



undergraduate  
*Bulletin*

2012 - 2013

Youngstown  
STATE UNIVERSITY



**YOUNGSTOWN  
STATE  
UNIVERSITY**

**UNDERGRADUATE  
BULLETIN  
2012–2013**

**EFFECTIVE AUGUST 2012  
Youngstown, Ohio 44555**

*Although current at the time of publication, the information in this catalog is subject to change without notice. The University reserves the right to change requirements, fees, course offerings, or other policies at any time. Please check with the department or dean's office for the most current information.*

Youngstown State University is committed to a campus environment that values all individuals and groups, and to non-discrimination and equal opportunity for all persons without regard to sex, race, religion, color, age, national origin, sexual orientation, gender identity and/or expression, handicap/disability, or identification as a disabled and/or Vietnam Era veteran. The University is also committed to the principles of affirmative action and acts in accordance with state and federal laws. Inquiries should be directed to Youngstown State University's Director of Equal Opportunity and Diversity, who is responsible for coordinating the University's programs for compliance. Inquiries can be initiated in writing or by calling 330-941-3370.

**UNDERGRADUATE  
BULLETIN  
VOLUME 81  
EFFECTIVE AUGUST 2012  
YOUNGSTOWN, OHIO**

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## YOUNGSTOWN STATE UNIVERSITY

### MISSION STATEMENT

Youngstown State University, an urban research university, emphasizes a creative, integrated approach to education, scholarship, and service. The University places students at its center; leads in the discovery, dissemination, and application of knowledge; advances civic, scientific, and technological development; and fosters collaboration to enrich the region and the world.

#### The University

- Creates diverse educational experiences that develop ethical, intellectually curious students who are invested in their communities;
- Provides access to a broad range of undergraduate programs;
- Offers graduate programs in selected areas of excellence, including those that meet the needs of the region;
- Supports economic development through applied learning and research;
- Integrates teaching and learning, scholarship, and civic engagement;
- Fosters understanding of diversity, sustainability, and global perspectives; and
- Advances the intellectual and cultural life of the city, region, and world.

## YOUNGSTOWN STATE UNIVERSITY CORE VALUES

*We—the faculty, staff, administrators, and students of Youngstown State University—hold the following values essential to achieving the University's mission:*

#### Centrality of Students

We are a student-centered institution committed to the education, development, well-being, and success of students of all ages and from all walks in life. In concert with our mission to help students grow intellectually, we strive to foster their personal, social, emotional, and career growth, as well as their capacities for lifelong learning, civic responsibility, and leadership.

#### Excellence and Innovation

We value excellence and innovation inside the classroom and out. Thus, we strive to integrate curricular and cocurricular activities; to offer outstanding academic programs; to foster intellectual inquiry, exploration, and discovery; to transcend traditional boundaries; to apply and perfect knowledge; to encourage creativity; to provide effective tools, technologies, and facilities for learning; and to excel in research and scholarly activity, including the “scholarship of teaching and learning”—an area of research that explores how individuals teach and learn.

#### Integrity/Human Dignity

As a campus community, we expect all conduct to be rooted in integrity, mutual respect, and civility. We value ethical behavior in scholarly and other endeavors; believe in the dignity and worth of all people; strive to foster an appreciation of, and respect for, differences among the human race; and celebrate the diversity that enriches the University and the world.

#### Collegiality and Public Engagement

As scholar-citizens of many extended and interconnected communities, we pledge to work collegially and cooperatively to enrich the cultural environment; establish productive partnerships; provide responsible leadership; address community and workforce needs; foster sustainability; and bring about the greater good of the collective whole—be it the University, the city of Youngstown, the state of Ohio, the region, or beyond.

## YSU VISION STATEMENT

Youngstown State University will become a national model for university-community engagement that enhances teaching and learning, student and faculty research, and community well-being. The University will expand its regionally focused mission to include national and international emphases, while working with other colleges and universities, business and industry, and the K-12 community to stimulate the economic, technological, and cultural rebirth of Ohio.

This Vision will be supported by

- Leading scholars and practitioners using multidisciplinary approaches to address societal challenges;
- Engagement of undergraduate and graduate students in research;
- Strategic development of undergraduate and graduate programs;
- Curricular and co-curricular integration of professional and liberal education, problem-solving, critical thinking, and communication skills;
- An emphasis on applied learning and community engagement; and
- Respect for the deep and rich diversity of the communities we serve.

## YSU 2020 THE FOUR CORNERSTONES

*YSU 2020: The Strategic Plan of Youngstown State University 2011–2020*, adopted by the YSU Board of Trustees in December 2010, is based on four critical guideposts, or “cornerstones”:

### Accountability and Sustainability

Accountability and sustainability entail aligning the University’s resources and investments to meet broad strategic goals and maintain institutional vitality.

### Student Success

Student success is defined as “academic achievement, satisfaction, and productive post-college performance.”

### Urban Research University Transition

Youngstown State University contributes to the development and application of knowledge for the betterment of students and, thus, the communities in which they live and work. The University strives to improve the quality of life in the region and is the primary link to the global community. As an urban research university, YSU is guided by three core principles:

- Faculty research and scholarship are integrated into teaching and learning to improve graduate and undergraduate student experiences;
- YSU answers important questions and solves real problems by sharing information, expertise, and resources with the community;
- YSU invests in research, academic, and other programs that enrich the intellectual, cultural, and economic life of the community.

### Regional Engagement

Regional engagement refers to activities that enhance the quality of life, well-being, and economic development of communities in and around Youngstown and the surrounding region. YSU has a positive impact on the region through active mutual engagement, not merely by existence.

The YSU 2020 document and related web pages are available at <http://web.yzu.edu/2020>.

## Accreditation

Youngstown State University is accredited by the Higher Learning Commission and a member of the North Central Association (web address: <http://www.ncahlc.org/>; telephone: [312]-263-7462).

Programs within the individual colleges may be further accredited by their respective professional bodies. Those accreditations are listed in each college section.

## Assessment

YSU is committed to providing an effective assessment process that supports student learning, improves academic programs, and enables YSU to provide exemplary services to all constituents. To sustain the University's continuous improvement on all levels, the Office of Assessment collaborates to design and coordinate regular and ongoing assessment of student learning outcomes with each academic department in the six colleges for each degree program; with the Office of General Education for the general education program; and with non-academic units in ongoing efforts to document student success. A systematic feedback loop also enables both academic and non-academic units to share information about student learning with students, faculty, staff, and appropriate organizations. All information is shared in aggregate form only, and confidentiality of individual students is safeguarded. If assessment information is shared beyond the internal efforts of program improvement or accreditation, departments and the Office of Assessment abide by the Human Subjects Research Committee guidelines at YSU.

## Office of Equal Opportunity and Diversity

Youngstown State University is committed to a campus environment that values all individuals and groups and to non-discrimination and equal opportunity for all persons without regard to sex, race, religion, color, age, national origin, sexual orientation, gender identity and/or expression, handicap/disability, veteran status, or any other basis protected by law. The University adheres to the principles of affirmative action and acts in accordance with all applicable state and federal laws.

The Office of Equal Opportunity and Diversity works to assess and facilitate the progress of the University in fulfilling its commitment to affirmative action, equal opportunity, and diversity for all members of the campus community. People are our first priority and most valuable resource. We believe that excellence and diversity are inextricably linked; the University is strengthened as its community becomes more diverse and inclusive, and the institution consistently reflects the contributions of all its members. We work to assure that all faculty, staff, and student members of the YSU community are full participants

in their chosen fields of endeavor and are regarded and treated with dignity and respect at all times.

The Office of Equal Opportunity and Diversity responds to complaints and reports of discrimination, discriminatory harassment, sexual harassment, and retaliation at the University. The office also provides informational counseling to faculty, staff, and students who believe they have experienced such treatment.

The office monitors changes in the University's workforce and works to recruit, hire, and retain individuals who would contribute to the diversity of the campus community. It provides a diversity orientation for faculty and staff search committees, and reviews and approves faculty and staff hiring decisions before an employment offer can be made. Periodic reports are issued to the University community on the progress the University is making in meeting its diversity goals.

The Office of Equal Opportunity and Diversity is also charged with helping the University and the University Diversity Council implement the institution's commitment to diversity through various programs, activities, and events. The Council advises the president of the University and the Board of Trustees on the formation of diversity-related policy, and the office works with faculty, staff, students, and the community to implement that policy. As part of its community outreach, the office coordinates and facilitates the Community Diversity Program Series, which offers an academic year of programs and events that take diversity and inclusion into the community.

## Historical Sketch

Youngstown State University traces its beginnings to a commercial law course offered by the Young Men's Christian Association in 1908. The YMCA had offered high school level and vocational courses since 1888, but wanted to meet the college-level needs of area residents in a society undergoing rapid industrialization and urbanization. The "Y" offered courses on law, business and engineering, and in 1910, even instituted a School of Law that granted no degree, but prepared students to take the bar exam. In 1916, the YMCA incorporated all of its educational work under the Youngstown Association School.

By the early 1920s, the Ohio Board of Education granted the School of Law the power to confer the Bachelor of Science in Law degree, and in 1924 the School of Commerce and Finance the right to confer the bachelor's degree in commercial science. The YMCA also offered courses to prepare teachers for certification, a program that evolved by 1927 into a separate school named Youngstown College and recognized by the State Department of Education. Throughout the 1920s, the schools of law and commercial science were called the Youngstown Institute of Technology, which began a move from downtown to the present location with the purchase of several mansions owned by the Wicks.



In 1931, the YMCA constructed its first building, the present-day Jones Hall, and appointed Howard Jones as the educational director. By the mid-1930s, the Board of Directors decided to incorporate with the official name of Youngstown College separate from the other “Y” educational efforts; they appointed Howard Jones as the first president, a position he held until 1966.

In 1944, the trustees of the Young Men’s Christian Association transferred control of the institution to the members of the Corporation of Youngstown College, and in 1955 the corporation was rechartered as The Youngstown University. The University joined the Ohio system of higher education in September 1967 as Youngstown State University.

Dana’s Musical Institute, founded in nearby Warren in 1869, became Dana’s Musical Institute of Youngstown College in 1941. In 1946, the Engineering Department, organized several years before, became the William Rayen School of Engineering; two years later, the Business Administration Department became the School of Business Administration; and in 1981 the school name was changed to the Warren P. Williamson, Jr. School of Business Administration. In 1960, the Education Department became the School of Education.

The Graduate School and College of Applied Science and Technology were created in 1968, and, in 1974, the College of Fine and Performing Arts was established.

In 1972, Youngstown State University, with the University of Akron and Kent State University formed a consortium to sponsor the Northeastern Universities College of Medicine, which enrolled its first students in 1975.

In 1991 the engineering technology departments separated from CAST and joined the new College of Engineering and Technology; the remaining departments formed the new College of Health and Human Services.

In 2007, the Rayen College of Engineering and Technology incorporated the science and mathematics departments from the College of Arts and Sciences. This reorganization linked science, technology, engineering, and mathematics on one hand, and the humanities and social sciences on the other.

Youngstown State University now consists of the School of Graduate Studies and Research and six undergraduate colleges: the Williamson College of Business Administration; the Beeghly College of Education; the College of Fine and Performing Arts; the Bitonte College of Health and Human Services; the College of Liberal Arts and Social Sciences; and the College of Science, Technology, Engineering, and Mathematics. Degrees offered range from the associate, bachelor’s, and master’s to a doctorate in educational leadership and the Doctor of Physical Therapy.

## Academic Organization

The Academic Division is organized in the following units:

- The Williamson College of Business Administration
- The Beeghly College of Education
- The College of Fine and Performing Arts
- The Bitonte College of Health and Human Services
- The College of Liberal Arts and Social Sciences
- The College of Science, Technology, Engineering, and Mathematics
- The School of Graduate Studies and Research

The colleges are described, along with their major programs and curricula, in subsequent sections of this catalog.

YSU also offers a BS/MD program leading to medical studies at Northeast Ohio Medical University.

The post-baccalaureate programs of the School of Graduate Studies and Research are set forth in the *Graduate Bulletin* and *Supplement*.

Virtually all departments offer courses during daytime and evening hours, and several majors may be obtained by students who are able to attend only during the evening. To accommodate working students, classes are offered on a flexible schedule—from classes that meet five days a week to classes that meet only one day a week. To better serve the community, many general education courses are also offered at the Metropolitan College site in Boardman. The main academic year runs from late August into May in two 16-week semesters. During the summer term, courses are offered both for a 12-week session and for three sessions of six weeks each. Courses are also offered in shorter time frames.

## The School of Graduate Studies and Research

The School of Graduate Studies and Research offers programs in American studies, art education, economics, financial economics, English, and history leading to the Master of Arts degree; a program in computing and information systems leading to the Master of Computing and Information Systems degree; a program in creative writing leading to the Master of Fine Arts degree; programs in applied behavior analysis, biology, chemistry, criminal justice, environmental studies, and mathematics leading to the Master of Science degree; concentrations in accounting and general business leading to the Master of Business Administration degree; a program in health and human services leading to the Master of Health and Human Services degree; programs in music education, performance, music theory and composition, music history and literature, and jazz studies leading to the Master of Music degree; programs in chronic illness care, nurse anesthesia, nurse education, and school nurse leading to the Master of Science in Nursing degree; a program in

public health leading to the Master of Public Health degree; a program in respiratory care leading to the Master of Respiratory Care degree; options in chemical, civil and environmental, electrical and computer, industrial and systems, and mechanical engineering leading to the Master of Science in Engineering degree; teacher education, educational administration, educational technology, counseling, and special education programs leading to the Master of Science in Education degree and a program in social work leading to the Master of Social Work degree.

The program in materials science leads to the Doctor of Philosophy (PhD) in materials science and engineering. The program in educational leadership offered by the Department of Educational Foundations, Research, Technology and Leadership leads to the Doctor of Education (EdD) in educational leadership degree. The program in physical therapy leads to the Doctor of Physical Therapy (DPT) degree. The program in school psychology leads to the Educational Specialist (EdS) degree.

Certificate programs are available in applied history, autism spectrum and related disabilities, enterprise resource planning, environmental studies, health care management, literature for children and young adults, nurse education, professional writing and editing, teaching of English to speakers of other languages (TESOL), teaching of writing, and working-class studies. Please refer to the latest *Graduate Bulletin* for additional program and admission information, or contact the Office of Graduate Studies and Research at 330-941-3091.

## Degrees

Youngstown State University grants the following baccalaureate and associate degrees: Bachelor of Arts (BA), Bachelor of Engineering (BE), Bachelor of Fine Arts (BFA), Bachelor of General Studies (BGS), Bachelor of Music (BM), Bachelor of Science (BS), Bachelor of Science in Applied Science (BS in AS), Bachelor of Science in Business Administration (BS in BA), Bachelor of Science in Education (BS in Ed), Bachelor of Science in Nursing (BSN), Bachelor of Science in Respiratory Care (BSRC), Bachelor of Social Work (BSW), Associate of Arts (AA), Associate of Applied Science (AAS), Associate of Technical Study (ATS), and Associate of Labor Studies (ALS). All bachelor's and associate degrees may be taken as honors degrees. A combined BS/MD degree is offered in conjunction with the Northeast Ohio Medical University.

## Majors

The college in which each major resides is noted in parentheses, with colleges coded as follows: Business Administration, WCBA; Education, BCOE; Fine and Performing Arts, FPA; Health and Human Services, BCHHS; Liberal Arts and Social Sciences, CLASS; and Science, Technology, Engineering, and Mathematics, STEM.

### Baccalaureate degrees may be earned in:

- Accounting (WCBA)
- Adolescent/Young Adult Education (BCOE)
  - Earth Science
  - Integrated Language Arts
  - Integrated Mathematics
  - Integrated Sciences
  - Integrated Social Studies
  - Life Sciences
  - Physical Sciences
- Advertising & Public Relations (WCBA)
- Africana Studies (CLASS)
- Allied Health (BCHHS)
- American Studies (CLASS)
- Anthropology (CLASS)
- Art History (FPA)
- Astronomy/Physics (STEM)
- Biological Sciences
  - Biology—Physical Therapy Track
- Business Economics (WCBA)
- Chemical Engineering (STEM)
- Chemistry (STEM)
- Civil Engineering (STEM)
- Civil & Construction Engineering Technology (STEM)
- Clinical Laboratory Science (BCHHS)
- Combined Science (STEM) (B.S./M.D. students only)
- Communication Studies (FPA)
  - Interpersonal/Organizational Track
  - Media Track
  - Persuasion Track
- Computer Information Systems (STEM)
- Computer Science (STEM)
- Criminal Justice (BCHHS)
  - Corrections Track
  - Law Enforcement Track
  - Legal Processes Track
  - Loss Prevention/Asset Protection Track
- Dance Management (FPA)
- Dental Hygiene (BCHHS)
- Dietetics (BCHHS)
  - Coordinated Program in Dietetics
  - Didactic Program in Dietetics
- Early Childhood Education (BCOE)
- Earth Science (STEM)
- Economics (CLASS)
- Electrical Engineering (STEM)
  - Biomedical Option
  - Computer/Digital Option
  - Traditional Option
- Electrical Engineering Technology (STEM)
- English (CLASS)
  - English Studies Option
  - Literature Studies Option
- Environmental Studies (STEM)
- Exercise Science (BCHHS)
  - Exercise Science—Physical Therapy Track
- Family & Consumer Sciences Education (BCOE)
- Family & Consumer Studies (BCHHS)
- Finance (WCBA)
  - CFP Track
  - Finance Management Track

Forensic Science (BCHHS)

- Anthropology Track
- Biology Track
- Chemistry Track

French (CLASS)

General Administration (WCBA)

General Studies (CLASS)

Geography (CLASS)

Geology (STEM)

- Environmental Option
- Geoscience Option

Gerontology (CLASS)

History (CLASS)

Hospitality Management (BCHHS)

Human Resource Management (WCBA)

Individualized Curriculum Program

Industrial & Systems Engineering (STEM)

Information Technology (STEM)

- Database Option
- E-Commerce Option
- Multimedia/Web Design Option
- Network Option
- Security Option
- Technical Support Option

Italian (CLASS)

- Interdisciplinary Cultural Studies Option

Journalism (CLASS)

- Electronic Journalism Option
- General Journalism Studies Option
- Magazine Option
- Writing and Reporting Option

Management Information Systems (WCBA)

Marketing Management (WCBA)

Mathematics (STEM)

- Actuarial Mathematics Track
- Applied Mathematics Track
- Quantitative Business Track
- Statistics Track

Mechanical Engineering (STEM)

Mechanical Engineering Technology (STEM)

Merchandising: Fashion & Interiors (BCHHS)

Middle Childhood Education (BCOE)

- Language Arts & Math Option
- Language Arts & Science Option
- Language Arts & Social Studies Option
- Math & Science Option
- Math & Social Studies Option
- Science and Social Studies Option

Multi-Age Education (BCOE)

- Art
- French
- Health
- Italian
- Physical Education
- Spanish

Music (FPA)

- Composition
- History & Literature
- Music Education—Instrumental
- Music Education—Keyboard
- Music Education—Vocal
- Performance—Instrumental

- Performance—Jazz

- Performance—Keyboard

- Performance—Organ

- Performance—Piano

- Performance—Recording

- Performance—Voice

- Theory

Nursing (BCHHS)

Nursing (RN-BSN Completion) (BCHHS)

Nursing Home Administration (BCHHS)

Philosophy (CLASS)

- Pre-Counseling Track

Physical Education (BCHHS)

Physics (STEM)

Physics/Astronomy (STEM)

Political Science (CLASS)

- Political Science—Public Management Track

Pre-Dentistry (STEM)

Pre-Forestry (STEM)

Pre-Medicine (STEM)

Pre-Law (CLASS)

Pre-Pharmacy (STEM)

Pre-Veterinary (STEM)

Professional Writing and Editing (CLASS)

Psychology (CLASS)

- Psychology—Physical Therapy Track

Public Health (BCHHS)

Religious Studies (CLASS)

- Pre-Counseling Track

Respiratory Care (BCHHS)

- Sleep Diagnostics Option

Social Studies (CLASS)

Social Work (BCHHS)

Sociology (CLASS)

Spanish (CLASS)

Special Education, Intervention (BCOE)

- Mild to Moderate Option
- Mild to Moderate to Intensive Option

Studio Art (FPA)

- Graphic + Interactive Design Option
- Interdisciplinary Studio Arts Option
- Painting/Printmaking Option
- Photography Option
- Three Dimensional Studies Option

Telecommunication Studies (FPA)

Theater (FPA)

- Musical Theater Option
- Theater
- Theater Studies

**Associate degrees may be earned in:**

Associate of Arts (CLASS)

Associate of Arts Business Administration (WCBA)

Business Technology (WCBA)

Civil & Construction Engineering Technology (STEM)

Clinical Laboratory Technician (BCHHS)

Computer Information Systems (STEM)

## Criminal Justice (BCHHS)

- Corrections Track
- Law Enforcement Track
- Loss Prevention/Asset Protection Track

## Dietetic Technician (BCHHS)

## Drafting &amp; Design Technology (STEM)

## Early Childhood Associate PreK (BCHHS)

## Electrical Engineering Technology (STEM)

- Traditional Option
- Computer Option

## Electric Utility Technology (STEM)

- Power Plant Technology Option

## Emergency Medical Services (BCHHS)

## Hospitality Management (BCHHS)

- Event Management Track
- Hotel/Lodging Management Track
- Restaurant Management Track

## Information Technology (STEM)

## Labor Studies Technology (WCBA)

## Mechanical Engineering Technology (STEM)

## Medical Assisting Technology (BCHHS)

## Social Services Technology (BCHHS)

Associate degrees can be applied to a related baccalaureate degree or serve as the foundation for a bachelor's degree in the same field through the Individualized Curriculum Program.

**Certificates may be earned in:**

- Anatomy & Physiology (STEM)
- Applied Gerontology (CLASS)
- Basic Police Training (BCHHS)
- Computer Databases (STEM)
- Computer Networking (STEM)
- Construction Management Technology (STEM)
- Electronic Commerce Technology (STEM)
- Emergency Medical Technology (BCHHS)
- Enterprise Resource Planning (WCBA)
- Entrepreneurship (WCBA)
- Geospatial Science and Technology (CLASS)
- Information System Programming (STEM)
- Medical Coding Specialist (BCHHS)
- Multimedia and Web Design (STEM)
- Museum Studies (FPA)
- Nonprofit Leadership (WCBA)
- School Nurse Licensure (BCHHS)

## ADMISSION

Youngstown State University offers broad access to education through open admission for all Ohio high school graduates.

Undergraduate admission is handled by the Office of Admissions, located in Sweeney Welcome Center at the corner of University Plaza and Bryson Street. You may contact the admissions office in any of the following ways:

- Phone: Toll free 877-GO-TO-YSU  
(877-468-6978)  
330-941-2000
- TDD: 330-941-1564

Fax: 330-941-3674

E-Mail: [enroll@ysu.edu](mailto:enroll@ysu.edu)

Web Site: [www.ysu.edu](http://www.ysu.edu)

The Office of Admissions is open on weekdays and selected Saturdays. Please call the numbers above or visit the website for times. Campus tours are available twice daily M-F and on selected Saturdays. Tours can be scheduled by calling the Admissions Office or by scheduling on-line at <http://cfweb.cc.ysu.edu/visit/index.cfm>. Tours are best scheduled a week or more in advance, but you are welcome to visit the YSU campus and stop in the office any time without an appointment. If you schedule ahead, we can arrange free parking; otherwise, visitors can park in the F-1 (University Plaza) lot across from the Sweeney Welcome Center for a nominal fee that covers parking for a full day.

Admission to the University does not guarantee admission to every program. Some programs within the University have separate admission standards that must be met before a student may enroll in that particular program. Developmental courses are available to assist in satisfying scholastic deficiencies. Those students who lack high school subjects required by the various colleges within the University may be admitted with the understanding that these courses will be completed as soon as possible and not later than the end of the college sophomore year.

## Admission with Conditions

Students may be admitted to YSU with conditions under certain circumstances. Please see p. 14 for information about conditional admission.

## State Residency Status

Place of residence for admission and tuition purposes will be determined at the time of admission or readmission by the Office of Admissions on the basis of the residency rules stated in Appendix A and information supplied on the "Application for Admission" and "Undergraduate Application for Readmission" form.

If at any time you have questions about your appropriate classification, you should immediately bring it to the attention of Admissions for review. Students requesting Ohio residency are required to complete a State of Residency Verification form and provide additional supporting documentation. A change to resident status cannot be made retroactive if supporting documentation is received after the first day of the requested semester.

## Residency Status Appeal

After Admissions makes their determination, a decision will be sent in writing to the student. If a student wishes to appeal the decision, she or he can request an appearance before the Residence Classification Board. Such appearances occur within two weeks of the request, if possible. The Residence Classification Board's appellate decision is final.

Please see Appendix A of this *Bulletin* for the complete text of the Ohio Board of Regents' residency criteria.

## Academic Credentials

Academic credentials include high school and college transcripts, test scores, GED scores, and/or any other records required for admission or granting credit. **Only properly certified and signed credentials issued to YSU and received directly from the issuing institution will be accepted.**

## Application Fee

A non-refundable application fee of \$30 is required unless the applicant is a former YSU student.

## HIGH SCHOOL PREPARATION

Students desiring to pursue a baccalaureate degree should have completed the following college preparatory units:

English	4
Mathematics	3
Science	3
Social Studies	3
Foreign Language <sup>**</sup>	2
Arts	1
<b>Total Units</b>	<b>16</b>

<sup>\*\*</sup>Two units in one language.

It is recommended that coursework include English composition; algebra 1, 2 and geometry; laboratory science; and United States history and government.

## Application Deadlines

We encourage all students to apply at least **two months** prior to the application closing dates listed below. Review of applications received after these dates cannot be guaranteed.

FALL SEMESTER 2012	SPRING SEMESTER 2013	SUMMER SEMESTER 2013
<b>Freshman</b>		
Application Deadline: <b>Aug. 1*</b> Credentials Deadline: <b>Aug. 1</b>	Application Deadline: <b>Dec. 1</b> Credentials Deadline: <b>Dec. 1</b>	Application Deadline: <b>Apr. 15</b> Credentials Deadline: <b>Apr. 15</b>
<b>Former Transfer and Transfer</b>		
Application Deadline: <b>Aug. 1</b> Credentials Deadline: <b>Aug. 15</b>	Application Deadline: <b>Dec. 1</b> Credentials Deadline: <b>Dec. 15</b>	Application Deadline Summer I: <b>Apr. 15</b> Credentials Deadline Summer I: <b>May 15</b> Application Deadline: Summer II & III: <b>May 15</b> Credentials Deadline: Summer II & III: <b>June 1</b>
<b>Former Transient and Transient</b>		
Application Deadline: <b>Aug. 1</b> Credentials Deadline: <b>Aug. 15</b>	Application Deadline: <b>Dec. 1</b> Credentials Deadline: <b>Dec. 15</b>	Application Deadline Summer I: <b>Apr. 15</b> Credentials Deadline Summer I: <b>May 15</b> Application Deadline: Summer II & III: <b>May 15</b> Credentials Deadline: Summer II & III: <b>June 1</b>
<b>Beginning Dates for Each Semester</b>		
<b>Wednesday, Aug. 22, 2012</b>	<b>Monday, Jan. 14, 2013</b>	Session I and Full Term: <b>Monday, May 20, 2013</b> Session II: <b>Monday, June 17, 2013</b> Session III: <b>Monday, July 1, 2013</b>

\*If you are accepted for admission by **February 15**, you will be eligible for the Early Advisement and Registration Program (EARLY). If you do not participate in the EARLY program, please keep in mind that your orientation and registration date is based on the date of your acceptance to the University.

The following programs have a **deadline date of December 31 and a credentials deadline date of January 31** for enrollment in the fall semester: **dental hygiene, histotechnology, and clinical laboratory technology.**

**Phase I BS/MD**—If interested in applying for this program, contact NEOMED for deadlines and application procedures

*The director of Admissions has discretionary authority regarding these requirements under an approved procedure.*

In addition, the Bachelor of Engineering (BE) degree program suggests a unit of mechanical drawing, a half-unit of trigonometry, and in the sciences, one unit of chemistry and one unit of physics specifically. Students interested in programs such as computer information systems, physical sciences, and mathematics should also take a fourth year of mathematics. For the Bachelor of Music (BM) degree program, the applicants are expected to have proficiency in one or more branches of applied music. See the Dana School of Music section.

Students wishing to pursue an associate degree should have completed the following college preparatory units:

English	4
Mathematics	2
Science	2
Social Studies	2
Other Subjects	6
<b>Total Units</b>	<b>16</b>

Students admitted to the University may have their high school records evaluated by the college in which they are enrolled. Specific coursework, in addition to what is listed above, may be required in order to be accepted into a specific program or major. Since such coursework may vary depending on the college and degree requirements, students should check with advisors as to the academic expectations that need to be met.

## ADMISSION STATUS

### New Freshman Applicants

#### Ohio Residents

Ohio Residents who have graduated from a public or chartered high school or successfully completed the General Education Development (GED) test are eligible for admission to the University. Admission to restricted academic programs may have additional requirements.

Students graduating from an Ohio non-chartered high school must show evidence of having successfully passed the GED or have an ACT composite score of 17 or higher, or have a combined critical-reading and math SAT score of 820 or higher.

Applicants who have been out of high school two or more years are not required to submit ACT or SAT test results.

**Home-schooled applicants** must meet the following criteria:

1. Applicants are required to submit results from the ACT or SAT. Those applicants who have been out of school for two or more years are exempt from this requirement.
2. An official transcript showing documentation of coursework completed of grades 9-12 and

indicating date of completion of studies or graduation must be sent to Admissions.

3. A copy of academic assessment (i.e. Iowa Basic Skills Test, California Achievement Test, etc.) reports submitted to the appropriate superintendent of school pursuant to Section 3301-34-04 of the Ohio Administrative Code must be received by Admissions.
4. Curriculum outline, detailing course content, textbooks used, and any other relevant information regarding coursework must be submitted to Admissions.
5. A copy of the Superintendent's Exemption Notice showing the student is excused to receive home schooling.

#### Out-of-State Residents

Out-of state residents must have graduated from a high school with a state-approved diploma or regional accreditation and be ranked in the upper two-thirds of their graduating class; or have an ACT composite score of 17 or higher, or have a combined SAT critical-reading and math score of 820 or higher.

Applicants who have been out of high school two or more years are not required to submit ACT or SAT test results.

Out-of-state residents who hold a valid GED will be evaluated upon an individual basis but may also be required to have an ACT composite score of 17 or higher, or have a combined SAT critical-reading and math score of 820 or higher.

**Home-schooled students** must meet the following requirements:

1. Applicants are required to submit results from the ACT or SAT. Those applicants who have been out of school for two or more years are exempt from this requirement.
2. An official transcript showing documentation of coursework completed of grades 9-12 and indicating date of completion of studies or graduation must be sent to Admissions.
3. Any relevant supporting documents required by the applicant's home state verifying home school curriculum.
4. Curriculum outline, detailing course content, textbooks used, and any other relevant information regarding coursework must be submitted to Admissions.
5. A copy of the Superintendent's Exemption Notice showing the student is excused to receive home schooling.

#### Mercer and Lawrence Counties

By special agreement, residents of Mercer and Lawrence Counties in Pennsylvania are afforded the same admission requirements as Ohio residents.

## Athletics Participation

Students planning to participate in intercollegiate athletics in their first year at YSU must take either the SAT or the ACT prior to enrolling in college. Please call the Office of Intercollegiate Athletics at 330-941-2282 for more information about eligibility for athletics participation.

## Conditional Admission

Students will be admitted to YSU with conditions if their high school grade point average is below 2.00 (out of 4.00) or their composite ACT is below 17 (or SAT critical-reading and math composite is below 820). Transfer students will be conditionally admitted if their transfer GPA is below 2.0.

If a student has not taken the ACT or SAT, or does not have a high school GPA, the student will be conditionally admitted until a placement test is taken. Following the placement test, if a student tests into RSS 1510B or ENGL 1539, the student will remain conditionally admitted. If a student tests out of both RSS 1510B and ENGL 1539, the conditionally admitted status is removed.

Conditionally admitted students must meet the following requirements:

1. Conditionally admitted students shall not be admitted during the summer session. Students who place into conditional admission status based on placement testing in the summer term will have their start date deferred to the fall semester.
2. Conditionally admitted students are required to attend freshman orientation (SOAR); failure to do so will defer admittance to a subsequent semester.
3. Conditionally admitted students shall be classified as having an *undetermined* major within their college, a status that shall remain until the student satisfies all requirements to exit the conditional admission classification.
4. During their first semester, conditionally admitted students must fulfill a contract with the Center for Student Progress, which includes meeting weekly with their coordinator and two times during the term with their college academic advisor.
5. Conditionally admitted students cannot register for more than 14 semester hours of courses in a single semester.
6. Students placing into RSS 1510A, RSS 1510B, ENGL 1539, or ENGL 1540 must take these courses in their first semester. Students may not withdraw from these courses unless they make a complete withdrawal from the university.
7. Conditionally admitted students are restricted to an approved list of courses (see course listing below).
8. Conditionally admitted students must receive approval of their course schedule by a college academic advisor and may not make further changes without approval of the advisor.

9. Failure to fulfill the first semester guidelines and achieve good academic standing (a GPA of 1.75 or above for students with less than 32 s.h. of accumulated credit and a 2.00 GPA for all others) shall result in the conditionally admitted student being suspended from the university.

The restrictions imposed on coursework and semester hours will be removed when the student has done the following:

1. Successfully completed all developmental courses into which the student has tested (RSS 1510A, RSS 1510B, ENGL 1539 or ENGL 1540).
2. Successfully completed six semester hours of non-developmental courses.
3. Achieved good academic standing, which, for freshmen, is a GPA of 1.75 or above. See the *Undergraduate Bulletin* for more information on academic standing.
4. Fulfilled the conditional admission contract.

A student fulfilling these requirements may file a petition with a college academic advisor to have the restrictions and their conditionally admitted status removed.

Approved courses for conditionally admitted students:

AFRST 2600*	Introduction to African Studies 1
AFRST 2601*	Introduction to African Studies 2
CMST 2610*	Intercultural Communication
COUN 1587*	Introduction to Health and Wellness in Contemporary Society
COUN 1589	Success in Careers and Life Planning
CSIS 1514	Business Computer Systems
ECON 1503*	Rich and Poor: Diversity and Disparity in the U.S. Workplace
ENGL 1539	Fundamentals of College Writing
ENGL 1540	Introduction to College Writing
ENST 1500/L*	Introduction to Environmental Science
HAHS 1510	Investigations into Economic Class in America
HIST 1501*	American Dreams
MATH 1500	Number Concepts and Beginning Algebra
MATH 1501	Elementary Algebraic Models
MATH 1502	Beginning Algebra 1
MATH 1503	Beginning Algebra 2
MATH 1507	Intermediate Algebra
MATH 1508	Introduction to Trigonometry
MUED 2621*	Music Literature and Appreciation
MUHL 2616*	Survey of Jazz
PHLT 1531*	Fundamentals of Public Health
PHLT 1568*	Healthy Lifestyles
POL 1550*	Politics and Globalization
RSS 1510A	Advanced College Success Skills
RSS 1510B	Basic College Success Skills
RSS 1510C**	STEM Advanced College Success Skills
SOC 1500*	Introduction to Sociology
THTR 1560*	Understanding Theater
THTR 1590*	History of Motion Pictures

\* General education courses

\*\* Specific to STEM students only

## English Requirement for Permanent Residents, Refugees, or Political Asylees

YSU requires proof that you have sufficient knowledge of the English language to follow your program of study.

If your native language is not English, please see International Student Applicants section on p. 21.

## Early Admissions Options Program

Youngstown State University offers an Early Admission Options Program (EAOP) which provides additional academic challenges to high school students who have demonstrated above-average academic performance. The program allows qualified high school students to experience college-level course work, supplement their high school curriculum, enjoy special interests and accumulate college credit. Course work may be applied toward a program at Youngstown State University or may be transferable. Since this is a selective admission program, students must contact the Office of Admissions in sufficient time to review admission standards. Financial responsibility for coursework is solely that of the student. EAOP students who plan to continue at YSU after graduation from high school must reapply to YSU and provide a final high school transcript to the Office of Admissions. Students interested in the EAOP should contact the Admissions Office.

## College in High School

The YSU College in High School program (CHS) offers college readiness and credit-bearing college courses to high school students in their school as a regular part of their school day. The student does not have to come to campus or worry about class time interfering with in-school or after-school activities. High school students earn college credit on an official YSU transcript that is transferable to any state-funded college or university in Ohio and some private and out of state schools. CHS students who plan to continue at YSU after graduating high school must reapply to YSU and provide their final high school transcript. Partnerships with regional high schools make this opportunity possible. See the College in High School website for eligibility and information about course offerings in each school district.

## Post-Secondary Enrollment Options (Senate Bill 140) Program

The Ohio General Assembly has adopted a Post-Secondary Enrollment Options program (SB 140) designed to provide Ohio high school students with additional options for learning at no cost to the student. Youngstown State University welcomes the opportunity to work with high school students, their parents, and high school personnel interested in this program. The experience allows appropriately qualified students to earn college and high school graduation credits. Applications are submitted in the spring of each year for consideration of participation beginning with the following fall semester. Summer

is not included in this program. However, if students wish to attend YSU during the summer term, they may do so through EAOP. Details may be obtained from local high school guidance offices or the Office of Admissions.

## Articulated Credit

In the presence of a formal agreement between Youngstown State University and a particular career center or high school, students may earn college credit for specified courses they successfully completed in high school. Youngstown State University has several program-specific articulation agreements with career centers and high schools, including Ashtabula County Joint Vocational School, Choffin Career and Technical Center, Columbiana County Career and Technical Center, East Liverpool High School, Girard High School, Mahoning County Career and Technical Center, Maplewood Career Center, Trumbull Career and Technical Center and Mercer County Career and Technical Center. Students in those articulated programs receive instructions from their career/technical center or high school about how to have earned credits posted to their YSU transcripts after they enroll at YSU. Students who complete College Tech Prep programs may also receive specified articulated college credit. For information about College Tech Prep programs at YSU, see <http://www.yosu.edu/adtp>.

## High School Transcripts

Applicants must arrange to have their high schools send to the Office of Admissions a record of all work completed. Partial transcripts will be given consideration for early decisions. If the applicant's record clearly indicates satisfactory completion, notification of conditional acceptance will be made before high school graduation.

## Non-Matriculated Admission

The option of non-matriculated admission provides an opportunity for adults out of high school two or more years to enroll in undergraduate courses without completion of the regular admission process. High school or previous collegiate transcripts are not required until the non-matriculated student completes 18 credit hours or decides to seek admission to a degree program. Coursework taken in the 18 semester hours as a non-matriculated student can be applied to a degree program at Youngstown State University. Non-matriculated students are able to register only after current students have registered.

Applications for non-matriculated admission can be obtained through the Office of Admissions.

## TRANSFER

An applicant who has graduated from high school and was enrolled in another college or university for at least one course is classified as a transfer applicant. This classification includes post-graduate applicants from other institutions seeking additional undergraduate coursework.



The Ohio Board of Regents in 1990, following a directive of the 119th Ohio General Assembly, developed the Ohio Articulation and Transfer 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. A subsequent policy review and recommendations produced by the Articulation and Transfer Advisory Council in 2004, together with mandates from the 125th Ohio General Assembly in the form of Amended Substitute House Bill 95, have prompted improvements of the original policy. While all state-assisted colleges and universities are required to follow the Ohio Articulation and Transfer Policy, independent colleges and universities in Ohio may or may not participate in the transfer policy. Therefore, students interested in transferring to independent institutions are encouraged to check with the college or university of their choice regarding transfer agreements. In support of improved articulation and transfer processes, the Ohio Board of Regents has established a transfer clearinghouse to receive, annotate, and convey transcripts among state-assisted colleges and universities. This system is designed to provide standardized information and help colleges and universities reduce undesirable variability in the transfer credit evaluation process.

### OBOR Transfer Module

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 curriculum in AA, AS and baccalaureate degree programs. Students in applied associate degree programs may complete some individual transfer module courses within their degree program or continue beyond the degree program to complete the entire transfer module. The transfer module contains 54-60 quarter hours or 36-40 semester hours of course credit in English composition (minimum 5-6 quarter hours or 3 semester hours); mathematics, statistics and formal/symbolic logic (minimum of 3 quarter hours or 3 semester hours); arts/humanities (minimum 9 quarter hours or 6 semester hours); social and behavioral sciences (minimum of 9 quarter hours or 6 semester hours). Oral communication and interdisciplinary areas may be included as additional options. Additional elective hours from among these areas make up the total hours for a completed transfer module. Courses for the transfer module should be 100- and 200-level general education courses commonly completed in the first two years of a student's course of study. Each state-assisted university, technical and community college is required to establish and maintain an approved transfer module.

Transfer module course(s) or the full module completed at one college or university will automatically meet the requirements of individual transfer module course(s) or the full transfer module at another college or university once the student is admitted. Stu-

dents may be required, however, to meet additional general education requirements at the institution to which they transfer. For example, a student who completes the transfer module at Institution S (sending institution) and then transfers to Institution R (receiving institution) is said to have completed the transfer module portion of Institution R's general education program. Institution R, however, may have general education courses that go beyond its transfer module. State policy initially required that all courses in the Transfer Module be completed to receive its benefit in transfer. However, subsequent policy revisions have extended this benefit to the completion of individual transfer module courses on a course-by-course basis.

### Transfer Assurance Guides

Transfer Assurance Guides (TAGs) comprise transfer module courses and additional courses required for an academic major. A TAG is an advising tool to assist Ohio university and community and technical college students planning specific majors to make course selections that will ensure comparable, compatible, and equivalent learning experiences across the state's higher-education system. A number of area-specific TAG pathways in the arts, humanities, business, communication, education, health, mathematics, science, engineering, engineering technologies, and the social sciences have been developed by faculty teams. TAGs empower students to make informed course selection decisions and plans for their future transfer. Advisors at the institution to which a student wishes to transfer should also be consulted during the transfer process. Students may elect to complete the full TAG or any subset of courses from the TAG. Because of specific major requirements, early identification of a student's intended major is encouraged. TAG courses count toward the major without adding to the overall total of credits in the particular major.

Students should also check with their department about which courses have received approval from OBOR as part of the Transfer Assurance Guide program. Only those courses that have received such approval can be guaranteed transfer credit as part of the major. Students may also check with the OBOR TAG website link <http://www.ohiohighered.org/transfer>.

### OBOR Conditions for Transfer Admission

1. Ohio residents with associate degrees from state-assisted institutions and a completed, approved transfer module shall be admitted to any state institution of higher education in Ohio, provided their cumulative grade point average is at least 2.0 for all previous college-level courses. Further, these students shall have admission priority over out-of-state associate degree graduates and transfer students.

2. When students have earned associate degrees but have not completed a transfer module, they will be eligible for preferential consideration for admission as transfer students if they have grade point averages of at least a 2.0 for all previous college-level courses.

3. In order to encourage completion of the baccalaureate degree, students who are not enrolled in an A.A. or A.S. degree program but have earned 60 semester or 90 quarter hours or more of credit toward a baccalaureate degree with a grade point average of at least a 2.0 for all previous college-level courses will be eligible for preferential consideration for admission as transfer students.

4. Students who have not earned an AA or AS degree or who have not earned 60 semester hours or 90 quarter hours of credit with a grade point average of at least a 2.0 for all previous college-level courses are eligible for admission as transfer students on a competitive basis.

5. Incoming transfer students admitted to a college or university shall compete for admission to selective programs, majors, and units on an equal basis with students native to the receiving institution.

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 the institution. Once admitted, transfer students shall be subject to the same regulations governing applicability of catalog requirements as native students. Furthermore, transfer students shall be accorded the same class standing and other privileges as native students on the basis of the number of credits earned. All residency requirements must be completed at the receiving institution.

### Acceptance of Transfer Credit

To recognize courses appropriately and provide equity in the treatment of incoming transfer students and students native to the receiving institution, transfer credit will be accepted for all successfully completed college-level courses completed in and after fall 2005 from Ohio state-assisted institutions of higher education. Students who successfully complete AA or AS degrees prior to fall 2005 with a 2.0 or better overall grade point average would also receive credit for all college-level courses they have passed. (See Ohio Articulation and Transfer Policy, Definition of Passing Grade, Appendix D on the OBOR website, <http://www.ohiohighered.org/transfer>.) While this reflects the baseline policy requirement, individual institutions may set equitable institutional policies that are more accepting. Pass/fail courses, credit by examination courses, experiential learning courses, and other nontraditional credit courses that meet these conditions will also be accepted and posted to the student record.

## Transferring to YSU

### Transfer Credit

Transfer credit is given for all coursework taken at a regionally accredited institution, provided that the student has a cumulative point average equivalent to at least a 2.0 (on a 4.0 system) at that institution and the work is creditable towards a degree at that institution. YSU accepts a "D" grade on the same basis as the rules governing native students. Courses from nonregionally-accredited institutions may be accepted on a case-by-case basis with the approval of the chair of the department and the dean of the college in which the course would be housed at YSU. For example, a "D" grade might not satisfy a prerequisite for which a higher grade is needed.

Conditions for transfer admission to the University are in line with OBOR rules and regulations (see above). Per OBOR policy, the University recognizes the associate degree as preliminary to the baccalaureate and admits advanced-standing students possessing the associate degree from a regionally accredited institution. Transfer credit is granted for all work successfully completed from the associate degree. Admission to the University does not guarantee that a transfer student will be automatically admitted to all majors, minors, or fields of concentration. Some programs within the University have separate admission standards that must be met before a student may enroll in that particular program. Please consult the appropriate college or department for information on restricted program admissions. Once admitted, transfer students shall be subject to the same regulations governing applicability of catalog requirements, class standing, and other privileges as all other native students.

Transfer applicants who are in good standing at the last institution attended and who have an aggregate cumulative point average of 2.0 or higher (on a 4.0 system) for all previous college-level courses are admitted in good standing. Transfer applicants with an aggregate cumulative point average of less than 2.0 or who are on probation will be admitted on probationary status for one term. Applicants suspended or dismissed from their most recent institutions are not eligible for admission until at least one semester (excluding summer) has passed following the term in which the suspension occurred. Transfer students with multiple suspensions or a dismissal may not be eligible for admission. See the reinstatement policy for YSU students in the University Bulletin. Consistent with undergraduate academic policy, failure to maintain a grade point average of 2.0 or higher (on a 4.0 system) during the probationary semester will result in academic suspension.

Transfer students will receive a preliminary review of the transfer ability of their courses from the Office of Admissions. The university is continuing the

process of examining all courses from surrounding collegiate institutions. Both the department chairs and the coordinator of General Education work with the Office of Admissions to identify courses that equate or courses that could count toward a major or general education credit. The appropriate school or college and/or department and/or coordinator of general education in accordance with policies governing the fulfillment of degree requirements will determine distribution of any accepted course work.

### Credentials for Transfer Students

Official transcripts must be sent directly from the issuing institution to the YSU Office of Admissions. The Ohio Board of Regents has established a transfer clearinghouse to receive, annotate, and convey transcripts among state-assisted colleges and universities.

**Pre-baccalaureate.** All undergraduate transfer applicants will need to provide the Youngstown State University Office of Admissions with an official copy of their high school transcript and must provide an official copy of all undergraduate transcripts.

**Baccalaureate.** Postgraduate applicants are required to submit a transcript from the institution that granted their highest degree. High school transcripts and any other undergraduate transcripts are not required unless specifically requested by YSU.

### General Education and the Transfer Module

1) Per the articulation and transfer module guidelines developed by the Ohio Board of Regents, any student transferring to YSU with a completed transfer module from another Ohio public institution of higher learning will receive credit for all hours (36-40 semester hours; 54-60 quarter hours) contained within the module. Furthermore, the transfer module portion of YSU's General Education Requirements will be judged to be completed.

2) For those students who have completed the transfer module at another university or college, equates will be established for YSU courses and the transferred courses. The General Education Office will determine how many hours remain to be completed and which domains need to be satisfied. Students may find a list of courses that satisfy each domain on the general education website [web.ysu.edu/ger/](http://web.ysu.edu/ger/).

3) For those students who have not completed the transfer module at another school, OBOR has guaranteed that any approved transfer module course taken at one institution must receive general education credit at the receiving institution. YSU has also determined that courses beyond the TM list may satisfy general education requirements. The Office of Admissions will process equates between YSU courses and the transferred courses. The General Education Office, will determine which courses being transferred fit within the YSU general education model. The student will then be advised as to how

many courses in each domain must be taken to satisfy the general education requirements at this university. Each student must complete a capstone course at Youngstown State University.

### Transfer from a Regionally Accredited Institution—Articulation Agreements

YSU also has a number of articulation agreements with community colleges in Ohio and western Pennsylvania. Through these agreements a maximum number of credits from the associate-degree-granting institution will be applied toward a bachelor's degree program at YSU. Associate-degree holders meeting that criterion will, in most cases, be admitted with junior standing at Youngstown State and entitled to all the rights and privileges of native junior students, including eligibility for financial aid and priority in registration. The colleges listed below will have information on each of their articulation agreements.

#### College of Liberal Arts and Social Sciences

Eastern Gateway Community College  
Butler County Community College

#### Beeghly College of Education

Eastern Gateway Community College—early childhood education

A consortium of fourteen Ohio public and private institutions in northeast Ohio

#### College of Science, Technology, Engineering, and Mathematics

Eastern Gateway Community College—Power Plant Technology

Belmont Technical College—Power Plant Technology

#### Bitonte College of Health and Human Services

Lorain County Community College  
Allied Health Partnership Program  
Criminal Justice Baccalaureate Degree Program  
Public Health Partnership Program  
Social Work Baccalaureate Degree Partnership

Cuyahoga County Community College  
Allied Health Partnership

Columbus State Community College  
Allied Health Partnership Program

Winner Institute of Arts & Sciences  
Culinary Arts Partnership Program

National Restaurant Association  
Hospitality Management Academic Credit  
Food and Nutrition Academic Credit

The College also has articulation agreements with the following career and technical centers to award college credit for various courses: Choffin, Mahoning County, Trumbull County, and Columbiana County.

Most of this credit is applicable in the Departments of Health Professions and Criminal Justice & Forensic Sciences. Please contact those departments for additional information.

Articulation agreements are pending with several other institutions in the region. Applicants who have not completed an associate program are considered on the same basis as other transfer applicants.

## Transferring from YSU

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. Students should use the Transfer Module (see below), Transfer Assurance Guides (<http://www.ohiohighered.org/transfer>), and the u.select system (<http://www.transfer.org/uselect/>) for guidance in planning the transfer process. 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 the college or university to which they plan to transfer.

## YSU TAG Courses

Students should check with their department about which courses have received approval from OBOR as part of the Transfer Assurance Guide program. Only those courses that have received such approval can be guaranteed transfer credit as part of the major at another state institution. Students may also check with the OBOR TAG website link (<http://www.ohiohighered.org/transfer>).

## YSU Transfer Module

Based on OBOR guidelines, students wishing to transfer to another state college or university can complete the general education transfer module by taking the following:

Writing I, II (6 hours), one of the substitute mathematics courses (see GER Basic Skills chart, 3-5 hours), Natural Science (must include one laboratory science and two different disciplines, 6-9 hours), Arts/Humanities (must include two different disciplines, 6-9 hours), Social and Behavioral Sciences (must include two different disciplines, 6-9 hours), Oral Communication Course (3 hours) and Interdisciplinary Studies wherein students may substitute one course designated as a special topics course for natural science, arts/humanities or social and behavioral sciences.

Consult with an advisor or the General Education Office to determine in which area special topics courses may substitute. No course may count unless it is on the 1500 or 2600 level. The student must take the minimum credits in each category and at least 36 credits overall to complete the transfer module. However, each course approved as part of a university's Transfer Module is guaranteed credit at another state institution as a general education course.

Students planning to transfer from YSU should refer to the *Bulletin* (see pp. 49 and 50) for a list of general education courses approved as part of the transfer module. Only those with an asterisk will receive general education credit. This information will also be available on the general education website, which is linked to the YSU homepage.

## Advanced Placement (AP)

The state of Ohio, working through the University System of Ohio, has initiated policies to facilitate the ease of transition from high school to college as well as between and among Ohio's public colleges and universities.

Beginning in the fall term 2009:

1. Students obtaining an Advanced Placement (AP) exam score of 3 or above will be awarded the aligned course(s) and credits for the AP exam area(s) successfully completed.
2. General education courses and credits received will be applied towards graduation and will satisfy a general education requirement if the course(s) to which the AP area is equivalent fulfill a requirement.
3. If an equivalent course is not available for the AP exam area completed, elective or area credit will be awarded in the appropriate academic discipline and will be applied towards graduation where such elective credit options exist within the academic major.
4. Additional courses or credits may be available when a score of 4 or 5 is obtained. Award of credit for higher score values varies depending on the institution and academic discipline.
5. In academic disciplines containing highly dependent sequences (mathematics, sciences, etc.) students are strongly advised to confer with the college/university advising staff to ensure they have the appropriate foundation to be successful in advanced coursework within the sequence.

## Appeals

A student who disagrees with the award of transfer credit by the receiving institution has the right to appeal the decision and should contact the Office of Admissions to begin the process. The institution will make the student aware of the entire appeal process at the time of contact. You can also visit this website for an explanation of the process—[http://web.ysu.edu/admission/transfer\\_appeal](http://web.ysu.edu/admission/transfer_appeal).

## Admission with Non-Traditional Credit

You may be admitted to Youngstown State University with credits from non-traditional educational sources.

### Veterans

Efforts are made to give all necessary guidance and assistance to military veterans and others eligible for VA educational benefits.

Courses taken through the United States Armed Forces Institute (USAFI) or the Defense Activity for Non-Traditional Education Support (DANTES) as well as certain formal service school courses may be considered for transfer toward the student's degree program. USAFI or DANTES courses must be evidenced by an official transcript, and service school courses by certification of in-service training on AARTS (Army), SMARTS (Sailors and Marines), CCAF (Air Force), and Coast Guard Institute.

An individual who has served or is serving in the United States Armed Forces and has completed Basic Military Training will receive credit for that training. Credit may also be granted for Advanced Individual Training (A.I.T.) obtained while a member of U.S. Armed Forces. A copy of the applicant's DD 214 or DD 229 must be supplied to the Office of Veterans Affairs in order to validate such credit. AARTS (Army), SMARTS (Sailors and Marines), CCAF (Air Force), and Coast Guard Institute transcripts should be provided to the Office of Admissions. Granting of credit for A.I.T. will be based on the American Council of Education's (A.C.E.) recommendation. Credits granted may not be applicable to specific degree requirements. The University participates in the Con-App Program.

Questions should be addressed to the Office of Veterans Affairs, 330-941-2503.

### Credit by Examination

Credit by examination is available to students who satisfactorily complete the appropriate subject examination.

Advanced Placement Program (APP)—available *only* through student's high school.

College Level Examination Program (CLEP)

Departmental Examinations—Call the specific department for a list of available exams and registration information.

### Online Credit

The University will accept online work taken in connection with a regionally accredited institution under the same circumstances as provided in the section titled "Transfer Credit."

## Transient Applicants

A student seeking a degree at another institution may ordinarily take one semester of course work at YSU as a transient student. The student must apply for admission to the University and provide a statement from the registrar from the student's current institution that she or he is in good standing. Only students in good academic standing and eligible to return to their institution will be permitted to enroll as transients. Students who wish to remain as a transient student for a second consecutive semester should contact Admissions. A transient student who wishes to transfer to Youngstown State University must complete an Undergraduate Application Form, provide an official high school transcript, and submit official transcripts from all other colleges attended.

## Former-Student Applicants

All students who have interrupted their attendance at Youngstown State University for three consecutive semesters must reactivate their record. Students who have attended any accredited college or university since last attending YSU must contact the Office of Admissions, submit an application and provide all official documentation described under, "Credentials for Transfer Students."

## Suspended Students

A former student who was academically suspended must apply for reinstatement to the dean of the college he or she wishes to attend. **Reinstatement procedures may vary with the college.** For details, consult either the Office of Records or the appropriate dean's office.

See Grade Requirements on p. 42 for rules regarding suspension and reinstatement.

## Combined Bachelor of Science/Doctor of Medicine Applicants (BS/MD)

Prospective students seeking admission to the YSU combined B.S./M.D. degree program must submit an application for admission to Northeast Ohio Medical University (NEOMED) and must take either the ACT or the SAT. Official results from either the ACT or SAT must be sent directly to NEOMED from the testing agency. Also, high school transcripts with grades through the junior year must be mailed directly from the high school to NEOMED.

Northeast Ohio Medical University is a publicly chartered and funded institution in the state of Ohio. Therefore, its charter mandates giving admissions preference to residents of the state of Ohio as defined by the Ohio Board of Regents. Only U.S. citizens and permanent residents may be considered for admission to NEOMED. Upon application, you must have U.S. citizenship or permanent-resident status.

In the early action admissions phase, the deadline for application and official transcripts and test results is October 15, and in the regular admissions

phase, this deadline is December 15, both deadlines preceding the summer in which the program begins. Students should consult with NEOMED for the latest application process information and visit the website <http://www.neomed.edu>.

## INTERNATIONAL STUDENT APPLICANTS

Youngstown State University welcomes applications from qualified students around the world. The University's Center for International Studies and Programs (CISP) provides a wide range of support services for international students, described in detail in other sections of this *Bulletin*.

Applicants who are not U.S. citizens or legal permanent residents apply for admission through the CISP ([www.yсу.edu/cisp](http://www.yсу.edu/cisp)).

### General Admission Statement

The admission information contained in this section reflects standard admissions requirements. Meeting these requirements does not guarantee admission to the University or to specific programs. Persons who are not citizens of the U.S. but hold permanent resident, refugee, or political asylee status should apply based on their state of residence.

### International Application Completion Deadlines

Semester	Freshman	Transfer
Fall	March 1	May 1
Spring	July 1	September 1
Summer	November 1	February 1

### International Freshman and Overseas Transfer Students

Applicants from overseas must submit the following information well in advance of the desired date of admission. Admission is possible during all terms provided the deadline for application is met. Students should plan to arrive one week prior to the beginning of the term.

1. A completed application form, a \$30 non-refundable application fee (to be drawn on a U.S. bank) and a list of all educational experiences including studies undertaken in the U.S. Applicants seeking F-1 or J-1 (student) nonimmigrant status must submit certification of sufficient financial resources available for education and living expenses while attending the University.
2. Official credentials and transcripts from all secondary schools, colleges, and universities that the student has attended, including subjects studied, grades, and a key to the grading system. If credentials are not in English, official translations must be provided. Transfer credits may be granted for courses taken at U.S. and overseas accredited institutions only if an official syllabus or course

description is provided; other options include credit by examination. Evidence of academic and disciplinary good standing at the last prior institution with a minimum grade point average of 2.00 (on a 4.00 scale). Some YSU programs may have higher requirements.

3. *Transfer applicants who have successfully completed more than one year of full-time post-secondary study (excluding English-as-a-second-language [ESL] courses) do not need to submit secondary school records or results of school certificate, matriculation, or certificate of education examinations. However, they must submit official transcripts and syllabi for all college-level work as described above.*
4. English Language Proficiency

Applicants whose education is from an English-medium secondary or postsecondary institution in the following countries are exempt from the standardized English proficiency testing requirement: Antigua & Barbuda, Australia, Bahamas, Barbados, Belize, Bermuda, Botswana, the British Caribbean and British West Indies, Canada, Cook Islands, Dominica, Fiji, Gambia, Ghana, Granada, Guyana, Ireland, Jamaica, Kenya, Kiribati, Liberia, Mauritius, Micronesia, Namibia, Nauru, New Zealand, Nigeria, Niue, Northern Mariannas, Papua-New Guinea, St. Christopher Nevis, St. Lucia, St. Vincent, Seychelles, Sierra Leone, Solomon Islands, South Africa, Swaziland, Trinidad & Tobago, Uganda, United Kingdom and the United States (except Puerto Rico), Zambia, and Zimbabwe. International students who graduate from an English-medium secondary school in the United States are required to submit either the ACT or SAT in lieu of TOEFL.

All other applicants for whom English is a second language must present evidence of proficiency in the English language in one of the following ways:

- 1) Official Test Score on one of the following:
  - a) Test of English as a Foreign Language (TOEFL) directly from the Educational Testing Service (ETS) with a minimum score of:
    - 500 or higher on the paper & pencil test
    - 173 or higher on the computer-based test, or
    - 61 or higher on the Internet Based TOEFL test (iBT)
  - b) a minimum score of 69 on the Michigan English Language Assessment Battery Test (MELAB)
  - c) a minimum score of 5.5 composite (with at least 5.0 on each subscale) on the International English Language Testing System (IELTS)
  - d) a minimum score of GRADE 1 on the Society for Testing English Language Proficiency (STEP) Test
  - e) a minimum score of 950 on the SAT II English Language Proficiency Test

2) Successful completion of 24 semester hours of college-level coursework from an accredited English-medium college in the United States or another country where English is an official language.

3) Students may also be referred to enroll in CISP's full-time English Language Institute (ELI); for information call 330-941-2336 for applications. Successful completion of the English Language Institute at YSU fulfills the proficiency requirement (determined by examination and classroom assessment).

4) Applicants whose standardized test score is below the minimum may be admitted, at the discretion of the University, if there is compelling additional evidence of English language proficiency commensurate with academic study at YSU.

Students may be required to enroll in supplemental noncredit courses in English as a second language (ESL). Applicants may be required to submit additional materials.

### TOEFL/MELAB Registration and Official Score Reports

It is to your advantage to take the TOEFL early or before the application process. The *TOEFL Bulletin*, which includes a registration form, is available in many locations outside of the U.S., usually at American embassies and consulates, U.S. educational commissions and foundations, binational centers, and many private organizations, such as the Institute of International Education (IIE), the African-American Institute (AAI), American-Mideast Educational and Training Services (AMIDEAST), and the American-Korean Foundation. You may also contact: TOEFL/TSE Educational Testing Services, P.O. Box 6154, Princeton, NJ 08541-6154, USA (website [www.toefl.org](http://www.toefl.org); telephone 609-771-7780). **The official reporting TOEFL code for YSU is 1975.**

You may register for the MELAB if you are unable to take the TOEFL. For more detailed information about the MELAB, contact: English Language Institute, MELAB Office, TCF Building, University of Michigan, 401 E. Liberty, Ste. 350, Ann Arbor, MI 48104-2298. Telephone 866-696-3522, fax 734-615-6586.

### The English Language Institute (ELI)

The English Language Institute (ELI) at YSU was established through the Center for International Studies and Programs (CISP) and the Department of English to provide intensive study of English to speakers of other languages. It offers pre-college, non-credit courses designed to teach English to students who already have some knowledge of English. In addition, the ELI provides an orientation to college life and culture in the U.S. Courses are available both to international students and to immigrants.

English-as-a-second-language courses cannot be used as credit toward a degree. Applicants need to understand in advance that deficiencies in English may increase the amount of time and money required for completing a regular program of study.

Proficiency testing is also available by special arrangement. YSU's Center for International Studies and Programs (CISP) administers both the institutional TOEFL and the MELAB. These scores are valid at YSU only.

For more information see English Language Institute (ELI) in the Special Academic Programs section on p. 75.

## Types of Admission for International Students

### Regular Admission

Regular admission will be granted if your records meet YSU's academic requirements for admission, satisfy the high school curriculum requirements, and show that you have adequate preparation for study in your proposed major. Regular admission is unconditional admission.

### Conditional Admission

Students meeting all the above admissions requirements except the specified level of English proficiency may be admitted conditionally. This admission is conditional upon successful completion of English language study at CISP's English Language Institute (ELI).

### Admission with Transfer Credit

All transfer credit is evaluated by the Center for International Studies and Programs. Credits from accredited or officially recognized institutions in other countries will be evaluated upon presentation of official transcripts, official translations and complete course descriptions and/or syllabi. Students holding undergraduate degrees equivalent to the bachelor's degree may be admitted to the University for post-baccalaureate undergraduate study upon recommendation of the dean of the proposed college, CISP's director, and the chair of the relevant department.

### Standardized Academic Testing

Scores on the SAT or ACT are required only for the admission of international students from Canada, those who are attending U.S. high schools or international schools that follow a U.S. high school curriculum, and those who intend to participate in the intercollegiate athletic program and need to comply with NCAA eligibility requirements.

Other students will be tested on a case-by-case basis.

To receive more information about the SAT I: Reasoning Test, contact:

The College Board  
SAT Program  
P. O. Box 6200  
Princeton, NJ 08541-6200 USA  
Telephone: 609-771-7600  
Web address: [www.collegeboard.org](http://www.collegeboard.org)  
**YSU's SAT reporting code number: 1975**

**STUDENT FEES AND CHARGES**  
**Effective Fall 2012**

**For a current list of Fees and Charges please go to the  
Student Accounts Web site at <http://web.yosu.edu/saur>**



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To receive more information about the ACT, contact:

ACT National Office  
500 ACT Drive  
P.O. Box 168  
Iowa City, IA 52243-0168  
Telephone: 319-337-1000  
Fax: 319-339-3020  
Web address: [www.act.org](http://www.act.org)  
YSU's ACT reporting code number: 3368

## GRADUATE ADMISSION

Application for admission to the University for graduate study is made directly to the School of Graduate Studies and Research. (For details, consult the Graduate *Bulletin* or the School of Graduate Studies and Research website, <http://www.yсу.edu/gradschool/>.)

## CONTINUING EDUCATION

Information about workforce development, non-credit programs, and off-campus credit-bearing courses offered through YSU's Metro College can be found in this *Bulletin* in the University/Community Outreach section.

## TUITION, FEES, AND CHARGES

### Payment of Tuition and Fees

Student accounts are billed each semester. Tuition statements are sent out electronically, and an e-mail is sent each time a bill is issued. Current account information—including charges, payments, and refund amounts—is available online via the *MyYSU* Portal. Tuition statements may also be printed from this site.

Tuition and fees for the term are due in full on or before the date shown on the statement of account. Late and/or partial payments are subject to late payment fee assessment. You are strongly encouraged to pay your bill online. You may also make payment in person at the payment windows on the second floor of Meshel Hall, via the payment drop box also located on the second floor of Meshel Hall, or by mail to the Office of Student Accounts (One University Plaza, Youngstown, OH 44555). You may pay by check (made payable to Youngstown State University) or with Visa, MasterCard, or Discover. If you deliver a check in person, mail it, or place it in the payment drop box, you authorize us to convert that check to an electronic Automated Clearing House (ACH) transaction. That check will then appear on your monthly bank statement as an Electronic Debit. If you do not wish to have your paper check converted to an ACH, you must present it in person, or select an alternative payment method (for instance, credit card).

A payment plan is also available that will allow you to spread your payments out over a longer pe-

riod. Payment plan enrollment must be processed online and requires an initial payment at the time of enrollment. There is a fee for enrollment in the payment plan, and late payments are subject to late payment fee assessment.

Students are solely responsible for timely payment of their tuition and fees. In the event that the account becomes past due, the University reserves the right to withhold services (e.g., transcripts, diplomas, registration) until the past-due balance is paid in full.

If full payment cannot be obtained, then the delinquent balance must be turned over to the Ohio Attorney General's Collection Enforcement Office for collection and it will be reported to the Credit Bureau. Once an account becomes delinquent, the student will be required to pay in advance of registering for subsequent terms. An account turned over to the Attorney General will incur interest and collection expenses which must be paid before any of the adverse sanctions can be removed.

Your enrollment at the University creates a contract between you and YSU. If you choose not to attend the University, you must officially withdraw from all courses by the 14th day to receive 100% refund or reduction of charges (see refund policy on page 29). All days of the week are counted, including weekends and holidays, to determine the 14th day. Please be advised that all University offices are not open on weekends and holidays; thus, online withdrawal may be required.

If you decide to withdraw from the University once you have enrolled, you must access the registration functions through the *MyYSU* Portal ([www.yсу.edu](http://www.yсу.edu)).

### Fees

The Board of Trustees of Youngstown State University has pledged to make every effort to keep the required fees as low as is consistent with providing quality education. It is intended that fees not be adjusted more often than annually and that fee changes be announced in the spring or early summer. The Board of Trustees does, however, reserve the right to change any fee, charge or fine without notice if conditions warrant.

The table found on the following two pages lists all fees, charges and fines for the current academic year. An explanation of each follows.

*Tuition.* The sum of the instructional fee, the general fee, and the information services fee constitutes tuition.

*Instructional Fee.* This fee is assessed to all students each term. The rate is per academic semester hour of credit for one to 12 credits or for more than 16 credits; it is a flat rate for students registering for 12 to 16 credits during one term. Students registering for 17 or more credits pay the flat rate plus the per-credit rate for each credit over 16. This fee supplements the state subsidy and is a source of revenue for the University's educational and general fund.

*Audited Courses.* Students may audit courses (*i.e.*, register to take a course without receiving credit). The fee for auditing a course is the same as if the course were taken for credit.

*General Fee.* This fee is also assessed to all students each term; the rate depends upon the number of credits registered for. This fee is for non-instructional services such as Kilcawley Center, intercollegiate athletics, intramural sports, performing artists and lecture programs, student government, and the Career Services Office.

*Non-Resident Tuition Surcharges.* As noted above, all students pay the instructional fee, the general fee, and the information services fee. Those students who are not legal residents of Ohio must pay a surcharge in addition. Students who are residents of the regional service area pay a lesser surcharge than do students who are legal residents of other states and/or areas. The regional service area includes the counties of Chautauqua, New York; Armstrong, Clarion, Fayette, Forest, Greene, Indiana, Jefferson, and Warren counties in Pennsylvania; and Brooke, Hancock, Marshall, and Ohio counties in West Virginia. Students who are residents of the following western Pennsylvania counties pay a further reduced surcharge: Allegheny, Beaver, Butler, Crawford, Erie, Lawrence, Mercer, Venango, Washington, and Westmoreland.

*Information Services Fee.* This fee is charged to all students each term. It is applied on a per-credit basis to provide information technology infrastructure and services across campus, including the new Student Information Systems, wireless connectivity, classroom technology, and a continuous strengthening and securing of the computing and networking environment. It provides support for technology enhancements and initiatives contained within the IT Master Plan, supporting the vision to keep pace with an evolving, interactive, student-centered and collaborative electronic learning environment.

*College Fee.* This fee is designed to recognize the differential cost of instruction among colleges. Examples of use include research instrumentation, enhanced teaching equipment, specialized software, specialized information resources (databases), maintenance and repair of capital equipment, technical and laboratory personnel support, and lab and instructional space upgrades.

*Credit by Examination Fee.* A fee is charged for each course for an individual examination provided by an academic department to determine whether a student can be given academic credit for his or her knowledge of the course material. The fee must be paid before the test can be taken. This fee is charged on a per-credit basis.

*Graduation Fee.* This nonrefundable fee is assessed when students apply to graduate to cover costs associated with graduation. If a student defers graduation and has paid the fee, the payment remains valid for the two academic terms following the term

of application. Should a student graduate with more than one degree at a time, the fee will only be charged once.

*Health and Physical Education Locker and Towel Fee.* Students enrolled in a class requiring use of a basket, or towel service in Beeghly Physical Education Center or the Sports Complex do not pay a fee. Other authorized persons pay a Campus Recreation Locker and Towel fee each academic term. Loss of or damage to the lock or towel will result in assessment of a replacement charge.

*Late Add Fee.* Late adds will be granted on an exceptional basis only and there will be a late-add fee assessed for each course added after the add deadline. This fee is nonrefundable and cannot be appealed.

*Late Application for Graduation.* Application for Graduation must be submitted within the first three weeks of the term. Applications submitted after this date will be assessed a non-refundable late fee.

*Late Payment Fees.* Payment of a bill received after the due date results in assessment of a late payment fee. All fees and charges billed must be paid in full. Partial payments will result in assessment of a late fee. Payment plan participants who do not pay their scheduled payment amount by the due date are also subject to assessment of a late payment fee.

*Late Registration Fee.* A fee is charged a currently enrolled student who fails to register for the next term at the assigned time and later registers at the time assigned new or returning students.

*Parking Permit Fee.* A permit to park in YSU parking facilities will be issued to students and employees of the University upon payment of the fee. The fee is for the academic term and does not guarantee an available space in any particular lot. Some facilities are restricted (*e.g.* for students only, for faculty and staff only, or resident hall residents only). The current *Driving and Parking Regulations* pamphlet and parking lot map should be consulted. A daily fee is charged anyone without a permit who wishes to park in facilities designated for cash business. Persons other than employees and students who are on campus for a short period of time to conduct business may park in one of the visitors' lots if space is available. The parking permit fee is refundable only if the student returns the permit access card and current validation sticker prior to the end of the 100% tuition refund period (see Reduction/Refund on following page). If a student completely withdraws, the permit, access card and current validation sticker must be returned within five days of either the withdrawal date or the last date of the 100% tuition refund period—whichever is earlier—in order to obtain a refund for this fee.

*Performance Music Fee.* This fee is charged in addition to the regular tuition. It is assessed students taking music lessons and is applied on a per-credit basis.

*Processing/Matriculation Fee.* All first-time students will be assessed a non-refundable processing/ma-

trication fee to cover costs incurred for the use of University facilities, the development of publications, and other program/registration costs. Students cannot prepay this charge; it will be billed electronically. If a student decides not to attend the University, he/she is still responsible for paying this fee.

*Proficiency Examination Fee.* A fee is charged for an examination provided by an academic department to determine a student's proficiency for some reason other than assignment of academic credit. If academic credit is to be awarded, the credit by examination fee applies and not this fee.

*Technology/Laboratory Materials Fee.* This fee is designed to partially offset expenses associated with courses that make use of supplies, equipment or personnel support beyond that associated with typical lecture courses. Examples include chemical supplies, engineering equipment, computers, software, and lab monitors.

*Testing Fees.* The University Office of Testing supervises a variety of special tests used for admission to college, graduate, or professional schools. The fees are established by the agencies responsible for the tests. Students are advised to contact the Testing Office for information and to make reservations.

*Transfer Matriculation Fee.* All new transfer students will be assessed a non-refundable processing/matriculation fee to cover costs incurred for the use of University facilities, the development of publications, and other program/registration costs. Students cannot prepay this charge; it will be billed electronically. If a student decides not to attend the University, he/she is still responsible for paying this fee.

*Undergraduate Application Fee.* This fee is charged to every new applicant for admission. This fee is non-refundable. Former students do not have to pay to apply for re-admission.

## Service Charges

*Computer-Based Placement Re-Test Fee.* A nonrefundable fee is charged each time a computer-based placement test is retaken.

*Identification Card Replacement Charge.* A non-refundable charge is made for replacement of an ID card.

*Payment Plan Enrollment Fee.* A nonrefundable fee is charged for enrollment in the payment plan. All tuition and fees are due in full by the payment due date unless the student enrolls in the payment plan.

*Physical Education Activity Charge.* Certain activity courses (e.g. bowling, skiing, ice skating, scuba diving) are available only upon the payment of a charge sufficient to cover the cost of the facility or transportation. These charges are set by the operator of the facility, are paid by the student to that operator (not to the University), and are in addition to any other applicable fee.

*Housing Charges.* University housing is available for the academic year and summer terms. The academic year contract includes fall and spring terms. Charges are billed each semester. The housing contract includes room and full meal plan. In addition to the charge for service, a security deposit is required. Payment and refunds are as scheduled in the housing contract. Meal plans are also available for students who are not residents in University Housing.

*PC Remediation Service Fee.* Fee assessed for removal of all spyware and viruses from the PC and for installing the most current updates to applications and the operating system to help reduce the risk of future attacks. The first two PC remediation services are provided free of charge to current YSU students; the fee only applies to remediation performed beyond the first two free services.

*Data Recovery Service Fee.* Fee assessed to recover data and/or transfer data that was successfully recovered onto a media device provided by the students i.e. flash drive, hard drive, or DVD. No fee assessed unless some or all of the data is recovered. Note: If it is necessary to remove the hard drive from the PC in order to recover data, the Tech Desk will NOT be able to perform the service, and no fee will be charged to the student.

*Returned Check, ACH (Electronic Check) or Credit Card Charge.* A charge is levied on anyone whose check, ACH, or charge is returned unpaid by the bank. If any late payment results therefrom, the applicable fee is also assessed. Failure to pay billing of return check, ACH, and/or charge within six days; and/or a second check, ACH or charge return will result in the University not accepting this type of payment at any of its collection points and may subject the student to financial suspension for the term.

*Student Locker Rental.* A limited number of lockers are available in various buildings for the convenience of commuting students. Locker payments and assignments are made in Kilcawley Center.

*Thesis-Binding Charge.* A charge is made for each copy of a master's thesis bound by the William F. Maag, Jr. Library.

*Transcript of Credits Charge.* There is a charge for normal transcript processing requests, rush or overnight express requests issued by the Office of Records. Transcripts will not be issued for anyone with outstanding debts owed to the University.

## Fines

*Parking Violation Fine.* Parking without a permit, parking in unauthorized areas and other offenses as identified in the *Parking Regulations* brochure will result in the issuance of a citation against the vehicle and its owner, or against the student responsible for the vehicle (e.g., a student driving a parent's car). Payment of a fine removes the citation. In certain cases, vehicles may be towed. See the regulations for detailed information.

*Library Fines.* Fines are assessed for failure to return books on time as stipulated or for the unauthorized removal of a reserved book. Willful damage or defacement of library materials or other property is a violation of state law and is punished as such.

### Reduction/Refund of Fees and Charges Upon Withdrawal

To withdraw from a single course, or from all courses (complete withdrawal), it is necessary to access the registration functions online via the MyYSU Portal – Registration. It is the student’s responsibility to confirm that the withdrawal was correctly processed, and the course(s) is (are) deleted. Nonattendance of class, or notification to the instructor or department, does not constitute official withdrawal.

Effective Summer 2009, if a student is permitted to withdraw from the University or if a student reduces his or her academic load, a refund of the tuition charge, and the nonresident tuition surcharge, where applicable, shall be made in conformity with the following schedule for regularly scheduled courses:

Length of Course	100% refund/reduction	No reduction of charges
6 weeks or more	thru the 14th day*	15th day and later*
Less than 6 weeks	15% of course duration	>15% of course duration

*\*Since access to registration/change of registration is now available online 24/7, every day of the week is counted (including weekends and holidays) when calculating tuition refunds. Be advised that University offices are not open most weekends and/or on holidays. Therefore, online withdrawal may be required.*

*Note: For a complete withdrawal from any term, all applicable fees, fines, and penalties will be deducted from any refunds. If fees were paid by scholarship, loan or grant-in-aid, the appropriate credit will be issued to the fund from which the initial payment was made. Student accounts paid with financial aid may be subject to a financial aid repayment. No refunds will be issued until after the 15th day of the term.*

If the student withdraws after the prescribed time limits (as indicated above), all tuition and other applicable fees and charges are forfeited.

If fees were paid by scholarship, loan or grant-in-aid, the appropriate credit is issued to the fund from which the initial payment was made. Refunds are calculated for Title IV recipients who completely withdraw during the first 60% of the semester.

Title IV financial aid funds are awarded to a student under the assumption that the student will attend school for the entire period for which the assistance was awarded. If a student completely withdraws on or before the 60% point in time of the period of enrollment, calculated using calendar days, a portion of the federal aid awarded (Federal Pell, SEOG, Perkins Loans, Direct Loans, and PLUS Loans—but not Federal Work Study) may need to be returned according to the provisions of the Higher Education Amendments of 1998. This recalculation may result in the student’s owing a balance to Youngstown State University and/or the federal Department of Education.

Any withdrawal, or reduction in academic hours **after** the schedule outlined above will not be entitled to a reduction of charges and/or refund unless an Application for Involuntary Withdrawal is submitted and approved by the Fees and Charges Appeal Board. All decisions made by this board are final and binding.

If a student withdraws for reasons beyond his or her control (e.g., illness, military service, job transfer, or shift change imposed by the employer that creates a direct conflict with the class schedule), the fee charges may be reduced in proportion to the number of weeks enrolled, upon submission and approval of an application for involuntary withdrawal.

An application for involuntary withdrawal can be processed only for courses in which the student has already received a grade of “W” (withdrawn). Applications for involuntary withdrawal will be considered only for terms falling within the immediately preceding **one-year time period** (3 semesters). Appeals pertaining to terms beyond this one-year time limit will not be accepted. All applications for involuntary withdrawal must be documented, and are processed only by mail on forms provided by Student Accounts. Address such correspondence to the Fees and Charges Appeals Board, c/o Student Accounts, Youngstown State University, One University Plaza, Youngstown, OH 44555.

### Title IV Credit Balance Refunds

Pell-eligible students who meet all eligibility requirements at least 10 days before the start of a payment period and whose disbursed funds would have created a Title IV credit balance will receive a refund no later than the 7th day of the payment period. The amount of the refund will be the lesser of the amount of the presumed credit balance or the amount needed to purchase books and supplies as determined by Youngstown State University. Refunds are sent in the form of a check, mailed to the current student address, or as direct deposit to the student’s bank account. A direct deposit profile can be set up via the MyYSU portal.

## FINANCIAL AID AND SCHOLARSHIPS

The University has a comprehensive program of financial assistance which includes scholarships, grants, work-study, and loans. Most of these programs are administered by the Office of Financial Aid and Scholarships.

All YSU applicants for admission or current YSU students seeking financial aid should apply no later than **February 15** of the year in which aid is desired. For maximum consideration, students should apply on-line at [www.ysu.edu/finaid](http://www.ysu.edu/finaid). There you will find the links to the online:

- 1.) **Free Application for Federal Student Aid (FAFSA)** to apply for all federal and state aid and for need-based scholarships and grants.

2.) **Youngstown State University Institutional Aid Application** to apply for certain miscellaneous scholarships.

If students meet the **February 15** priority filing date for financial aid consideration, they will receive a YSU financial aid offer by the end of April. Prospective students are strongly encouraged to apply for financial aid as early as possible.

## TYPES OF FINANCIAL AID

### Scholarships (Gift Aid)

Scholarships are gift aid awarded to students on the basis of superior academic performance or talent, other criteria, and/or financial need. Scholarships do not have to be repaid. Amounts may vary depending on academic ability, financial need and/or the current state of funding or endowment support for the scholarship. Scholarship funds have been established at YSU by individuals, corporations, clubs, and religious and fraternal organizations. In addition, the Youngstown State University Foundation administers endowments which provide substantial funding for numerous scholarship programs at Youngstown State University, including the Scholarships for Excellence program.

Scholarship awards to Youngstown State University students are based upon the student's academic record, character, and/or financial need. Scholarships for entering freshmen are awarded on the basis of high school academic record, recommendation by high school administrators, scores on a standard college entrance examination, and/or class rank. Scholarship applicants are considered for all scholarships appropriate to their aims and interests.

To be considered for scholarships, students should complete all appropriate forms by **February 15** of each year. To apply, contact the Office of Financial Aid and Scholarships or visit the YSU financial aid website at [www.yсу.edu/finaid](http://www.yсу.edu/finaid).

To be considered for scholarships that are need-based, students should file the **Free Application for Federal Student Aid (FAFSA)** so the Office of Financial Aid and Scholarships can determine a student's financial need.

In addition to completing Youngstown State University's Institutional Aid Application and the FAFSA, students also should check with their particular college or department to apply for academic-specific scholarships. Students and their parents are encouraged to check with their places of employment to find out if there are any scholarships provided to students or if they provide for fee remission. Check with local community resources for scholarships such as church organizations and the library to find out about scholarship opportunities. Another excellent resource is the World Wide Web at: [www.fastweb.com](http://www.fastweb.com) or [www.finaid.org](http://www.finaid.org). Web access is available for these purposes in the Office of Financial Aid and Scholarships.

For a searchable listing of all scholarships currently offered at Youngstown State University, visit [www.yсу.edu/finaid](http://www.yсу.edu/finaid). If web access is not readily available, be sure to read the current Financial Aid and Scholarships brochure for other detailed information on financial aid. You can find this brochure in the Office of Financial Aid and Scholarships, Meshel Hall, or you may call to request a brochure at 330-941-3505.

### Grants-in-Aid (Gift Aid)

Grants-in-Aid are gift monies that do not have to be repaid. The amount of grant aid awarded is determined by the recipient's financial need and/or academic record and character.

A.) The **Federal Pell Grant** is a need-based federal grant provided to eligible undergraduate students pursuing a first bachelor's degree or associate's degree. File the FAFSA every year to be considered for this grant.

B.) The **Federal Supplemental Educational Opportunity Grant (FSEOG)** is a need-based grant funded by the federal government and awarded by YSU. Students who meet the eligibility requirements for the Federal Pell Grant receive primary consideration for this grant. File the FAFSA as early as possible after January 1 to be considered for this campus-based aid program.

C.) The **Ohio College Opportunity Grant (OCOG)** is awarded by the State of Ohio to full-time undergraduate students who are residents of Ohio and who are pursuing a first bachelor's degree or associate's degree. Eligibility is based on family income. File the FAFSA by October 1 of each year to be considered for this grant. At the time of publication, the budget for the state of Ohio has yet to be determined. Funding for the upcoming year is uncertain.

D.) **Part-time Ohio College Opportunity Grant** is awarded to students enrolled less than full-time who otherwise would have been eligible for an Ohio College Opportunity Grant had they been full-time. At the time of publication, the budget for the state of Ohio has yet to be determined. Funding for the upcoming year is uncertain.

E.) The **Pennsylvania Higher Education Assistance Award (PHEAA)** provides grants to Pennsylvania residents who are YSU students. Students may be full-time or half-time undergraduates enrolled in an approved program of study requiring at least two years to complete. File the FAFSA by the appropriate PHEAA deadline date to be considered for this grant (May 1).

F.) The **YSU Foundation PHEAA Supplemental Grant**. Because of the legislative cap on Pennsylvania grants to Pennsylvania residents attending Ohio universities, YSU has initiated a supplemental grant program funded by YSU and the YSU Foundation. This grant will be automatically awarded to YSU students who are awarded and eligible to receive a PHEAA grant. The supplemental grant will be

awarded in amounts up to 200% of the PHEAA grant, **subject to availability of funds.**

G.) The **Martin Luther King Inner-City Achievement Award**. Funded by the YSU Foundation, this award is available to graduates of Youngstown/Warren inner-city schools (Calvary Christian Academy, Cardinal Mooney, Chaney, East, Rayen, South, Ursuline, Wilson, Youngstown Christian School, John F. Kennedy, Warren G. Harding, and Warren Western Reserve). Also included are graduates of Campbell Memorial, Niles McKinley, Farrell, New Castle, Sharon and Struthers high schools. Need-based awards of up to \$1000 per academic year are available to students who have financial need. Students must be admitted to the University in good standing or, if currently enrolled at YSU, must maintain a minimum cumulative grade point average of 2.5 and be registered for at least 6 credit hours. For priority consideration, complete the FAFSA by February 15 as funds are limited. (You must have completed FAFSA results to be considered.)

H.) **Veterans' Administration Education Assistance**. The Department of Veterans' Affairs provides education assistance to veterans or current armed services personnel. Programs include contributory plans, rehabilitation benefits, work-study, and dependent/spousal benefits. Contact the Office of Financial Aid and Scholarships or phone toll-free 888-GI-BILL1 (888-442-4551).

I.) **Bureau of Vocational Rehabilitation Awards** are two programs funded by the Bureau of Vocational Rehabilitation in Ohio (BVR) and the Office of Vocational Rehabilitation in Pennsylvania (OVR) that provide grants for tuition, fees, and/or books for residents with disabilities. Eligibility is determined by each state's Bureau.

J.) **Ohio War Orphans** is a grant for children of disabled or deceased U.S. Armed Forces veterans. There is a needs test and the student must be between 16 and 20 upon application for a grant. The grant pays a percentage of tuition and fees. Phone 614-752-9528 or 1-888-833-1133.

K.) **Ohio National Guard** provides grants for tuition to members who are full-time undergraduates, paying 100% of instructional and general fees. Apply through the National Guard, and pay close attention to deadlines. Phone 614-336-7032.

L.) **Graduate Assistant Fee Remission** is for graduate assistants who are graduate students working toward a degree who are employed by the University through the School of Graduate Studies and Research. The stipend, or salary, starts at \$7,500 per year. Graduate assistants are also entitled to remission of instructional fees, including, where applicable, the non-resident tuition surcharge.

### Employment (Self-help Aid)

To help pay for educational and living costs, students may contact the Office of Student Life for on-campus student employment. Any student cur-

rently enrolled and in good standing may apply for on-campus employment. All on-campus opportunities are posted in Student Life, outside the Office of Financial Aid and Scholarships on the second floor of Meshel Hall, and on the YSU website at [www.ysu.edu/studentlife](http://www.ysu.edu/studentlife). Students are encouraged to check regularly for open positions.

The **Federal Work-Study Program** is a need-based program which provides funds for eligible students. This program also helps students with educational expenses and living costs, as work-study students receive paychecks for hours worked. To receive maximum consideration for this campus-based program, file the FAFSA as soon as possible after January 1 but not later than **February 15 of each year**. To the question on the FAFSA "Are you interested in being considered for work-study?" you should answer "yes."

### Loans (Self-help Aid)

Loans are a form of financial aid for many students to help meet educational expenses. Keep in mind that loans accrue interest and must be repaid.

A.) The **Federal Perkins Loan** is a need-based federal loan (with a 5% fixed interest rate) awarded by Youngstown State. Eligible undergraduate and graduate students attending at least half-time may be considered for this loan. This is a subsidized loan, which means the government is responsible for the interest during the student's enrollment of at least half-time; for the grace period after the student is no longer enrolled half-time; or during deferment periods. After the nine-month grace period, the student is responsible for the interest. For priority consideration for this campus-based program, file the FAFSA as early as possible after January 1 but not later than February 15 of each year.

B.) The **Federal Subsidized Direct Stafford Loan** is a need-based federal loan awarded to students who demonstrate financial need based on the information provided on the FAFSA. Undergraduate students attending at least half-time may be considered for this loan. "Subsidized" means the government is responsible for the interest that is accruing during at least half-time enrollment. The student is responsible for the interest at all other times. To be considered for this loan, file the FAFSA.

C.) The **Federal Unsubsidized Direct Stafford Loan** is a non-need based loan that is available to all students regardless of income. Undergraduate, graduate, and professional students attending at least half-time may be considered for this loan. "Unsubsidized" means that the government is not responsible for the interest at any period of time. Borrowers may choose to make interest payments while in school or borrowers may defer (accumulate) the interest until repayment. To be considered, file the FAFSA.

D.) The **Federal Direct Parent Loan for Undergraduate Students (PLUS loan)** is available to the parents of dependent students. These loans are based on educational costs and cannot exceed the cost of



attendance less other aid. Since these loans are not subsidized, the parent borrower must repay the amount borrowed plus the interest.

E.) **Grad Direct PLUS Loans** are federal loans that graduate and professional students with good credit history may borrow to help pay educational expenses. Half-time enrollment is a requirement. Since these loans are not subsidized, the borrower must repay the amount borrowed plus the interest.

### Part-time Students

Part-time aid is available for students. The amount of part-time aid and the type of aid available vary. Be sure to file the FAFSA and YSU's Institutional Aid Application by February 15 each year for maximum consideration. Also, check with the Office of Financial Aid and Scholarships to find out how part-time attendance affects your financial aid.

### Financial Aid: Helpful Hints and Important Tips

—Make sure to have all applications in by their priority deadlines. Youngstown State University's priority deadline to be considered for campus-based aid, scholarships, and some grants is **February 15** each year. If you miss the deadline date, you may reduce or eliminate your chances to be considered for every type of financial aid that you otherwise would have been awarded.

—If you are selected for verification/documentation, you are required to submit certain documentation to YSU. Be sure to submit this requested documentation as soon as possible so that the processing of your financial aid is not delayed. If you are late in submitting this requested documentation, you might not receive every type of financial aid that you otherwise would have been awarded, even if you applied on time.

—If you missed application deadlines, you should still apply. Late funding may become available.

—Check with your specific department or college to find out if there are any academic-specific scholarships for which you may apply.

—Keep copies of all your tax forms and W-2 forms each year. Be sure to keep copies of all forms and documents submitted to the Office of Financial Aid and Scholarships.

—Check with the Office of Financial Aid and Scholarships to determine the status of your financial aid processing. Do not wait until you receive your bill.

—Remember to apply on time each year!

—If you or your family have unusual circumstances that have occurred during the academic year, such as unusual medical expenses or loss in income, check with a counselor in the Office of Financial Aid and Scholarships to discuss your situation.

—Contact the Office of Student Accounts at 330-941-3133 to find out about convenient payment plans to help pay for tuition and fees.

—Contact the Office of Financial Aid and Scholarships at 330-941-3505 if you have questions. Mailing address: Youngstown State University, Office of Financial Aid and Scholarships, One University Plaza, Youngstown Ohio 44555-3505. E-mail: [ysufinaid@ysu.edu](mailto:ysufinaid@ysu.edu). Web address: [www.ysu.edu/finaid](http://www.ysu.edu/finaid).

### Some Commonly Used Financial Aid Terms:

**Cost of Attendance:** The total cost of attending school for one academic year, including direct costs (tuition, fees, room, and board) and indirect costs (books & supplies, transportation, and miscellaneous expenses).

**Expected Family Contribution (EFC):** The amount that you and your family will be expected to contribute toward your educational expenses, as determined by the federal government from the information on your FAFSA. For information regarding the formula used to determine your EFC, go to [www.studentaid.ed.gov](http://www.studentaid.ed.gov) and select 'Other Publications'. You can also call 1-800-4-FED-AID for additional information.

**FAFSA (Free Application for Federal Student Aid):** The form that you must complete so that the federal processor can determine your EFC and YSU can determine your financial need. You must file if you are interested in loans, grants and certain scholarships.

**Financial Aid:** All forms of financial assistance, including scholarships and grants (gift aid) and work programs and loans (self-help aid).

**Financial Need:** The difference between the Cost of Attendance and your Expected Family Contribution.

**Gift Aid:** Aid, usually in the form of scholarships and grants, that does not have to be paid back.

**Grant:** Gift aid awarded to a student on the basis of financial need and sometimes academic performance and character. Does not have to be paid back.

**Scholarship:** Gift aid awarded to a student on the basis of academic performance, talent, other criteria, and/or financial need.

**Subsidized:** A subsidized loan is a need-based loan in which the government pays the interest while the student is enrolled at least half-time.

**Verification/Documentation:** The process by which Youngstown State University confirms the accuracy of the information supplied on the FAFSAs each year as required by federal regulation. If you are selected for verification/documentation, you and your family will be asked to supply the Office of Financial Aid and Scholarships with additional information and copies of documents. Please note that federal tax *transcripts* and W2 forms may be required.

**Unsubsidized:** An unsubsidized loan is not based on financial need. The borrower is responsible for all interest that accrues.

## Satisfactory Academic Progress (SAP) Policy

Federal regulations require that Youngstown State University review the academic progress of students annually, whether they are a previous aid recipient or not. The purpose of this review process is to measure whether a student is making satisfactory progress towards his or her educational goals. The following federal programs are affected when a student is not in compliance with the Satisfactory Academic Progress Policy:

### Federal Pell Grant

### Federal Supplemental Educational Opportunity Grant (SEOG)

### Federal Work-Study Program

### Federal Perkins Loan

### Federal Stafford Loans (subsidized and unsubsidized)

### Parent PLUS Loans for Undergraduate Students

### PLUS Loans for Graduate Students

State Grant programs such as the Ohio College Opportunity Grant and the Pennsylvania Higher Education Assistance grant are not governed by the federal Standards of Academic Progress but rather by the respective state.

Youngstown State University's satisfactory academic progress requirements for undergraduate and graduate students include the following three components:

#### 1) Grade Point Average (GPA)

All students at Youngstown State University are required to maintain a minimum cumulative grade point average. Undergraduates who have earned less than 32 credit hours must maintain a minimum 1.75 GPA. Undergraduates who have earned 32 or more credit hours must maintain a minimum 2.0 GPA. Graduate students are required to maintain a 3.00 GPA. The following grades are included in the GPA calculation: A, B, C, D, and F. The GPA calculation excludes the following grades: CR-credit; NC-no credit; AU-audit; I-incomplete; W-withdrawal. For incompletes, the credit hours apply to the term the student was enrolled, not the term the student was making up the incomplete.

**Students academically suspended cannot receive federal aid during the period of suspension.**

#### 2) Max Time Frame

When a student's attempted hours, as defined above, reach 150% of the maximum hours needed to complete an associate (109 hours) or bachelor's

degree (217 hours), federal financial aid eligibility will be suspended unless the time frame is extended with an appeal accompanied by an Academic Advisor Evaluation. Graduate degrees must be completed by the length of time standards established and monitored by the School of Graduate Studies.

#### 3) Percentage Completion

**a. Freshmen** undergraduate students (0-31 hours earned) must complete a **minimum of 55%** of the total hours attempted each year;

**b. Sophomore** undergraduate students (32-62 hours earned) must complete a **minimum of 60%** of the total hours attempted each year;

**c. Junior** undergraduate students (63-93 hours earned) must complete a **minimum of 65%** of the total hours attempted each year;

**d. Senior** undergraduate students (94 + hours earned) must complete a **minimum of 70%** of the total hours attempted each year;

**e. Graduate** students (13 + grad hours attempted) must complete a **minimum of 50%** of the total hours attempted each year;

Percentage completion will be calculated by dividing completed hours by attempted hours. For federal financial aid satisfactory academic progress purposes, attempted hours exclude audited hours and withdrawals made by the last date to add a class. The following grades negatively impact the percentage completion calculation: F-failed; NC-no credit; AU-audit; I-incomplete; W-withdrawal. For Incompletes, note that the credit hours apply to the term in which the student was enrolled in the course, not the term the student was making up the Incomplete.

#### Transfer Students

Transfer students will be eligible for federal aid through the spring semester of the academic year they begin at Youngstown State University. During the spring semester, transfer students will be evaluated under the Satisfactory Academic Progress Policy. Transfer hours will be included in the number of hours earned and attempted but only YSU grades enter into the GPA calculation.

#### Non-Degree Students (undergraduate, post-undergraduate, and graduate)

A student must be enrolled in a degree program to receive federal financial aid.

#### THE APPEAL PROCESS

##### (New—effective 2011-2012 aid year)

If a student is non-compliant, he/she must **appeal** the denial of financial aid by submitting an appeal form that explains the circumstances. Supporting documentation may be required. Appeals will be evaluated by the Satisfactory Academic Progress Appeal Committee, which will respond in writing with the decision within 30 days.

The decision made by the Satisfactory Academic Progress Appeal Committee is final. Students who consistently abuse the Satisfactory Academic Progress Policy will be denied federal financial aid. Federal regulations require students who successfully appeal to be placed on a semester based Financial Aid Probation and Academic Progress Plan. The terms and conditions of the Academic Progress Plans must be met in full to continue to receive Federal aid for future semesters by the conclusion of the probationary semester.

Students who do not appeal, or who are denied by the Committee, will not be eligible for federal financial aid programs. Students will remain denied until their academic record is once again in compliance with the Satisfactory Academic Progress Policy. To attain compliance, students must attend school without federal financial assistance while clearing their satisfactory academic progress. When reinstatement is granted, a student may be considered for those financial aid funds available at that time.

#### FINANCIAL AID REFUND POLICY

The refunding of financial aid funds to the appropriate funding source corresponds to federal regulations, the Return of Title IV fund requirements, and YSU's refund policy regarding student fees upon withdrawal from class(es). This policy is explained in greater detail in the *Undergraduate Bulletin* on p. 29.

## SCHOLARSHIPS FOR EXCELLENCE

*Please check with the Office of Financial Aid and Scholarships for current information.*

Scholarships for Excellence are awarded by the University and largely funded by the YSU Foundation. The YSU Foundation, with an endowment of over \$150 million, is committed to providing this "edge of excellence" for the University, providing more than \$4 million in scholarship assistance annually for YSU students. These Scholarships for Excellence are awarded to eligible **new high school graduates, transfer students, and current students**. Current and transfer students will automatically be considered for these scholarships. In addition, incoming freshmen should apply for admission by **February 15** to be considered for these scholarships automatically.

**Leslie H. Cochran University Scholars.** These are four-year, full-ride academic scholarships which require a separate application. These scholarships are awarded annually to as many as 40 incoming freshmen based on minimum criteria of an ACT of 28 or SAT of 1340 and upper 15% ranking in the student's high school class. (Writing scores are not included in ACT or SAT composite scores.) Must attend full-time and maintain at least a 3.5 cumulative GPA to renew. A separate application is required for the Leslie H. Cochran Scholarship.

**Trustees' Scholarships:** These are \$4,500, four-year scholarships awarded to incoming high school valedictorians. Must attend full-time and maintain at least a 3.5 cumulative GPA to renew.

**President's Scholarships:** These are \$2,500, four-year scholarships awarded to the upper 10% of high school class with a minimum ACT of 27 or SAT of 1220. Must attend full-time and maintain a 3.5 cumulative GPA to renew.

**Deans' Scholarships:** These are \$2,000, four-year scholarships awarded to the upper 15% of the high school graduating class with a minimum ACT of 25 or SAT of 1140. Must attend full-time and maintain a 3.5 cumulative GPA to renew.

**Red and White Scholarship:** These are \$1,500, four-year scholarships awarded to 22 ACT/1030 SAT and 3.0 high school cumulative GPA. Renewed each year up to a maximum of four years if the student maintains a 3.0 GPA and completes a minimum of 24 semester hours per year.

**Transfer-Student Scholarships:** Available to students who have completed at least 24 transfer able credit hours. Those who transfer to YSU with a GPA of 3.50 or higher qualify for an award of \$1,500 per academic year; those with a GPA between 3.00 and 3.49 will receive \$1,000. Renewable for three years if the recipient maintains a 3.5 GPA for the \$1,500 award and a 3.0 for the \$1,000 award. Awards are available for part-time students (at least 6 hours per term) on a pro-rated basis. Students should apply for admission by **February 15** to be considered for these scholarships automatically.

**Academic Achievement Award:** These are \$500, three-year scholarships awarded to continuing YSU students with a minimum criteria of 24 hours completed and a cumulative GPA of 3.5. Must attend at least half-time and maintain a 3.5 cumulative GPA to renew. These scholarships are based on the level of scholarship funding and the number of eligible students. Students are automatically considered for this award.

**PLEASE NOTE:** Undergraduate Scholarships for Excellence guidelines are **subject to change**. Students cannot be awarded more than one scholarship through the Scholarships for Excellence program.

## OTHER YSU SCHOLARSHIPS

For a listing of scholarship opportunities currently available to YSU students, go to [www.ysu.edu/finaid](http://www.ysu.edu/finaid). Under "Tools to Search and Estimate," click on "Scholarship Search" for a display of over 480 scholarships.

## ACADEMIC POLICIES AND PROCEDURES

### PLACEMENT TESTS

New students may be required to take placement tests to determine their readiness for college-level work. If placement testing shows that students are not prepared for college-level work, they will be placed into one or more developmental courses in composition, reading and study skills, and/or mathematics. The Composition Placement Test, the COMPASS® Reading Test, and the COMPASS® Math Test are required of all students unless there is an automatic placement or exemption due to ACT/SAT scores. Students who have AP credit or transfer coursework may not need placement testing. Students will be informed about what testing is needed when they are accepted for admission to the University.

Students who are required to take one or more placement tests must do so before advisement and registration.

#### Composition Placement Test and COMPASS Reading Test

The Composition Placement Test and the COMPASS® Reading Test are required of a student who has not been placed through ACT/SAT scores, or is not required to take the ACT/SAT test. No student is permitted to register for classes without having taken the tests, except those students placed into English classes for non-native speakers and those with approved transfer credit.

Students placing into the developmental courses Reading and Study Skills (RSS) 1510, English (ENGL) 1539, and/or ENGL 1540 must complete the specified coursework within their first 36 semester hours. Otherwise, the student will be limited to enrolling only for those developmental classes until they are completed successfully.

Conditionally admitted students placing into RSS 1510B must take that course in their first semester. Conditionally admitted students placing into RSS 1510A, ENGL 1539, or ENGL 1540 must take these courses within their first 20 semester hours.

Students directed to enroll in ENGL 1539, ENGL 1540, and/or RSS 1510A or 1510B must do so. The student may not withdraw from these courses unless he or she is making a complete withdrawal from the University.

None of the above-named mandatory developmental courses may be taken more than twice without the approval of the college dean. Should a student not successfully complete any of these courses within two attempts or he or she withdraws from them twice, the student will be disenrolled from the University.

*Please note that credit hours from ENGL 1509, ENGL 1512, ENGL 1539, ENGL 1540, RSS 1510A and RSS 1510B will not count toward a degree.*

### COMPASS Math Test

Students who have not been placed through ACT/SAT scores or are not required to take the ACT/SAT test must take the COMPASS® Math Test unless they have approved AP math credit or sufficient transfer coursework. Students will be placed into appropriate mathematics courses based on their ACT/SAT scores or the COMPASS® Math Test.

*Please note that credit hours from developmental MATH 1500, 1501, 1502, 1503, 1507, and 1508 will not count toward a degree.*

For more information regarding math coursework, visit the Department of Mathematics and Statistics' website at <http://web.yosu.edu/stem/math>. For a sample math placement test, visit <http://www.act.org/compass/sample/math.html>.

### English Composition Requirement

A student must complete the regular English composition requirement for graduation within the first 60 hours of coursework. A student who does not complete the English requirement within the first 60 hours of coursework will be prohibited from registering for any additional upper-division courses until the English requirement has been met. Transfer students having completed 60 hours or more are exempt from this policy for their first 12 hours of enrollment at Youngstown State University.

### Foreign Language Placement Test

Students in BS and AB degree programs must satisfy a foreign language requirement for the degrees. Students in the BA and BM degree programs in the College of Fine and Performing Arts should consult with advisors in that college.

Students who have had some high school or college-level language study may enroll in any 1550 elementary foreign language course without taking the FLPT.

Students who wish to begin their college-level foreign language study with 2600 Intermediate or above to satisfy the requirement MUST take the foreign language placement test (FLPT).

Students with AP credit in a foreign language have completed the requirement. Students with transfer credit for college foreign language courses may enroll in the next course in the sequence.

## REGISTRATION

All YSU class registration takes place online through the MyYSU Portal (<http://my.yosu.edu>). Registration day and time are determined by the student classification. (Registration dates and appointment times for current students are published on the MyYSU Portal.)

Registration must be concluded no later than the date published for the particular term. All significant dates for each term are published in the front of this *Bulletin* and on the YSU website.

**Photo Identification Card.** The Office of the Registrar issues a photo identification card to every student enrolled at the University. The student must carry the card while on campus. The use of this card is restricted to the student to whom it was issued. The student must report the loss or theft of his or her card to the YSU Police. Lost or stolen cards must be replaced at the student's expense (see "Student Fees and Charges" for amount). To replace the card, the student must present proper identification (e.g. driver's license) to the Office of Student Accounts and pay the applicable replacement fee. The photo identification card is the property of the University and must be surrendered by the student upon request by University officials.

### Advisement

The Office of the Registrar provides instructions for advisement and registration prior to registration.

All students are urged to consult with advisors in their major area. Each department or college has a procedure for either assigning an advisor to a student or having the student select an advisor. Advisement is required for the following students:

1. Freshmen (with fewer than 32 hours of credit).
2. Post-Secondary Enrollment Option/Early Admission Options Program students.
3. Any student not in good standing.
4. First-semester transfer students.
5. All former students returning to the University.
6. Athletes

The responsibility for fulfilling all requirements rests ultimately upon the student; the advisors provide assistance in that process.

Students may use the online *Schedule of Classes* to determine the specific classes offered in a particular term. For information about future offerings or when a particular course will be offered again, consult the appropriate department.

### Change of Registration

Registered students may change their registration by accessing the registration functions through the MyYSU Portal (<http://my.yosu.edu>). (Also see "Reduction/Refund of Fees" section).

Students should consult their advisors prior to changing their schedules. In general, each student who needs an advisor's approval for registration must also have an advisor's approval for add/drop (change of registration). However, advisors' approval is not required for (1) withdrawing from a course(s), (2) changing sections of a course, or (3) changing physical activity courses.

A registered student may add an additional course through the change-of-registration procedure until the last day to add a class as published in the academic calendar (see inside front cover, p. i of this *Bulletin*).

Withdrawal from a course must be accomplished through the change-of-registration procedure. If a student withdraws from one or more courses during the full-refund period (or the end of the first week of the summer term), no entry will be made on the student's permanent record for the course(s) dropped.

Administrative change(s) of registration may occur if a student is improperly enrolled in any course or has registered for more hours than permitted.

Students who wish to completely withdraw from the University should consult the appropriate section in this *Bulletin*.

### Cancellation of Registration

A student's registration may be cancelled for any of the following reasons:

1. Academic suspension for the previous term.
2. Disciplinary action against the student.
3. Insufficient class enrollment.
4. Failure to meet admission or prerequisite requirements.
5. Failure to satisfy past-due financial obligations to the University.

## CREDIT HOURS/CLASS STANDING/ MAJORS

The *class hour* is a weekly 50-minute class period and is the basic unit of instruction. The term "semester hour" (s.h.) signifies one class hour a week carried for one 15-week semester (or the equivalent in a summer term or flexibly scheduled class). A *semester hour of credit* is the amount of credit given for one semester hour successfully completed. Each *semester hour of credit* represents an average of *three hours of study and instruction* every week through the term.

### Maximum/Minimum Credit-Hour Value

Registration is not permitted for less than the approved credit hour value of any course as listed in the catalog. Students may not register for more than the approved credit-hour value of a course.

### Variable Credit Hours

Certain courses have variable credit hours. A student wishing to register for such a course may do so only after consulting with the department offering the course to determine the number of hours for which to register.

### Student Load

The semester hours of credit a student carries per term depend on the degree sought and on the curriculum being followed. A minimum of 124 semester

hours must be satisfactorily completed to earn a baccalaureate degree; a minimum of 64 semester hours for an associate degree. Students expecting to complete a bachelor's degree in four years or an associate degree in two years should average 16 credits per term. Students interested in taking 21 credit hours or more per term must seek approval from the dean of their college.

### Full-time Status

A full-time undergraduate student is one carrying 12 or more hours for credit per term.

### Academic Classification

All students working for any undergraduate degree conferred by this University are ranked in classes, by semester hours completed, as follows:

Freshman.....	0-31 semester hours of credit
Sophomore.....	32-62 semester hours of credit
Junior .....	63-93 semester hours of credit
Senior .....	94 or more semester hours of credit

For purposes of satisfying course prerequisites, the term "senior standing" may be defined by reference to the specified curricula of a given school or college, if it provides detailed programs leading to the attainment of a degree. A student who has completed a four-year degree and who continues undergraduate enrollment is classified as post-baccalaureate.

### Majors

#### Declaring or Changing a Major

A student may enter the University as an undetermined major.

A major and minor (if required) must be declared by the time the student has completed 63 semester hours.

In order to change or declare a major, the student must fill out a form from the department of the desired major. The form will be forwarded to the Office of Records.

Students who need help selecting a major should contact an academic advisor, the academic department, or the Office of Career Services for assistance with academic and career planning.

#### Additional Majors and Degrees

A student interested in pursuing more than one major at a time should contact the departments offering majors to be assigned an advisor for each program. Multiple majors or degrees may be awarded concurrently.

**Multiple majors/single degree:** A degree—e.g. Bachelor of Science, Bachelor of Arts—may be awarded only once. However, more than one major for the degree may be posted on the transcript when the appropriate department chairpersons certify completion of the requirements. The student should indicate in each of the appropriate colleges each ma-

ior completed when filing for graduation. When the student completes more than one major in a given degree, one diploma is awarded. A minimum of 30 semester hours or 50% of the credits counted towards a major, whichever is less, must be specific to that major and not shared by any other major.

**Multiple majors/multiple degrees:** If a student wishes to complete the requirements for multiple majors that are awarded under different degrees, the student must fulfill all requirements for each major and each degree. The appropriate chairpersons and deans must then certify completion of the requirements for each major and degree. The student must file intent to graduate and graduation application forms for each major and each degree in the appropriate colleges. A minimum of 30 semester hours or 50% of the credits counted towards a major, whichever is less, must be specific to that major and not shared by any other major.

Students may not earn the Bachelor of General Studies concurrently with another bachelor's degree. Students who hold a bachelor's degree are not eligible for a Bachelor of General Studies degree.

Any student who has received a degree from another institution and desires a second degree from YSU must complete a minimum academic residency of 20 semester hours for an associate degree and 30 semester hours for a baccalaureate degree, meet all requirements for the second degree, and complete the requirements for a new major. Students coming from another university or from YSU with an already-completed bachelor's degree will not have to complete any additional general education requirements at YSU but will have to satisfy the residency requirements described above.

### Minors

For information about minors, please see p. 47.

### Credit from Professional Schools

Students at YSU wishing to enter professional schools with the option of completing their baccalaureate degree in absentia may do so with the completion of at least 94 semester hours of coursework, which must include the following:

1. All general University requirements.
2. Completion of major.
3. Completion of minor (if required).
4. 54 s.h. of upper-division coursework (3700-4800-Level).

The University will accept the completion of not more than 30 semester hours from any professional school granting any of the degrees listed below and approved by the accrediting agency of that profession, provided that the student has been accepted for further study at the professional school. The student may thus secure the baccalaureate degree after three to three-and-a-half years in the University followed by approximately a year in the professional school.

The relevant professional degrees are: Doctor of Dental Surgery or equivalent; Doctor of Medicine, Doctor of Osteopathy, Doctor of Podiatry, Doctor of Veterinary Medicine, Doctor of Jurisprudence or equivalent; Doctor of Ministry or equivalent; Bachelor of Divinity or equivalent.

The policy above does not apply to students admitted in the BS/MD Integrated Program of Youngstown State University and the Northeast Ohio Medical University (NEOMED). However, credit of up to 13 s.h. may be granted toward the completion of the B.S. degree to those students who have participated in the 6th year *Human Values in Medicine* Programs of NEOMED.

### Undergraduate Preparation for Post-Baccalaureate Degrees

Medical schools have specific requirements for pre-medical study, and many law, theological, technological and graduate schools have curriculum requirements for those seeking admission. Anyone wishing to enter a professional, technological, or graduate school of any kind should consult advisors in the appropriate undergraduate college of this University as early as possible. Such special needs can usually be met within the degree requirements of Youngstown State University, but the proper selection of courses may have to begin in the first year.

### Course Load Requirements for Enrolled Nonimmigrant International Students

In accordance with federal regulations, F-1 students may not be employed on campus for more than 20 hours per week while school is in session. Furthermore, F-1 students are required to “pursue a full course of study,” which for undergraduate students is defined as a minimum of 12 credit hours each semester (9 credits for graduate students). In order to avoid being de-registered from courses and thus violating nonimmigrant status, it is essential that international students pay their YSU tuition and other fees, including health insurance (see below), in full at the beginning of each semester.

During international student orientation, results of any required placement tests in math or English language are coordinated with testing and academic areas to assist students who may need to further improve proficiencies for academic success

The Center for International Studies and Programs can provide advice on maintaining nonimmigrant status, authorization for a reduced course load, and obtaining additional employment authorization for unforeseen economic hardship or practical training. For more information, see Center for International Studies and Programs on p. 74.

### International Student Health Insurance

Enrollment in YSU’s student health insurance plan is mandatory for all international students (F and J status) and for their nonimmigrant dependents. Coverage must be maintained for the entire calendar year.

An exception to this requirement is granted only to:

1. students who have comprehensive group health insurance coverage through a parent or spouse’s U.S. employer OR
2. students whose sponsorship by the U.S. government, the student’s home government, or a U.S.-recognized international organization includes comprehensive health insurance.

To request a waiver from enrollment in the YSU international student insurance plan, students must, *by the end of the first week of classes each semester:*

Submit a completed YSU International Student Health Insurance Waiver Request Form to the Center for International Studies and Programs **with proof of insurance** (including confirmation of coverage dates and a description of covered expenses and exclusions) through a qualifying relative’s employer or qualified sponsor.

### ATHLETIC ELIGIBILITY

The Athletic Eligibility Committee is responsible for the athletic eligibility certification for Youngstown State University with respect to academic “standards of progress” for current student athletes and incoming students in compliance with (NCAA) National Collegiate Athletic Association’s regulations.

## COURSES

### Prerequisites

No student may receive credit towards graduation for a course that is a prerequisite for a more advanced course which the student has already successfully completed, unless an exception to this policy is recommended by the appropriate chair and approved in writing by the student’s academic dean.

### Repetition of Courses

A student may repeat a course once, unless otherwise stipulated in the course description or unless an additional repetition is authorized by the student’s academic dean. If the course is a prerequisite to another course, the repetition must be successfully completed before the other course is taken. Both the original course and the repeated course must be taken at YSU. Transfer, study abroad, and/or transient courses are not eligible to be used as a repetition. If the student has received credit for a more advanced course in the same subject, a repetition is treated merely as another course, along with the first, in calculating the point average, unless the student secures an approved repetition form for recalculation of point average from the dean of the college in which the student is enrolled. (See Recalculation of Point Average.) A course repeated, however, may be counted only once as credit toward a student’s total academic hours for graduation.

The Repetition form and the Petition for a Late Withdrawal cannot be used for the same course. In other words, a Petition for a Late Withdrawal cannot be processed for any course that was repeated and a recalculation of point average processed and posted on the student's academic record.

Credit towards graduation will not be given for a course on the semester system if the student has credit for the equivalent course on the quarter system.

### Closed Classes

Departments set limits to the number of students that can be accommodated in each section. During the registration period or the period for adding courses, many classes become filled. These classes are called "closed," which means that no more students will be admitted to them. Only the chair of the department offering the course can admit a student to a closed class or reopen a closed class.

### Audited Courses

A student may audit any course. The student pays the full tuition, as well as any other applicable fee, for the course(s) audited. Audited courses are carried in a student's load only for fee purposes. A student receiving financial aid should confer with the Office of Financial Aid and Scholarships before electing to audit a course.

A student may not change registration from audit to credit status or from credit to audit status after the last day to add a class.

### Conference Courses

Conference work is available only in exceptional cases and if the academic advisor considers conference work essential. You must obtain the required approval(s) and complete the registration on-line.

Conference courses have the following restrictions:

1. Permission is limited to seniors with a 3.00 average. Exceptions must be approved by the dean of the college in which the student is enrolled.
2. The course must be given by a full-time faculty member.
3. A brief description of the plan of procedure must be given by the full-time faculty member.
4. Must have approval from the department concerned and the dean of the school in which the course is offered.

### Graduate Courses for Undergraduates

An undergraduate student who has senior standing and an unrecalculated grade-point average of at least 2.7, may enroll in 6900 or higher level graduate courses, provided such enrollment does not cause the total schedule for the term to exceed 12 semester hours. Before registering for courses the student must

have the approval of the student's advisor in the program where the credit will be applied, the course instructor, and the dean of Graduate Studies and Research. The credit earned may be used for graduate credit at YSU only after the student is admitted to the School of Graduate Studies and Research and the credit is accepted by the department in which the student continues graduate work. (Such coursework cannot count toward fulfillment of the requirements for a bachelor's degree.) The maximum amount of such credit that will be accepted at Youngstown State University is nine hours.

### TRANSIENT STUDENT AUTHORIZATION

Current YSU students desiring to attend another institution as transient students must complete and submit the Transient Student Authorization form, available from the dean of the college in which they are enrolled. Instructions are on the form. To be certain the transient class is applicable to the degree, the TSA form must be completed prior to taking the course. If the form is completed after the course is taken, applicability cannot be guaranteed.

To receive credit for approved coursework, the student must have received a grade of "C" or better and must attend Youngstown State University the semester following the completion of the transient term. It is the student's responsibility to have an official transcript sent from the other institution to the YSU Office of Records.

### COMPLETE WITHDRAWAL FROM THE UNIVERSITY

**Procedure:** The student who wishes to withdraw from all courses in a particular term must access the registration system on the MyYSU Portal or come to the Office of the Registrar. **Any student receiving Title IV financial aid should seek advisement from the Office of Financial Aid prior to processing a complete withdrawal.** A complete withdrawal may be executed before classes or after the term starts. The student should consult the MyYSU Portal for deadlines.

#### Eligibility for future registrations:

1. A new applicant who withdraws from all courses prior to the first day of the term will not receive notice for future registrations unless the person requests that the Office of Admissions defer the application to a future term.
2. A former YSU student who withdraws from all courses prior to the first day of the term will not receive notice for future registrations unless the person requests that the Office of Records defer the application to a future term.
3. A current undergraduate student withdrawing on or after the first day of the term will receive notice of future registrations for one academic year.



## HONORABLE WITHDRAWAL

On occasion, a student voluntarily withdrawing from the University may need a letter stating the conditions of her or his withdrawal.

If a statement of honorable withdrawal is needed, the dean of the appropriate college or other appropriate offices (i.e., University Discipline Officer) will furnish one, provided the student is of good character, has a satisfactory record of conduct, has no financial obligations to the University, and is withdrawing voluntarily for acceptable reasons; and provided that the student, if withdrawing during a term, follows the official procedure for a change of registration.

## GRADING SYSTEM

Faculty assign grades on the basis of achievement in the subject matter of the course and in accordance with accepted professional standards for that subject. The grade earned by a student thus represents the quality of work and is not based merely on competition within the class.

The grade of **A** represents exceptional work in which the student shows that he or she has firmly grasped and achieved the objectives of the course.

The grade of **B** indicates very good work and considerable grasp of the essentials of the course.

The grade of **C** indicates good work and a usable grasp of the essentials of the course.

The grade of **D** indicates a definite, but not necessarily coherent, knowledge of the course.

The grade of **F** indicates that the student has not achieved even a minimum grasp of the essentials of the course. This grade can also result from failure to withdraw officially from a course (see Change of Registration and Refund of Fees Upon Withdrawal).

An incomplete grade of **I** may be given to a student who has been doing satisfactory work in a course but, for reasons beyond the control of the student and deemed justifiable by the instructor, had not completed all requirements for a course when grades were submitted. A letter grade may not be changed to an **I** (Incomplete) after the term has ended and grades have been recorded. A written explanation of the reason for the **I** must be forwarded by the instructor to the Office of Records. This explanation will be included in the student's permanent record, with copies to the student and department chairperson. For fall term courses, the final date to complete an **I** will be March 1 of the following term; for the spring term courses, September 1; for all summer term courses, October 1. With approval by the instructor and the dean of the college in which the course is taught, the completion date may be extended. Courses not completed by the appropriate date will be converted to an **F**.

Students should not register for the same course the subsequent term. Rather, the student should work individually with the instructor to fulfill the course requirements. The instructor will initiate a grade change upon completion of the course requirements. If no formal grade change occurs within the allotted time frame, the **I** automatically converts to an **F**. Any **I** that is still pending by graduation will be converted to an **F**.

If a student receives an **I** as a result of being summoned to active military duty, the student will have one academic year from the date when he or she is released from active duty to complete the course requirements and have the change of grade recorded. It is the student's responsibility to inform the registrar or associate director of records regarding the Incomplete grade.

Department chairs are granted authority to convert grades of **I** into final grades in cases where instructors may have severed connections with the University or have been otherwise unable to convert the grades.

A progress grade, **PR**, is given in certain approved courses to indicate that work is still in progress on a project that occupies more than one semester. This grade is changed to a final letter grade at the end of the term in which the work is completed.

The **PR** grade may also be given at the end of a term in courses specifically identified as competency-based<sup>†</sup> to indicate that the student needs more time to demonstrate a mastery of the subject matter. In such instances, the **PR** grade will be converted to a letter grade by the instructor no later than the end of the subsequent term, excluding the summer. A **PR** grade not changed by this time is automatically converted to an **F** grade.

**W** represents a withdrawal properly processed at any time from the end of the full-refund period through the last day to withdraw with a **W** (as published in the Academic Calendar for each semester). For courses involving foreign travel, the last day to drop a course with a **W** shall be the date at which the student first leaves the campus to begin the travel. Withdrawal after the designated date (or an improper withdrawal) is recorded as **F**. Withdrawal thereafter (or improperly done, at any time) is recorded as **F**. Petitions for late withdrawal must be submitted within one year from the time a grade in the course was earned. If the grade resulted from circumstances over which the student had no control, the student may petition the appropriate dean for a late withdrawal.

A Petition for Late Withdrawal and the Repetition Form cannot be used for the same course. In other words, Petition for a Late Withdrawal cannot be processed for any course that was repeated and a recalculation of point average processed and posted on the student's academic record.

<sup>†</sup> The definition of competency-based instruction is to be provided by the instructor responsible for the course. Competency-based courses are so designated in the *Schedule of Classes*.

When withdrawals change a student's status (full-time to part-time), the student immediately forfeits any privileges contingent upon full-time status, and all interested parties which legally require it will be notified.

The distribution of achievement levels, and therefore of grades, in a large unselected group of students generally follows the normal frequency curve, in which 5% to 10% are A's, 20% to 25% B's, 40% C's, 20% to 25% D's, and 5% to 10% F's. However, since it is likely that substantial variation from the normal will occur in individual classes, the instructor does not use the "curve" as a standard to be imposed, but only as a model against which the instructor may compare each particular class, using his or her own judgment on the basis of professional standards.

Instructors may use plus and minus modifications of the grades, but they are not recorded or used in calculating the point average.

### The Point Average and Scholastic Standing

The student's scholastic standing is indicated by the quality point average (also called "grade point average," "grade average," or "point average").

For determining this, every grade has a quality point value for each semester hour it represents, as follows: **A**, four quality points; **B**, three points; **C**, two points; **D**, one point; **F**, zero points. For example, an **A** in a three-hour course is worth 12 quality points; a **D** in a four-hour course, four points; and an **F** in any course, zero points. To find the point average, the total number of quality points earned is divided by the total GPA hours. Thus, a student who earns 16 hours and 40 quality points has a point index of 2.50. Only grades of A, B, C, D, and F are included in the calculation of the point average.

### Grading Options

#### Traditional Grade (A,B,C) /No Credit

To receive credit for courses offered on a traditional grade/no credit basis, a student must earn a grade of **C** or better. If the student fails to do so, an **NC** is entered on his or her transcript.

An **NC** does not fulfill the requirements for satisfactory completion of the course; it does not affect the grade point average.

#### Audit (AU)

The **AU** grade indicates a student has registered for a course on an audit basis and has met the audit attendance requirement established by the instructor. Failure to meet the attendance requirement results in a grade of **AU (W)**.

Students must indicate their election of the audit grading option at the time of registration or within the time limits established for adding a class. The audit option will not be changed to the standard grading option beyond the last day to add a class.

#### Credit/No-Credit (CR/NC)

Credit/no-credit grades are given in some specific courses as approved by the Academic Senate. Such courses are identified in the course descriptions.

#### Credit/No-Credit (CR/NC) (Student Option)

To encourage students to experiment with courses outside their major field of concentration, a credit/no-credit policy exists within the following guidelines.

Youngstown State University students who have completed at least 15 semester hours of credit and have a grade point average of 2.00 or better, or transfer students admitted unconditionally who have at least 30 semester hours of transfer credit, may elect to take a course for credit/no-credit.

The grade recorded for the student is not a letter grade, but either **CR** (credit) or **NC** (no-credit). If a student who has opted for CR/NC earns an A, B, or C in the class, the grade officially assigned is CR; otherwise it is NC. In either case, the grade point average is not affected.

This option may be elected for a maximum of twelve (12) semester hours for the baccalaureate degree or six (6) semester hours for the associate degree. Courses offered only under the CR/NC option (by department designation) *do not* count as a student-elected credit/no credit class. Students are restricted to taking one CR/NC course per fall and spring semester and one CR/NC course per non-overlapping summer term.

**Courses taken under the CR/NC option may not be counted toward a student's major or minor.** Students should confer with their advisors prior to electing the CR/NC option.

Students must indicate their election of the CR/NC option at the time of registration or within the time limits established for adding classes. **The CR/NC option will not be changed to the standard grading option beyond the last day to add a class.**

### Changing of Grading Options

You may change your grading option only through the last day to add a class.

### Excluding Older Grades (Statute of Limitations)

An undergraduate student *currently enrolled* may petition the dean of his or her college to exclude from the calculation of the grade point average grades earned five or more calendar years before. If the petition is approved, all grades (not merely grades of D and F) earned during the specified quarter or semester and all previous grades (not merely grades of D and F) will then be removed from the calculation. However, all grades remain on the permanent record.

Excluded course credit (including transfer credit) will not count toward the total hours required for graduation. However, courses passed may fulfill

basic curriculum requirements and may satisfy prerequisites for higher courses where applicable. Courses excluded from the calculation may be taken again and repeated once without infringing upon repeat privileges specified in catalog course descriptions. Courses excluded are not subject to credit by examination. *A student whose petition has been approved is ineligible for graduation honors.* Only one petition from each student may be approved. Students **may not** petition to exclude older grades after a degree has been conferred.

### Grade Reports

Final grades are available through the MyYSU Portal (<http://my.ysu.edu>). Students are notified by e-mail when end-of-term grade processing has been completed.

### Grade Changes

A request for a grade change must be made to the course instructor. Applications for grade changes must be signed by the instructor, department chair, and dean. All grade changes must be submitted by the dean or the instructor to the Office of Records; they will not be accepted from the student. **After a degree has been conferred, in no case may a grade change be made for a course or courses taken while pursuing that degree.**

A student's academic record contains a complete history of his or her academic performance while earning a degree. Therefore, the academic record of a student who graduates may not be revised using a *Grade Change Form, Repetition Form, Petition for a Late Withdrawal, or Statute of Limitations.*

In the case of a student who has completed an associate degree, the above policy may, on occasion, be waived, but only if the student is currently pursuing a baccalaureate degree. However, changes cannot be made in a student's record which would affect the status of the awarded associate degree. Waivers must be approved by the appropriate dean.

### Credit by Examination—Departmental

A currently enrolled student who can demonstrate ability and knowledge in a particular subject area may establish credit in certain courses without enrolling in them, by taking a special examination (through the appropriate department). An examination fee is assessed for each examination. The only grade possible is "CRX", and there is no effect on the student's grade point average. For the examination fee, see "Fees and Expenses". Information on courses for which credit by examination is possible may be obtained from the student's academic dean or the Office of Testing. Registration for departmental tests is done through the specific department.

### Recalculation of Point Average

A current undergraduate student may wish to improve his or her cumulative point average by

repeating a course in which a grade of 'D' or 'F' was earned. In order to recalculate the cumulative point average, the repetition must be consistent with the policy on repetition of courses, and the student must initiate the recalculation process with the approval of his or her advisor (or the dean, if it is a second repetition). A recalculation will be made for only the immediately preceding grade for the course, regardless of the number of repeats, and may be made only once for any course. Although courses are not deleted from the permanent record, the record is adjusted to reflect the inclusion of only the last grade in the computation of the point average. The hours credited toward degree hours completed are those earned with the last grade.

Only undergraduate students currently attending the University may request this recalculation privilege, and only courses taken at Youngstown State University may be used in recalculating the cumulative point average. **A post-baccalaureate student is not eligible to petition for a recalculation unless both the course and the repetition are completed subsequent to the conferring of the degree.** A student holding the associate degree may petition after receiving the associate degree only if currently pursuing a baccalaureate degree. **All YSU grades, including those deducted from accumulative totals as a result of an approved Repetition Form, will be counted in determining honors for graduation.**

### Proficiency in English and Grading

The student's ability to express himself or herself in English is the concern not of the Department of English alone, but of every member of the University faculty. Inadequate competence in English is to be regarded as a reason for lowering a student's grade in any course in the University.

### Absence from Classes and Examinations

The problem of excessive class absence concerns instructor and student, and consequently requires their mutual effort. All students must realize that for their own welfare they are expected to attend all class meetings of courses in which they are enrolled.

The instructor, however, has the prerogative of determining the relationship between class attendance, achievement, and course grades, and the responsibility for communicating the relationship to the students at the beginning of each term.

A student must have the instructor's consent in order to take any examination at a time other than that scheduled.

### GRADE REQUIREMENTS

Four categories of academic standing are established: Good Standing, Warning, Probation and Suspension. These are intended to signify a student's progress toward graduation or to provide an opportunity for making improvements and achieving academic success.

“Warning” and “Probation” indicate that grade standards consistent with graduation requirements are not being met. An advisor’s approval of course load is required prior to continuing studies at the University.

“Suspension” means that a student is separated from the University for a period of time.

Recognizing that the transition from high school to college may be a difficult one, the University has set the minimum levels of academic achievement during the student’s first year below the level required for graduation. Academic standing is based on the total earned hours (TEH) completed, including accepted transfer hours. The point averages (PA) required for good standing are as follows:

Required TEH	PA
1-31	1.75
32+	2.00

A student whose point average falls below the specified average for the number of credit hours achieved will be given a warning.

A student who has been on warning and who fails to bring the average up to the minimum by the end of the following term will be placed on probation for the next term. A probationary student who has failed to bring the average up to the minimum by the end of the probationary term will be suspended; however, a student who makes substantial improvement during a probationary term and averages at least 2.00 for that term will be continued on probation even though the student’s cumulative average does not reach the desirable minimum.

A student on warning is permitted to participate in University activities.

A second suspension will have a duration of at least one full year before reinstatement on probation. Students should not expect to be reinstated after two suspensions unless the dean agrees that extraordinary conditions or circumstances have occurred. Additional suspensions will have durations of at least two years.

**Reinstatement** after any suspension is determined by the dean (or designee) of the college from which the student was suspended, or, if the student wishes to change colleges, by the dean of the new college. Exceptions to the suspension policy may be granted by the dean.

Transfer students admitted in **good standing** or on **probation** must meet those point-average requirements indicated for their total hours, including transfer hours accepted by Youngstown State University.

## TRANSCRIPTS

The official transcript is a record of all coursework taken at Youngstown State University. Transcripts may be ordered online at the YSU website or in person. Requests should include the student’s name,

any former name(s), Social Security or Banner ID number, dates of attendance, day-time phone number and written signature. Students are advised that most graduate and professional schools and many employers accept transcripts only if sent directly by the University. Photo identification is required when ordering or picking up the transcript in person. Transcripts will be released only for those students who do not currently have a financial obligation to the University.

A transcript indicates the academic status of a student. Disciplinary action is not shown on a student’s academic record.

## ACADEMIC HONORS

### The Dean’s List

The Dean’s List (for each term except summer) includes those full-time undergraduate students who have earned at least a 3.4 average for not less than 12 semester hours’ credit in the semester just ended.

Included in the listing for the spring term are those part-time students who have earned at least a 3.4 average for the fall and spring terms, and who have accumulated a minimum of 12 hours of credit.

### Class Honors

To be eligible for undergraduate class honors a freshman must have completed at YSU at least 12 semester hours; a sophomore 24 semester hours; a junior 36 semester hours; and a senior 48 semester hours. Honors are based on the accumulative point average at YSU only; no transfer work is included. Both full-time and part-time students are eligible, provided they 1) have a minimum cumulative point average of 3.00; 2) have earned at least 12 credits in traditionally graded courses taken during the three semesters (including summer) preceding the term in which honors are awarded; and 3) are enrolled during the current term. Non-matriculated, post-secondary enrollment option students, transient students, post-graduate transfer students, and YSU students who have received a baccalaureate degree prior to spring semester in the academic year in which the honors convocation is held are not eligible. A student can receive class honors only once as a member of a particular class (freshman, sophomore, etc.). The number of honor recipients approximates the top one percent of the total fall enrollment of every class in each undergraduate unit of the University, but it may slightly exceed this figure because of ties.

### Honors Convocation

The Honors Convocation recognizes those students who have distinguished themselves academically. Some of the awards listed under Awards and Prizes (See Student Activities section) are announced and presented on this occasion.

## Graduation Honors

Students graduating with a baccalaureate degree who rank high scholastically are awarded special honors at the commencement exercise, as follows:

Those who attain a quality point average of 3.8 or higher are granted their degrees *summa cum laude*.

Those who attain a quality point average of less than 3.8 but not less than 3.6 are granted their degrees *magna cum laude*.

Those who attain a quality point average of less than 3.6 but not less than 3.4 are granted their degrees *cum laude*.

Students graduating with any associate degree who rank high scholastically are awarded special honors at the commencement exercise, as follows:

Those who attain a quality point average of 3.7 or higher are granted their degrees With High Honors.

Those who attain a quality point average of less than 3.7 but not less than 3.4 are granted their degrees With Honors.

A student who has processed an approved *Statute of Limitations* is ineligible for graduation honors. All *YSU grades* (including those deducted from accumulative totals as a result of an approved Repetition Form) will be counted in determining honors for graduation.

Transfer students who are baccalaureate degree candidates must have at least 60 semester hours of credit at Youngstown State University, or those who are associate degree candidates must have at least 40 semester hours of credit at Youngstown State University to be eligible for graduation honors. However, no transfer red credit—work taken at any time at an institution other than Youngstown State University—is included in the calculation of the point average.

## ACADEMIC MISCONDUCT

### Academic Honesty

Academic honesty is essential to the educational process and serves to protect the integrity of the University community. Therefore, all members of the University community have a responsibility of maintaining high standards of honesty and ethical practice. Cheating, plagiarism, and other forms of academic dishonesty constitute a serious violation of University conduct regulations.

Though instructors are responsible for taking all reasonable precautions to prevent cheating and plagiarizing, students share a joint responsibility and should report any act of academic dishonesty to the instructor.

In cases involving academic dishonesty, the faculty member may take one or more of the following actions:

- warn a student; no further action
- submit an “F” grade on the exam or paper
- submit an “F” grade for the course
- and/or request additional sanctions from the Student Academic Grievance Subcommittee.

The faculty member shall obtain from the Office of Student Life an Academic Dishonesty Report to be completed and returned to the Office of Student Life.

The faculty member should discuss the circumstances of the incident with the student prior to taking any action.

The student may appeal any actions affecting the grade to the department chairperson, the dean of the college, or the ombudsperson. The Student Academic Grievance Subcommittee may address certain appeals, as described below.

A report requesting additional action will be forwarded to the Office of the Provost. Repeated incidents of academic dishonesty or flagrant single offenses may warrant action beyond a failing grade in the course.

Procedures for reporting, investigating, and considering student conduct are found in *The Code*. *The Code* is available online at the YSU homepage or may be obtained in the Office of Student Life.

### Academic Grievances

The Undergraduate Student Academic Grievance Procedure provides students with a formal channel through which complaints concerning academic matters may be heard. A student must attempt to resolve the complaint by first discussing the issue with the faculty member. If not resolved at that level, the student should direct his or her complaint to the department chair and, if the complaint is still not resolved, then to the dean of the college. Complaints not resolved following a discussion with the dean will be considered by the associate provost for Academic Administration. Upon his or her review, the associate provost determines whether the complaint is grievable. If so it is presented to the Student Academic Grievance Subcommittee. This committee may mandate a grade change only in cases of academic dishonesty or when the faculty member materially deviates from the course syllabus.

Students wishing to file a grievance should contact the secretary in the provost’s office for an appropriate referral. Further information may be found in Article IX, Section B of *The Code*, which is available online at the YSU homepage or may be obtained in the Office of Student Life.

## STUDENT RECORDS

### Student Name Changes

Students who need to have their official name changed must complete the Student Name Change

form (available at [www.ysu.edu/records](http://www.ysu.edu/records)). Legal documentation (marriage license, passport, divorce document, court order, naturalization papers) must accompany the form. This documentation may also be presented to either the Registrar's or Records office.

### Notification of Rights under FERPA

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. They are:

(1) *The right to inspect and review the student's education records within 45 days of the day the University receives a request for access.*

A student should submit to the registrar, dean, head of the academic department, or other appropriate official, a written request that identifies the record(s) he/she wishes to inspect. The University official will make arrangements for access and notify the student of the time when and the place where the records may be inspected. If the records are not maintained by the University official to whom the request was submitted, such official shall advise the student of the correct official to whom the request should be addressed.

(2) *The right to request the amendment of the student's education records that the student believes are inaccurate, misleading, or otherwise in violation of the student's privacy rights.*

A student should write the University official responsible for the record in question, clearly identifying the part of the record he/she wants changed, and specifying why it is inaccurate, misleading, or otherwise in violation of his/her privacy rights.

If the University decides not to amend the record as requested by the student, the University will notify the student of the decision in writing and advise the student of his/her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.

(3) *The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent.*

Personally identifiable information is information that, if disclosed, would make a student's identity easily traceable, e.g., name, address or social security number. One exception which permits disclosure without consent is disclosure to University officials with legitimate educational interests. A University official is a person employed by Youngstown State University in an administrative, supervisory, academic, research, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the University has contracted (such as an attorney, auditor, or collection agent); a person serving on the Board of Trustees; or

a student or volunteer serving on an official committee, or assisting a University official in performing his/her tasks.

A University official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility for Youngstown State University.

Upon request by another school in which a student seeks or intends to enroll, Youngstown State University also discloses education records without a student's consent to officials of such school.

(4) *The right to prevent the University from disclosing any or all of the information about the student the University has designated as directory information.*

FERPA permits the disclosure of directory information without the consent of the student. Directory information is information contained in a student education record which would not generally be considered harmful or an invasion of privacy if disclosed. Youngstown State University has designated the following types of information as directory information:

- a. name;
- b. address (campus and home);
- c. telephone listing (campus and home);
- d. e-mail address (campus and home);
- e. field of study;
- f. participation in officially recognized activities and sports;
- g. weight and height of members of athletic teams;
- h. dates of attendance and graduation;
- i. degrees, honors, and awards received;
- j. the most recent previous educational institution attended; and
- k. photographic, video or electronic images of student.

Any student wishing to exercise this right must inform the Registrar in writing within the first seven (7) calendar days of any academic semester of the information not to be designated as directory information with respect to that student. If no such written notification is submitted, the University will assume that a student does not object to the release of the directory information. A student's request for such non-disclosure will remain in effect until the student notifies, in writing, the Registrar otherwise.

(5) *The right to file a complaint with the U.S. Department of Education concerning alleged failures by Youngstown State University to comply with the requirements of FERPA.*

Colleges and universities can notify parents of any student younger than 21 caught drinking or using illegal drugs. Colleges and universities do not have to hold disciplinary hearings before alerting parents. Colleges and universities can establish their own procedures for deciding when to contact parents and

are not required to notify the student when they have contacted the parents. However, the institutions must keep a record of the disclosures and provide it, upon request, to any student who wishes to know whether his or her parents have already been notified.

To protect the health or safety of a student or other persons, the University may release information from education records to appropriate persons in connection with an emergency if knowledge of the information is necessary to protect the health or safety of the student or other persons.

The name and address of the office that administers FERPA is:

Family Policy Compliance Office  
U.S. Department of Education  
400 Maryland Avenue, S.W.  
Washington, D.C. 20202-5920

Any questions about this notification should be directed to the Registrar.

## GRADUATION REQUIREMENTS

### Catalog of Entry

The *Undergraduate Bulletin* is in effect when a student first enrolls at the university or any one subsequent catalog will be the guide to graduation requirements, provided the student is in continuous attendance and does not change majors.

When a student changes majors, the guide to graduation requirements will be the catalog in effect at the time of change or any one subsequent catalog. Exceptions to this rule include the requirements for the minor and general education requirements. Unless the minor is specified by the new major, a student who has been in continuous enrollment and changes majors can fulfill the requirements for a minor by using the criteria in effect in either the catalog of entry or the catalog in effect at the time of the change in major. See the section on General Education Requirements for the relevant policy on general education.

Readmitted students will use the catalog in effect at their last readmission or any one subsequent catalog as the guide to graduation requirements. Any exceptions to requirements must be approved by the student's department chair and/or college dean. The University reserves the right to change course offerings and academic requirements.

### Candidacy for a Degree

To be eligible for candidacy for any degree, students must fulfill the following three requirements:

**Application.** You must file a Request for Graduation Evaluation form with the dean of your college after the completion of 40 semester hours for the associate and 100 semester hours for the baccalaureate degree.

An Application for Graduation form must be filed by the deadline indicated in the University Academic Calendar published on the YSU website. The form and payment of fee is to be returned to the Office of Student Accounts. The application form is available at the dean's office in your college.

If the student does not graduate at the commencement exercise for which the application has been filed, the application must be reactivated with the appropriate dean. It is the student's responsibility to make certain all degree requirements are complete. The student must fulfill the: 1) University-wide, 2) college, and 3) departmental requirements as well as the minimum credit hours.

**Residency.** The last 20 semester hours leading to an associate degree and the last 30 semester hours leading to a baccalaureate degree must be completed at Youngstown State University. (In the pre-forestry, pre-law, and pre-medical curricula, however, which allow the student to earn final credit hours in absentia, the last 30 semester hours prior to the period of absence must be spent at Youngstown State University.) A minimum of 16 semester hours in the concentration area for the associate degree, and a minimum of 16 hours of credits in the major in the baccalaureate degree, must be earned in residence. A minimum of 21 semester hours of upper-division credit for the baccalaureate degree must be earned in residence. Exceptions must be approved by the Office of the Provost. Additional requirements may be specified by individual colleges.

**Grades.** The cumulative point average must be at least 2.00 (see The Point Average and Scholastic Standing) at the time candidacy is approved and at the time the degree is granted.

Additional requirements for the associate or baccalaureate degree appear on the following pages.

### Baccalaureate Degree

A *minimum* of 124 semester hours must be successfully completed to earn a bachelor's degree. In addition to requirements stated under Candidacy for a Degree, the following requirements must also be fulfilled for a baccalaureate degree:

**Course Levels.** At least 60 semester hours must be completed in courses numbered 2600 or higher; at least 48 of these 60 hours must be in courses numbered 3700 or higher.

**Majors.** Each student must complete a major. A department major consists of at least 30 semester hours of an approved set of courses. A combined major, in which courses are given by more than one department, consists of at least 48 semester hours. All grades in the major must be "C" or better.

Each department determines the course requirements for its own major or majors. Responsibility for certifying that a student has completed a major rests with the chairperson of the major department. The student may be required to do more than the minimum stated in the preceding paragraph.

As soon as a student has decided on a major, he or she should consult with the department chair of the major department. A major must be declared by the time a student has completed 63 semester hours. Early consultation with the department chair is strongly recommended, since in some departments the student must begin coursework related to the major during the freshman year or risk a delay in graduation.

**Minors.** A minor is an intellectual venture that broadens and deepens the student's intellectual growth. An intellectual framework and coherence are evident in the scope and sequence of the minor course of study. A minor is intended to contrast with or deepen the major or General Education and is to be taken in a discipline other than that of the major. In approved interdisciplinary minors, courses from the student's major discipline can be counted in the minor provided that the same courses are not counted toward the major. Each student must complete a minor, unless the student has a combined major or is enrolled in a professional or technical curriculum that does not require a delineated minor. Check with an academic advisor for specific information.

A minor consists of at least 18 hours of an approved set of courses. All grades in the minor must be "C" or better. Courses taken under the Credit/No Credit option may not be counted toward the minor. Upper-division courses must comprise at least 1/3 of the credit hours in the minor. An individualized minor may be developed and approved through the Individualized Curriculum Process (ICP). Transfer students may also use the ICP process for approval of a minor course of study. An official minor is designated on the student's transcript at the time the degree is awarded.

Each department develops the specific pattern or sequence of courses for any minor(s) it offers. However, the department in which the student receives the major is responsible for certifying that a student has completed a minor. Certification will be guided by the description of minors published in the *Undergraduate Bulletin*. For a list of minors and their requirements see Minor Areas of Study, p. 242.

### Certificates

A certificate identifies a concentration of study in an academic area. There are a limited number of academic areas where certificates are available, and students should consult the program descriptions for this information. All grades for the certificate must be "C" or better.

### Associate Degree

A *minimum* of 64 semester hours must be successfully completed in order to earn an associate degree. Students in associate degree programs must take a minimum of six general education courses, including Writing I and Writing II, and four additional courses selected from at least three of the following areas: mathematics, speech, natural science, arts and

humanities, social science, or social and personal awareness. No more than one course counted toward the requirement may be in mathematics. Students should check with their departments to see if certain general education courses are mandated by their program.

## GENERAL EDUCATION REQUIREMENTS

Note: Students admitted to YSU in Fall 2012 or later must meet the following general education requirements. Students admitted prior to Fall 2012 can meet either the following requirements or the requirements that were in place between Fall 2000 and Summer 2012. Students admitted prior to Fall 2012 should consult with an academic advisor when selecting which set of requirements they will meet.

### Goals

The general education program at YSU is designed to help students achieve the following five goals:

- Students will demonstrate the ability to write and speak effectively, reason quantitatively, and think critically so they are prepared to perform appropriately in their professions upon graduation. These skills will be applied in the major and culminate in the successful completion of a senior capstone project.
- Students will demonstrate understanding of the basic facts, principles, theories, and methods of science. Students will demonstrate the interdependence of science and technology and the influence of science and technology on society.
- Students will interpret significant writings and works of art, with a focus on aesthetics, historical responses, and the nature of the human condition.
- Students will demonstrate understanding of the development, diversity, and complexity of human behavior, institutions, and culture.
- Students will demonstrate understanding in any of the following critical areas of contemporary life: Domestic Diversity, International Perspectives, Sustainability, and Wellbeing.

### Learning Outcomes

To assist students in achieving the goals, the courses included in the general education model incorporate some combination of the following learning outcomes:

#### Core Competencies Learning Outcomes:

- Students will demonstrate the ability to write and speak effectively, develop sound arguments, and derive justified conclusions.
- Students will demonstrate the ability to reason using quantitative data, and students will demonstrate use of mathematical methods and concepts in both abstract and concrete contexts.



- Students will demonstrate the ability to reason critically and identify credible sources.

### Knowledge Domain Learning Outcomes:

#### Natural Sciences

- Students will successfully perform an experiment to test a hypothesis including the collection and analysis of data.
- Students will demonstrate the knowledge and application of scientific principles.
- Students will use and interpret formulas, graphs, and tables.
- Students will demonstrate understanding of the interactions of science, technology and society.

#### Arts and Humanities

- Students will analyze and evaluate the elements and the personal and societal impact of multiple types of literary and artistic expressions.
- Students will demonstrate awareness of ethical or cultural values in shaping the human experience.

#### Social Sciences

- Students will demonstrate understanding of the contexts and development of human cultures and institutions.
- Students will demonstrate understanding of individual and social behavior.
- Students will demonstrate an understanding of methodologies used in the social sciences.

#### Social and Personal Awareness

- Domestic Diversity—Students will demonstrate knowledge of the experiences of different groups within the United States where those groups are defined by class, ethnicity, race, religion, disability, sex, or sexual orientation.
- International Perspectives—Students will demonstrate knowledge of the artistic, social, economic, or political life of communities outside the United States.
- Environmental Sustainability—Students will demonstrate understanding of contemporary concerns regarding the environmental sustainability of social, economic, public policy and technological systems and practices.
- Wellbeing—Students will demonstrate understanding of and appreciation for the relationship between personal behaviors and lifelong health and wellness.

## Baccalaureate Degree General Education Requirements

### A. Core Competencies

#### 1) Writing

To learn the skills of effective writing, students will take two courses: Writing 1 (ENGL 1550)—the standard introductory writing course—and Writing 2 (ENGL 1551)—a course in which students investigate a thematic topic; gather evidence from the library, Internet, or other appropriate sources; and write a research paper using a computer.

#### 2) Speaking

To become effective speakers, students will take Communication Foundations, CMST 1545.

#### 3) Critical Thinking

The critical-thinking learning outcome will be met through your major's curriculum.

#### 4) Mathematics

Students must take at least one approved course that teaches mathematical and statistical skills. A student may satisfy this requirement by passing an approved course, or by passing a higher-level mathematics course. The current approved courses are MATH 2623 and MATH 2625, Survey of Mathematics. The substitute courses include:

MATH 1552, Applied Mathematics for Management

MATH 1570, Applied Calculus 1

MATH 1571, Calculus 1

MATH 1572, Calculus 2

MATH 1581H, Biomathematics 2

MATH 1585H, Calculus Honors 1

MATH 2652, Mathematics for Early Childhood Teachers 2

MATH 2665, Foundations of Middle School Mathematics 2

MATH 2670, Applied Calculus 2

MATH 2686H, Calculus Honors 2

PHIL 2619, Introduction to Logic

Students who have taken MATH 1549 (College Business Mathematics 2), which is no longer being offered, have satisfied the mathematics requirement.

### B. Knowledge Domains

To become more well-rounded members of the community, students are required to take a total of nine courses from the four knowledge domains. The coursework gives students exposure to fields of study outside their majors. Students are required to take two courses in each of the four domains (Arts and Humanities, Natural Science, Social Science, and Social and Personal Awareness) and one general education elective from any of the four domains. At least one of the Natural Science courses must include a laboratory component.

### C. Capstone

All majors require a capstone course. In the capstone course students are required to demonstrate knowledge in their major as well as their ability to communicate in writing, their oral communication skills, and their ability to reason critically.

**General Education Requirements Summary**

**Core Competencies**

Writing.....	2 courses
Speech.....	1 course
Mathematics .....	1 course

**Knowledge Domains**

Arts and Humanities.....	2 courses
Natural Science ..2 courses (1 must include a lab)	
Social Science.....	2 courses
Social and Personal Awareness.....	2 courses
General Education Elective .....	1 course
Capstone .....	1 course
<b>Total.....</b>	<b>14 courses</b>

**Associate Degree General Education Requirements**

The general education requirements vary by degree; the requirements for each associate degree are listed in the appropriate college section. All associate degrees require the completion of a minimum of six courses. The six courses must include Writing I & II (ENGL 1550 and 1551) and four additional courses from at least three of the following areas: mathematics, speech, natural science, arts and humanities, social science, and social and personal awareness. No more than one course counted toward the requirement may be in mathematics. Students should consult with their department to see if any general education courses are mandated by their program. All students in associate degree programs who, based on the Math Placement Test, are placed in the developmental math course (MATH 1501) will be required to complete that course to graduate.

**General Education Courses by Knowledge Domain**

Courses in italics are cross-listed in two domains.

Courses with an \* are part of the Ohio Transfer Module. See p. 19.

**Arts and Humanities**

- AFST 2601: Introduction to Africana Studies II\**
- Art 1540: Masterpieces of World Art\**
- ART 1541: Survey of Art History 1\*
- ART 1542: Survey of Art History 2\**
- DNCE 2698: Survey of Dance (formerly THTR 2698)\*
- ENGL 1590: Introduction to Literature
- ENGL 2603: Journalism Ethics and Social Responsibility\*
- ENGL 2605: Journalism as Literature (also listed as JOUR 2605)
- ENGL 2610: World Literature\**
- ENGL 2617: Women in Literature\**
- ENGL 2618: American Literature and Diversity\**
- ENGL 2631: Mythology in Literature\*
- ENGL 2665: Introduction to Film Study\*
- FNLG 2610: Foreign Film*
- JOUR 2605: Journalism as Literature (also listed as ENGL 2605)
- MUED 2621: Musical Literature and Appreciation\**

- MUHL 2616: Survey of Jazz\*
- MUHL 2617: Film Music\*
- MUHL 2618: Rock 'n Roll to Rock\*
- MUHL 2622: Title: Popular Music in America\*
- MUHL 3771: Music History and Literature 1
- MUHL 3772: Music History and Literature 2
- MUHL 3773: Music History and Literature 3
- MUHL 3774: Music History and Literature 4
- PHIL 2600: Introduction to Philosophy
- PHIL 2608: The Examined Life
- PHIL 2609: Technology and Human Values\*
- PHIL 2610: Global Ethics (also listed as REL 2610)
- PHIL 2616: Character and Virtue†
- PHIL 2625: Introduction to Professional Ethics\*†
- PHIL 2626: Engineering Ethics†
- PHIL 2627 (formerly 3723): Law and Criminal Justice Ethics†
- PHIL 2628: Business Ethics†
- PHIL 2630: Critical Thinking
- PHIL 3711: General Ethics
- PHIL 3760: Ethics of War and Peace
- REL 2601: Introduction to World Religions*
- REL 2605: Myth, Symbol, and Ritual
- REL 2610: Global Ethics (also listed as PHIL 2610)
- REL 2617: Introduction to Eastern Religions*
- REL 2621: Religion and Moral Issues\*
- REL 2631: Religion and the Earth*
- THTR 1512: Survey of Musical Theater
- THTR 1560: Understanding Theater\*
- THTR 1590: History of Motion Pictures\*
- THTR 2690: The Art of Motion Pictures\*

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†All of these courses deal with an area of professional ethics; only one course in this group can be counted towards general education credit.

**Natural Sciences**

- ASTR 1504: Descriptive Astronomy\*
- BIOL 1505: Biology and the Modern World\*
- CHEM 1500: Chemistry in Modern Living\*
- ENST 1500: Introduction to Environmental Science\**
- GEOG 1503: Physical Geography\*
- GEOG 2630: Weather
- GEOL 1500: Environmental Geology*
- GEOL 1504: The Dynamic Earth\*
- GEOL 1505: Physical Geology\*
- GEOL 2602: Introduction to Oceanography
- PHYS 1500: Conceptual Physics\*
- PHYS 2608: Sound

The following courses were designed for science, engineering, and health science majors. Students should consult their advisor before selecting them.

- BIOL 1545: Allied Health Anatomy/Physiology\*
- BIOL 1551: Anatomy & Physiology I\*
- BIOL 1552: Anatomy & Physiology II\*
- BIOL 2601: General Biology: Molecules and Cells\*
- BIOL 2602: General Biology: Organisms and Ecology\*
- CHEM 1505: Allied Health Chemistry I\*
- CHEM 1506: Allied Health Chemistry II\*
- CHEM 1515: General Chemistry I\*
- CHEM 1516: General Chemistry II\*
- GEOL 2611: Geology for Engineers
- PHYS 1501: Fundamentals of Physics I\*

PHYS 1502: Fundamentals of Physics II\*  
 PHYS 2601: General Physics for Applied Medical Studies I\*  
 PHYS 2602: General Physics for Applied Medical Studies II\*  
 PHYS 2607: Physical Science for Early & Middle Childhood Education  
 PHYS 2610: General Physics I\*  
 PHYS 2611: General Physics II\*

### Social Science

AFST 2600: *Introduction to Africana Studies I*  
 AMER 2601: *American Identity*  
 AMER 2605: *Turning points in U.S. History 1 (also listed as HIST 2605)*  
 AMER 2606: *Turning Points in U.S. History II (also listed as HIST 2606)*  
 AMER 2610: *Work and Class in American Culture*  
 ANTH 1500 (formerly 2602): *Introduction to Anthropology*  
 ANTH 1503: *The Rise and Fall of Civilizations*  
 CJFS 1500: *Introduction to Criminal Justice*  
 ECON 1501: *Economics in Action\*††*  
 ECON 1502: *Panic and Prosperity: U.S. Economic Policy Since the Great Depression\**  
 ECON 1503: *Rich and Poor: Diversity and Disparity in the U.S. Workplace\**  
 ECON 2610: *Principles of Microeconomics\*††*  
 ECON 2630: *Principles of Macroeconomics\**  
 ENGL 2651: *Introduction to Language*  
 GEOG 2626: *World Geography\**  
 GEOG 2640: *Human Geography\**  
 GEOG 2650: *Global Economic Landscapes\**  
 GERO 1501: *Introduction to Gerontology*  
 GERO 3703: *Aging and Society (also listed as SOC 3703)*  
 HIST 1500: *Discovering World History*  
 HIST 1501: *American Dreams*  
 HIST 1511: *World Civilizations to 1500\**  
 HIST 1512: *World Civilizations since 1500\**  
 HIST 2605: *Turning points in U.S. History 1 (also listed as AMER 2605)\**  
 HIST 2606: *Turning Points in U.S. History II (also listed as AMER 2606)\**  
 PHLT 1531: *Fundamentals of Public Health*  
 POL 1550: *Politics and Globalization\**  
 POL 1560: *American Government\**  
 POL 2640: *Comparative World Government\**  
 PSYC 1560: *General Psychology*  
 PSYC 3700: *Social Psychology*  
 PSYC 3755: *Child Development*  
 PSYC 3758: *Lifespan Development*  
 SOC 1500: *Introduction to Sociology\**  
 SOC 2601: *Social Problems*  
 SOC 3703: *Aging and Society (also listed as GERO 3703)*  
 TCOM 1595 *Survey of American Mass Communication\**  
 WMST 2601: *Introduction to Women's Studies\**

††ECON 1501 and ECON 2610 cannot both be used for general education credit; students can only count one of the two.

Courses with an \* are part of the Ohio Transfer Module. See p. 19.

### Social and Personal Awareness

#### Domestic Diversity

AFST 2600: *Introduction to Africana Studies I\**  
 AFST 2601: *Introduction to Africana Studies II*  
 AMER 2601: *American Identity*  
 AMER 2606: *Turning Points in U.S. History II (also listed as HIST 2606)*  
 CMST 2610: *Intercultural Communication*  
 ENGL 2617: *Women in Literature\**  
 ENGL 2618: *American Literature and Diversity\**  
 ENGL 2651: *Introduction to Language*  
 HIST 2606: *Turning Points in U.S. History II (also listed as AMER 2606)*  
 SOC 2690: *Identities and Differences*  
 WMST 2601: *Introduction to Women's Studies\**

#### Environmental Sustainability

ENST 1500: *Introduction to Environmental Science*  
 GEOL 1500: *Environmental Geology*  
 PHIL 3727: *Environmental Ethics*  
 REL 2631: *Religion and the Earth\**

#### International Perspectives

Art 1540: *Masterpieces of World Art*  
 ART 1542: *Survey of Art History 2*  
 ENGL 2610: *World Literature*  
 FNLG 2610: *Foreign Film*  
 GEOG 2626: *World Geography*  
 GEOG 2640: *Human Geography*  
 GEOG 2650: *Global Economic Landscapes*  
 HIST 1500: *Discovering World History*  
 HIST 1512: *World Civilizations since 1500*  
 MUED 2621: *Musical Literature and Appreciation\**  
 POL 1550: *Politics and Globalization*  
 POL 2640: *Comparative World Government*  
 REL 2601: *Introduction to World Religions*  
 REL 2617: *Introduction to Eastern Religions*

#### Wellbeing

COUN 1587: *Introduction to Health and Wellness in Contemporary Society*  
 FNUT 1551: *Normal Nutrition*  
 GERO 3703: *Aging and Society (also listed as SOC 3703)*  
 GERO 3745: *Sociology of Health, Illness, and Health Care (also listed as SOC 3745)*  
 HPES 1500: *Physical Activity Core Concepts (two 1-hour physical activity courses must be taken with this course)*  
 PHLT 1531: *Fundamentals of Public Health*  
 PHLT 1568: *Healthy Lifestyles (formerly HSC 1568)*  
 PSYC 2692: *Human Sexuality*  
 PSYC 3707: *Psychology of Intimate Relationships*  
 PSYC 3758: *Lifespan Development*  
 SOC 3703: *Aging and Society (also listed as GERO 3703)*  
 SOC 3745: *Sociology of Health, Illness, and Health Care (also listed as GERO 3745)*

### General Education and Transfer Students

**Transfer students with a bachelor's degree.** Students with a bachelor's degree from a regionally accredited institution in the United States seeking an additional baccalaureate degree do not have to

complete the YSU general education requirements. Students will need to take general education courses required for their major.

**Transfer students without a bachelor's degree.** All transfer students without a bachelor's degree from a regionally accredited institution in the United States must complete the general education requirements. Students should consult with an academic advisor to discuss the coursework they need to complete the YSU general education requirements. See the Transfer Credit section of this bulletin for additional information.

## COMMENCEMENT

There are four graduation ceremonies each year: fall commencement is held in December, at the end of the first semester of the academic year; spring commencement, undergraduate and graduate ceremonies are held in May, at the end of the second semester of the academic year; and summer commencement is held in August, at the end of the summer sessions.

## STUDENT SERVICES

### Marion G. Resch Center for Student Progress

The Center for Student Progress, located below the Youngstown State University Bookstore, is available to assist students in successfully completing their University experience. The Center is designed to intervene actively in the lives of students to help them achieve academic and social success in college. In an effort to cultivate the skills of new students, expand the skills of developing students, and enhance the skills of exceptional students, the CSP (which can be found on the web at [web.yosu.edu/csp](http://web.yosu.edu/csp)) offers the following services and programs:

#### Adult Learner Services

The CSP/Adult Learner Services assists adult students in making the transition to and graduating from college. Adult students are defined as those who are 25 years of age or older, or who have been out of school four years or more. The CSP/Adult Learner Services provides academic and personal support both individually and through programming with services such as:

- Math classes for adult students
- Study and learning skills workshops
- Adult peer mentoring
- Early warning progress reports
- Time management and goal setting for adults
- Connections with adult learner groups on campus

More CSP/Adult Learner Services information is available by following the Adult Learner link at [http://web.yosu.edu/gen/ysu/Adult\\_Learner\\_Services\\_m692.html](http://web.yosu.edu/gen/ysu/Adult_Learner_Services_m692.html), or by phone at 330-941-3538.

## Disability Services

CSP/Disability Services provides students, faculty, and staff with assistance and information regarding accommodations for people with disabilities, either permanent or temporary. Compliance with the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 involves providing reasonable accommodations to qualified individuals with disabilities. These accommodations are provided in order to ensure equal access to people with disabilities regarding educational opportunities, programs, and activities.

The CSP/Disability Services addresses the needs of students with disabilities. Support for academic success includes:

- Serving as the gateway for accommodations for YSU students with disabilities
- Providing accommodation information
- Collaborating with faculty/staff regarding issues involving students with disabilities
- Arranging for classroom modifications for students with disabilities to allow equal educational access
- Making campus referrals/connections

To inquire about receiving disability services, please contact the office at 330-941-1372 (voice), 866-757-1353 (video), or 330-941-7470 (fax). A confidential appointment will be set up to discuss accommodation needs. The CSP/Disability Services is located at 275 Fifth Avenue.

Additional information about the CSP/Disability Services may be found by following the CSP/Disability Services link at: [http://web.yosu.edu/gen/ysu/Disability\\_Services\\_m695.html](http://web.yosu.edu/gen/ysu/Disability_Services_m695.html), or by phone at 330-941-1372.

#### First-Year Student Services

The CSP/First-Year Student Services helps students become familiar with YSU, build confidence, develop direction, and identify opportunities that assist in achieving personal goals. CSP/First-Year Student Services provides all first-year and transfer students with the opportunity for an orientation program throughout the entire first year of college. Peer Assistants, upper-class students who are specially trained, serve as guides and friends to assist new students with time management, goal setting, navigating on campus, social adjustment, academic development, registration, and obtaining a faculty/staff mentor. First-year students receive individualized assistance through the development of a personalized plan to guide them through their first year of college. Services include:

- Peer assistance
- Early warning progress reports
- Various social and academic activities
- Connections and information for parents

The CSP/First-Year Student Services also provides a continuous opportunity for parents and family to stay connected with information about YSU and their students' first year through the Penguin Parent E-mail and Penguin Parent website which can be found at: [http://web.ysu.edu/gen/ysu/Penguin\\_Parent\\_Family\\_Home\\_Page\\_m1529.html](http://web.ysu.edu/gen/ysu/Penguin_Parent_Family_Home_Page_m1529.html).

More information about CSP/First-Year Student Services may be found at: [http://web.ysu.edu/gen/ysu/FirstYear\\_Student\\_Services\\_m690.html](http://web.ysu.edu/gen/ysu/FirstYear_Student_Services_m690.html), or by phone at 330-941-3538.

### Individual Intervention Services

The CSP/Individual Intervention Services offers professional coordinators to assist students on a one-on-one basis with strategies for college success. Coordinators provide on-site assistance, make campus referrals, and follow-up to ensure students receive all the University support available. More CSP/Individual Intervention information is available through links provided at [http://web.ysu.edu/gen/ysu/Individual\\_Intervention\\_Services\\_m691.html](http://web.ysu.edu/gen/ysu/Individual_Intervention_Services_m691.html), or by phone at 330-941-3538.

### Multicultural Student Services

The CSP/Multicultural Student Services provides the following services and programs to African American, Hispanic, Asian American, and Native American students:

- Academic support
- Workshops
- Faculty/staff mentoring
- Campus referrals and connections
- Early warning progress reports
- Co-sponsoring of cultural events
- Advocating for minority students
- Summer Bridge and Bridge and Beyond Learning Community

Information on Multicultural Student Services is available [http://web.ysu.edu/gen/ysu/Multicultural\\_Student\\_Services\\_m693.html](http://web.ysu.edu/gen/ysu/Multicultural_Student_Services_m693.html) at, or by phone at 330-941-3538.

### Orientation Services

The CSP /Orientation Services realizes that the first year of college is a time of rapid change and new experiences. The CSP/Orientation Services helps students become familiar with Youngstown State University and gives them an edge in achieving their education and social goals. Services include:

- Building confidence, developing direction and identifying opportunities
- Supporting students in their transition to YSU
- Promoting knowledge of campus activities and services that encourage academic achievement and personal growth

- Interacting with faculty, staff, and student representatives
- Receiving academic advisement, selection, and registration of courses
- Providing official information on students' undergraduate programs, rights and responsibilities
- Parent and family member programming

These services are explained at <http://web.ysu.edu/csp/orientation>. For additional information, call 330-941-2103.

### Student Tutorial Services

The CSP/Student Tutorial Services provides support for academic success by offering:

- Regularly scheduled individual and group tutoring sessions
- Independent study materials
- Computer-assisted instruction
- Review sessions for exams
- Academic support through tutoring in a variety of courses

Additional information on CSP/Student Tutorial Services as well as a tutorial schedule are available at: [http://web.ysu.edu/gen/ysu/Student\\_Tutorial\\_Services\\_m694.html](http://web.ysu.edu/gen/ysu/Student_Tutorial_Services_m694.html), or by phone at 330-941-7253.

### Supplemental Instruction Services

The CSP/Supplemental Instruction Services (SI) offers a series of weekly review sessions for students taking selected courses. Availability of SI is announced in the classroom at the beginning of each semester. SI is provided for all students in these classes who want to improve their understanding of course material and improve their grades. SI attendance is voluntary. For students, it's a chance to get together with classmates to compare notes, discuss important concepts, develop strategies for studying the subject, and take part in practice tests. At each session, the student SI leader, who attends the class and facilitates the session, will guide students through this material. The SI leader has previously taken the class and has received preparation to share information about both course content and learning strategies. There is a link for CSP/Supplemental Instruction at [http://web.ysu.edu/gen/ysu/Supplemental\\_Instruction\\_Services\\_m696.html](http://web.ysu.edu/gen/ysu/Supplemental_Instruction_Services_m696.html). For additional information, call 330-941-7253.

## Career and Counseling Services

### Career Services

Your connection to careers and employment opportunities begins with the Office of Career and Counseling Services. This office provides comprehensive career planning/exploration and job search services to students and alumni in all areas of career

decision-making and the professional job search. Students are encouraged to become familiar with Career and Counseling Services early in their course of study in order to fully utilize and benefit from available services and resources.

Services and resources available to students include: individual career and job search consultation; computerized interactive career planning software for assistance with individual academic/career planning; job postings from hundreds of local, regional, and national employers; a comprehensive career resource information center; employment search skill development programs and workshops offered each semester; an on-campus recruiting program which annually brings employer organizations to the YSU campus to interview graduating students for employment after graduation; and annual career/job fairs and consortium job fairs.

Central to the operation of the Office of Career and Counseling Services is *PenguinLink* (software by Symplicity), a totally web-based software system that makes it possible for currently enrolled students, YSU alumni, and employers to have 24-hour-a-day/7-day-a-week access to recruiting information and services at Youngstown State University. Through *PenguinLink*, students and alumni registered with Career and Counseling Services can upload their resumes to the database and publish their resumes to one or more online resume books, search job listings and email resumes directly to employers, quickly view the latest announcements from our office, and review the recruiting schedule and sign up for interviews with employers recruiting on campus.

### Counseling Services

Juggling life's responsibilities is a challenge that causes many individuals to feel anxious, confused, or overwhelmed at times. Youngstown State University Counseling Services provides a comfortable environment in which to discuss and address problems and possible solutions. Short-term counseling, consultation, and referral services are provided to currently enrolled students, and there is no fee for services. Issues commonly addressed during individual counseling sessions include: depression, anxiety, relationship problems, low self-esteem, school and work problems, eating disorders, and loss and grief issues.

The Office of Career and Counseling Services is located in 1034 Jones Hall. The office hours are 8:00 am – 5:00 p.m. on Mondays through Fridays. Our phone number is 330-941-3515, and our web site address is [web.ysu.edu/careerservices](http://web.ysu.edu/careerservices).

### Office of Veterans Affairs

Located in Tod Hall, the Office of Veterans Affairs (OVA) serves as a central location to discuss issues, questions, or concerns current and prospective students may have regarding their enrollment. The university recognizes the sacrifice of military service and waives the undergraduate application and new

students orientation fees for all veterans and current military. To have the application fee waived, the applicant must apply through the OVA with a printed-out undergraduate application form and verification of honorable service in the armed forces of the United States.

After their initial registration, all former and current military personnel will receive priority registration notification for their second term.

Filing with the Veterans Affairs Office also qualifies students for enrollment into certain sections of General Education Required (GERs) classes set aside for current or prior service members only.

The OVA also works with the Office of Veterans Affairs Advisory Council, an independent body that guides and supports the university's efforts to serve those who have or are serving in the armed forces. The Council is a representative body drawn from faculty, students, staff, the community and the YSU Board of Trustees.

Students and all interested parties can contact the Council and the OVA by visiting our web site at [web.ysu.edu/veterans](http://web.ysu.edu/veterans) and clicking on the Advisory link, emailing us at [veterans@ysu.edu](mailto:veterans@ysu.edu), or calling the office at 330-941-2503 or 2523. Individual person-to-person meetings are encouraged.

### Kilcawley Center

Since its opening in April 1974, Kilcawley Center has served as the heart of campus. This not only refers to its central location on campus, but to the many services, conveniences, programs, and amenities it provides to the University community. The Center's casual atmosphere, comfortable lounges, and attractive dining areas focus on making free-time activity an integral part of a YSU education. Through cultural, social, and recreational programming, Kilcawley Center provides for rich and diverse experiences. For YSU students. Visit Kilcawley's web site at [www.kc.ysu.edu](http://www.kc.ysu.edu) for details on Kilcawley's services, hours of operation, staff directory, the daily calendar of events, and student job postings.

Kilcawley Center's study lounges are renowned for their comfortable overstuffed chairs and couches that are perfect for studying, relaxing or napping. The lounges and restaurant dining areas in Kilcawley Center provide high-speed wireless Internet access. The Center offers convenient banking at a Home Savings & Loan branch office and ATM machine, ComDoc copy services, as well as offices for Student Government and student organizations. Kilcawley Center houses sixteen seminar rooms, two computer-training classrooms, and a large multi-purpose room. On a daily basis these rooms host luncheons, workshops, seminars, lectures, organization meetings, and programs.

Graphic Services, located on the lower level of the Center, designs flyers, banners, posters, brochures, and graphics to fit whatever the need may be.

Graphic Services is open Monday-Friday and offers a lamination service and a variety of helium balloons to suit any occasion.

On the upper level of Kilcawley is the YSU Info & PC Lab, where students can find popular software programs on the PCs and access to the Internet. A small fee is charged for printouts. The YSU Info & PC Lab serves as the information center and lost & found for the University, registers students for campus locker rentals, provides estimates for Kilcawley Resume and Typing Service, and offers for purchase 24-hour campus wireless access (ATT) cards. A fax service is also available and includes international faxing.

Kilcawley Center offers diverse choices in dining. Located on the lower level of Kilcawley are YSU Wendy's, the KC Food Court—which includes Denny's Fresh Express, Jump Asian Express, and Pennyguins—the Candy Counter, Simply to Go, and the HUB, featuring Dunkin Donuts and SubConnection. On the upper level of Kilcawley is Pete's Place Restaurant.

The Kilcawley Candy Counter is a popular place for quick snacks, along with U.S. postage stamps and single-dose healthcare items.

Adding Pete's Points to your YSU ID card will allow you to debit your purchase at ANY Kilcawley dining location including the Kilcawley Candy Counter and the YSU Bookstore C-store. Pete's Points are also accepted at many nearby locations both on and off campus and are listed at [times2dine.ysu.edu](http://times2dine.ysu.edu). Stop in the Kilcawley Center Staff Office to add Pete's Points to your card. A \$25 minimum deposit is required, payable in cash, credit card, or personal check.

Campus Meal Plans are available for purchase and are offered with a variety of dining options. A meal plan brochure is available at <http://mealplans.ysu.edu> or stop in the Kilcawley Center Staff office for a copy. If you have meal plan questions, or wish to purchase a meal plan for the semester, visit the Card Office located in the Kilcawley Center Staff Office or call 330.941.2513. Cash, credit card, or check is accepted.

Sodexo Dining Services is located on the upper level of Kilcawley Center near the Student Government offices. Sodexo provides a full catering menu for small group functions to large dinner buffets for up to 450 people. For information call 330.941.3391.

The YSU Bookstore is located on the upper level of Kilcawley Center; along with the convenience store (C-store), and the offices of Student Life, Student Government, Student Diversity Programs, and Student Programming/Greek Life/Homecoming. The Andrews Student Recreation and Wellness Center can also be accessed from the upper level of Kilcawley Center.

Kilcawley Center's lower level west wing, located under the YSU Bookstore, houses the Center for Stu-

dent Progress. The east wing of Kilcawley Center is Kilcawley House, where the Office of Housing and Residence Life and the Student Health Clinic are located on the first floor.

## Ombudsperson

Youngstown State University's ombudsperson provides students with an experienced staff member who can answer questions, help mediate disputes, solve problems, explain policies, and recommend changes in University policies and procedures that may be outdated or ineffective. Available during regular office hours in the student affairs office in Tod Hall, the ombudsperson serves as an advocate, a confidant, a mediator, a helper, and a listener. Visit <http://ombuds.ysu.edu/> for more details.

## Student Health Clinic

The Student Health Clinic is located on the first floor of Kilcawley House, which is adjacent to Kilcawley Center. The entrance to the Clinic is located off University Plaza.

The Clinic provides health care to all currently enrolled YSU students—both resident and commuter students. Licensed physicians staff the Health Clinic twelve (12) hours per week during the semester. Appointments are required. Students must call 330-941-3489 to schedule an appointment. During break weeks and summer term, physicians have limited hours; however, registered nurses are available daily, year round.

Health care is available for illness, injury, first aid, and routine health checks. Health screening tests, physical exams for sports and academic programs, gynecological exams, as well as consultations and referrals, are provided. Flu and other immunizations are also given; however, there are charges for these injections.

Office visits are free. Students do not need to have student health insurance to use the Clinic's services. Blood tests, x-rays, lab tests, etc., ordered by a YSU Health Clinic physician are done off campus at the student's choice of provider and at the student's expense.

Student records are kept strictly confidential. Information cannot be released to anyone without the written consent of the student. Certain public health diseases, however, must be reported to the Department of Health as required by law.

The Student Health Clinic also provides information for Student Health Insurance. Details concerning the policy are available by stopping in or calling the Health Clinic office or on the web page.

## Student Health Insurance

The University makes a health insurance policy available to students who qualify. Details are available from the YSU Student Health Clinic webpage at <http://healthclinic.ysu.edu/>. Click on insurance.

## Day Care

Students who have younger children may wish to place them in on-campus childcare centers.

Wee Care Day Care and Learning Centre is the official provider of childcare services to Youngstown State University students, faculty, staff, and alumni. It has a professionally trained staff that takes care of children ages six weeks to 10 years. The Centre is located in Fedor Hall and is open from 5 a.m. to 11:30 p.m. The phone number is 330-941-2936.

Wee Care is equipped with 24-hour-a-day video monitoring and a very strict sign-in and sign-out policy. Besides the convenience of its location and the quality of its program, students especially like the flexible scheduling options.

Students may also be eligible for child care through the Mahoning County Educational Service Center, which has day care facilities throughout Mahoning County, including one on the YSU campus. Please call 330-965-7828 for more information.

Partial reimbursement is also available to University students for licensed off-campus day care facilities. Contact the Office of Financial Aid and Scholarships at 330-941-3501 for more information.

## ACADEMIC RESOURCES

### The Writing Center

The YSU Writing Center is operated by the Department of English to provide individualized instruction in writing for all students. The goal of the Center is to help clients become more independent, confident, and successful writers. The Writing Center staff includes faculty, graduate assistants or interns, undergraduates, and a full-time coordinator.

Services include one-to-one feedback on any writing task, at any stage, for any course, as well as peer-group reviews, workshops, and access to instructional handouts. The services offered by the YSU Writing Center are free of charge to all registered YSU students.

The Writing Center is located on the lower level of Maag Library, Room 171. Writing Center hours are Monday through Thursday 9 a.m. – 5 p.m., and Friday 10 a.m. – 1 p.m. Students can schedule appointments through WOnline at <http://ysu.mywconline.com>. Consultants are also available for walk-in sessions on a first-come, first-served basis. Evening, weekend, and satellite hours at Stambaugh Stadium and the YSU Metro College at Southwoods vary by semester.

For more information about the Writing Center, please call 330-941-3055, or visit [web.ysu.edu/writingcenter](http://web.ysu.edu/writingcenter) or e-mail [wcenter@ysu.edu](mailto:wcenter@ysu.edu). Appointments outside regular hours, online advice for distance-learning students, and extended sessions for papers longer than 10 pages (i.e. capstone projects) can also be arranged.

### Mathematics Assistance Center

The Mathematics Assistance Center (MAC) is an academic support service integrated with the Department of Mathematics and Statistics. Its mission is to offer YSU students assistance in the strengthening of their fundamental mathematics skills necessary for success in the study of mathematics. This mission is accomplished through services provided such as one-on-one or group tutoring and the provision of resource materials for independent study.

The MAC has many services available to currently enrolled YSU students. The main service, tutoring, is provided to students currently enrolled in mathematics courses ranging from elementary algebraic modeling through calculus. In addition, other services such as computer-assisted instruction, video-based instruction, mathematics course solutions manuals, some mathematics “hand-outs” for selected topics, and specific workshops (offered as needed and as resources permit) are available to any currently enrolled YSU student.

The Mathematics Assistance Center (MAC) operates on a **walk-in** basis during business hours (listed below) at its location in Room 408, Lincoln Building. The staff of the MAC consists of a coordinator, assistant to the coordinator, graduate and undergraduate tutors, and student office assistants.

For any additional information, call the Mathematics Assistance Center (MAC) at 330-941-3274. Hours for fall and spring semesters: Monday through Thursday, 9:00 a.m. to 5:00 p.m., and Friday, 9:00 a.m. to 3:00 p.m. For summer hours, call the MAC.

### Reading and Study Skills Center

The Reading and Study Skills Center provides individualized and course instruction in improving reading rate and comprehension as well as enhancing strategies for studying at the college level. Staffed by instructors, graduate students, undergraduate peer tutors, an administrative assistant, and a coordinator, the Reading and Study Skills Center primarily maintains classes and tutoring sessions for RSS 1510A, 1510B and 1510C—courses students may be mandated to take based on the COMPASS® Reading Test (CRT). Additional services include individual tutoring, college success workshops, and assistance with preparation for standardized tests such as PRAXIS, MCAT and GRE. Students may call or visit our website to schedule an appointment for individual tutoring or to view the semester calendar of free workshops.

The services offered by the Reading and Study Skills Center are free of charge to all registered YSU students. The Center is located in the lower level of Maag Library and is open from 8:00 a.m. to 6:00 p.m., Monday and Wednesday; 8:00 am to 5:00 p.m., Tuesday and Thursday; and 8:00 a.m. to 3:00 p.m., Friday. For more information contact the Reading



and Study Skills Center, telephone 330-941-3099, e-mail [rdgstudyskillsctr@ysu.edu](mailto:rdgstudyskillsctr@ysu.edu), or visit the website: [www.ysu.edu/rdg-studyskills](http://www.ysu.edu/rdg-studyskills).

## Maag Library

The six-story William F. Maag Library is an attractive, comfortable, yet technically advanced, environment for study and research at the center of the YSU campus. Maag Library provides comprehensive information services as well as access to information in print, analog, micro and digital formats. A professional staff provides in-depth assistance in a wide variety of disciplines. Maag Library is open for on-site use more than 80 hours per week during the term. Virtual access to library services, the on-line catalog, and direct digital information resources is available via MaagNet, [www.maag.ysu.edu](http://www.maag.ysu.edu), providing constant access from home or office.

Maag Library is a member of OhioLINK, a state-wide library and information network linking the libraries of all of Ohio's public and private colleges and universities. OhioLINK provides straightforward, easy access to a combined collection of over 39 million items. The vast majority of this state-wide collection is open to patron-initiated borrowing with rapid delivery to any member site. The network also provides access to over 100 indexing and abstracting databases in a wide variety of disciplines and direct access to the full text of over 8000 scholarly journals. OhioLink currently provides direct Internet access to a wide variety of audio, visual, and primary-source materials.

Maag Library itself offers instructional and research materials in books, periodicals, microforms, CD/DVD, and sound recordings to a combined catalog of over 1.5 million records. These holdings number close to 100,000 government documents (with access to millions on-line), 700,000 bound volumes, and 900,000 microforms. Periodicals, microforms, and micro-readers are housed on the third floor. Copiers are available for self-service. User service points such as reference and circulation, as well as most staff offices, are conveniently located on the Library's entrance floor. The book collection is in open stacks, with split-level design between stack and reading areas. Study rooms and carrels are located on five of the floors.

Maag Library houses contemporary computer workstations, connected to a high-speed network, located throughout the building. The fourth floor of Maag houses a general-purpose productivity computer lab that is open to faculty and students as many hours as the library is open. Moreover, laptop computers with wireless network connections can be checked out for use anywhere in the library. In addition, any YSU faculty, staff or student with a wireless device is able to connect to the Maag wireless hubs.

Two group study rooms on the fourth floor offer unique accommodations including multiple

presentation viewing for laptops and improved wireless connections. Rooms can be checked out at the circulation desk.

In 2004 Maag Library initiated the development of the Archives and Special Collections unit. Located on the fifth floor of Maag, this unit not only collects and preserves documents detailing the history of YSU and its environs but also is developing the capacity to provide searchable Internet access to its entire collection. The Maag Multi-Media Center on the third floor contains over 20,000 phonograph recordings, audio and video tapes as well as audio and data disks. The collection is strong in recordings of opera, jazz, and the collected works of J.S. Bach. A significant effort is currently underway to digitize most of the collection's analog recordings.

The Curriculum Resource Center (CRC) located in the Beeghly Hall College of Education is also a vibrant part of Maag Library, offering curriculum materials and support for students in education.

The lower level of Maag Library houses the Writing Center, The Reading and Study Skills Center, the English Language Institute, and the Center for Communication Excellence.

## Information Technology Services

YSU's technology services departments include Computer Services, Media & Academic Computing, and Network Telecommunications & Security. Providing services to meet technology needs for students, faculty, and staff, Computer Services and Network Telecommunications & Security occupy the fourth floor of Meshel Hall while Media & Academic Computing is located in the basement of Cushman Hall. As part of Media & Academic Computing but serving as the initial point of contact for technology customer support needs, the Tech Desk is housed on the fourth floor of Maag Library. Electronics Maintenance Services is located on the third floor of Moser Hall.

Computer Services supports both academic and administrative needs through delivery and maintenance of the SunGard Datatel+SGHE Banner ERP software suite. Media & Academic Computing consists of Academic Computing, Classroom Technology Support (including multimedia), Electronics Maintenance Services (including electronic equipment used in teaching and research labs), Instructional Technology Center, providing the University community with training and support in the use of educational technology, Interactive Distance Learning, Media Design, and the YSU Tech Desk. The Tech Desk provides first-level technical support of all the YSU computer systems and helps faculty, staff, and students with password-related problems, assists students with installing "academic-related" software, and configuring their PCs to connect to the YSU network. Network Telecommunication supports YSU Network Internet access, including access for all residence hall rooms.

More than 4,000 online technology devices, including personal computers, printers, and multimedia systems are located on campus. Personal computers are available on campus for instruction and research. Currently, more than 80 labs exist within the 14 campus buildings and the suburban Metropolitan College site. A comprehensive list of all computer labs and the hardware and software they contain can be found at <http://www.as.yzu.edu/~maclabs>. Selected classrooms are equipped with fiber optic access to facilitate broadcast quality, full-motion video distribution, and distance-learning opportunities. Networked personal computers allow access to local software, as well as to other facilities on campus, such as Maag Library, and to the Internet.

The YSU Network provides faculty, staff, and students the opportunity to access networks and current-generation computer hardware and software via a high-speed network infrastructure. A Virtual Private Network (VPN) is provided for remote access to campus. All campus buildings are linked to fiber network backbone consisting high-availability core switches; 100Mb Ethernet is available to the desktop using Category 5 copper cabling. A campus-wide wireless network provides mobility for students and employees. AT&T Wi-Fi services are also available for visitors. The MyYSU portal extends email, calendaring and collaboration services to students, faculty, staff, and University guests.

## Laboratories

In addition to the Computer Center, Youngstown State University offers students a wide range of up-to-date laboratories and equipment across campus.

Located in DeBartolo Hall, the **Language Learning Resource Center** is a state-of-the-art foreign language lab facility designed for both classroom use and individual study in second-language acquisition and the study of foreign languages, literatures, and cultures.

The LLRC audio lab was completely renovated and remodeled in 2009. The new audio lab carrels are equipped with the most current digital Sanako hardware for language learning and the Sanako Duo software, a digital two-track interactive audio recorder. The audio lab, which is reserved for foreign language study, has 30 student stations each equipped with Dell personal computers with CD-RW/DVD-ROM combo drives, Windows Office 2007, and Tandberg Educational headphones. With Sanako, a digital audio or video file may be played back from a program track while students simultaneously record their response on the student track. The LLRC computer lab has an additional 50 student Dell personal computers and is an open lab when not in use for a class. Student assistants are hired to assist with the various types of equipment and to tutor the languages taught at YSU.

In the **psychology laboratories**, located in the basement of DeBartolo Hall, students can learn basic techniques of experimental psychology, child

psychology, social psychology, and survey research. Equipment includes an electromagnetically isolated room, animal housing areas, a child observation room, equipment for the control of animal behavior, and various physiological recording devices.

The **anthropology and archaeology laboratory** has a wide range of specialized equipment: including standards for the parameters of a biological profile (age, sex, ancestry and stature), statistical analysis packages for biological anthropology research, anthropometry instruments, and archaeology research tools.

The **Department of English has eight computer labs** in DeBartolo Hall primarily for the use of students enrolled in English composition and professional writing and editing classes, one lab for journalism classes in Fedor Hall, and one Writing Center lab in Maag Library.

Computer facilities in the new **Williamson Hall** include three networked computer labs with direct internet access and laser printers. A Financial Service Lab and Professional Sales Lab are also available. Specialized software used in business courses is also available.

In **Cushwa Hall, laboratories** are provided for radio broadcasting, physical therapy, dental hygiene, microbiology, nursing, criminal justice, medical technology, respiratory care, human ecology, clothing and textiles, medical assisting, and paramedical science.

Laboratories in Moser Hall are described in the College of Science, Technology, Engineering, and Mathematics section of the catalog.

## YSU Bookstore

The YSU Bookstore, located between Kilcawley Center and the Andrews Recreation and Wellness Center, is YSU's only official bookstore. The YSU Bookstore is your source for all of your course needs at competitive low prices.

The YSU Bookstore's website, [www.ysubookstore.com](http://www.ysubookstore.com), lets students compare our textbook prices alongside those of other leading online retailers. If you decide to shop elsewhere, you can do so directly from our site. There are disadvantages of ordering from other sources; those reasons are listed on our site. The YSU Bookstore can only guarantee purchases from our store, not from these other sources. When you shop with us, you are protected by our refund policy.

Among the services the bookstore provides is textbook rental—hundreds of titles are available to rent each semester—offering significant upfront savings. The Bookstore also offers a free reservation (pick-up) service for textbooks during reservation program dates. And for books purchased, the bookstore provides a book buyback program at the end of the semester where cash back is paid to students for titles in demand by our campus as well as other campuses.

The YSU Bookstore is not just about textbooks – it offers a wide array of quality YSU official apparel, gifts and supplies.

Students, alumni, and friends can shop anywhere anytime, including from their mobile phones.

## Comprehensive Testing Center

The Comprehensive Testing Center is a part of the Division of Student Affairs. Among the testing services provided are administrations of national admission and certification examination. These include the American College Test (ACT), the Graduate Record Exam (GRE) Subject Test, the Miller Analogies Test (MAT), the Law School Admissions Test (LSAT), and the PRAXIS exam.

Additionally, YSU's computer-based placement testing is administered through this office. Placement tests are administered year-round in both group and individual sessions.

General and vocational-interest examinations for guidance purposes are available on campus. Current YSU students wishing to take such tests may make arrangements with the University's Career and Counseling Center.

## Center for International Studies and Programs (CISP)

The Center for International Studies and Programs (CISP) is an integral part of the Division of Academic Affairs and is responsible for coordinating the international dimensions of the university, including international student and faculty services, study abroad and exchange programs, and the English Language Institute. For more information on studying abroad and about the English Language Institute, visit <http://www.ysu.edu/EngIns>.

### International Undergraduate Admission

Applicants who are not U.S. citizens or legal permanent residents should apply for undergraduate admission through the Center for International Studies and Programs (CISP). For an application form and more information about international undergraduate admission, please visit the CISP website at <http://www.ysu.edu/cisp/>. Those wishing to enroll in the English Language Institute (ELI) also apply directly to the CISP. For more information about admission, see International Undergraduate Applicants on p. 20-22; for more information about the ELI, see p. 75.

### International Student and Faculty Services

CISP coordinates international student recruitment and admission, the international student health insurance program, and the Stephen and Brigitta Hanzeley International Student Scholarship. The CISP also provides immigration-related services for international students, faculty, and staff. For more

information about requirements for enrolled international students, see Requirements for Nonimmigrant Students on p. 38.

### International Student Association (ISA)

Originally founded in 1958 as the International Student Federation, the purpose of ISA is:

- To promote positive interactions among U.S. American and International students;
- To increase awareness of international cultures at Youngstown State University and in the Youngstown community;
- To be a place where international students can find common ground;
- To support international students at Youngstown State University.

## HOUSING & RESIDENCE LIFE

### University Housing

YSU owns and operates five housing facilities for students: Kilcawley House, located on University Plaza; Lyden House and Cafaro House on Madison Avenue; and Wick House and Weller House on Wick Avenue. On-campus options for students range from traditional residence hall facilities to apartment-style housing.

On-campus living provides students many advantages and opportunities. University housing facilities are structured environments. Each is a small community, and as such, has procedures and regulations addressing such things as noise, safety, guests and security. University residence halls have full-time professional and part-time student staff that oversee the operation of the halls and assist students with the challenges of daily college life. Each facility has state-of-the-art building security systems. On-campus living is a good place to get to know many students in a short period of time. Sharing bathrooms, lounge space, and corridors with a group means you can't help but make friends quickly. Being on campus also means that classes, the library, the student center and the wellness center are never very far away.

### Kilcawley House

Kilcawley House was constructed in 1965. This seven-story building can accommodate 224 students. Kilcawley residents live in double-occupancy rooms, complete with bunk beds, wall-to-wall carpeting, built-in desks, cable TV, Internet access, and plenty of closet and drawer space. Rooms feature separate room-controlled heating and air conditioning. Lounges and study areas are available on each floor. A computer lab with Internet access is located in the basement. The basement also contains a TV lounge, a game room equipped with ping-pong and pool tables, a kitchen with vending machines, fitness equipment, a 24-hour study area and two music

practice rooms. Its residents have the advantage of being located in the heart of the YSU campus, and can use all of Kilcawley Center's facilities, including Home Savings & Loan Bank, computer center, and copying service, without going outdoors.

## Lyden House

When Lyden House opened in the fall of 1990, a new era began for on-campus housing at Youngstown State. The impressive five-story structure reflects a traditional collegiate gothic style with clean, contemporary lines.

Lyden House, located just north of campus along Madison Avenue, houses 300 students. A typical student room is approximately 12' x 17' and houses two students. In addition to a bunk bed, which can be stacked or separated, each student has a desk and chair, a dresser, a shelving unit and an armoire wardrobe unit. The furniture is uniquely designed to interchange to suit the individual student's tastes in personal decor.

Rooms also feature separate room-controlled heating and air conditioning units, cable TV, vertical window blinds, overhead lighting and tiled floors. Each room has high-speed Internet access. All rooms in Lyden are designed to be handicapped accessible.

Each wing of this beautifully designed residence hall includes convenient shower and restrooms, quiet study rooms, and comfortable conversation lounges. Students have full access to a kitchenette/vending area, fitness room, computer lab with Internet access and laundry facilities in the lower level of Lyden. A convenient parking area is also available adjacent to Lyden House.

## Cafaro House Honors Residence

Cafaro House, our newest residential honors facility, is coed, housing 274 students. The facility, which opened fall 1995, houses participants in the University Scholars Program, BSMD program, Honors Program, and the Emerging Leader Community.

Enclosed suites rather than traditional rooms accommodate 4-18 residents, with individual rooms branching off each suite area to house 2-3 residents. Each room has cable TV, and high-speed Internet access.

In addition to providing a variety of lounge and recreational spaces similar to Kilcawley and Lyden, this facility also has academic spaces such as a seminar room, computer lab, and music practice rooms.

## Weller House

Weller House is located along Wick Avenue next to the Arms Family Museum of Local History and near the Butler Institute of American Art. Weller House accommodates 19 upperclass, junior, senior

and graduate residents. Furnishings provided for each student are similar to those previously listed for Lyden House residents.

Weller House opened in fall 1991, offering apartment-style on-campus living, each unit having a full bathroom with tub and/or shower, a kitchen, high-speed Internet access, cable TV, an electric range, refrigerator/freezer, garbage disposal and a dining table. Apartments vary in size and are designed to accommodate one to three students.

Weller also offers students a comfortable, group lounge with convenient laundry facilities on the lower level.

## Wick House

Located on Wick Avenue adjacent to Weller House, Wick House is a restored mansion that was at one time the home of the Wick family. This residence hall offers unique living spaces for 36 upperclass residents. Rooms vary in size and design, accommodating one to three residents, and several rooms offer private bathrooms. Rooms are furnished with beds, desks, and wardrobes similar to those found in Lyden House.

Wick House provides a kitchenette and large lounge on the first floor and laundry facilities in the basement. Ample parking is available adjacent to the building.

## Christman Dining Commons

The Christman Dining Commons opened for fall 1991, and serves students with an on-campus resident meal card or on a per-meal cash basis. The Commons is located adjacent to both Lyden House and Cafaro House and is easily accessible from Elm Street, Madison Avenue, and Custer Street.

This gracious single-floor dining facility architecturally complements Lyden and Cafaro Houses, seats 300 and will serve over 600 per meal.

The Commons offers a wide variety of menu options to campus residents, from self-serve cold foods, beverages, and snack selections to staff-served grille specialties and hot entrees.

Various meal plans are also available to those current students not living in University-owned facilities.

## Application for Housing

Applications are available online at <http://housing.yosu.edu/application> If you indicate an interest in housing on your application for admission, an information packet will be sent to you.

In order to be accepted for University Housing a student must first be admitted to the University. Space is allocated on a first-come first-served basis. If you have not yet applied to the University, contact the Office of Admissions at 330-941-2000.

## University Housing Partners

### University Courtyard Apartments

New for the fall of 2003 were the University Courtyard Apartments. Independently operated, these are an ideal option for students wishing to live close to campus but not in a University residence hall. The University Courtyard Apartments are located in the Wick Oval, just minutes away from the center of campus and adjacent to Bliss Hall, home of the College of Fine and Performing Arts. There are 1, 2 or 4 bedroom apartments available, and each apartment comes equipped with ceiling fans, wall-to-wall carpet, appliances—including dishwasher and microwave—garbage disposal, and mini-blinds. In addition, every apartment comes fully furnished. In the apartment complex, there are planned resident activities, a study center—including a computer lab—and a choice of fitness and recreation opportunities. The rent for the apartments is all-inclusive, which means the residents pay one amount for everything—central heat and air, electricity, water and sewer, local telephone, high-speed Internet access, and basic cable TV. Complete with a comprehensive safety and security plan, the University Courtyard Apartments provide an ideal way to “study hard and to live easy.”

### Buechner Hall

Buechner Hall, a privately owned and operated women’s residence hall, is located near the center of campus. Although this facility is not operated by Housing Services, cooperation and regular communication ensure that the women residents are integrated into campus life.

Designed and built expressly for women, Buechner Hall is operated by the Buechner Foundation, a private, not-for-profit corporation, and is maintained by funds from the original bequest. The Foundation partially underwrites every resident’s cost. Located on the YSU campus, Buechner Hall houses 72 women in single and double rooms. The air-conditioned rooms are completely furnished, including linens and telephones, and are cleaned weekly by the house-keeping staff. The dining room provides 15 home-cooked meals a week, and weekend cooking facilities are also available. The building has an elevator and sprinkler system, and laundry facilities on each floor. Staff and security guards provide maximum 24-hour security service. A beautiful and immaculately maintained building, Buechner Hall is conducive to a quiet study environment. It is located at 620 Bryson Street, Youngstown, OH 44502 330-744-5361.

## Independent Living

Off-campus housing is an attractive option for many students. In the greater Youngstown area, there is a wide variety of apartments, houses, and rooms for rent at surprisingly reasonable rates. Much of this housing is within walking distance to campus, so students without their own automobile are able to

take advantage of it. Many students with transportation opt to live further from campus.

Whatever kind of housing you are interested in, please contact the Office of Housing & Residence Life at 330-941-3547 for more information.

## Lockers

Campus lockers are available in Bliss Hall, Moser Hall and Cushwa Hall at a cost of \$25. A lock is included with the fee. The university assumes no responsibility for property stored in the locker, and all items must be removed at the end of each academic year. Details and rentals are available at the YSU Info & PC Lab located on upper level of Kilcawley Center or at 330-941-3516.

## CAMPUS SAFETY

### University Police Department

A well-trained and well-equipped campus police force is maintained by Youngstown State University. The department is located in Clingan Waddell Hall at the corner of Fifth Avenue and Wood Street.

The staff consists of 23 sworn police officers, 6 support employees, and an intermittent staff of 150 sworn officers. The department is a personal-service, technology-efficient law enforcement unit. The staff is supported by a sophisticated communication system, closed circuit television, well-equipped cruiser/patrol vehicles, and computer-based record keeping.

The training of departmental personnel is ongoing, and crime prevention is a departmental priority. Some officers are members of the Mahoning Valley Law Enforcement Task Force. This participation results in the availability of additional police resources for the University community.

The University Police Department is open 24 hours a day. The general business telephone number is 330-941-3527. The emergency service number is extension 911. Campus emergency telephones are located throughout campus that will connect you directly to the YSU Police Department in the event of an emergency.

All students are encouraged to program the YSU Police Department phone number (330-941-3527) into their cell phones for immediate contact with a YSU Police Dispatcher when a campus phone is not available or convenient.

## Campus Safety Statistics

Youngstown State University has an outstanding record of safety on campus. For a detailed description of campus safety measures and FBI Uniform Crime Report statistics, see the publication *Annual Campus Safety and Fire Report*, available from YSU Police, the Vice President for Student Affairs, or from the campus crime-prevention boards located in all campus buildings.

**Campus Crime Alerts, as well as other information regarding campus safety, can be viewed at the department website: <http://www.yсу.edu/police>.**

## Emergency Notification System

The University has in place an emergency notification system that instantly reaches cell phones and other mobile devices when an urgent campus situation needs to be communicated. In the event of an emergency, a text message is sent to the mobile number and/or email registered with the system.

Students must register at <http://alert.yсу.edu> to receive emergency notifications. Parents and family of students may also sign up at the same website to receive alerts.

## Student Security Service (SSS)

SSS is a free service provided by specially trained YSU student employees who will accompany students, faculty, and staff safely anywhere on campus. During the hours of operation, you can be escorted to the near North Side if an officer is also available to assist with the escort. Student Security Service aides are available Monday through Thursday from 7:00 a.m. to 11:00 p.m., on Friday from 7:00 a.m. to 7:00 p.m., and Saturday from 8 a.m. to 2 p.m., every day school is in session. The exception is summer semester and during breaks, when escorts are available from 7:00 am to 7:00 p.m. Monday through Friday. Those with disabilities who need assistance are encouraged to make special arrangements to be safely escorted to any location on campus, day or night. Call 330-941-1515 for more information or to schedule an escort. After hours, on holidays and weekends, call the YSU Police Department at 330-941-3527 if you need assistance.

## PARKING

Parking for students, faculty, and staff is available close to all major campus buildings. You must secure a parking permit on either a semester or a daily basis to be able to park in these lots. You may order your parking permit online through the MyYSU Portal and it will be mailed to you the next business day.

Some short-term metered parking is available on the streets surrounding campus and beside Meshel Hall.

Parking areas are designated as follows:

M—Mixed Parking (faculty, staff, and students)

R—Resident Parking

F—Faculty/Staff Parking

Parking facilities for students include two parking decks and specified surface lots. Although some lots are designated for faculty/staff parking during the day, after 4:30 p.m. daily, most F-lots become mixed (except the F-1 lot on University Plaza).

Street parking is under the jurisdiction of the city of Youngstown. Tickets received for street parking violations must be appealed to the city. For more information call the Parking Office at 330-941-3546.

The current parking regulations brochure contains additional information about University-controlled parking. The brochure is available from Parking Services in Room 2000, 318 Fifth Avenue or on the YSU web page, [www.yсу.edu/parking](http://www.yсу.edu/parking).

For information on registration of vehicles and applicable fees, see the Fees and Expenses section of this catalog.

## Motorists' Assistance Program

Parking Services offers on-campus help with jump starts and lockouts to anyone with a valid YSU parking permit. The MAP will also lend out lug wrenches, jack stands, and gas cans. To contact the MAP program and shuttle service call 330-941-3051 or stop at any staffed parking booth.

## STUDENT ACTIVITIES

Youngstown State University offers a broad range of campus activities geared to enriching and expanding the student experience beyond the classroom. Participating in student government, intramurals, student publications, art and music groups, and student organizations give students opportunities to make new friends; meet people from backgrounds, cultures, and perspectives different from their own; develop leadership skills; and balance the demands of university life with the need for relaxation and recreation.

### Penguin Productions

Penguin Productions is a student group under the Division of Student Affairs charged with assessing, initiating, implementing, and evaluating major events for almost 14,000 students on the campus of Youngstown State University.

Penguin Productions conducts campus-wide assessments of students' entertainment interests and identifies possible performers and venues. Performers such as Elton John, Korn, Sugarland, and Danity Kane have come to campus or the downtown Covelli Centre.

Working with Penguin Productions carries no academic credit or pay, but participants get a behind-the-scenes look at events planning, concert staging, ticket management, and other concert business, including meeting the performers.

For more information about upcoming events or becoming a Penguin Productions board member, please call 330-941-2242.

## Student Organizations

There are over 165 student organizations ranging from academic and social awareness to cultural, Greek, and Student Government. You are invited to take the first step and discover something that engages your interests. Student organization mailboxes are located in the Student Activities Office, Room 2100, Kilcawley Center.

The following is a partial list of the organizations available at YSU. For a complete searchable listing of registered student organizations at YSU, go to <http://web.ysu.edu/studentorganizations/>.

Alpha Kappa Alpha Sorority  
 Alpha Phi Delta Fraternity  
 Alpha Kappa Mu (AKM) (Honor Society)  
 Alpha Omicron Pi Sorority  
 Alpha Phi Sigma (AFS)  
 Alpha Psi Omega (Honorary Dramatics Society)  
 Alpha Xi Delta Sorority (AXD)  
 American Institute of Chemical Engineers  
 American Marketing Association  
 American Society of Civil Engineers  
 American Society of Mechanical Engineers  
 Anthropology Colloquium  
 Beta Alpha Psi (Honor Society)  
 Campus Crusade for Christ  
 Catholic Student Association  
 Chi Sigma Iota (CSI) (Counseling Honor Society)  
 College Democrats  
 Dana Flute Society  
 Dance Club  
 Dance Ensemble  
 Delta Zeta Sorority  
 Early Childhood Association (YSU ECA)  
 Economics Club  
 Environmental and Animal Rights Coalition  
 Environmental Studies Society  
 Exercise Science Club  
 Food and Nutrition Students  
 Golden Key National Honor Society  
 Greek Campus Life  
 Guitar Association  
 Habitat for Humanity  
 Ice Hockey Club  
 Institute of Industrial Engineers  
 Interfraternity Council

Jazz Society  
 Kappa Delta Pi (KDP)  
 Lacrosse Club Team (Club Sports)  
 National Pan Hellenic Council (NPHC)  
 New Music Society  
 Ohio Collegiate Music Educators Association  
 Omicron Delta Kappa (ODK)  
 Omega Psi Phi Fraternity  
 Pan-African Student Union  
 Panhellenic Council  
 Phi Alpha Theta (National Honor Society)  
 Phi Kappa Phi (National Honor Society)  
 Phi Kappa Tau Fraternity (OKT)  
 Pre-Medical Society  
 Protestant Campus Ministry  
 Roller Derby Club  
 Rookery Radio  
 Rugby Club  
 Sigma Alpha Epsilon Fraternity (SAE)  
 Sigma Chi Fraternity (SC)  
 Sigma Tau Gamma Fraternity (STG)  
 Society of Success and Leadership (SAL)  
 Society of Women Engineers  
 Spanish Club  
 Spanish Club (Los Buenos Veciños)  
 Speech Team  
 Student American Dental Hygienists Association (SADHA)  
 Student Athlete Advisory Committee (SAAC)  
 Student Organization for Respiratory Care  
 Student Physical Therapy Association  
 Student Social Work Association  
 Students In Fashion and Interiors  
 Students In Free Enterprise (SIFE)  
 Tau Kappa Epsilon Fraternity  
 YSUnity: A Gay-Straight Alliance  
 Zeta Tau Alpha Sorority  
 Zeta Phi Beta Sorority

## Greek Life

Greek Life at YSU affords students the opportunity to gain leadership experience and develop a positive social outlet. There are 12 Interfraternity, NPHC, and Panhellenic groups from which to choose.

## Andrews Student Recreation and Wellness Center

The Department of Campus Recreation is located in the Andrews Student Recreation and Wellness Center. This state-of-the-art facility contains more than 140 pieces of strength and conditioning equipment. Located near the free-weight and cardio area is the Center's impressive rock wall, at 53 feet Ohio's tallest. Volleyball, basketball, and other activities are situated within the multi-purpose sports forum, which contains four courts. The spacious aerobic studios are home to many group exercise classes and are adjacent to the 1/8-mile indoor track, both on the top floor of the facility.

The Andrews Center also includes a tranquil meditation studio, full-functioning locker rooms, and the Wellness Resource Center. In addition to the Andrews Student Recreation and Wellness Center, the Department supervises programs in Beeghly Physical Education Center, Stambaugh Stadium, and the outdoor complex.

Participants must have a valid YSU ID card to use the facilities, equipment, services, and programs offered by the Department of Campus Recreation.

The Department is one of the most popular places on campus to be employed. If you are interested in applying for a position, complete the department application found online at [www.ysu.edu/reccenter/](http://www.ysu.edu/reccenter/). Submit a cover letter and resumé to the Department of Campus Recreation administration office, located in the Andrews Student Recreation and Wellness Center.

For additional information about the Department of Campus Recreation, please contact 330-941-3488 or visit: [www.ysu.edu/reccenter/](http://www.ysu.edu/reccenter/).

## Student Government

The student body of Youngstown State University is represented by Student Government, which operates under constitutional powers granted by the University. The legislative branch of Student Government is composed of representatives from the six undergraduate colleges and the School of Graduate Studies and Research, in proportion to the enrollment of each. All meetings of student government representatives are open to the student body.

Student Government exercises the power to conduct student elections, to recommend students to serve as members of joint faculty-student committees, and to supervise programs financed from its operating budget.

Student Government selects nominees for the two student positions of the University Board of Trustees.

## Student Publications

The University supports two student publications that provide an avenue for students to express their literary and artistic talents. Policies and procedures concerning student publications are prepared, reviewed, and applied by the Student Publications Committee.

*The Jambar* ([www.thejambar.com](http://www.thejambar.com)), a newspaper published twice a week, and *The Penguin Review*, a literary annual, are recognized student publications on campus.

## Theater

All students in the University are invited to participate in theater production. As a cultural offering of the Department of Theater and Dance in the College of Fine and Performing Arts, the University Theater presents four major productions and two second-stage productions during each academic year, plus a dance recital and numerous student-directed one-act plays.

The co-curricular production program is designed to support the theater training mission of the Department. As such, its staged performances reflect a wide range of dramatic expression, from historical masterpieces to representative works from the contemporary theater. Major productions are so selected that during a four-year span at YSU, a theater student will have the opportunity to work on a balanced blend of modern and classical plays and musicals.

Membership in the Eta Phi chapter of Alpha Psi Omega, the country's largest and most active honorary dramatics society, is open to YSU students who distinguish themselves in theater and scholarship.

Major University Theater productions are presented in Bliss Hall, the performing arts complex which contains Ford Theater, a 400-seat standard proscenium theater, and the Spotlight Arena Theater. Besides accommodating major productions, the Spotlight Theater also serves as a laboratory for student-directed plays, acting and oral interpretation recitals, and various workshop activities.

With an emphasis on "learning by doing," YSU theater students apply classroom theories and techniques in numerous campus productions. An active guest-artist program has also brought them into working contact with noted practitioners from the professional world. In the past we have hosted nationally known artists such as playwrights Edward Albee, Robert E. Lee, Karen Sunde, and Barry Stavis; makeup designer Irene Corey; Broadway set and lighting designers Fred Voelpel and David Segal; stage and screen dialect coaches David Stern and Paul Meier; Broadway director Christopher Martin; stage combat masters David Boushey and David Doersch; commedia dell'arte and Lecoq clown teacher Gale McNeeley; choreographer Billy Siegenfeld; and actors Earl Hyman, Neil Vipond, Kate Mulgrew, and Aiden Quinn.



## Musical Organizations

Many campus musical organizations are open to all students of the University. For these, see the Dana School of Music in the College of Fine and Performing Arts section of this *Bulletin*.

## Art Exhibitions

Student and faculty art exhibitions, including two annual graduating BFA exhibitions, are held in the John J. McDonough Museum of Art on the YSU campus. The McDonough Museum also exhibits work of nationally and internationally known artists. The Butler Institute of American Art, a private institution located in the midst of the YSU campus, sponsors two annual competitive exhibitions, the area annual and the national mid-year, to which students are encouraged to submit work. The Bliss Hall Gallery, located on the 2<sup>nd</sup> floor of the College of Fine and Performing Arts' Bliss Hall, is used throughout the year for various student and faculty exhibitions, in addition to exhibitions of visiting artists.

The Student Art Association sponsors an annual exhibition of the work of Youngstown State University students. The work is displayed at the McDonough Museum of Art during the month of April, with awards given from various donors. Other area venues also exhibit student work, such as The Oakland Center for the Arts, Trumbull Art Gallery, and the Art Outreach Gallery at the Eastwood Mall.

## Intercollegiate Athletics

Intercollegiate athletics are conducted at Youngstown State University to meet the needs and interests of the entire student body as spectators or participants in healthful amateur sports. Tryouts are open to any student who qualifies under the Youngstown State University, NCAA, and conference eligibility regulations. Men's teams compete in intercollegiate baseball, basketball, cross country, football, golf, tennis and track and field. Women's intercollegiate teams compete in basketball, cross country, golf, soccer, softball, swimming and diving, tennis, track and field and volleyball.

The University's intercollegiate athletic programs are governed by the National Collegiate Athletic Association (NCAA).

Students are encouraged to participate as athletes, cheerleaders, trainers, managers or scorekeepers in any of the varsity sports. Students who want to try out should contact the head coach of the sport of interest in either Beeghly Center or Stambaugh Stadium.

## Honorary Organizations

Honorary organizations related to academic fields and departments recognize outstanding achievement by University students. Many of these

organizations are local chapters of national honor societies, which provide national recognition and local scholarships.

For more information on honorary organizations in your area of academic concentration, contact the faculty department chairperson of that area, or the Student Activities Office, second floor, Kilcawley Center.

Alpha Epsilon Delta—Honorary Premedical Society

Alpha Kappa Mu—Historically African-American Honor Society

Alpha Lambda Delta—Freshman Honor Society

Alpha Phi Sigma—Criminal Justice Honor Society

Alpha Psi Omega—Drama Honorary

Beta Alpha Psi—Accounting and Finance

Chi Sigma Iota—Counseling Honorary

Eta Sigma Gamma—Health Education Honorary

Golden Key—National Honor Society for achievement in all undergraduate fields of study

Kappa Delta Pi—Education Honor Society

Kappa Omicron Nu—Human Ecology

Lambda Pi Eta—Communications Studies

Order of Omega—Greek Letter Honor Society

Phi Alpha Theta—History Honorary

Phi Epsilon Kappa—Physical Education

Phi Kappa Phi—National Honor Society for achievement in all fields

Pi Mu Epsilon—Mathematics Honorary

Psi Chi—Honorary Psychology

Sigma Alpha Lambda—National Leadership and Honors Organization

Sigma Pi Alpha—Human Resource Management

Tau Beta Pi—Engineering Honor Society

Zeta Phi Alpha—Social Work Honor Society

## YSU Annual Awards

The University has established a series of awards to recognize excellence and to encourage participation in campus life. The awards are presented annually at the Student Activities Awards Banquet in the spring. Each year students, faculty, and staff are invited to nominate outstanding individuals and organizations for these prestigious awards. Selections will be made by a committee composed of students, faculty, and staff. Details regarding this program and the different awards listed below may be obtained from the Student Activities Office.

***President Cynthia E. Anderson Lifetime Achievement Award***

Awarded to a full-time student who has exhibited an extended commitment and dedication to serving the student body through various positions on Student Government.

***Cardinal Newman Service Award***

The Cardinal Newman Award is given to a graduating senior who, through service to the Newman Center, Catholic Student Association, the Youngstown State University as a whole, and to the wider community, has embodied Cardinal Newman's motto, thus allowing their own feats to be spoken to others in service and in recognition of the responsibility we each have to care for our neighbor.

***Constellation Award—Outstanding University-wide Programs***

This award recognizes an outstanding University-wide event sponsored by a registered YSU student organization. The program must be distinguished by its inclusion of the University community and the program's contribution to the quality of student life.

***DeCrane-Houser Award***

Scholarship for a student who has been active at the Newman Center. It is in honor of Arthur DeCrane, who was the first Catholic campus minister for Youngstown College and also for the late Judge William Houser, who was active in the Newman Center while going to school here. Judge Houser's family donated a large sum of money to make this scholarship available upon his death.

***Emerging Leaders Program***

The Emerging Leader Program provides students with an opportunity to develop and refine the knowledge and skills essential to leadership. Students who complete the program receive designation on their official University transcript, cords for their academic regalia, and a YSU Leadership pin.

***Gillespie-Painter Award***

To recognize outstanding achievement in support of the Division of Student Affairs at YSU beyond the scope of assigned duties. All members of the Division of Student Affairs are eligible for this award.

***The John J. Gocala Service Award***

The John J. Gocala Service Award was established by the Student Government Association during the 2008-09 academic year to recognize the commitment and contributions of John J. Gocala during his tenure as YSU Police Chief.

The intent of the award is to recognize one individual within the university community who has gone above and continues to go above and beyond the call of duty to serve the first-class reputation and traditions of Youngstown State University.

The individual must truly work to preserve the best interests of the YSU campus and community.

***Kocinski Award***

The Kocinski Award is given in honor of Marilyn Kocinski, who taught dance at YSU in the Department of Human Performance and Exercise Science from 1960 to 1983.

Her family was responsible for instituting the award in the late 1990s in her memory. The award is presented to a senior student who has played a significant role as a student leader in the YSU Dance Ensemble and who demonstrates academic integrity as well as artistry and creativity in the field of dance.

***Libra Award—Outstanding Advisor***

The Libra Award is presented to the outstanding faculty/staff advisor of a registered student organization. The award is designed to recognize the contributions and commitment to furthering student leadership development made by advisors.

***Dr. Martin T. "Marty" Manning Award***

The Martin T. "Marty" Manning Award, established during the 2010-2011 academic year by the Student Government Association, is in honor of the late Dr. Martin T. "Marty" Manning. The award is in recognition of the superior student mentoring of Dr. Manning.

The award is given to a full- or part-time student, administrator, faculty or staff member, or alumnus/a who has exemplified the student-mentoring capacity that Dr. Manning so consistently displayed throughout his Youngstown State University career.

***Dr. Charles A. McBriarty Award***

This award was established by Student Government during the 1992-93 school year to recognize and remember the commitment and contributions to students and student services by Dr. Charles McBriarty during his tenure as Vice President for Student Affairs. Its intent is to recognize individuals within the university community who have a reputation for being exceptionally student-oriented and who possess the traits, ethics, and friendly style exhibited by Dr. McBriarty.

***Edna K. McDonald Cultural Awareness Award***

Award to recognize an outstanding individual who has made a lasting contribution to encourage and increase awareness of cultural diversity at Youngstown State University. All faculty, staff, students, and members of the extended YSU community are eligible for the award.

***Mentor of the Year***

This award honors the faculty or staff mentor who has contributed the most during the past year to the development of a YSU student.

**Multicultural Student Services Leadership Award**

The Multicultural Student Services Leadership Award recognizes up to two minority students served through the Center for Student Progress who have achieved academic success and demonstrated effective leadership in promoting cultural awareness to the campus and community.

**Orion Award—Outstanding Student Organization**

The Orion Award recognizes an exceptional student organization for its outstanding leadership and service to the University community during the current academic year.

**Smith-Murphy Award**

The award shall be given to one full-time faculty member each year. The recipient shall possess the qualities of Lester Smith and Gratia Murphy and display a genuine concern for the well-being and success of the students he or she teaches.

**Student Government Spirit Award**

Given by Student Government to a member of the campus or Youngstown metropolitan community who has displayed enthusiasm for the work of YSU Student Government over the past academic year.

**Student Service Award**

To recognize an outstanding individual who has demonstrated exceptional commitment to the students of YSU. All faculty, staff (excluding the Division of Student Affairs), and members of the University community are eligible for this award.

**Gina Tenney Memorial Scholarship**

Gina Tenney was one of YSU's best and most dedicated students. Before her tragic death in 1985, Gina had been actively involved in campus life and had achieved excellent academic standing. She served in Student Government and was a student assistant in the Student Services Office. She was also active in the University Theater Department. In honor of Gina's memory, the Gina Tenney Memorial Scholarship Fund was established in January of 1986 by the YSU Student Government.

**YSU Pin**

Begun more than 60 years ago, in 1948, the YSU pin recognizes up to five graduating seniors who have achieved academic success and demonstrated outstanding leadership, motivation, and creativity in University and community activities.

**The Luke N. Zaccaro Award**

The Luke Zaccaro Award is given to a YSU student who may be a member of Student Government. The individual should have done something exceptional for the university, Student Government, or fellow students during the course of the current year.

**Other Awards and Prizes*****The Vindicator Award for Most Well-Rounded Student***

The *Vindicator* Award for Most Well-Rounded Student is one of several awards supported by The *Vindicator*. This award recognizes a single outstanding student whose demonstrated leadership is supported by academic excellence.

***The Greek Campus Life Awards for Scholarship***

Given annually to the fraternity and sorority chapter with the highest aggregate point index and to the member of a fraternity with the highest individual point index, based on the academic work of the previous two semesters. The awards are presented during the spring semester at the annual Greek Sing competition.

***Who's Who Among Students in American Universities and Colleges***

A list of upperclass students and graduate students achieving outstanding academic and curricular records.

**ALUMNI AND EVENTS MANAGEMENT**

Serving a constituency of over 94,000 alumni, the Office of Alumni and Events Management emphasizes a creative, integrated approach to communicating with and fostering and maintaining relationships with all alumni, while upholding academic traditions and the university vision. Alumni and Events Management provides comprehensive programs that allow alumni to become involved in and support the university. Community-wide and nation-wide events coordinated by the office are designed to highlight the value of the university.

The mission of the office is also accomplished through the coordination and facilitation of academic ceremonies that welcome the students to the university, celebrate their accomplishments and scholarship, and honor the culmination of their academic endeavors. These ceremonies build pride in students and alumni members in the success they achieved at YSU.

**CAMPUS FACILITIES****Campus Development**

During its earlier years the institution had a number of homes. Starting in the old Central YMCA building, it occupied various sites on Wick Avenue until the completion of Jones Hall in 1931. Additional buildings have been constructed and nearby properties converted to University use, so that today the campus extends through most of an area five blocks long and four blocks wide, covering almost 150 acres. The University also owns 118.4 acres in Hartford Township.

## All-Sports Complex, Stambaugh Stadium

Located on an 18-acre site adjacent to Beeghly Physical Education Center, the All-Sports Complex includes Arnold D. Stambaugh Stadium and Beede Field, an artificial-turf sports field for football and soccer, with seating for more than 20,630 spectators; officials' dressing rooms; varsity athletic offices; classrooms, racquetball courts, gymnasiums, weight rooms and facilities for various other health and physical education activities.

Atop the stadium and overlooking the city of Youngstown is the DeBartolo Stadium Club. The club provides meeting and dinner/party seating for 220 people and is available to campus and community organizations or individuals. For reservation information, please call the Office of Alumni and Events Management at 330-941-3497.

The complex also includes 10 hard-surfaced and lighted tennis courts.

The Watson And Tressel Training Site (WATTS) is an indoor athletic facility containing a 300-meter competition track, a full-size football field, batting cages, a putting green, and locker rooms. This facility allows for year-round training for all athletic programs, as well as a competition site for the track and field teams.

### Other Sports Facilities

Currently, in addition to Beeghly Center and the All-Sports Complex, the physical education, athletic and intramural programs use the athletic fields and well-equipped sports centers in Mill Creek Park; Evans Field, Cene Park, and Cafaro Field for baseball; Harrison Field in Smoky Hollow and McCune Park for softball; and for other activities, the Holiday Bowl in Struthers, and the Henry Stambaugh Golf Course on Youngstown's North Side, and the par 3 golf course in Mill Creek Park.

## Andrews Student Recreation and Wellness Center

The new Andrews Student Recreation and Wellness Center is described in detail on p. 63.

## Beeghly Hall

The four-story, 96,600 square foot Beeghly Hall opened in the fall of 1998 to serve as the College of Education building.

On the main floor are the main north/south entrance and access, dean's suite, Wilcox Curriculum Resource Center, Child Study Center and the 400-seat multi-purpose and multi-media McKay Auditorium.

The new Beeghly College of Education building includes:

- an interactive distance-learning classroom
- a classroom of the future
- the Center for Teaching and Learning Technology

- Macintosh- and Windows-based computer labs
- the Curriculum Resource Center
- a counseling clinic
- a child-study center
- Testing Office

## Beeghly Physical Education Center

In this building, first occupied in 1972, are the Department of Human Performance and Exercise Science and the Olympic sports offices and facilities. In addition to a gymnasium with seating for over 6,900 spectators and an olympic-size swimming pool, it contains faculty offices; 10 classrooms including 2 laboratories for research and kinesiology; physical education for handicapped; dance studio, a rifle range, and a fitness center.

## Bliss Hall

Housing the College of Fine and Performing Arts, Bliss Hall, completed in 1977, was named in memory of William E. Bliss, a prominent area industrialist. Its facilities include the 390-fixed seat Ford Theater, named for the Ford family; the 248-seat Bliss Recital Hall; an experimental theatre with flexible seating for up to 250; 80 music practice rooms, all equipped with Steinway studio or grand pianos; a Schlicker performance organ and two Flentrop practice organs; 30 faculty office-studios which can be used for music instruction; a band/orchestra room with a library; a photography studio with 32 enlargers; a metals studio; fully equipped drawing, printmaking, sculpture, and painting studios; a MIDI/graphics computer lab; a video editing suite; a Mac-based graphic design laboratory with dye-sublimation printer; ceramics studios with gas, electric, raku, and salt kilns; a complete shop with heavy equipment for working in three-dimensional design; art faculty office-studios; a student lounge/art gallery; and conference and seminar rooms.

Bliss Hall has recently seen major renovations to administrative offices. A new jazz rehearsal room, video production studios, and upgrades to art and sculpture areas were part of same renovation project. Opened in Fall 2005, a painting and sculpture addition included a foundry and metal fabrication, wood shop, sculpture and painting labs, offices, a 3D visualization lab and an exterior work court.

## Cushwa Hall

Opened in 1976, this structure houses the Bitonte College of Health and Human Services, as well as Media and Academic Computing, WYSU-FM, and the Peace Officer Training Academy. One of the largest buildings on campus, it contains 23 classrooms, 43 laboratories, 177 offices, and two lecture halls.

## DeBartolo Hall

First occupied in 1978, DeBartolo Hall houses the departments of Economics, Philosophy and Religious Studies, Political and Social Science, Psychology,

Sociology and Anthropology, and the Africana studies and women's studies programs. Also housed in DeBartolo Hall is the Center for Peace and Conflict Studies. In this six-story structure are over 165 offices for faculty and staff, 5 student lounges and study areas, 15 classrooms, 15 laboratories, a computer terminal room, a 200-seat lecture hall with stage, and special varied laboratories for the Department of Psychology.

### Fedor Hall

Fedor Hall is located on the west side of Elm Street. It was constructed in 1949 and purchased from the Youngstown Board of Education in September 1965. A \$1,100,000 renovation project was completed in 1992. It houses the student newspaper, the Wee Care Day Care Center, the Rich Autism Center, and Youngstown Early College.

### Historic Buildings

Listed in the National Register of Historic Places in recognition of their representing important eras in Youngstown's development, these two buildings are in the Wick Avenue Historical District. Renovation efforts were dedicated to maintaining the visual, architectural and physical character of these structures while recognizing, identifying and preserving their heritage.

**Alumni House** The Office of Alumni and Events Management is housed in the oldest building on campus, built in 1893 and originally the home of the Myron Israel Arms Family. It is located on the corner of Wick Avenue and University Plaza. The YSU Foundation occupies the second floor.

**Coffelt Hall** This two-story brick building, located on the north side of University Plaza, was constructed in 1933, and renovated in 2010 to house the School of Graduate Studies and Research.

### Jones Hall

One of the oldest buildings on the present campus is Howard W. Jones Hall, a limestone structure of conventional tudor style on the northwest corner of Wick and Lincoln avenues. Built in 1931 and long the institution's "main building," it was renamed in 1967 to honor the man whose energy and acumen, during his 36 years as president, brought an embryonic college to membership in the state university system.

The structure was enlarged in 1949 by the addition of the C.J. Strouss Memorial Auditorium, named for the then president of the Strouss-Hirshberg Company, a friend and trustee of the University. In 1978 the interior was completely remodeled to accommodate administrative offices. Jones Hall currently houses the Offices of Career and Counseling Services, Payroll, Accounting, Human Resources, Budget, Enrollment Management, and Records.

### Kilcawley Center

Kilcawley Center is the community center of the University. The Center's facilities and services include numerous dining rooms with a variety of diversified food service programs, lounges, 19 conference and multi-purpose rooms, bank, ATM machine, graphic services, candy counter, copy services, stage and entertainment areas, and a billiards recreation area, as well as a travel agency, FAX service, campus locker rentals, the University's lost and found, and the Center's reservations and conference services office. Kilcawley Center also includes the YSU Bookstore, a computer/word processing access center, U.S. mail drop, stamp machines, campus information center, catering offices, and the Center's staff offices. Student organization mailboxes, and offices for Student Life, Student Government, and student organizations are located in Kilcawley, as are the Center for Student Progress and the Center for International Studies and Programs.

### Lincoln Building

The Lincoln Building houses the Department of Mathematics and Statistics, the Math Assistance Center, and the offices of distance education and Metro Credit, as well as 14 classrooms and four laboratories.

### Maag Library

The University's six-story William F. Maag, Jr., Library, completed in 1976, provides an attractive and comfortable environment for study and research. A member of the Online Computer Library Center (OCLC), Maag Library provides reference and inter-library loan services, CD-ROM as well as online database searching, access to government documents, and other services necessary to the needs of the University community. The University Archives are housed on the 5th floor, and the Tech Desk is located on the 4th floor. The lower level of Maag houses the Writing Center, the Reading and Study Skills Center, and the English Language Institute.

### Melnick Hall

Melnick Hall is the home of The Rose Melnick Medical Museum. The Museum houses thousands of medical artifacts consisting of instruments, equipment, and research materials documenting the history of medicine, dentistry, pharmacy, and nursing with a local focus. The Museum displays permanent and changing exhibits on the history of medicine, offers lectures on various medical topics, and serves as a research facility and gathering place for the medical community and the general public.

### Meshel Hall

Meshel Hall, dedicated January 1986, houses expanded facilities for academic and administrative computer use that broaden Youngstown State University's educational programs. The state-of-the-art center is for instruction, research and application in advanced computer technology that serves the entire University community.

The four-story steel, concrete, stone and glass structure contains 90,100 square feet of space and is located to the west of the Wick Avenue Parking Deck with its main access and entry by the pedestrian walkway over Wick Avenue. The building contains 5 classrooms, 10 specialized computerized laboratories, and 23 faculty offices. The Office of Student Accounts and University Receivables, the Office of Financial Aid and Scholarships, and the Enrollment Center are located on the second floor. The Department of Computer and Information Systems is located on the third floor. The fourth floor houses the University's main computer facilities and Computer Center staff.

### **John J. McDonough Museum of Art**

The John J. McDonough Museum of Art, located on Wick Avenue between Bliss Hall and Meshel Hall, opened for the fall quarter of 1991. The 14,000 sq. ft. multi-level building exhibits faculty and student art work, which in the past has been displayed in the Bliss Art Gallery and the Kilcawley Center Art Gallery. It also exhibits works by artists from other universities as well as local and regional artists, and serves the academic program of the Art Department with shows and competitive exhibits. The museum has the following spaces and functions: installation gallery, traditional galleries, art lecture hall, work/preparation area, storage (vault area), public lobby and restrooms, offices, loading dock and receiving area, and the necessary mechanical and electrical equipment spaces.

### **Moser Hall**

Moser Hall, a five-level structure completed in 1967, houses the College of Science, Technology, Engineering, and Mathematics. In addition to 49 laboratories, 11 classrooms, 2 research and development rooms, 7 conference rooms, and 76 offices, it contains the 200-seat state-of-the-art Schwebel Auditorium. A \$6,873,000 renovation project was completed in fall 1996. Moser Hall also houses the Clarence R. Smith Mineral Museum.

### **Phelps Building**

The Phelps Building, located on the corner of Lincoln Avenue and Phelps Street on campus, houses the Department of Geography, and the Public Service Institute, including the Center for Urban and Regional Studies and the Center for Human Resources Development.

### **Service Buildings**

The buildings at various locations on campus that house specific services include:

**Salata Complex**, located on Rayen and Wood Streets, houses University planning and construction, maintenance, administration staff, Grounds Department staff and equipment, Central Receiving, Key Control, Motor Pool, various repair shops, and Printing Services.

**Central Utility Plant** is located south of the new WATTS Center on the north side of campus. The plant has the capability of producing steam and chilled water for University needs and is distributed through a system of underground tunnels and direct-burial utility lines.

### **Smith Hall**

A medical building purchased in 1992 at 318 Fifth Avenue currently houses the Center for Working Class Studies, American Studies program, and Parking, Janitorial Services, and Recycling.

### **Sweeney Hall**

Sweeney Hall—formerly Dana Hall—a classic one-story building located at the corner of Bryson Street and University Plaza, was constructed in 1908. The building houses the **Sweeney Welcome Center** and the Office of Admissions.

### **Tod Hall**

The University's main administrative offices are in Tod Hall, a former library building built in 1952 and thoroughly renovated in 1978. These offices include those of the President, Provost, Vice President for Finance and Administration, Vice President for Student Affairs, University Development, Grants and Contracts, Associate Degree Programs, Institutional Research, Assessment, University Marketing and Communications, the ASECU Credit Union; Office of Equal Opportunity and Diversity; and the Board of Trustees' meeting room.

### **Ward Beecher Hall**

This building houses the departments of Biology, Chemistry, and Physics and Astronomy. The five-story original unit was constructed in 1958, a major addition was built in 1967, and a small addition comprising chemical storerooms was completed in 1997. It was built with funds contributed by Mahoning Valley Industries and area industrialist Ward Beecher. Presently the building contains 31 laboratories, including a planetarium and a greenhouse, 9 classrooms, 66 academic offices, 53 faculty-research rooms, and a conference-seminar room.

### **Williamson Hall**

Opened in fall, 2010, Williamson Hall houses the Williamson College of Business Administration offices, including the Office of the Dean, Center for Student Services and the Professional Practice Program, the MBA program, and the Lariccia School of Accounting and Finance, the Department of Management, and the Department of Marketing.

In addition, the building houses 14 classrooms, a Financial Services Lab, a Professional Sales and Business Communication Lab, interview rooms, a 200-seat auditorium and a conference center. WCBA student organizations share office space in the building, and students have access to eight student team rooms, three networked computer labs, a quiet study

lounge, and collaborative areas. Williamson Hall is also home to the Center for Nonprofit Leadership, the Williamson Center for International Business, the Nathan and Frances Monus Entrepreneurship Center, the Ohio Small Business Development Center at YSU, and an Executive-on-Campus office. The Gallery of Industry, Business, and Entrepreneurship, a spacious sky-lit atrium, and café with outdoor seating are also part of the 110,000 square feet facility.

LEED certified by the US Green Building Council, Williamson Hall is the first "green" building on the Youngstown State University campus.

## UNIVERSITY/COMMUNITY OUTREACH

### The Public Service Institute

The Public Service Institute was created by the University Board of Trustees in 1985 to coordinate, promote, and stimulate public service programs and activities offered by the University to the community.

At present, the Institute consists of the Center for Urban and Regional Studies and the Center for Human Services Development.

The Institute works with community organizations, as well as with University departments, to facilitate the extension of University resources into the community where they might be needed. In order to accomplish this, the Institute's executive director is responsible for identifying public service needs in the community not now being met by University programs; assisting in developing public service programs to meet community needs; helping coordinate public services delivered to the community when two or more University departments are involved; promoting the Institute as a clearinghouse for disseminating information about University public service programs; and serving as a point of contact for the community when seeking University services.

### Center for Urban and Regional Studies

The Center for Urban and Regional Studies is a research and technical assistance unit established by the Youngstown State University Board of Trustees in 1967 in recognition of the University's obligation to contribute to the economy, the social well-being, and the environmental quality of the region.

The Center's primary mission is to integrate professional staff, faculty, students, and other University resources to focus on issues and challenges of urban and regional development through an ongoing program of applied research, technical assistance and training for local government, social service organizations, and business.

Organizational development and staff capabilities are directed toward the seven programmatic areas: reduction in poverty, local government assistance, economic development, urban and environmental planning, urban data services, human services development, and crime reduction.

The Center for Urban and Regional Studies is a federal depository for U.S. Census data. The Urban Data Services Office provides population, economic, and social data to academic users, government, business, and the public. In addition, the Center conducts public opinion surveys.

The Center for Urban and Regional Studies has developed an extensive geographic information system (GIS) capability, which provides statistically generated maps that can be produced from independent data files. Such products have been developed for demographic analysis, urban planning, market research and other uses which, in addition to being employed in traditional academic research, have served the banking industry, business, and local government.

The YSU Center for Urban and Regional Studies participates in five statewide networks: Ohio Economic Development Information Network, Ohio Geographic Information Systems Network, Ohio Housing Research Network, Neighborhood Initiative Network, and the Urban Schools Research Network. The output from these research networks has resulted in local, statewide, and national policy recommendations, and national presentations and publications.

The Center is located in the Phelps Building and can be reached by phone at 330-941-3355.

### Center for Human Services Development

In 1985, the University Board of Trustees established the Center for Human Services Development to serve as a community resource for health and human service organizations, and community leaders. Staff at the Center work with a community-wide spectrum of people to identify community problems and needs, develop solutions, and evaluate activities in the health and human services field.

The Center offers a variety of services, including: 1) establishing and maintaining networks or linkages among service providers and the broader community; 2) offering technical assistance for social service program evaluation; 3) providing training for agency directors, boards and staff members; 4) conducting community-wide needs assessments and sharing information; 5) helping organizations to develop strategic plans; 6) identifying and obtaining grants for community organizations who are working collaboratively to address community needs.

The Center is housed in the Phelps Building; the phone number is 330-941-3469.

### Metropolitan Workforce Development

—coordinates the on- and off-campus delivery of non-credit classes throughout the service area at instructional settings including business, agency or community locations.

—provides a gateway to the educational resources of the University for students and works to form partnerships with regional workplaces. The Metro-

politan College creates and delivers programs and services that meet when and where students need them—days, evenings, weekends, on and off campus, in a traditional classroom or out—and that use distance learning technologies to supplement other learning experiences.

The offices, classrooms and computer labs of the Metropolitan College are located at Southwoods Commons, just south of the Southern Park Mall at 100 DeBartolo Place, Boardman. For information about Metro College or any of the programs listed, please call 330-941-2465.

### **Workforce Development and Continuing Education**

Metropolitan Workforce Development develops and administers courses and programs outside the traditional degree programs through continuing education, contract training, and the Center for Creative Retirement programs. Through non-credit course offerings at a variety of convenient times and locations, it makes academic programs, along with administrative and support services, available to both traditional and non-traditional students.

Through Metro Workforce Development, YSU seeks to make the lifelong process of education possible for the adult with family and work obligations.

In accordance with the Board of Trustees and Senate policy, Metro Workforce Development awards the Continuing Education Unit (CEU) for programs that meet the policy requirements. The CEU is a standard unit of measure (10 hours of participation in a Continuing Education course or seminar) that has been increasingly used by employers and professional certifying agencies to evidence educational attainment in non-credit post-secondary courses.

### **Workforce Development**

The University's educational resources are connected to the community through a workforce-based education initiative. Non-credit classes are offered to businesses for on-site training of employees. YSU's Metro Workforce Development can deliver any training needed by area businesses and health care organizations. A professional consultant works with the companies to design and deliver training.

### **Continuing Education**

Continuing education non-credit programs offer area residents a wide variety of adult study or lifelong-learning courses and seminars to meet the needs of a changing society for updating and upgrading professional skills, for mid-career adjustments, and for lifestyle changes.

Area residents participate annually in more than 200 non-credit programs, many of which are in the academic disciplines and professional areas, varying from half-day seminars to multi-week courses conducted in local business and government settings and other off-campus locations.

Both workforce development and continuing education functions are manifested in the offerings described below.

### **Community Education Programs**

—provide non-credit courses, seminars, and conferences to meet the personal development and leisure, general interest and recreation needs of the greater Youngstown area.

### **Health and Human Services Programs**

—provide non-credit courses, seminars, and conferences developed to meet the needs of local, county, state and federal government, public and community agencies in areas such as allied health, criminal justice, family and consumer science, nursing home administration, day care centers, social work, education, mental health, medical transcription, food service and related topics.

### **Business and Management Programs**

—serve this sector of the community, including courses, seminars and conferences in management, supervision, accounting, purchasing, marketing, advertising, public relations, small business, construction, production and inventory control, real estate, secretarial and office management, banking and finance, insurance, labor relations, traffic and transportation and related areas.

### **Engineering, Technical, and Computer Programs**

—serve this sector of the community with courses, seminars, and conferences in engineering, engineering technology, computer and data processing, information technology, and related areas.

### **Teleconferences**

—link the educational resources of the world through satellite-delivered educational teleconferences in a variety of professional and academic fields to personnel in the Mahoning and Shenango valleys.

### **Center for Creative Retirement**

#### **The College for the Over Sixty**

—a state-mandated program providing for the enrollment of Ohioans 60 years of age or older (who have been residents of the State for the preceding 12 months) in undergraduate credit classes on a space-available basis. Residents who meet eligibility requirements based on income level may earn credit toward a degree through the Over Sixty program.

#### **The YSU-ILR (Institute for Learning in Retirement)**

—an affiliate of the Elderhostel Institute Network, providing seniors with the opportunity to develop and conduct educational and social opportunities for the members of YSU-ILR.



### The YSU Elderhostel

—an approved program site through regional and national Elderhostel. Week long residential educational and social experiences are provided for registered participants.

### Edutavel

—provides adults with the opportunity to explore cultural learning by visiting foreign countries to experience another land and culture. Travel-study programs in this series provide on-site lectures, seminars and field experiences and also provide visits to sites and facilities often not available to the average tourist.

## Community Counseling Clinic

The Community Counseling Clinic (CCC) is a training clinic for master's degree level counseling students. The clinic's counselors and counselor trainees provide individual, family, couples, and group counseling services to YSU students and their families, as well as all children, adolescents, and adults living in Youngstown and its surrounding communities. All counseling services provided to YSU students are free of charge. Services are provided to non-YSU students and their families for a greatly reduced fee; usually \$1 a session, depending on income level.

The CCC offers a relaxed and confidential environment to discuss personal, relationship, academic, or work-related problems. Examples of several commonly presented issues include: academic success-related concerns, relationship problems, family conflicts, adjustment-related problems, depression, anxiety, career indecision, and loss and grief issues. Talking with a counselor can be an important first step in making desired life changes.

In addition to clinical services, CCC staff members offer presentations and workshops on a variety of mental health issues. A small sampling of these topics includes enhancing self-esteem, dealing with stress, coping with loss, health and wellness issues, and drug and alcohol issues.

Day and evening appointments are available. Appointments can be made in person, or by calling 330-941-3056. The CCC is located in Room 3101 in the Beeghly College of Education, which is at the corner of Fifth and Rayen avenues. Additional information is available at [http://www.yzu.edu/cse/counseling\\_clinic.shtml](http://www.yzu.edu/cse/counseling_clinic.shtml).

## The Ohio Small Business Development Center

The Ohio Small Business Development Center at Youngstown State University (SBDC) program is part of the most comprehensive and effective business assistance network in the nation. Its purpose is to help existing businesses develop and retain a

competitive advantage in the ever-changing global economy, and to help entrepreneurs realize their dream of business ownership. SBDC's enhance economic development throughout the region, the state of Ohio, and the country.

In Ohio, the SBDC program is a partnership of the Ohio Department of Development and the U.S. Small Business Administration. Locally the SBDC is hosted by Youngstown State University and the Williamson College of Business Administration, and serves Ashtabula, Mahoning and Trumbull Counties.

The Ohio SBDC at Youngstown State University is one of the foremost business-assistance agencies in the region. Its mission is to provide professional, in-depth consulting and training to existing and new business ventures and to foster a strong and successful business community. Assistance with exporting and international trade is also available for area companies through the International Trade Assistance Center (ITAC) at YSU.

A professional staff, knowledgeable of the needs of small to mid-sized businesses is available for consulting. There is no fee for consulting services, and all project and company information is held in strict confidence.

Both the SBDC and the ITAC are located in the Williamson College of Business Administration and can be reached at 330-941-2140.

## Telecommunication Services

### WYSU-FM, 88.5 MHz

Youngstown State University owns and operates WYSU-FM, a 50,000 watt radio station that serves the Mahoning and Shenango Valley region with fine arts and news and information programming from its studios in Cushman Hall. The station broadcasts a mix of news and classical music programs on its main analog channel, on its HD1 (digital) channel, and as an Internet stream; as well as all-classical music on its HD2 channel and second Internet stream. The station broadcasts at 88.5 MHz in Youngstown, at 90.1 MHz in Ashtabula, and 97.5 MHz in New Wilmington, Pennsylvania.

WYSU-FM is non-commercial, listener-supported public radio, committed to being the community's leading source for trusted, in-depth news, engaging conversation, and music that stimulates the mind and spirit.

As one of Youngstown State University's most visible daily representatives to the community, WYSU also strives to be a valuable ambassador to that community, providing a forum to promote the artistic and intellectual activities of the university. The core of the radio operation is a full-time professional staff. Youngstown State University students whose qualifications meet professional broadcasting standards are also employed to support various aspects of the station's operations.

## FM-SCA Programs

The University transmits special educational programs for the sight-disabled on a multiplex basis using a sub-carrier frequency of 67 kilohertz.

## Channels 45 and 49, Northeastern Educational Television of Ohio

The University is a member of NETO (North-eastern Educational Television of Ohio), a public television consortium of the state universities at Akron, Kent and Youngstown, which operates UHF Channels 45 and 49.

Common transmitters at Salem and Akron broadcast programs acquired from the Public Broadcasting Service and the Ohio Educational Television Network as well as local programs produced at Kent, Akron, and by contract at Youngstown.

## SPECIAL ACADEMIC PROGRAMS

### Leslie H. Cochran University Scholars

*The terms and criteria for these scholarships may have changed. Please check with the Office of Financial Aid and Scholarships for current information.*

Leslie H. Cochran University Scholars are those students who have achieved an ACT score of at least 28 or SAT of at least 1860 (1240 old test) and have been selected to receive a full tuition, room-and-board scholarship for one year. All University Scholars may retain full support for the next year by earning a GPA of 3.5 for the current year.

All University Scholars are honors students and will follow the requirements of the Honors Program (see p. 76). In addition, Scholars are required to donate sixty hours of community service per academic year and to participate in the co-curricular aspects of the program. For more information, contact the Honors Office at 330-941-2772.

### University Honors Programs

Two types of honors programs are available:

- (1) The honors program permits any baccalaureate program to be taken, with additional requirements, for an honors diploma.
- (2) Departmental honors programs are available in selected departments.

See p. 76 for more information about the Honors Program.

## Individualized Curriculum Program

The student whose needs are not met by existing conventional programs may wish to investigate and apply for the Individualized Curriculum Program (ICP). This requires a student to design the curriculum suited to his or her particular background and needs, allowing alternative paths for reaching the currently offered undergraduate degrees.

A student admitted to the program will have the help of a committee of faculty advisors selected by the student. This committee will help to develop a program that will serve a valid educational goal not attainable within the regular curricular structure of the University. To receive approval, the overall program needs to be of a scope and intensity comparable to conventional programs leading to the degree being sought.

Students wishing to develop an individualized curriculum must meet the following requirements:

1. Sophomore standing 32 s.h. completed (for baccalaureate degree)
2. GPA of at least 2.50
3. Students pursuing a baccalaureate degree must have at least 30 s.h.'s to complete once the program has been approved. Students pursuing an associate degree must have at least 20 s.h.'s remaining upon approval.

The ICP does not provide for new or modified courses or degrees, or for changes in course prerequisites. Credit by examination may be sought, subject to approval through normal channels.

Detailed information is available from the director of the program, Room 104, DeBartolo Hall or on the web at <http://web.yzu.edu/class/icp>.

## The Northeast Ohio Medical University

The Northeast Ohio Medical University (NEOMED) was established under the sponsorship of a consortium formed in 1972 by University of Akron, Kent State University, and Youngstown State University. Admitted by a joint-admissions process to both an undergraduate consortium university and to NEOMED, students in the BS/MD program are able to complete both their BS and MD degrees within six years. Students spend two to three years of full-time, year-round study at one of the three consortium universities, complete the basic medical science coursework at the NEOMED Rootstown campus, and complete two years of clinical clerkships and rotations at the consortium teaching hospitals.

The BS phase of the BS/MD program of study integrates a liberal arts education with an accelerated and enhanced science curriculum. The program fosters

the development of intellectual curiosity, appreciation of diverse cultures, an historical framework for interpreting the present and creating the future, written and oral communication skills, the desire for lifelong learning, and other perspectives and skills characteristic of a liberal education. Further, it prepares students for success in a premier medical school curriculum and builds the foundation for a life-long career as a physician in the 21st century.

Prospective YSU students interested in the NEOMED program can refer to the catalog under Admissions and under Combined BS/MD Program in the College of Science, Technology, Engineering, and Mathematics section. A detailed description of the curriculum is available from the office of the dean of the College of Science, Technology, Engineering, and Mathematics or from the Office of Admissions or on the web at <http://www.neomed.edu>.

Students interested in the NEOMED College of Pharmacy should consult with the BS/MD and health professions advisor in the STEM advising center for coursework appropriate to a pre-pharmacy concentration. Upon completion of their undergraduate degree, they should seek direct entry in the College of Pharmacy using the procedures found at [www.neomed.edu](http://www.neomed.edu).

## Interdisciplinary Programs

The University offers a number of interdisciplinary programs. More information on these programs may be found in the College of Liberal Arts and Social Sciences section of this *Bulletin*.

Africana Studies

American Studies

Global Education

Judaic and Holocaust Studies

Islamic Studies

Peace and Conflict Studies

Women's Studies

Working-Class Studies

## Center for International Studies and Programs (CISP)

The CISP is an integral part of the Division of Academic Affairs and is responsible for coordinating the international dimensions of the university, including international student and faculty services, study abroad and exchange programs, and the English Language Institute (ELI).

For more information on International Student Services, see "Center for International Studies and Programs" under Student Services; for more information about international student admission, see International Applicants on p. 21.

## Study Abroad

Youngstown State University encourages students to engage in international study as part of their YSU education. Credits earned through study abroad at postsecondary institutions overseas must be approved in advance through the CISP in consultation with academic colleges and departments. Students studying abroad through YSU-affiliated programs and institutions maintain full-time status at YSU and remain eligible for state, federal, and institutional financial aid. Credits earned by foreign study through a YSU-approved study-abroad programs are treated as transfer credit and therefore are not computed into the student's grade point average. Students must be in good academic standing and meet the GPA requirements of the host program in order to submit an application to study abroad.

- **Scholarships for Study Abroad** Most YSU tuition scholarships apply to study-abroad programs. The CISP also coordinates advising for the Fulbright, Gilman, Freeman-Asia, National Security Education Program (NSEP), and Rhodes Scholarships.

## Study-Abroad Programs

- **International Exchange Programs.** YSU students pay tuition and fees at YSU and exchange places with students from the overseas institution for one or two semesters. YSU maintains reciprocal exchange agreements with the University of Jyväskylä in Finland and with Yeditepe University in Istanbul, Turkey; both programs offer courses in many majors, taught in English. In addition, intensive Chinese language study is available through an exchange program with Lunghwa University of Science and Technology in Taiwan.
- **Affiliated Programs.** Youngstown State University is a member of the Ohio International Consortium (see below), the Institute of International Education (IIE) and the College Consortium for International Studies (CCIS). These memberships provide YSU students with the opportunity to study in many Youngstown State University countries throughout the study abroad programs administered by other member institutions. YSU maintains direct affiliate agreements with other high-quality study-abroad organizations, including the American Institute for Foreign Study (AIFS), Cultural Experiences Abroad (CEA), International Studies Abroad (ISA) and the Semester at Sea program.
- **The Ohio International Consortium (OIC).** OIC facilitates study abroad opportunities for students of the University System of Ohio by allowing matriculated students from any of Ohio's thirteen state assisted public universities to participate in overseas programs irrespective of which campus maintains the program. Youngstown State University students may participate in study abroad programs through Bowling Green, Central, Cleveland, Kent, Ohio Shawnee, and Wright State

Universities, Miami and Ohio universities, and the Universities of Akron, Cincinnati, and Toledo. OIC also supports and administers the Donald Nelson study-abroad scholarship.

- **International Field Study Courses.** CISP works with YSU faculty who teach YSU international field study courses, which are YSU courses that incorporate an international component, usually one to four weeks in length. Recent YSU international field study courses have been conducted in the Bahamas, Brazil, China, England, Ireland, Guatemala, Mexico, India, Italy, and Turkey. YSU credit is also available for an intensive Italian Language program offered each summer in Sicily.

## The English Language Institute

The English Language Institute (ELI) at YSU was established through the CISP and the Department of English to provide intensive study of English to speakers of other languages. It offers pre-college, non-credit courses designed to teach English to students who already have some knowledge of English. In addition, the ELI provides an orientation to college life and culture in the U.S. Courses are available both to international students and to immigrants. The ELI also offers specially tailored courses to groups by special arrangement.

The ELI welcomes all students, as well as professionals, who wish to increase their English language proficiency. The ELI prepares students for academic study in American universities, using the following curriculum: Five Levels (introductory, basic, intermediate, high intermediate, and advanced) covering listening/speaking, reading/writing, grammar, and TOEFL/vocabulary development preparation or pronunciation hours, for a total of 19 hours weekly. There are two 15-week terms per year (fall, spring) and one ten-week summer session. ELI admission is through the CISP. Students must be at least 17 years old or have completed high school. For an application and more information about the ELI, visit the ELI website at <http://www.yzu.edu/EnglIns/>.

## College in High School

The YSU College in High School program (CHS) offers college readiness and credit-bearing college courses to high school students in their school as a regular part of their school day. The student does not have to come to campus or worry about class time interfering with in-school or after-school activities. High school students earn college credit on an official YSU transcript that is transferable to any state-funded college or university in Ohio and some private and out-of-state schools. CHS students who plan to continue at YSU after graduating high school must reapply to YSU and provide their final high school transcript. Partnerships with regional high schools make this opportunity possible. See the College in High School website for eligibility and information about course offerings in each school district.

## College Tech Prep

College Tech Prep is a national education program that combines college prep academics with advanced technological training that is career focused. The seamless career programs begin in the 11th grade and continue through an associate and/or bachelor degree. Students successfully completing the secondary portion of College Tech Prep and continuing in their career pathway at the post-secondary level may earn up to 16 free articulated college credits at YSU depending on their college major. For more information contact the Office of Associate Degree and Tech Prep Programs.

## Youngstown Early College

Youngstown Early College, the first school of its kind at a public university in Ohio, helps Youngstown City School District students succeed in high school and make a successful transition to higher education. From YEC's home base in Fedor Hall on the YSU campus, students take a combination of high school and university classes, graduating from high school with up to 64 hours of college credit. The YEC program operates in partnership with Eastern Gateway Community College and YSU. Youngstown Early College was developed with the assistance of the KnowledgeWorks Foundation and the Bill and Melinda Gates Foundation.

## Off-site Degree Programs

### Allied Health and Public Health

The University offers baccalaureate degree-completion programs in allied health and in public health on the campus of Lorain County Community College (LCCC). Allied health is also offered at Cuyahoga Community College (CCC) and Lakeland Community College (LCC). Students in these programs are registered at Youngstown State University and attend classes online or at the LCCC, CCC, or LCC campuses. Courses are taught by YSU faculty members, using interactive video conferencing systems and are also offered online (web-based). LCCC, CCC, and LCC provide support services and access to facilities, such as computer labs and the library, including Ohio LINK online research services. Students are advised by YSU faculty members, or a YSU academic advisor. Faculty members may hold office hours at the off-site campus, online, or through video conferencing systems. Students communicate with faculty members using a variety of methods including online discussions, e-mail, video conferencing, phone, and face-to-face meetings.

### Criminal Justice

Youngstown State University offers a baccalaureate degree-completion program in criminal justice on the campus of Lorain County Community College (LCCC) and Lakeland Community College (LCC). Students in this program are registered at YSU and at

tend classes at the LCCC or LCC. Courses are taught by YSU faculty members, using interactive video conferencing systems. LCCC and LCC campuses provides support services and access to facilities, such as computer labs and the library, including Ohio LINK online research services. Students are advised by a YSU academic advisor. Faculty members may hold office hours online, by phone, or through video conferencing systems. Students communicate with faculty members using a variety of methods including online discussions, e-mail, video conferencing, phone, and face-to-face meetings.

### Social Work

YSU also offers a Bachelor of Social Work (BSW) degree through Lorain County Community College (LCCC) and Lakeland Community College (LCC). Students in this program are registered at YSU and attend classes at LCCC or LCC taught by YSU faculty members in a traditional classroom format. LCCC and LCC provides support services and access to LCCC facilities, such as computer labs and the library, including Ohio LINK online research services. Students are advised at LCCC and LCC or via e-mail by a faculty member from either YSU or LCCC and LCC.

### Electric Utility Technology, Power Plant Option

The University offers an Associate of Applied Science Degree in electric utility technology, power plant option (EUT/PPT) on the campuses of Eastern Gateway Community College (EGCC) in Steubenville, Ohio and Belmont Technical College (BTC) in St. Clairsville, Ohio. Students in the program are registered at Youngstown State University and attend classes at the community college campuses. The community colleges provide supporting courses, services, and access to facilities. Students are advised by both YSU faculty members and EGCC/BTC academic advisors. Faculty members may hold office hours at the off-site campuses, online, or by phone. Students communicate with faculty members using a variety of methods, including video conferencing, e-mail, phone and face-to-face meetings.

At EGCC, the EUT/PPT courses are taught by YSU faculty members via interactive video conferencing; at BTC, the courses are taught on site by YSU faculty members.

### Off-Site Credit Programs—Metro Credit Educational Outreach

Metro Credit Educational Outreach, working in partnership with University colleges and departments, school districts, employers, and community and government agencies, offers opportunities for a variety of populations to obtain college credit and degrees. The department designs programs to deliver college-credit coursework to high school students, teachers and others needing graduate education, the

unemployed, the under-resourced, student-inmates at local correctional facilities, and those who cannot access campus services and programs.

#### Specific programs include:

YSU Metro College at Southwoods Commons in Boardman—Metro College provides an off-campus site conveniently located for many students. Course offerings vary, and are concentrated on the first- and second-year general education requirements applicable to most degrees. Saturday classes run every fall and spring semester. The location is also convenient for meetings, non-credit workshops, and seminars.

YSU College in High School (YSU-CHS)—CHS offers college courses to high school students in their school. For more information see Special Academic Programs, Admissions, and [www.ysu.edu/metro\\_credit](http://www.ysu.edu/metro_credit).

The Learning Community—This program is designed by and for first-generation college students. The Learning Community provides a supportive college experience that helps students achieve college-level performance and build the resources needed to complete their goals.

Advanced Job Training (AJT)—Metro Credit delivers core undergraduate courses at local correctional facilities offering course completion certificates via in-person teaching and interactive distance learning.

Off-Campus Cohorts—Master's degrees are offered at various locations throughout northeast Ohio. Concentrations include curriculum and instruction, literacy, educational administration, as well as content-specific programs.

## University Honors Program

*Ronald V. Shaklee, Director*

### Mission of the Honors Program

The Honors Program is designed to create a continuing community of intellectual excellence. Exceptional students brought together from diverse disciplines and challenged with extraordinary courses and learning experiences outside the classroom can find in the program opportunities to develop their full cultural and intellectual potential, their unique academic achievements being recognized with an Honors diploma. Intended to foster interdisciplinary interaction, self expression, experimentation, leadership, and academic excellence, the Honors Program serves as a tangible emblem of Youngstown State University's commitment to education, teaching innovation, and cultural enrichment.

### Course Credit Generation

Honors credit generation includes:

- special sections of traditional courses,
- seminars on special topics,
- contract honors courses as necessary,

- some advanced course work in areas outside the major,
- a common theme when possible,
- a capstone project or course in the senior year

### Outcomes

*Enrichment:* Eligible students who desire an enriched education may take honors courses and thus participate in the “honors experience” without having formally applied to the Honors Program.

*Honors Diploma:* Students may apply to the Honors Program, pursuing excellence in a broad range of subjects. Successful completion of this guided course of study will be acknowledged with a special designation on the commencement program, diploma, and final transcript.

### Baccalaureate Honors Program

#### I. To enter the baccalaureate Honors Program:

- All Leslie H. Cochran University Scholars are enrolled in the Honors Program.
- The following students qualify for the Honors Program upon application:
  - Presidential and Dean’s Scholars
  - Students in the top 15% of their graduating class and with at least a Composite ACT score of 26 (or combined SAT of 1760 new 1160 old)
  - Current YSU students having completed at least nine semester hours of college-level study (not to include remedial courses) with a cumulative GPA of at least 3.4
  - Students having completed at least 18 semester hours of college-level study accepted for credit at YSU (not to include remedial courses) with a cumulative GPA of at least 3.4.
- First-year students either in the top 15% of their graduating class or with a Composite ACT score of at least a 26 (or combined SAT of 1160), as well as other interested students, are encouraged to apply to the Honors Program.

II. To take honors courses, students enrolled in or eligible to enter the Honors Program and others approved by the instructor and director of Honors may take honors courses. All students are encouraged to enroll in honors courses.

III. To remain in good standing in the Honors Program, students must maintain a GPA of at least 3.4. Students falling below this level for two consecutive semesters will be dropped from the program. Reapplication to the Honors Program may be made once the GPA is restored to at least a 3.4.

IV. Students who complete no honors work for two consecutive semesters will be suspended from

the program unless they can demonstrate, to the satisfaction of the director of the Honors Program, continuing progress toward the completion of honors graduation requirements.

V. Completing the Honors Program requires an average of three semester hours of honors work per term. In order to complete the program in a timely manner, honors students are expected to take:

- a minimum of six semester hours of honors work within their first 30 undergraduate hours;
- at least 12 total hours of honors work within their first 60 hours;
- at least 18 accumulated hours of honors work within their first 90 hours;

Any student unable to complete work in the Honors Program within this schedule must obtain written permission for delay from the Honors director in order to remain enrolled in the program.

### Baccalaureate Honors Curriculum

#### (for students who enroll in the program after March 1, 2000)

Students who enter the Honors Program after Spring 2000 are required to complete at least 24 semester hours of honors work, including a senior thesis/project.

Further requirements include the following:

- Of the 24 hours, at least twelve hours of honors general education courses distributed as follows:
  - At least one honors course from three of the five general education requirements (GER) knowledge domains or basic skills (see pages 49-50).
- At least six hours of honors work must be upper-division courses.
- At least six hours of honors course work shall be taken from actual honors classes (opposed to contract honors credit).
- At least one full credit hour of Honors Seminars or University Honors Seminars.
- Senior Year Honors Thesis.

During the senior year, a capstone thesis/project in the major department is required. This is generally worth 1-3 semester hours depending upon the department. A faculty advisor, selected by the student and approved by the Director of Honors, will oversee this project and be assigned an appropriate workload adjustment.

The thesis should be bound and archived by the Library and stored in the Honors Office, Cafaro House. Certain projects other than theses could be presented in poster form or technologically recorded and similarly archived and stored. A

public defense (or exhibition or recital) is required. The student should also be encouraged to make a formal presentation at a regional or national conference. Projects completed by individuals, teams, and teams of students working with community officials are all appropriate.

#### Further Considerations

- Students may join the honors degree program in their second or third year. However, the same requirements outlined above stand.
- Students with multiple majors have to complete only one thesis and 24 semester hours of honors course work.
- A student dual majoring in the same general education area, for example Sociology and Political Science, would have to complete 6 hours of honors credit in general education knowledge domains outside the major.
- A student dual majoring in different general education areas for example—chemistry and English—would meet requirement by completing 6 hours of honors credit in any of the general education knowledge domains.

#### Honors Associate Program

The pre-college requirements for the Honors Associate Program are identical to those of the four-year Honors Program.

Students who have not completed the college preparatory subjects are admitted to the Honors Associate Program on the condition that their course of study includes at least one course prescribed for correcting a deficiency each semester until the deficiencies have been erased. Courses taken at the college level and used to make up a deficiency will not be applied toward the Honors Associate Program.

The following students qualify, upon application, for the Honors Associate Program:

- Presidential and Dean's Scholars.
- Students in the top 15% of the graduating class and with an ACT score of 26 or a combined SAT of 1760 (new) 1160 (old).
- Current YSU students having completed at least 9 semester hours of college-level study (not to include remedial courses) with a cumulative GPA of at least 3.4.
- Students having competed at least 15 semester hours of college-level study accepted for credit at YSU (not to include remedial courses) with a cumulative GPA of at least 3.4.

First semester students who have met the criteria delineated above are encouraged to apply to the Honors Associate Program. To remain in good standing, students must maintain a GPA of at least 3.4.

#### Honors Associate Curriculum

Completion of the Honors Associate Program requires a minimum of 12 semester hours of honors work, as well as the completion of a capstone thesis/project. Further requirements include:

1. At least one honors course from two of the five general education knowledge domains.
2. At least three hours of coursework from an actual honors class (opposed to contract honors credit).
3. At least one honors seminar.
4. Capstone project in the major.

#### Individualized Honors Curriculum (IHC)

An individualized honors curriculum (IHC) is available for high-achieving students who wish to alter any of the requirements listed above for either the associate or baccalaureate Honors Programs. However, the student should prepare a full proposal that includes: application for IHC (available from the Honors Office), reasons for choosing not to follow the prescribed honors program, goals of the IHC, exact courses and the course format (i.e. honors class, contract honors, independent study, etc.), outcomes of the IHC, and estimated time to completion. The proposal must be signed by the department chair of the student's major, the thesis advisor, and the director of honors prior to being submitted to the Honors Committee. Final approval must be given by the Honors Committee before the IHC is recognized as an alternative to the requirements of the Honors Program.

#### Transfer of Honors Credit

1. Honors credit from other institutions will be accepted as honors credit and can be used to partially fulfill the requirements for the Honors Program at Youngstown State University provided that the honors credit was earned in a college-level course with a grade of B or higher.
2. Upon application, all students from other honors programs who were in good standing relative to their previous program will be admitted into the YSU Honors Program. Honors credit earned at other institutions will be accepted as honors credit and can be used to partially fulfill the requirements for honors at YSU subject to review by the honors director.
3. To graduate with an Honors diploma, a student must complete at least 12 of the total 24 semester hours of honors course work from YSU, fulfill the depth and breadth requirements of the Honors program, and complete a senior thesis in the major discipline. (For more details, consult with the Honors director.)
4. Students who transfer into the YSU Honors Program have all the rights and privileges granted to its members, e.g., honors housing, priority registration, use of honors facilities, etc.

### Documentary Recognition of Success in the Honors Program:

1. Grade records. A student's permanent record will be the sole official record of his or her honors courses and seminars, each of which will be designated with an "H" after the catalog number, or in some cases, with a note detailing that honors credit was earned for that particular course.
2. Completion of the Honors Program. When a student's record satisfies the director of the Honors Program that the student has successfully completed the requirements of the Honors program, the following notation will be entered on the student's record: "Has successfully completed the Honors Program," and upon graduation the student will be awarded the Honors Medal, special recognition in the commencement program, and an Honors diploma.

### Benefits of Joining

- Students enjoy the benefits of early registration each semester they are actively participating;
- Honors students are eligible to live in the Honors Program's living and learning center, Cafaro House;
- Course material is covered in much greater depth than in a traditional class. Therefore, honors students receive a "value-added" education;
- Members may use the computer facilities in Cafaro House. The facility is open 7 days a week, 24 hours a day; nonresidents must follow residence hall visitation policy;
- As reflected by the transcript and diploma, an Honors student has shown the desire and ability to go above and beyond what is traditionally required by the University. This is particularly impressive to graduate and professional schools and potential employers;
- High-achieving students benefit from the experience of taking classes and learning with some of the most intelligent students in the nation;
- It is a gift that a person who loves learning gives to oneself and to others.

### Courses of Instruction

#### The Nature of an Honors Course

When compared to a non-honors course, an honors course should:

- cover material in greater depth
- encompass more complex concepts, stressing analysis
- place greater emphasis on communication skills
- include discussion of applicable theories in the field

- require of the students more preparation and class participation, including more ambitious papers or projects, as well as a greater share of responsibility for learning
- involve more state-of-the-art technology whenever possible and appropriate

### Honors Program Courses

1500. *Introduction to Honors*. Prepares students for the expectations and requirements of the Honors Program. Students develop skills that aid in their overall academic endeavors and explore topics pertinent to their development within the Honors Program and as citizens of the university, local, national and global communities. Prereq.: Admission to the University Honors Program or eligibility for admission to the University Honors Program. 1 s.h.

1599. *Special Topics*. An introductory-level examination of some topic appropriate for honors study. Typically team-designed. In certain cases, students may arrange to have the course counted toward their major by negotiation with the major department. With approval of the director of Honors, may be repeated for credit with different topics. Prereq.: Admission to the Honors Program or permission of instructor and director of Honors. 3 s.h.

2601, 2602. *Honors Seminar*. An interdisciplinary seminar series dealing with topics appropriate to students in the honors program. The subjects include, but are not limited to, creativity, the organization and function of Society, the total human being, critical thinking, current events, etc. Prereq.: Admission to the Honors Program or permission of instructor and director of Honors. 1-2 s.h. each

2699. *Special Topics*. A close examination of some topic appropriate for lower-division honors study. Typically team-designed. In certain cases, students may arrange to have the course counted toward their major by negotiation with the major department. With approval of the director of Honors, may be repeated for credit with different topics. Prereq.: Admission to the Honors Program or permission of instructor and director of Honors. 3 s.h.

3701, 3702 *University Honors Seminar*. A critical investigation of selected ideas underlying civilization, embracing and integrating the particular studies of science, society and the humanities. Prereq.: Admission to the Honors Program or permission of instructor and director of Honors. 1-2 s.h. each

3799. *Special Topics*. A close examination of some topic appropriate for upper-division honors study. Typically team-designed. In certain cases, students may arrange to have the course counted toward their major by negotiation with the major department. With approval of the director of Honors, may be repeated for credit with different topics. Prereq.: Admission to the Honors Program or permission of instructor and director of Honors. 3 s.h.



4890. *Senior Honors Thesis*. Directed research for students pursuing senior honors thesis research. Prereq.: Junior status; completion of 18 s.h. of Honors coursework; submission of an approved Honors thesis proposal; and permission of the honors director. May be repeated for up to 3 s.h. 1-3 s.h.

4899. *Special Topics*. An advanced examination of some topic appropriate for honors study. Typically team-designed. In certain cases, students may arrange to have the course counted toward their major by negotiation with the major department. With approval of the director of Honors, may be repeated for credit with different topics. Prereq.: Admission to the Honors Program or permission of instructor and director of Honors. 3 s.h.

### Contract Honors Courses

Any course other than remedial or high school remedial courses may be taken for honors credit with the concurrence of the faculty teaching the class and the approval of the honors subcommittee.

This option does not involve more credit hours for a course, but rather credit of a different kind. Proposals should involve not simply more work on the part of the student, but rather work in greater depth. Proposals are initiated by the student and

instructor, then carefully reviewed by the department chair. Chairs certify that by the standards of the discipline, proposals meet the criteria listed on the contract form. The further approval process is outlined on the form "Request for Contract Honors Credit" available in the Honors Office and on the Honors homepage.

Remedial courses are not suitable for contract honors. Contracts are not normally approved when an honors section exists for the same course (e.g. English 1551). Projects in the historiography of any discipline are acceptable.

Contract proposals must be submitted with proper signatures by the due date listed on the contract honors form (and preferably before registration).

Grades are reported to the Honors director, using the form "Grade Report for Contract Honors." This form, along with the document "Contract Honors Approval," will be mailed to the sponsoring faculty member after the project has been accepted by all appropriate individuals.

### Administration of the Honors Program

The program is operated by the director of Honors under the jurisdiction of the Honors Committee of the University Senate.



# Academic Calendar 2012-2013

## Fall 2012

DATE	DAY	TIME	EVENT
Aug. 22	Wed.		Classes begin
Sept. 3	Mon.		Legal holiday—University closed
Aug. 29	Wed.		Last day to add classes or change grading option
Sept. 14	Fri.		Last day to apply for fall term graduation
Oct. 27	Sat.		Last day to withdraw with a grade of 'W'
Nov. 12	Mon.		Legal holiday—University closed
Nov. 21	Wed.		No classes scheduled—University offices open
Nov. 22	Thurs.		Legal holiday—University closed
Nov. 23	Fri.		Legal holiday—University closed
Nov. 26	Mon.	0800	Thanksgiving academic break ends—Classes resume
Dec. 10	Mon.		Final examinations begin
Dec. 16	Sun.		Final examinations end
Dec. 16	Sun.	1400	Commencement

## Spring 2013

Dec. 24	Mon.		Legal holiday—University closed
Dec. 25	Tues.		Legal holiday—University closed
Jan. 1	Tues.		Legal holiday—University closed
Jan. 14	Mon.		Classes begin
Jan. 21	Mon.		Legal holiday—University closed
Jan. 22	Tues.		Last day to add classes or change grading option
Feb. 1	Fri.		Last day to apply for spring term graduation
Mar. 11	Mon.		Spring Break begins
Mar. 18	Mon.	0800	Spring Break ends—Classes resume
Mar. 28	Thurs.		Last day to withdraw with a grade of 'W'
May 6	Mon.		Final examinations begin
May 12	Sun.		Final examinations end
May 18	Sat.	1000	Commencement

## Summer 2013

May 20	Mon.		Classes begin—full summer term, first 6-week term
May 27	Mon.		Legal holiday—University closed
May 28	Tues.		Last day to add classes or change grading option—full term, first 6-week term
June 7	Fri.		Last day to apply for summer term graduation
June 13	Thurs.		Last day to withdraw with a grade of 'W'—first 6-week term
June 17	Mon.		Classes begin—middle 6-week term
June 24	Mon.		Last day to add classes or change grading option—middle 6-week term
June 30	Sun.		First six-week term ends (final exams are given during last class session)
July 1	Mon.		Classes begin—second 6-week term
July 4	Thurs.		Legal holiday—University closed
July 8	Mon.		Last day to add classes or change grading option—second 6-week term
July 8	Mon.		Last day to withdraw with a grade of 'W'—full summer term
July 11	Thurs.		Last day to withdraw with a grade of 'W'—middle 6-week term
July 25	Thurs.		Last day to withdraw with a grade of 'W'—second 6-week term
July 28	Sun.		Middle 6-week term ends
Aug. 11	Sun.		Full summer, second 6-week terms end (final exams are given during last class session)
Aug. 17	Sat.	1000	Commencement

# The Warren P. Williamson, Jr. College of Business Administration

*Betty Jo Licata, Dean*



The mission of the WCBA is to prepare undergraduate and MBA students for productive and fulfilling careers as leaders in business, government, nonprofit organizations, and society. Our programs emphasize a student-centered, teaching/learning process with a focus on the application of theory to practice and the intellectual and professional development of our students. We engage in faculty scholarship that contributes to management practice, advances the discipline, and enhances the teaching/learning process.

Our students, faculty, and staff contribute to the university, profession, and the economic development of the region. Internships, business projects, guest speakers, and community service projects are a few of the important ways in which our students enhance their learning experiences.

The undergraduate majors in the Williamson College of Business Administration (WCBA) are housed in one of three departments. These are:

- The Lariccia School of Accounting and Finance  
Majors: Accounting, Finance
- The Department of Management  
Majors: Business Administration, Human Resource Management, and Management Information Systems
- The Department of Marketing  
Majors: Advertising/Public Relations, Marketing Management

The Department of Economics is housed in the College of Liberal Arts and Social Sciences and includes business economics.

The WCBA also houses the WCBA Center for Undergraduate Student Services, which includes the director, two professional academic advisors, and the professional practice program/internship coordinator. Other college-based centers include the Center for Nonprofit Leadership, the Williamson Center for International Business, the Monus Entrepreneurship Center, and the Ohio Small Business Development Center at YSU.

## Degrees

The Williamson College of Business Administration offers courses leading to the Bachelor of Science in Business Administration (BSBA) degree, with a major in

- Accounting
- Advertising and Public Relations
- Business Economics
- Finance
- Business Administration
- Human Resource Management
- International Business
- Management Information Systems
- Marketing

The WCBA also offers an Associate in Labor Studies, Associate in Arts in Business Administration, and Associate in Technology Study. At the graduate level, the WCBA offers the Master of Business Administration (MBA) degree.

## Accreditation

The Williamson College of Business Administration's bachelor's and master's programs are fully accredited by the AACSB International—The Association to Advance Collegiate Schools of Business, the premier accrediting agency for programs in business administration. Fewer than 25% of business programs in the U.S. have AACSB accreditation.

## BSBA Goals

The business curriculum is designed to provide all majors with a strong foundation in the general areas of business, as well as an opportunity for specialized study. In addition to the business core courses and the major courses, students must complete the University's general education requirements. Students working toward the Bachelor of Science in Business Administration will develop the following competencies in order to become successful leaders in their fields:

### BUSINESS PROFESSIONAL SKILLS

#### Analytical Skills

The ability to organize and manipulate quantitative and qualitative data for business problem solving.

#### Information Management

An ability to seek, interpret, validate, and apply both current and innovative information sources and technology.

#### Communications

The ability to communicate effectively in a professional context.

#### Leadership and Interpersonal Skills

The ability to lead and work effectively in teams.

### BUSINESS PROFESSIONAL BEHAVIORS

#### Ethics & Social Responsibility

An understanding and appreciation of the importance of ethical conduct in business and responsibility to multiple stakeholders in society.

#### Business Professionalism

An understanding and appreciation of the behaviors, traits and characteristics of successful business professionals.

#### Entrepreneurship

An understanding and appreciation for the attitudes and skills required for the creation of new ventures

### BUSINESS PROFESSIONAL KNOWLEDGE

#### Accounting

An understanding of financial statements and their use in decision-making.

#### Finance

An understanding of the relationship between risk and return, time value of money, and pro forma analysis to enable decision-making.

**Marketing**

An understanding of customer needs and the process of developing, pricing, distributing and promoting products and services that provide customer value.

**Management**

An understanding of the management function and the skills required of managers.

**Operations**

An understanding of the process of creating value through the production of goods or services.

**Global Business Environment**

An understanding of the multiple and pervasive environmental factors affecting the international operations of firms.

**Strategic Management**

A fundamental understanding of how and why some firms achieve and sustain superior performance while others fail.

**Honor Societies**

The Williamson College of Business Administration recognizes students' outstanding academic performance through initiation into Beta Gamma Sigma, the national honor society for AACSB International-accredited business schools. Students who qualify for Beta Gamma Sigma are inducted in the spring of each year. To be eligible, students must be in the upper 10 percent of the junior class, the upper 10 percent of the senior class, or the upper 20 percent of the graduating master's class.

Qualified business students are also eligible for membership in Phi Kappa Phi, a national honor society that recognizes superior scholarship in all academic fields, and Beta Alpha Psi, the national professional organization for accounting, finance, and information systems majors who have completed one upper level course, have a 3.0 accounting, finance or information systems GPA, and have a 3.0 overall GPA.

**Center of Excellence in International Business**

The Williamson College of Business Administration (WCBA) Center of Excellence in International Business integrates the strong and varied international business activities of the Williamson College of Business Administration, the Williamson Center for International Business (WCIB), the Emerging Markets Initiative (EMI), the Ohio Small Business Development Center, and the International Trade Assistance Center (ITAC) at YSU to accelerate the attainment of goals related to international business education, research in international business, and regional economic development.

The goals of the WCBA Center of Excellence in International Business (CEIB) are designed to advance our work in teaching, scholarship, and outreach services, and bring increased impact through the integration of global business issues across the curriculum and in the business community. Specifically, the goals of the Center of Excellence in the International Business (CEIB) are to:

1. Create a global learning environment that enhances the development of students' global competencies through curricular, professional, and co-curricular initiatives and innovations.
2. Generate and expand research that advances knowledge and practice in international business (IB) and supports the economic development of northeast Ohio.
3. Accelerate the development of academic and business partnerships that support our educational and economic development goals.
4. Expand the Emerging Markets Initiative (EMI) and solidify our unique niche of expertise in emerging markets.
5. Expand the IB training, research, and consulting services that strengthen the ability of businesses to compete in a global marketplace.

The CEIB is designated as an Ohio Center of Excellence by the Ohio Board of Regents.

**The Monus Entrepreneurship Center**

The Nathan and Frances Monus Entrepreneurship Center is located in the Williamson College of Business Administration on the Youngstown State University campus. The mission of The Monus Entrepreneurship Center is to spur economic development in the Mahoning Valley. To achieve this goal the center concentrates its efforts in three areas. The primary area of focus is the development of entrepreneurship initiatives and programs on both the undergraduate and graduate level. The center has developed a "Certificate in Entrepreneurship" and a minor in entrepreneurship that assist students of all majors across the YSU campus with transforming marketable ideas into start-up businesses and emerging entrepreneurial ventures. A secondary focus is to communicate the entrepreneurship theme throughout the region. This is accomplished by hosting entrepreneurship events for the regional business community as well as for students in grades 6-12. Lastly, the Center acts as a resource center for the University community providing entrepreneurship expertise and support.

**Center for Nonprofit Leadership**

The Center for Nonprofit Leadership, housed in the Williamson College of Business Administration, provides academic programming and professional development experiences for students interested in

pursuing a career in nonprofit management and/or serving the community. The Center offers a certificate in Nonprofit Management and Leadership and a Nonprofit Leadership Minor. Both the minor and certificate can be combined with any major on campus. The nonprofit sector is the fastest growing employment sector in our country, and offers a wide range of employment opportunities.

Also available through the Center for Nonprofit Leadership is the Student Nonprofit Leadership Organization (SNLO) and the Service Learning Citizen Scholar Program. SNLO is an organization for currently enrolled students receiving a baccalaureate degree. The organization provides professional nonprofit management experiences through site visits, guest lecturers, and the planning of fundraising events. The Service Learning Citizen Scholar Program recognizes students who have completed multiple service-learning opportunities through academic coursework.

### **The Ohio Small Business Development Center at Youngstown State University**

The Ohio Small Business Development Center (SBDC) at YSU is an important part of the Williamson College of Business Administration. The SBDC helps entrepreneurs realize their goals of business ownership and expansion. The SBDC assists existing businesses in developing and retaining their competitive advantages. Counseling, training, research, technology transfer, and export assistance are offered in the start-up, operation, and expansion of small to mid-size businesses. Emphasis is placed on the use of strategic business planning and basic principles of enterprise development. The SBDC serves clients in Ashtabula, Mahoning, and Trumbull counties, with offices in Youngstown, Warren, Jefferson, and Ashtabula.

The SBDC is partially funded by the Ohio Department of Development and the U.S. Small Business Administration and is one of over 950 such centers in the United States. The SBDC also houses the International Trade Assistance Center which provides consulting services to businesses who want to initiate or expand international trade activities.

WCBA students are involved with the SBDC through class projects, independent studies, and internships. Collaboration between the SBDC and the WCBA provides a great benefit for students, faculty, and small businesses.

### **Beyond the Classroom**

An important dimension of a student's preparation is the learning that takes place beyond the classroom. In the WCBA, opportunities for leadership development, networking, and professional enhancement are extensive.

Student chapters of national professional organizations provide an excellent means for students to develop leadership skills, network with professionals in their chosen career fields, and increase their exposure to the business world. WCBA organizations are actively involved in public service such as the Voluntary Income Tax Assistance (VITA) program, and Dare to Care Day; national competitions; and fund raising activities.

Students are also involved in the WCBA through the Student Leadership Council which is composed of 25 WCBA students. These students, who meet monthly with the dean, serve as representatives of the WCBA student body and as ambassadors for the College.

Through the Williamson Symposium Series, and the Executive in Residence Program, students are able to interact with business people who are leaders in their fields. These programs provide a forum for the exchange of ideas and give an added dimension to the education of our students.

Rigorous academic preparation, career-related work experience, and involvement in activities beyond the classroom create a valuable combination that positions business majors for success in the business world.

### **Professional Practice Program**

In addition to broad academic training through the WCBA degree programs, students can acquire professional experience through the Professional Practice Program. Internships and cooperative education programs are designed to benefit both students and sponsoring organizations. Participating students have the opportunity to supplement their classroom learning with actual hands-on business experience.

Through internships and cooperative education, students can earn academic credit toward their degrees and, in most cases, be paid for their work. Students work for public accounting firms, state and local government, public relations firms, Fortune 500 corporations, marketing agencies, brokerage firms, banks, investments groups, nonprofit agencies, and retail establishments.

To be eligible for internship positions, students must have a minimum 2.50 grade point average, completed prerequisites in their major beyond the core, and meet the requirements of the sponsoring organization. Internships are typically fifteen weeks in length or a minimum of 225 hours. Cooperative education (co-op) students work for one employer a minimum of two semesters before graduation.

To prepare students for their internships, the Professional Practice Program offers workshops, such as internship orientation/debrief sessions, resume writing, interviewing techniques, networking, targeted career search, business and dining etiquette, and a professional development course.

The program also offers campus interviews and other events to bring together students and employers. Additional information concerning programs and sponsoring organizations is available from the WCBA Office of Professional Practice located in the WCBA Undergraduate Advisement Center.

## Career Services

YSU maintains an Office of Career Services to help students plan and explore careers, aid them in resume and letter-writing and help them prepare for job interviews and placement. Job openings are posted on their PenguinLink online system for current students and alumni. These include full- and part-time, seasonal and summer employment opportunities. Several hundred corporations, businesses, schools, agencies and government units visit Career Services each year to interview students and alumni. The Office of Career Services also sponsors job expos during the spring and fall semesters. A Career Services placement coordinator focuses on assisting business majors with their professional job search plans.

## Facilities

The Williamson College of Business Administration moved into a new 110,000 square-foot, \$34.3 million building in fall 2010. The College's new home is a LEED-certified state-of-the-art facility that provides enhanced classrooms and learning spaces for students and provides a variety of places for students to study and meet with team members, friends, and the business community. The building includes 14 classrooms, faculty offices, the Center for Undergraduate Student Services, a financial services lab, professional sales lab, computer labs, team rooms, student organizations office, a café, student entrepreneurship lab, auditorium, conference center, and outreach centers. Designed to link the campus with the downtown community, the new building is a valuable resource for WCBA students and the regional community.

## Courses of Instruction and Curricula

Course descriptions can be found in a separate section in the back of this *Bulletin*.

Each student is charged with the responsibility of checking the catalog for prerequisites for each course he or she wishes to take. This will ensure minimum changes of registration on the student's behalf and will alleviate many problems associated with scheduling.

## Requirements for the Major

The courses required for the various majors are listed by each department. The combined major, advertising and public relations, is described in the Department of Marketing listings. The combined major in general administration is described in the Department of Management listings.

## Bachelor's Degree Program—BSBA

### New Applicants (Pre-Business)

**Direct Admission:** Students with a 3.5 high school GPA and minimum ACT score of 25 or SAT score of 1150 to directly enter their business major of choice. Majors include: accounting, advertising/public relations, business economics, finance, general administration, human resource management, international business, management information systems, or marketing.

**Pre-Major:** Students with a high school GPA of 2.25 and ACT of at least 20 will be admitted to the WCBA as a Pre-business major. Students will be admitted as pre-accounting, pre-business, pre-business economics, pre-finance, pre-marketing, pre-management.

**Undeclared Business:** Beginning with the spring 2013 semester incoming freshmen with a minimum high school GPA below 2.25 or with an ACT score of less than 20 will be admitted into the WCBA as an Undeclared Business Major with specific requirements to be met in order to progress to pre-major status in the college.

### Transfer students

#### Students with fewer than 32 semester hours:

Transfer students with fewer than 32 semester hours and a college GPA of 2.25 will be admitted to the WCBA as a Pre- major. Transfer students must have completed ENGL 1550 and be eligible for Math 1507 in order to transfer into the WCBA.

#### Students with 32 or more semester hours:

**Direct Admit:** Students will be allowed to transfer directly into their major if (1) they have a high school GPA of 3.5 and ACT of 25 and have a college GPA of 2.5 or higher OR (2) if they have completed ENGL 1550 and ENGL 1551 and all tool courses with a grade of C or higher and have a college GPA of at least 2.5.

**Pre-major:** Transfer students with 32 or more semester hours and a college GPA of 2.5 and who have not completed the business tool courses will be admitted to the WCBA as a Pre-major.

### Upper-Division Requirements/ Declared Business Major

Upon the completion of 63 semester hours of course work (inclusive of Writing 1551, Mathematics 1552, Economics 2610, 2630, 3790, Business 1500, Management 2604, and Accounting 2602, 2603, and 2603L with grades of "C" or better), students who wish to be considered for upper-division standing in the WCBA must apply with an academic advisor in Room 408 of Williamson Hall. Students must have a **2.5 cumulative grade point average** to be admitted to upper-division standing.

Students are restricted from registering for upper-division business courses without a 2.5 GPA and a declared major.

### BSBA Degree Requirements

The student has the responsibility for seeing that all graduation requirements for the degree are satisfied. For the Bachelor of Science Degree in Business Administration, these are:

Courses and other requirements of the University. These are explained in the Academic Policies and Procedures section, and are listed below.

The curricula leading to a degree in business require a minimum of 124 semester hours. This degree may be earned in eight semesters if students average 16 hours per semester.

Admission to Pre-Business does not guarantee admission to upper-division status with a major in business.

The student whose needs are not completely met by existing programs may wish to investigate and apply for the Individualized Curriculum Program. See the Academic Policies and Procedures section.

ROTC students are permitted specific modifications of the requirement as explained in the Academic Policies and Procedures section.

### Pre-Business Tool Course Requirements

#### FIRST YEAR

Course	s.h.
ENGL 1550 Writing I.....	3
ENGL 1551 Writing II.....	3
BUS 1500 Exploring Business.....	3
MATH 1552 Applied Math for Mgt.....	4
ECON 2610 Principles I.....	3
ECON 2630 Principles II.....	3
General Education Requirements.....	9

#### SECOND YEAR

Course	s.h.
ACCT 2602 Financial Accounting.....	3
ACCT 2603 Managerial Accounting.....	3
ACCT 2603L Managerial Accounting Spreadsheet Lab.....	1
MGT 2604 Legal Environment of Business I.....	3
ECON 3790 Business & Econ Stat.....	5
CMST 1545 Comm Foundations.....	3
PHIL 2625 Intro to Professional Ethics.....	3
PSYC 1560 General Psychology.....	3
General Education Requirements.....	6
Lab Science.....	4

WCBA tool courses and English 1551 must be completed with a grade of "C" or better and student must possess an overall GPA of 2.5 or higher before core course permits are issued. CR/NC options may not be used in tool, core, and major courses.

A grade of "C" or better must be earned in all courses taken in the core, major and business electives.

### Upper-Division Core Requirements/ Declared Major

#### THIRD AND FOURTH YEAR

Course	s.h.
BUS 3715 Principles of International Business.....	3
**FIN 3720 Business Finance.....	3
**MGT 3725 Fund of Management.....	3
**MKTG 3702 Intro to Bus Professionalism (must be taken concurrently with MKTG 3703).....	1
**MKTG 3703 Mktg Concepts/Practice.....	3
**MGT 3725 Fund of Management.....	3
**MGT 3761 Info Systems for Mgt *.....	3
**MGT 3789 Operations Mgt.....	3
**FIN 4839 International Acct & Fin.....	3
MGT 4850 Strategic Management.....	3

**Major requirements and electives**—see academic advisors.

**Non-business electives**—semester hours vary according to major.

**Total Hours**..... 124

++WCBA tool courses and English 1551 must be completed with a grade of "C" or better. The student must possess an overall GPA of 2.5 or higher before he or she can register for core courses.

A grade of "C" or better must be earned in all core, major, and business elective courses. CR/NC options may not be used in tool, core, and major courses.

\*Information systems requirement is met with ACCT 3709 for accounting majors.

### Other Degree Requirements

- Completion of the appropriate number of semester hours.
- Upper-division status (completion of 63 semester hours of credit; completion of all tool courses with a grade of "C" or better; application must be made in the advisors' office).
- Minimum cumulative GPA of 2.5.
- Major requirements (a grade of "C" or better must be earned in all courses taken in the major and business electives).
- Course-level requirements (completion of sixty (60) semester hours of courses must be completed at the 2000 level or higher, of which forty-eight (48) semester hours must be at the 3000 level or higher).
- At least 50 percent (62 hours) of the total degree requirements must be taken in nonbusiness courses. Up to nine hours of economics courses can be counted as nonbusiness.
- Residence requirement.
- Application for graduation.

### BSBA (International Business)

Students interested in careers in international business may pursue the BSBA degree with a major in international business. All business majors are



encouraged to pursue one or more global learning experiences including study abroad, international business study tours, and international internships.

Students in the International Business major must complete:

1. The general education courses including Intro to World Religions (REL 2601)
2. The BSBA tool and core courses described above
3. Five courses from the International Business Core which includes: Emerging Economies (MGT 4854), International Finance (FIN 4838), International Marketing (MKTG 4845), International Business Consulting (BUS 4888), International Trade (Econ 5811), International Business Study Tour (BUS 4875), International Business Internship (BUS 4861).
4. Functional Core: Completion of a minimum of an additional twelve hours of coursework in accounting, economics, finance, management or marketing.

## LARICCIA SCHOOL OF ACCOUNTING AND FINANCE

330-941-3084

*Professors Parsegian, Law, Shaffer (Chair), Stout, Tackett, Wolf, Woodlock; Associate Professors Chen, Huber; Assistant Professors Counts, Petruska, Pierre, Yang.*

### Learning Outcomes

The student learning outcomes for majors within the Lariccia School of Accounting and Finance are as follows:

- Students will be able to identify, formulate and solve discipline-specific problems within the context of business, ethical, and societal constraints;
- Students will learn to function and communicate (in writing and orally) both individually and within multidisciplinary teams;
- Students will develop enhanced technology skills by being exposed to assignments requiring advanced computer/spreadsheet knowledge, expanded presentation activity (e.g. PowerPoint in the oral-intensive courses), and required analysis of financial statements;
- Students will be given opportunities to work with and be exposed to the business community and professionals through internship opportunities, student organizations, and social functions;
- Students will obtain a solid understanding of professional and ethical responsibilities and a recognition of and an appreciation for the need to engage in life-long learning.

Many of these learning outcomes will be developed both within the respective major and across the business and general studies curriculum. Students will be expected to be engaged in their studies and seek out assistance when needed to assure that these learning outcomes are met.

### ACCOUNTING

Accounting can be described as a service activity, a descriptive/analytical discipline, and an information system. As a service activity, it provides users with quantitative financial information to aid in making business-related decisions. As a descriptive, analytical discipline, it identifies those economic transactions affecting an economic entity and describes—through measurement, classification summarization, and reporting—the impact of the transactions on the entity. As an information system, accounting communicates financial information to interested parties. Accountants are involved in one or more of these areas.

### Career Opportunities

The demand for accounting graduates continues to grow as corporations develop, tax laws change, and new government regulations are introduced.

All types of organizations, public and private, require accounting services in their operations. Private accounting includes such areas of specialization as financial accounting, cost accounting, systems, managerial accounting, internal auditing, tax accounting, budgeting, and financial analysis. In public accounting, the major specializations include external auditing, management advisory services, tax accounting, and planning.

Employers of accountants include public accounting firms, banks, retail and wholesale businesses, manufacturers, tax firms, pension funds, foundations, hospitals, universities, churches, nonprofit organizations, government agencies, and consulting companies. Self-employed accountants may set up their own offices and work for private clients.

### Student Organizations

The Institute of Management Accountants Student Chapter at YSU operates under the sponsorship of the Institute of Management Accountants, the world's largest association of management accountants and financial managers. Beta Alpha Psi, an honorary organization for financial information professionals, is open to accounting, finance, and management information systems majors with a 3.00 or higher GPA.

Accounting students are actively involved in public service such as the Volunteer Income Tax Assistance (VITA). Students can either serve as a volunteer or register to earn academic credit.

## Requirements to Sit for the Certified Public Accountants (CPA) Exam

Effective with the year 2000, Ohio residents wishing to sit for the Certified Public Accountant (CPA) exam are required to have completed 150 semester hours (225 quarter hours) of education. To assist our students in meeting that requirement and to enhance their overall education and preparation for the exam, the Master of Business Administration (MBA) degree with a concentration in accounting is strongly recommended in conjunction with the bachelor's degree. With proper planning and coordination, a student can complete both a B.S. and MBA in five years (for example, students may take MBA courses in their senior year which would be counted towards the graduate degree).

In order to complete both undergraduate and graduate degrees in a timely manner, undergraduate students should apply to the MBA program (which includes successful completion of the GMAT exam) upon completion of 90 semester hours including intermediate accounting courses. Please consult any of the following: Undergraduate Advisement office, MBA office, or the Lariccia School of Accounting and Finance.

## Curricula

For University requirements, lower-division tool requirements, and upper-division core requirements, see pre-business course requirements at the beginning of the WCBA section.

### Accounting Major (124 Hours for the Degree)

#### Suggested sequence

##### Junior Year:

##### FALL

ACCT 3701: Intermediate Acct.....	4
ACCT 3711: Cost Acct .....	3
MKTG 3702: Intro to Professionalism .....	1
MKTG 3703: Marketing Concepts .....	3
MGT 3725: Fundamentals of Management .....	3
Electives (2-3 hours) (16-17 Hours)	

##### SPRING

ACCT 3702: Intermediate Acct II.....	4
ACCT 3709: Acct Info Systems.....	3
FIN 3720: Business Finance.....	3
BUS 3715: Principles of Intl Bus .....	3
Business upper-division elective (16 Hours)	

##### Senior Year:

##### FALL

ACCT 4801: Advanced Acct .....	4
ACCT 4813: Federal Tax I.....	4
MGT 3789: Operations Mgt .....	3
Business upper-division electives (17 Hours)	

#### SPRING

ACCT 4808: Auditing .....	4
MGT 3714: Legal Env. of Bus II.....	3
MGT 4850: Strategic Mgt.....	3
Business upper-division electives (16 Hours)	

## Accounting Minor

Courses include: ACCT 2602, 2603, 2603L, 3701, 3702, 3711, plus 1 to 3 s.h. of accounting electives.

## FINANCE

Due to rapid technological change, finance is one of the most exciting areas of business as well as an expanding career choice. A career in finance offers flexibility, security, and a wide choice of specializations. Corporations, governments, nonprofit institutions, and individuals all require the expertise that a financial professional can offer. During this era of restructuring, the unique analytical skills that a financial specialist provides can translate into job security as well as additional opportunity.

The role of finance professionals is to provide information and analyses to organizations and individuals that will result in superior decision making. A career in finance requires careful preparation, an aptitude for practical analytical skills, and the ability to recognize and communicate potential remedies and solutions to a wide variety of problems.

## Career Opportunities

Areas of specialization in the finance field include investment analysis, insurance, financial planning and analysis, banking, credit analysis, cash management, and corporate finance. The rapid expansion of international business and investments has led to a shortage of finance professionals to work in this area both domestically and abroad. The aging of the "Baby Boom" generation together with changing pension regulations increases the demand for professionals specializing in retirement planning and investments.

## Student Organizations

In addition to Beta Alpha Psi, students interested in learning more about the stock market and investing can participate in the Student Investment Fund, a student managed fund that exceeds \$500,000. Through the SIF, students work with faculty members to develop investment strategies, conduct research and make all investment decisions for the fund.

## There are two tracks in the finance major:

The second track is the financial planning track which positions students to earn the Certified Financial Planner designation. Students who complete this track will be eligible to sit for the certification exam.

CERTIFIED FINANCIAL PLANNER™ professionals are uniquely qualified to help individuals pull all their finances together, solve financial problems, and make a plan to achieve their financial goals. At a time when unemployment is soaring and many Americans are reaching retirement age, the need for personal financial planning expertise is greater than ever. Recruiters and prospective employers recognize CFP® certification as the most desired designation in this growing field. The financial planning career path is expected to grow 41% by 2016, according to *Money Magazine* and *Payscale.com*.

**Finance Major**  
(124 Hours for the Degree)

**BUSINESS FINANCE TRACK**

**FALL**

FIN 3720: Business Finance.....	3
MKTG 3702: Intro to Professionalism .....	1
MKTG 3703: Marketing Concepts .....	3
MGT 3725: Fund. of Mgt.....	3
BUS 3715: Principles of Intl Business .....	3
Business upper-division elective	
(16 Hours)	

**SPRING**

FIN 3730: Investment Analysis.....	4
FIN 4835 Adv. Bus Fin.....	4
MGT 3761: Operations Mgt .....	3
Business upper-division electives	
(14-17 Hours)	

**FALL**

FIN 4853: Fin Analysis.....	4
Finance upper division elective	
MGT 3789: Operations Mgt .....	3
Business upper-division elective	
Nonbusiness elective	
(16 Hours)	

**SPRING**

FIN 4836: Intro to Fin Markets .....	4
MGT 4850: Strategic Mgt.....	3
Business upper-division electives	
Nonbusiness elective	
(16 Hours)	

**CERTIFIED FINANCIAL PLANNING TRACK**

**FALL**

FIN 3720: Business Finance.....	3
MKTG 3702: Intro to Professionalism .....	1
MKTG 3703: Marketing Concepts .....	3
MGT 3725: Fund. of Mgt.....	3
BUS 3715: Principles of Intl Business .....	3
Business upper-division elective	
(16 Hours)	

**SPRING**

FIN 3730: Investment Analysis.....	4
FIN 4835 Adv. Bus Fin .....	4
MGT 3761: Operations Mgt .....	3
Business upper-division electives	
(14-17 Hours)	

**FALL**

FIN 4853: Fin Analysis.....	4
Finance upper division elective	
MGT 3789: Operations Mgt .....	3
Business upper-division elective	
Nonbusiness elective	
(16 Hours)	

**SPRING**

FIN 4836: Intro to Fin Markets .....	4
MGT 4850: Strategic Mgt.....	3
Business upper-division electives	
Nonbusiness elective	
(16 Hours)	

**Finance Minor**

Suggested courses include:  
FIN 3720, 3721, 3730, 4835, 4836, or 4853

**DEPARTMENT OF  
MANAGEMENT**  
330-941-3071

*Professors Eummi, Guzell, Karpak, Kasuganti (Chair), Katz, Psenicka, Russo; Associate Professors Kos, Peng, Rakestraw, Vendemia. Assistant Professors Bateman, Breland, Dangol, Han, Pandian.*

Management is the study of the process of working with and through others to solve practical problems and reach organizational goals. Programs offered by the Department of Management are designed to develop and enhance the skills and knowledge base necessary for successful managers. Effective managers must be able to meet the challenges of rapid change, intense and global competition, and increased sensitivity to social concerns that characterize today's business environment.

As leaders, managers are responsible for the successful performance of their unit and its function. They must have a thorough understanding of strategic planning, human resource management, product planning and design, capacity management, materials management, global operations, organizational design, and information systems. Supervisory, middle, and upper-level managers practice in a variety of profit and non-profit settings, and they must be adept in their interpersonal, informational and decisional roles.

The Department of Management offers programs leading to the Bachelor of Science in Business Administration degree in the following majors: management information systems, human resource management, and business administration. An Individualized Curriculum Program in international management is also offered.

The programs in the department are designed to prepare individuals for careers as managers/supervisors in business/industrial/transportation/and public organizations. For those not majoring in one of these

fields, the courses offered provide a knowledgeable background in management/supervision/administration of organizations.

The department also offers a two-year associate degree program in business administration.

### Career Opportunities

Managers work in every field. Some opportunities that are available for managers include the following:

*General Management* — Executive, Chief Executive Officer (CEO), Chief Operating Officer (COO), president, city manager, health services manager, hotel general manager, strategic planner, hospital administrator, entrepreneur.

The curriculum emphasizes knowledge of all areas of business as well as good analytical, organizational, and strategic management skills.

*Human Resource Management* — Human resource manager, vice president of human resources, employee relations, salary and wage administrator, labor relations, organizational design and development specialist.

Students will gain the knowledge, skills, and competencies to develop and deploy a capable and motivated workforce that spells the difference between success and failure in a complete and competitive global environment.

*Management Information Systems* — Management Information Systems (MIS) manager, vice president of information systems, systems analyst, data base administrator, network manager, and programmer. Courses in this area will focus on the personal, organizational, and technical aspects of the MIS function. Students will gain the knowledge, skills, and competencies to use information systems for gaining strategic, tactical, and operational advantage.

*International Management* — Careers in any of the areas listed above, when the employing organization has significant international involvement in the form of export/import, joint ventures, foreign direct investment, and multinational/global operations.

### Learning Outcomes

The student learning outcomes for majors within the Management Department are as follows:

- Operations Management—Demonstrate knowledge in role of operations management in business strategy of the firm; interdependence with other key functional areas; designing and improving processes; designing and operating value chains
- International Business—Demonstrate knowledge in cross-country variations in business environments that present both opportunities and challenges in operating globally; strategies and management systems to seize the opportunities and face the challenges in operating globally

- Information Systems—Demonstrate knowledge in role of information systems in the modern enterprise; emerging technologies (such as ERP, CRM etc.) and their potential impact on your business; managing IT resources effectively and efficiently to achieve business goals
- Business Policy and Strategy—Demonstrate knowledge in applying basic strategy frameworks, concepts, and definitions; cross-functional analysis, decision-making, and strategic integration; analysis of complex business/industry scenarios and development of action plans
- Management/Organizational Behavior — Demonstrate knowledge in management as a social process; managerial functions (planning, organizing, leading, motivating etc.) and skills (technical, communications, etc.)

### Student Organizations

Association of Information Technology Professionals (AITP) offers opportunities for information technology leadership and education through partnerships with industry, government and academia.

Students who have an ongoing interest in human resource management are encouraged to join the YSU student chapter of the Society for Human Resource Management (SHRM).

### Curricula

All students in management must take the department core requirements and the courses listed in their respective major. For University requirements, lower-division tool requirements, and upper-division core requirements, see Pre-Business Course Requirements on p. 86.

### Management Department Core Requirements

MGT 3750  
Managing Individuals Organizations

### Management Information Systems Major

#### GENERAL BUSINESS ADMINISTRATION FALL

MKTG 3703: Marketing Concepts .....	3
MKTG 3702: Intro to Professionalism .....	1
MGT 3725: Fund. of Mgt .....	3
FIN 3720: Business Finance.....	3
BUS 3715: Principles of Intl Business .....	3
MGT 3750: Managing Indiv. in Organizations .....	3
<i>(16 Hours)</i>	

**SPRING**

MGT 3761: Info Systems for Mgt ..... 3  
 ACCT/FIN UD Elective  
 MGT UD Elective  
 MKTG UD Elective  
 BUS UD Elective  
 (15 Hours)

**FALL**

MGT 3789: Operations Mgt ..... 3  
 ACCT/FIN UD Elective  
 MGT UD Elective  
 MKTG UD Elective  
 BUS UD Elective  
 (15 Hours)

**SPRING**

MGT 4850 ..... 3  
 BUS UD Elective  
 NON BUS Elective ..... 10  
 (16 Hours)

**HUMAN RESOURCE MANAGEMENT**

**FALL**

FIN 3720: Business Finance..... 3  
 MKTG 3703: Marketing Concepts ..... 3  
 MKTG 3702: Intro to Professionalism ..... 1  
 MGT 3725: Fund. of Mgt ..... 3  
 MGT 3750: Managing Indiv. in Organizations ..... 3  
 BUS UD Elective  
 (16 Hours)

**SPRING**

MGT 3761: Info Systems for Mgt ..... 3  
 MGT 4810: Comp/Perform. App..... 3  
 BUS 3715: Principles of Intl Bus ..... 3  
 MGT 4819: Select, Train. & Dev..... 3  
 MGT UD Elective  
 (17 Hours)

**FALL**

MGT 3789: Operations Mgt. .... 3  
 MGT 3715: Labor Law & Neg. .... 3  
 HR UD Elective  
 MGT UD Elective  
 NON BUS Elective  
 (16 Hours)

**SPRING**

MGT 4850: Strategic Mgt..... 3  
 MGT 4844: Strat Human Res Mgt..... 3  
 MGT 4845: Projects in Hum Res ..... 3  
 BUS UD Elective  
 NON BUS Elective  
 (13 Hours)

**MANAGEMENT INFORMATION SYSTEMS**

**FALL**

MGT 3761: Info Systems for Mgt ..... 3  
 MGT 3725: Fund. of Mgt ..... 3  
 CSIS 2610: Program & Problem Solving ..... 4

MKTG 3703: Marketing Concepts ..... 3  
 MKTG 3702: Intro to Business Professionalism..... 1  
 NON BUS Elective  
 (16 Hours)

**SPRING**

MGT 4881: Project Management..... 3  
 BUS UD Elective  
 CSIS 3720: System Conf & Maint..... 3  
 FIN 3720: Business Finance..... 3  
 MGT 3750: Managing Indiv. in Org..... 3  
 (15 Hours)

**FALL**

MGT 5835: Systems Analysis & Design..... 3  
 MGT 3771: Electronic Commerce ..... 3  
 BUS 3715: Principles of Intl Business ..... 3  
 MGT 3789: Operations Mgt ..... 3  
 Specialization..... 4  
 (16 Hours)

**SPRING**

MGT 5865: Database Mgt Sys..... 3  
 MGT 4850: Strategic Mgt..... 3  
 Specialization ..... 3  
 BUS UD Elective..... 5  
 Elective..... 1  
 (15 Hours)

**Logistics Minors**

Courses include: MGT 3725, 3789, or ISEN 4815, GEOG 3741 or GEOG 2640, MGT 4882, 4896

**Human Resource Minor**

Courses include: MGT 3725, 3750, and 3734; Three upper-division management electives from MGT 3705, 3715, 3761, 4810, 4819 (9-12 hours)

**Management Information Systems Minor**

Courses include: MGT 3725, 3761 and 5835; Three upper-division management electives from MGT 3737, 3771, 3789, and 5865

**Enterprise Resource Planning Certificate**

Mgt 3761 Management Information..... 3 s.h.  
 Systems  
 Mgt 3789 Operations Management..... 3 s.h.  
 Mgt 4880G Business Process Integration ..... 3 s.h.  
 Mgt 4820 Supply Chain Management..... 3 s.h.  
 with SAP

## DEPARTMENT OF MARKETING

330-941-3080

*Professors Anderson, Keillor, Toncar; Associate Professors Kohut (Chair), Reday, Wang-Ying; Assistant Professor Fowler.*

### MARKETING

Marketing deals with processes that provide products and services to buyers with the goal of satisfying their needs and wants. Buyers can be consumers or businesses. Determining buyers' needs and wants and developing ways to meet them is the fundamental role of business – both for-profit and not-for-profit. Indeed, it was recently stated in the *Harvard Business Review* that, within the context of business, "Marketing is everything" – the success of an organization's marketing determines the success of the organization. It is no wonder then, that marketing is the central activity of business organizations in market economies.

Marketing addresses a number of business issues, including deciding what products to offer, to whom, at what price, and at what location. Marketing majors in the Williamson College of Business Administration (WCBA) enroll in a wide variety of courses that examine these areas in great detail to provide them with the tools and knowledge to succeed in the world of business. For those not majoring in marketing, the course offerings provide a knowledge of how businesses function and how other business operations, such as finance and management, provide the inputs necessary for successful decision making and strategy implementation.

Although the Department of Marketing offers only one major in marketing, the curriculum is flexible enough to allow students to focus their attention in areas of interest. For instance, in addition to *marketing management*, the curriculum allows study in such areas as *retail marketing* (management of retail businesses who sell directly to consumers), *shopping center and property management* (management of shopping and mixed-use developments), *industrial marketing* (business-to-business marketing programs and practices), and others. The marketing major leads to a Bachelor of Science degree in Business Administration.

### Career Opportunities

Marketing courses at YSU are designed to prepare students for careers in marketing, including those related to the development distribution, pricing, promotion, and selling of goods and services. It is estimated that about 50 percent of all jobs in the United States are associated with these marketing functions. Department stores, retailers, and franchise service operations seek college-trained marketing experts. The marketing divisions of industrial corporations and advertising agencies have also traditionally held career opportunities for marketing graduates. Today,

however, they are joined by banks and other financial institutions, health-related and charitable organizations, government agencies, and other service and not-for-profit organizations.

Marketing positions are among the highest-paid positions in business today. A shortage of college-trained marketing experts, excellent advancement opportunities, and easily transferable skills make marketing an extremely attractive and a very rewarding career option.

### Learning Outcomes

The Department of Marketing provides quality professional business education that prepares students for productive careers in the marketing and advertising industry.

Our students will have a strong understanding of customer needs and the process of developing, pricing, distributing, and promoting products and services that provide customer value.

Students will have a knowledge and understanding of:

- The marketing concept
- Global marketing
- Ethical marketing practices
- The marketing mix
- Buyer behavior
- Basic marketing research
- Marketing communications
- Advertising and public relations management practices

### Student Organizations

The Collegiate Chapter of the American Marketing Association is open to students enrolled in the business curriculum.

### Curricula

Marketing majors must take the department core requirements. Students then have the flexibility to focus on areas of their interest. For University requirements, lower-division tool requirements, and upper-division core requirements, see Pre-Business Course Requirements on p. 86.

### Marketing Major Requirements (124 Semester Hours for the Degree)

#### MARKETING MANAGEMENT FALL

MKTG 3703: Marketing Concepts .....	3
MKTG 3702: Intro to Professionalism .....	1
MGT 3725: Fund. of Mgt .....	3
FIN 3720: Business Finance .....	3
BUS 3715: Principles of Intl Business .....	3
MKTG 3740: Professional Selling .....	3
(16 Hours)	

**SPRING**

MKTG 3726: Consumer Behavior ..... 3  
 MKTG 3750: Product Mgt..... 3  
 MKTG 4815: Marketing Research..... 3  
 MGT 3761: Info Systems for Mgt..... 3  
 BUS UD ELECT  
 (15 Hours)

**FALL**

MGT 3789: Operations Mgt ..... 3  
 MKTG 4825: Marketing Mgt..... 3  
 MKTG UD ELECT  
 BUS UD ELECT  
 NON BUS ELECT  
 (15 Hours)

**SPRING**

MGT 4850: Strategic Mgt..... 3  
 MKTG 4850: Intern or MKTG UD ELECT  
 MKTG UD ELECT  
 BUS UD ELECT  
 NON BUS ELECT  
 (16 Hours)

**Marketing Minors**

Courses include: BUS 1500, MGT 2604, MKTG 3703, MKTG 3702, MKTG 3740, MKTG 3709, MKTG 4845

**ADVERTISING AND PUBLIC RELATIONS**

Advertising and public relations are mainly concerned with communications by organizations to their various audiences. Organizations have public images that must be maintained and refined. Advertising and public relations practitioners create and place messages designed to inform or persuade audiences about an organization or its products and services. Many of these messages have selling as a major goal.

These messages are the ones the average person sees each day. How did you first learn about the car you drive or your favorite soft drink? It was probably through advertising messages. Similarly, public relations messages provide us with information about new developments in cancer research or charitable activities and services. Public relations activities also include planning events, writing newsletters, developing good relationships with media personnel, and providing information services to customers.

YSU's advertising and public relations major is unique because it is offered by the Department of Marketing in the Williamson College of Business Administration (WCBA). YSU's program has a distinct advantage because it is focused on integrated marketing communications similar to employers' organizations, thus enhancing the marketability of our graduates. The advertising and public relations program leads to a Bachelor of Science degree in Business Administration.

**Career Opportunities**

Advertising and public relations courses are designed for those students who plan careers in advertising and public relations and for those who desire to have a knowledge of advertising that would benefit them as they pursue a career in business, public, or nonprofit organizations.

**Student Organizations**

Alpha Delta Sigma (ADS) is a national professional advertising society affiliated with the American Advertising Federation.

**Curricula**

Advertising/PR majors must take the department core requirements and several courses in integrated marketing communications. Students then have the flexibility to focus on areas of their interest. For University requirements, lower-division tool requirements, and upper-division core requirements, see prebusiness course requirements at the beginning of the WCBA section.

**Advertising and Public Relations Major Requirements**

(124 Semester Hours for the Degree)

MKTG 3726, 4815, ADV 4855, and PREL 3710

ADV 3711, 3712, 3717 and three Advertising and Public Relations or Marketing electives and

Business upper-division electives

**ADVERTISING/PUBLIC RELATIONS**

**FALL**

MKTG 3703: Marketing Concepts ..... 3  
 MKTG 3702: Intro to Professionalism ..... 1  
 MGT 3725 MGT 3725: Fund. of Mgt..... 3  
 FIN 3720: Business Finance..... 3  
 ADV 3711: Marketing Communications ..... 3  
 PREL 3710: Basic Public Relations ..... 3  
 (16 Hours)

**SPRING**

MKTG 3726: Consumer Behavior ..... 3  
 MKTG 4815: Marketing Research..... 3  
 MGT 3761: Info Systems for Mgt ..... 3  
 BUS 3715: Prin of Intl Business ..... 3  
 BUS UD ELECT  
 (15 Hours)

**FALL**

ADV 3712: Creative Strategies in IMC..... 3  
 ADV 3717: Media Planning/Buying ..... 3  
 MGT 3789: Operations Mgt ..... 3  
 BUS UD ELECT  
 ADV UD ELECT  
 (15 Hours)

## SPRING

ADV 4855: IMC Campaigns .....	3
MGT 4850: Strategic Mgt.....	3
ADV UD ELECT	
NON BUS ELECT	
(16 Hours)	

## Advertising and Public Relations Minor

Courses include: ADV 3711, 3712, 4855, PREL 3710 plus choose two electives from the following: ADV 3717, 4811 or MKTG 3740

An advertising and public relations minor can be a valuable addition to any degree. See the Marketing Department chair for more information and course requirements.

## Business Economics

*The BSBA in business economics is offered jointly by the Williamson College of Business and the Department of Economics, College of Liberal Arts and Social Sciences.*

Economics provides critical decision-making tools in all areas of business. To the manager of a firm, microeconomic theory provides strategies on how to maximize profit, techniques for measuring how customers will respond to changes in price, and how the potential profitability of the firm will vary with the level of competition. Macroeconomic theory discusses why inflation, unemployment, and interest rates change. For a manager, an important issue is how the federal government may try to change the state of the economy, and how that will alter business opportunities. The field also offers courses that cover forecasting and other statistical techniques which may be used in business decision-making.

## Career Opportunities

A career in economics is a good choice for people who like to analyze how systems work. A degree in business economics can open high-paying opportunities in a wide variety of fields. Consulting firms, research firms, financial institutions and corporate planning departments all seek applicants trained in economics.

According to the Occupational Outlook Handbook published by the U.S. Bureau of Labor Statistics: "Competition, the growing complexity of the global economy, and increased reliance on quantitative methods for analyzing the current value of future funds, business trends, sales, and purchasing should spur demand for economists. The growing need for economic analysis in virtually every industry should result in additional jobs for economists."

To be competitive in the field, graduates must be able to analyze business problems using economic theory and statistical techniques, and then communicate those results clearly in written reports to non-economists.

## Upper-Division Status

Students pursuing a business economics major must meet all course requirements and maintain a 2.5 grade point average to be admitted to upper-division standing.

## Learning Outcomes

To be competitive in the job market, economics majors must have knowledge of microeconomics, macroeconomics, and statistical techniques. They must also be able to apply the theory and statistical techniques they have learned to public policy issues and business problems and be able to present their conclusions. The learning objectives of the economics major are as follows:

- Microeconomics – The student will be able to discuss the characteristics of different market structures and how the structure of a market affects consumers. The student will also be able to explain the conditions that must be met for an economy to use its resources in the most efficient manner possible.
- Macroeconomics – The student will be able to explain the major macroeconomic goals: rapid economic growth, high employment, and stable prices and how the tools of monetary and fiscal policy can be used to achieve macroeconomic goals.
- Statistical Analysis – The student will be able to interpret descriptive statistics, the results of hypothesis tests, and regression estimates.
- Communication Skills – The student will be able to give a well-prepared presentation on an economic problem. By well-prepared, it is meant that the presentation clearly frames the topic of the presentation, discusses the relevant theory and evidence, correctly document references, and proposes a conclusion consistent with the theory and evidence.

## Curricula

All students in business economics must take the department core requirements and the courses listed in their major. For University requirements, lower-division tool requirements, and upper-division core requirements, see the pre-business course requirements on p. 86.



## Business Economics Major Requirements

(124 Semester Hours for the Degree)  
(Junior and Senior Course Sequences)

### BUSINESS ECONOMICS

#### FALL

ECON 3712: Macroeconomics Theory .....	3
MKTG 3703: Marketing Concepts .....	3
MKTG 3702: Intro to Professionalism .....	1
MGT 3725: Fund. of Mgt .....	3
BUS 3715: Principles of Intl Business .....	3
NON BUS Elective	
(16 Hours)	

#### SPRING

ECON 3710: Microecon Theory .....	3
FIN 3720: Business Finance.....	3
MGT 3761: Info Systems for Mgt .....	3
BUS UD Elective	
ECON UD Elective	
(15 Hours)	

#### FALL

ECON 4880: Analysis of Economic Problems.....	3
MGT 3789: Operations Mgt. ....	3
ECON UD Elective	
BUS UD Elective	
(15 Hours)	

#### SPRING

MGT 4850: Strategic Mgt.....	3
ECON UD Elective	
BUS UD Elective	
NON BUS Elective .....	7
(16 Hours)	

## Economics Minor

An economics minor complements many different majors. Students taking a minor in economics must meet the requirements of one of the two tracks listed below. Courses at the 1500 level cannot be counted toward the minor.

### Economics with Statistics

ECON 2610 (Principles 1, Microeconomics), ECON 2630 (Principles 2, Macroeconomics) ECON 3790 (Business and Economics Statistics), and 9 semester hours of electives.

### Economics

ECON 2610 (Principles 1, Microeconomics), ECON 2630 (Principles 2, Macroeconomics), and 12 semester hours of electives. ECON 3790 cannot be counted as an elective in this track.

## Student Organizations

The Economics Club is open to all students. The club sponsors speakers and field trips related to the study of economics. For information about the Economics Club contact the Economics Department.

## Minor and Certificate Programs

### Business Minor (22 s.h.)

#### Minor and certificate programs

In addition to the minors in accounting, finance, human resource management, logistics, management information systems, marketing, and advertising/public relations already described, the WCBA offers minors in business, entrepreneurship and nonprofit leadership and certificates in enterprise resource planning, entrepreneurship, and nonprofit leadership.

#### BUSINESS MINOR

Exploring Business (BUS 1500), Financial Accounting (ACCT 2602), Managerial Accounting (ACCT 2603), Marketing Concepts (MKTG 3703), Fundamentals of Management (3725), and Business Finance (FIN 3720).

## Certificate in Non-Profit Leadership

The Certificate in Nonprofit Leadership is geared to any YSU student seeking a four-year degree who is interested in beginning a career in the nonprofit sector and/or serving the community. Students seeking the Certificate in Nonprofit Leadership must complete the following courses: PSYC 1560, SOC 1500, BUS 3720, BUS 3780 (offering Spring semester only), PR 3710, MGT 3755, MGT 3725, BUS 3740, BUS 4840, BUS 4841, PHIL 2625, MKTG 3702.

In addition to coursework, students must complete a 300 hour internship at a regional nonprofit organization. Academic credit is given for the first 225 internship hours through enrollment in BUS 4840 and BUS 4841 (listed above), which must be taken concurrently and during the semester the student is completing the internship. A student can enroll in these two courses during the fall, spring, or summer semester.

Students seeking the Certificate in Nonprofit Leadership must be active members of the Student Nonprofit Leadership Organization (SNLO), which meets on Tuesdays at 4:00 pm. Academic credit is given for participation in this student organization by enrolling in BUS 3740 – Nonprofit Community Service (listed above).

Lastly, students must attend the national American Humanics Management Institute or an equivalent conference to receive the certification.

Students seeking the Certificate in Nonprofit Leadership must contact the director of the Center for Nonprofit Leadership prior to enrolling in coursework.

## Nonprofit Leadership Minor

Both the nonprofit leadership minor and the Certificate in Nonprofit Leadership are geared to any YSU student seeking a four-year degree who is interested in beginning a career in the nonprofit sector and/or serving the community. All students who complete the requirements of the Certificate in Nonprofit Leadership also receive the nonprofit leadership minor. The courses required for the nonprofit leadership minor include: BUS 3720, BUS 3780 (offering Spring semester only), PR 3710, MGT 3755, MGT 3725, BUS 3740, BUS 4840, BUS 4841. All students seeking the nonprofit leadership minor must complete a 225-hour internship in a regional nonprofit organization. Academic credit is given for the internship through enrollment in BUS 4840 and BUS 4841 (listed above), which must be taken concurrently and during the semester the student is completing the internship. A student can enroll in these two courses during the fall, spring, or summer semester.

## Entrepreneurship

Both the minor and Certificate in Entrepreneurship are designed to provide a broad-based understanding of the entrepreneurial process and the unique problems and challenges faced by new ventures. In recognition of the broad spectrum of start-up concepts, these programs, while housed in the Williamson College of Business Administration, are open to students of all disciplines. The certificate and minor are designed to serve students who intend to start and lead their own company. Innovation, creativity, and opportunity recognition are critical skills necessary for anyone entering the marketplace. Learning these entrepreneurial skills will prepare one for the diverse and ever-changing opportunities that exist throughout the world of business.

The Certificate in Entrepreneurship consists of four courses. In order to earn the certificate, students must complete:

Exploring Business (BUS 1500) .....	3 s.h.
New Venture Creation (ENT 3700).....	3 s.h.
New Venture Financing (ENT 3750) .....	3 s.h.
Business Plan Development (ENT 4800) .....	3 s.h.

### Entrepreneurship Minor

The Entrepreneurship minor consists of 18 hours of coursework. Courses are designed to serve students who intend to start their own business.

*Course requirements are:*

BUS 1500 Exploring Business.....	3
ENT 3700 New Venture Creation .....	3
ENT 3750 Small Business Financial Management .....	3
ENT 4800 Business Plan Development .....	3

*Plus two of the following courses:*

ENT 4850 Entrepreneurship Internship.....	3
ENT 4851 Entrepreneurship Field Study.....	3

ACCT 1503 Elementary Accounting .....	3
OR	
ACCT 2602 Financial Accounting.....	3
MGT 2604 Legal Environment of Business 1 .....	3
MKTG 3703 Marketing Concepts .....	3
MGT 3725 Fundamentals of Management .....	3
<b>Total Semester Hours Required .....</b>	<b>18</b>

## Certificate in Enterprise Resource Planning (ERP)

Enterprise Integration involves the integration of software, hardware, and networking technology at both the intra-organizational and inter-organizational levels. To be successful, management must implement a business process view of the organization. The ERP Certificate enables students to be effective users of integrated ERP software and effective participants in managing the evaluation, installation, and use of ERP software.

Mgt 3761 Management Information Systems .....	3 s.h.
Mgt 3789 Operations Management.....	3 s.h.
Mgt 4880G Business Process Integration .....	3 s.h.
Mgt 4820 Supply Chain Management with SAP .....	3 s.h.

## Associate Degree Programs

### Associate in Arts in Business Administration

The Associate in Arts degree is intended for students not seeking other associate degrees. However, all courses taken in the Associate in Arts degree do apply toward the Bachelor of Science in Business Administration degree. To pursue an Associate in Arts degree, consult the Office of Undergraduate Student Services in the College of Business Administration, Room 408 of Williamson Hall.

### Associate in Arts in Business Administration Requirements—AA Degree

#### FIRST YEAR

Course	s.h.
ENGL 1550 Writing I.....	3
ENGL 1551 Writing II .....	3
*BUS 1500 Exploring Business.....	3
*MATH 1552 Applied Math for Management.....	4
*ECON 2610 Principles I.....	3
*ECON 2630 Principles II .....	3
PSYC 1560 General Psychology .....	3
CMST 1545 Communication Theory .....	3
General Education Requirements.....	6

**SECOND YEAR**

Course	s.h.
<sup>1</sup> MGT 2604 Legal Environment of Business I.....	3
<sup>1</sup> ACCT 2602 Financial Accounting.....	3
<sup>1</sup> ACCT 2603 Managerial Accounting.....	3
<sup>1</sup> ECON 3790 Business & Econ Stat.....	5
PHIL 2628 Business Ethics .....	3
ACCT 2603L Managerial Acct Spreadsheet Lab.....	1

**WCBA Core Courses**

MGT 3725 Fund of Management.....	3
MKTG 3702 Intro to Professionalism (must be taken concurrently with MKTG 3703).....	1
MKTG 3703 Marketing Concepts/Practice.....	3
FIN 3720 Business Finance.....	3
MGT 3750 Managing Individuals in Organizations .....	3
MKTG 3740 Professional Selling.....	3

<sup>1</sup>WCBA tool courses and English 1551 must be completed with a grade of "C" or better and an overall GPA of 2.5 or higher before core course permits are issued. CR/NC options may not be used in tool and core courses.

General Education Requirements.....	7
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## Associate of Technical Study—Business Technology

The Associate of Technical Study—Business Technology program is designed to provide an opportunity for individuals who have completed documented vocational or technical training to earn academic credit for the training and combine this with academic coursework at the college level to earn an Associate of Technical Study degree.

Students must be enrolled in or have successfully completed a course of technical training that has already been evaluated by YSU. Students may be awarded no more than 30 hours for previous documented technical training.

## Associate of Technical Study—Business Technology Requirements—ATS Degree

**FIRST YEAR**

Course	s.h.
*ENGL 1550 Writing 1 .....	3
*ENGL 1551 Writing 11 .....	3
*BUS 1500 Exploring Business .....	3
*MATH 1552 Applied Math for Management .....	4
*ECON 2610 Principles 1.....	3
CMST 1545 Communication Foundations .....	3

**SECOND YEAR**

*Mgt 2604 Legal Environment of Business I .....	3
*Acct 2602 Financial Acct .....	3
*Acct 2603 Managerial Acct.....	3
English Literature Elective.....	3
**Elective.....	3
YSU Semester Hours.....	34
Credit for technical studies.....	<u>30</u>

<b>Total Hours .....</b>	<b><u>64</u></b>
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\*Select from the following: ECON 2630, ECON 3790, MGT 3725 or PHIL 2625. Refer to the University catalog for course descriptions and proper prerequisites before registering for electives.

\*\*Business Tool Courses, ENGL 1551 (completed with a grade of "C" or better) and an overall GPA of 2.5 is the prerequisite for MGT 3725.

The programs and courses in the Williamson College of Business Administration will vary in nature depending upon content, level of instruction, and the pedagogical approach of the professor. At all times, discussion and the exchange of ideas between student and faculty is encouraged.



# The Beeghly College of Education

*Dr. Charles Howell, Dean*



The Beeghly College of Education offers programs and activities for preparing individuals for a variety of educational positions in schools, colleges, industry, business and governmental agencies. It is organized to offer curricula and/or services for the preparation of: (1) teachers in early childhood, middle, special education, and secondary school classrooms; (2) personnel to serve in various levels of school and administrative positions; (3) supervisory personnel for curricular development and instructional improvement; (4) teachers and other personnel in special education; (5) individuals for a wide variety of guidance and student personnel positions; (6) professional educators in colleges; community, technical, and vocational schools; and governmental agencies.

The Beeghly College of Education is essentially an upper-division school comprising three departments: Counseling, Special Education, and School Psychology; Educational Foundations, Research, Technology, and Leadership; and Teacher Education. It cooperates with the College of Liberal Arts and Social Sciences, the Bitonte College of Health and Human Services, and the College of Fine and Performing Arts in preparing teachers for both public and private schools.

Youngstown State University teacher education programs are accredited by the Ohio Department of Education and the National Council for Accreditation of Teacher Education (NCATE). These programs are subject to the sections of the Ohio law and regulations governing teacher education and licensure. The College of Education serves as the recommending agent for all Youngstown State University graduates who wish to qualify for state of Ohio licensure as well as for licensure in other states.

In the College of Education, professional courses are offered leading to teacher licensure and to the Bachelor of Science in Education degree.

Prospective teachers may also be licensed upon receiving degrees earned in the College of Liberal Arts and Social Sciences, the College of Fine and Performing Arts, and the Bitonte College of Health and Human Services, providing they meet requirements for admission to upper-division status in the College of Education and complete the proper teacher education programs.

### **Program Conceptual Framework: Reflection in Action**

The College's professional education programs, initial and advanced, are defined within a conceptual framework referred to as *Reflection in Action*. This translates into the following institutional standards and outcome statements:

#### **R1: Reflective practice is Reasoned.**

Candidates exercise rational judgment and give thoughtful consideration to their professional activities and decisions.

##### **Outcomes:**

- A. Candidates use research, theory, and wisdom of practice to inform their pedagogy.
- B. Candidates apply the appropriate knowledge of assessment and evaluation to their practice.
- C. Candidates utilize evaluation results for evidence-based decision-making.
- D. Candidates employ reflective professional judgment across all facets of their practice.

#### **R2: Reflective practice is Ethical.**

Candidates act in a moral, legal, and principled manner in professional practice.

##### **Outcomes:**

- A. Candidates apply ethical and legal practices in performing their professional responsibilities.
- B. Candidates demonstrate knowledge of education policies at the local, state and national level for instructional decision-making.
- C. Candidates value and apply the professional code of conduct particular to their area.

#### **R3: Reflective practice is Fair.**

Candidates exercise democratic fairness, principled concern, and humane care in their professional activities.

##### **Outcomes:**

- A. Candidates demonstrate professional, collaborative, and inclusive dispositions both in their field placements and within their courses.
- B. Candidates foster inclusive environments, and respect the backgrounds of and beliefs held by their students or clients.
- C. Candidates strive to meet the educational needs of all students or clients in a caring, non-discriminatory, and equitable manner.
- D. Candidates collaborate with colleagues, families and communities to ensure that all students reach their potential.

#### **R4: Reflective practice is Logical.**

Candidates think analytically in a deliberately consistent and rationally defensible manner.

##### **Outcomes:**

- A. Candidates think systematically and analytically about professional practice and professional decision-making.
- B. Candidates appropriately apply knowledge of research to their professional practice.

#### **R5: Reflective practice is Effective.**

Candidates apply professional knowledge in a consciously purposeful and deliberate manner.

##### **Outcomes:**

- A. Candidates are proficient in the procedures, techniques, and methods of their respective fields.
- B. Candidates are proficient in the content of their respective fields.

#### **R6: Reflective practice is Critical.**

Candidates use professional knowledge, objectively applying it to their own professional actions and the professional actions of others to the benefit of their students and clients.

##### **Outcomes:**

- A. Candidates evaluate their own effectiveness by giving attentive consideration to the positive growth of their students/clients.
- B. Candidates assess the needs for professional development and actively engage in professional activities to expand their knowledge, experiences and relationships.

**R7: Reflective practice is *Technical*.**

Candidates attend to procedural details and optimize the use of technologies appropriate to professional practice.

**Outcomes:**

- A. Candidates effectively and appropriately integrate various technologies into their work as teachers, counselors and administrators to maximize P-12 student learning.
- B. Candidates use technology to enhance their own professional development.

**Requirements for the Degrees****Bachelor of Science in Education**

It is the student's responsibility to fulfill graduation requirements for the appropriate degree. These consist of:

1. The pre-college or preparatory courses for each degree. Typically, these are completed at the high school level. Prior to admission to upper-division, the student must remove any deficiencies by a process described in the Academic Policies and Procedures section of this catalog.
2. The general education requirements to be completed in the University are explained in the Academic Policies and Procedures section of this catalog. Knowledge domains are comprised of natural sciences, artistic and literary perspectives, societies and institutions, personal and social responsibility, selected topics and electives and a capstone.
3. Completion of a minimum of 124 semester hours of credit with a grade point average of at least 2.67 overall and a 2.67 grade point average in the teaching field and professional education courses (each computed separately including transfer hours) with no less than a C grade in all major, licensure, and professional education courses.

**NOTE:** No student will be permitted to take the following professional education courses more than twice: FOUN 1501, FOUN 3708, EDTC 3771, PSYC 3709, SPED 2630, TERG 3701, TERG 3702, TERG 3703, TEMC 3702, SED 4800 series, ECE 2629, ECE 3760, pre-student teaching courses—ECE TEC, MCE Internship, STEP, SED 3706, MULT 4807, student teaching seminar and student teaching.

4. Students graduating from the Beeghly College of Education earn a Bachelor of Science in Education degree. The degree is awarded to students who qualify for a teaching license. Exceptions to this policy can be made only by the dean of the College of Education.

The curricula leading to the degrees are designed to be completed in four academic years.

ROTC students are allowed certain modifications of the requirements, as explained in the Department of Military Science in the College of Health and Human Services section.

**Majors in Teacher Education**

The following designations indicate student majors.

1. Early Childhood Education — (Pre-kindergarten through grade three). For teaching children who are typically developing, at-risk, gifted, and who have mild/moderate educational needs.
2. Middle Childhood Education — (Grades four through nine). For teaching learners in at least two of four curriculum concentration areas named on the teaching license. Students choose two areas from the following four: a) language arts; b) mathematics; c) science; d) social studies.
3. Adolescent Education — (Grades seven through twelve). For teaching learners in a curriculum area named on the teaching license. Students may choose from: a) Life Sciences Educ.; b) Earth Sciences Educ.; c) Physical Sciences Educ.; d) Integrated Sciences Educ.; e) Integrated Language Arts Educ.; f) Integrated Mathematics Educ.; g) Integrated Social Studies Educ.
4. Career/Technical Education — (grades four and beyond). For teaching in a subject area named on the teaching license. Students may choose from: a) Family and Consumer Sciences Educ.
5. Multi-age Education — (Pre-kindergarten through grade twelve). For teaching in a curriculum area named on the teaching license. Students may choose from: a) Art Educ.; b) French Educ.; c) Italian Educ.; d) Spanish Educ.; e) Health Educ.; f) Physical Educ.; g) Music Educ.
6. Special Education — (Intervention specialist, kindergarten through grade twelve). For teaching learners with Mild/Moderate Disabilities.

**Requirements for Admission to Teacher Education Licensure Programs**

Neither admission to the University nor declaration of a major related to a teaching field guarantees admission to the Beeghly College of Education (BCOE)'s teacher education programs or candidacy for a teaching license. *Formal admission to teacher education is required before students are allowed to enroll in junior and senior level courses in the College.*

After candidates have completed a minimum of 60 semester hours and fulfilled all other admission requirements, they should submit an application for admission to the teacher education program (upper division). The application for upper division must be completed and submitted to BCOE Room 2101 by:

September 15 to register for Upper Division courses for Spring; February 15 to register for Upper Division courses for Summer and Fall. Applications submitted after the deadline are NOT guaranteed acceptance in time to register for Upper Division courses.

Each completed application will be reviewed and approved by the Upper Division Admission and Retention Committee. If all requirements are met, student will be allowed to register for Upper Division courses the following semester.

Admission to the Teacher Education Program (Upper Division) is obtained upon satisfactory completion of the following requirements:

1. Minimum completion of 60 semester hours
2. Minimum 2.67 overall gpa and passage of the Praxis I with the following minimum scores: Writing – 172, Reading – 173, Mathematics – 172. The test is administered through the Education Testing Service and officially reported to YSU.
3. “B” average or better (A-C, B-B) for:
  - a. ENGL 1550
  - b. ENGL 1551

Note: ENGL 2601 is required if failure to meet “B” average above.

If you receive a “C” or below, you will need to retake this course.

4. “B” average or better (B-B-B, A-B-C) across the following:
  - a. FOUN 1501
  - b. CMST 1545
  - c. See curriculum sheet for concentration area course.

Note: If you do not have a “B” average, you will need to retake courses until the “B” average is achieved.

5. Completion of Good Moral Character Statement.
6. Current Bureau of Criminal Investigation (fingerprinting) and FBI clearances.

Candidates for degrees outside the College of Education are enrolled in the college awarding the particular degree, nonetheless these students must meet the above requirements and be admitted to Teacher Education in order to enter the junior and senior level courses offered in the College of Education leading to teaching licensure. All B.S. in Ed. candidates are enrolled in the College of Education and must meet these requirements for admission. Transfer students who were in good standing in an NCATE approved teacher education program at the previous school and who were admitted to the Teacher Education Program there, may be admitted to the Teacher Education Program at Youngstown State University with appropriate documentation.

Students are encouraged to plan to meet the requirements for admission to teacher education by the end of their sophomore year. Later qualification does not justify waiving any course prerequisites or planned sequences, and usually results in prolonging the period of study beyond the usual four years.

### Graduation and/or Licensure Evaluation

A Request for Graduation and/or Licensure Evaluation form should be completed and submitted to BCOE Room 2101 the semester prior to student teaching and/or application for licensure. This generates a program evaluation to assure that candidates are meeting graduation and/or licensure requirements.

### Requirements for Student Teaching

Application for a student teaching assignment must be filed with the Student Field Experiences Office during the preceding semester in which student teaching is to be completed. (BCOE Room 2101 for details.) The student must register for 10 hours for student teaching and 2 hours for the student teaching seminar in their respective licensure area during the open registration period preceding the student teaching term. Students anticipating more than one teaching license should seek advisement in the College of Education. To qualify for a student teaching assignment, the student must have satisfied the following requirements: 1) BCOE Upper Division Status; 2) a minimum overall G.P.A. of a 2.67; 3) completion of the program prerequisites; 4) an average of 2.67 in the major/teaching area and professional education courses (each computed separately with no grade less than a C); 5) a passing score on the Praxis II content and PLT test(s) and; completion of a criminal background check. No other course may be taken with student teaching. The Administrator of Student Field Experiences must be notified in writing prior to a student's attempt to register for course(s) outside of student teaching. Student teachers are required to complete the Teacher Performance Assessment (TPA). The Ohio Department of Education has accepted the TPA as a state mandated culminating assessment to be completed during student teaching for licensure. Student teaching is a full-time course, which may deviate somewhat from the University calendar depending on the calendar of the assigned school.

### Requirements for Licensure

**Initial Licensure.** The dean of the College of Education has the authority to recommend to the Ohio State Board of Education, and other licensure agencies, those Youngstown State University graduates who qualify for licensure in any teacher education program offered by the University. Students earning degrees in schools other than the College of Education must complete all requirements of the



teacher education program in order to be licensed. All candidates for any teaching license must meet the requirements for program admission in the College of Education, but the degree earned may be conferred by any of the University colleges in accordance with the specific requirements for the degree desired. However an overall undergraduate grade point average of 2.67 and 2.67 in the major field(s) and professional-education courses must have been earned if the student is to be recommended for licensure by Youngstown State University, irrespective of the type of degree received. **In addition, each candidate for licensure must pass the State of Ohio prescribed licensing examination(s) (Praxis II) and the state mandated Teacher Performance Assessment (TPA) prior to receiving YSU's recommendation for licensure.**

For more information regarding additional fields, or endorsements, consult the academic advisors in the College of Education.

**Post-Baccalaureate Licensure.** Post-baccalaureate students desiring Youngstown State University's recommendation for licensure in Ohio and any other state must be admitted to the University. Post-baccalaureate students are advised in the undergraduate student advisement office (BCOE Room 2101) and are advised in the same manner as undergraduate students. They must meet the standard set of requirements for admission and upper-division status in the College of Education. They must satisfy the teaching field, and professional education requirements comparable to the undergraduate program. Post-baccalaureate students may use approved, documented program equivalency to satisfy appropriate parts of the licensure program.

**Licensure in a Second Teaching Field.** Post-baccalaureate and undergraduate students seeking licensure in a second teaching field will need to satisfy the approved academic program as stated in the catalog under the section "Teaching Fields." The same quality point requirements apply to second teaching fields as those for initial licensure. A passing score on the specialty exam of the State of Ohio for the second teaching field is required prior to YSU's recommendation for the second teaching field.

## Advisement

All prospective teachers are advised by the academic advisors in the College of Education. Secondary students, middle childhood students, and multi-age students are also advised in the department in which their major or areas of concentration are located.

## Title II, Higher Education Act

For the Institutional Report on the Quality of Teacher Preparation, Title II, Higher Education Act, please see Appendix B of this *Bulletin*.

## Curricula and Courses of Instruction

Each curriculum leads to an Ohio resident educator license. Minimum requirements for teachers' licenses are determined by the Ohio Department of Education; if those requirements change, they become effective immediately at Youngstown State University. State department minimal requirements may be, and usually are, exceeded by University requirements.

Courses will be found in the back of this *Bulletin* in alphabetical order by course prefix.

## DEPARTMENT OF COUNSELING, SPECIAL EDUCATION, AND SCHOOL PSYCHOLOGY 330-941-3257

*Professors Dove, Kress, Martin, Miller; Associate Professors Ellenwood, Imler, Protivnak (Chair); Assistant Professors Briley, Choi, Gongola, Lewis, McGee, Paylo, VanVoorhis, Wolford; Instructor Hill.*

## Counseling

The counseling program offers an M.S. in Education degree with program options in clinical mental health counseling, school counseling, student affairs, college counseling, and addiction counseling. Candidates in clinical mental health, school, college, and addiction counseling are prepared to meet the requirements for licensure and national certification as a counselor. A complete listing of program options and course descriptions are presented in the *YSU Graduate Bulletin* and on the department's website.

The counseling program offers a limited number of undergraduate elective courses for students who are interested in developing counseling knowledge and skills and/or pursuing a graduate degree in counseling. The undergraduate counseling courses focus on mental health and wellness, leadership, career/life planning, and helping skills.

## Special Education

The department offers a B.S. and M.S. in Education with specialization in moderate/mild (M/M) disabilities. The undergraduate programs lead to licensure in the Intervention Specialist (M/M). An Intervention Specialist (M/M) serves students with mild to moderate cognitive disabilities. The program emphasizes the behavioral needs of students with disabilities.

Majors in this program must complete the general education requirements, professional education requirements, 12 hours of reading, and curriculum content requirements.

## Reading and Study Skills (RSS)

The Reading and Study Skills Center operated by the Department of Counseling in the Beeghly College of Education provides individualized and group instruction in improving reading rate and comprehension as well as study strategies. The Reading and Study Skills Center is staffed by an administrative assistant, part-time faculty, graduate assistants, undergraduate tutors, and a coordinator. The Center maintains a laboratory component for RSS 1510A, 1510B and 1510C—courses mandated for students based on the COMPASS® Reading Test (CRT). Additional services include individual tutoring in study strategies, reading rate and reading comprehension, college success workshops and assistance with preparation for standardized tests such as PRAXIS, MCAT, MAT and GRE. Peer tutors are available to work with students on an individual basis. Stop in the R&SS Center to schedule an appointment or visit our website to complete the Self-Referral Peer Tutoring form (under Services).

The services offered by the Reading and Study Skills Center are free of charge to all registered YSU students. The Reading & Study Skills Center is located in the lower level of Maag Library in Room 154 and is open from 8:00 a.m. to 6:00 p.m., Monday and Wednesday, 8:00 a.m. to 5:00 p.m., Tuesday and Thursday, and 8:00 a.m. to 3:00 p.m. Friday. For further information, contact the Reading and Study Skills Center at 330-941-3099; visit the website at <http://web.yzu.edu/rdgstudyskills/>; or e-mail the Center at [rdgstudyskillsctr@ysu.edu](mailto:rdgstudyskillsctr@ysu.edu).

### Intervention Specialist License (K-12)

Mild/Moderate Disabilities program requires a minimum of 124 s.h.

The B.S. in Ed. degree requires the courses listed below. Licensure also requires passing the Ohio Praxis II Exams, prior to student teaching.

All courses meeting requirements specified on this page require a minimum “C” grade. Exceptions are ENGL 1550 and 1551 which require a “B” average. **PLEASE BE AWARE OF THE PREREQUISITE FOR EACH COURSE.**

### General education requirements in Special Education (46 s.h.)

*The specific coursework required in general education for both Mild/Moderate and Moderate/Intensive is as follows:*

#### Writing

ENGL 1550 Writing 1 .....	3
ENGL 1551 Writing 2 .....	3
ENGL 2651 Intro to Language.....	3

#### Speaking

CMST 1545 Comm Theory & Practice.....	3
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#### Mathematics

MATH 1564 Foundations of Middle School Math.....	4
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MATH 2665 Foundations of Middle School Math.....	4
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#### Natural Science

Natural Science with a lab .....	4
Natural Sciences Course .....	3

#### Social Science

HIST 2605 or 2606.....	3
PSYC 1560 General Psychology .....	3
ENGL 2651 Intro. to Language.....	3

#### Arts and Humanities

MUED 2621 .....	3
Arts and Humanities .....	3

#### Social and Personal Awareness

COUN 1587 .....	3
PSYC 3758.....	3

Majors are required to have a minimum of 4 additional elective hours. Recommended courses include: HIST 2605, HIST 2606, ENGL 3704, ENGL 3739, POL 1560, GEOL 1504, PHYS 2607.

### Professional Education Requirements in Special Education (48 s.h.)

*The specific coursework required in professional education for both Mild/Moderate and Moderate/Intensive is as follows:*

FOUN 1501 Intro to Education .....	3
FOUN 3708 Education & Society.....	3
PSYC 3709 Educ Psychology .....	3
EDTC 3771 Tech for Teaching.....	3

### Reading Course Requirements in Special Education

*The specific coursework required in reading is as follows:*

TERG 3710 Rdg Appl in Content Areas, Middle Years.....	3
TERG 3701 Phonics in Rdg Instruction.....	3
TERG 3702 Dev Rdg Inst & Lit Strat P-9.....	3

#### STEP Block

SPED 5835 Clsrm Mgmt Except Children & Youth.....	4
SPED 4854 Cross Curricular Application .....	4
SPED 5864 Serv Coor Coll & Consult Student W/ Special Needs .....	3
TERG 3703 Assess & Inst in Reading, P-9 .....	3

#### Student Teaching

SPED 4849 for M/M.....	5-10
SPED 4869 Student Teaching Seminar (GER Capstone course).....	2

### Curriculum Content Requirements in Special Education

SPED 3715 Char & Needs Children & Youth w/ M/M Disabilities .....	4
SPED 5867 Interv & Remediation of Recept/Express Lang Dysfunction .....	3
SPED 2630 Individuals with Exceptionalities in Society .....	3

SPED 5828 Educ of Emotionally Disturbed Children .....4  
 SPED 5866 Assess & Ref Except. Childn/Youth.....3  
 SPED 5853 Diagnosis & Intervention Math SpEd.....3  
 SPED 5851 Trns Plf Social Skills Dev & Hlth Rel Issues..... \*3

**Curriculum Content Requirement for Teaching Students with Mild/Moderate Disabilities**

ENGL 3703 Lit for Young Children .....3  
 OR ENGL 3704 Lit for Middle School  
 OR ENGL 3705 Young Adult Lit  
 SPED 5868 M/M Prac (Prereq is STEP) .....4

**STEP**

All students seeking licensure in an area of special education must complete STEP (Special Teacher Education Program). The program is an intensive field-based experience conducted in cooperation with local elementary and secondary schools. STEP is scheduled during fall and spring semesters. Students are committed to an 8:00 a.m. to 3:00 p.m. schedule. Because STEP is a full-time commitment, students are advised not to plan any outside work during that period, nor will they be permitted to take any concurrent course work.

In STEP, theory and methods instruction takes place at the university and onsite teaching takes place in the public schools. Students learn to observe, diagnose, prescribe for, and teach exceptional children individually and in small and large groups. Field experiences are carefully planned and closely supervised and evaluated daily to insure that students will develop needed competencies. The emphasis is on individualized instruction adapted to the unique needs of each child.

Junior or senior students planning to take STEP must submit an application 1 (one) year in advance to BCOE Room 2101 by September 15 for fall STEP or February 15 for spring STEP. Contact the Beeghly College of Education academic advisors for minimum STEP prerequisites. It is best to take STEP one or two semesters prior to student teaching.

**DEPARTMENT OF EDUCATIONAL FOUNDATIONS, RESEARCH, TECHNOLOGY, AND LEADERSHIP**

**330-941-1436**

*Professors Beebe, McEwing (Chair), McNierney, Vergon; Associate Professors deBlois, Eggers, Pusch; Assistant Professors Djoletto, Larwin, Spearman.*

The Department of Educational Foundations, Research, Technology and Leadership, through its foundations and technology courses, provides un-

dergraduate education majors with courses that draw from a range of academic disciplines. Foundational studies attend particularly to the diverse contexts within which educational practices occur and examine how interpretation can vary with different historical, philosophical, cultural and technological perspectives. Undergraduate foundations courses, which include educational assessment, are designed to help develop interpretive, normative, and critical perspectives on education, both inside and outside the schools. The undergraduate technology course introduces candidates for teaching certificates to the issues, pedagogies and skills associated with the use of technology in the educational process.

Graduate courses offered by the Department appear in the Graduate School *Bulletin*.

**DEPARTMENT OF TEACHER EDUCATION**

**330-941-3251**

*Professors Bailey (Chair), Hoover, Kim, Williams; Associate Professors Cummins, Feist-Willis, Theall; Assistant Professors Graham, O'Connor, Rees, Saunders-Smith; Instructor Greene.*

**EARLY CHILDHOOD EDUCATION**

**IMPORTANT NOTICE:** Some teacher education programs, course, and credit information provided below is pending completion of all formal review processes at Youngstown State University and the Ohio Department of Education. Contact the Beeghly College of Education academic advisors to be advised of any changes in information provided here regarding these teacher licensure programs in early childhood education, middle childhood education, secondary education, and special education.

In cooperation with the Department of Human Ecology, the Department of Teacher Education offers a four-year early childhood education program approved by the Ohio Department of Education. Advisement is provided by the faculty in Child and Family and Early Childhood Education, as well as the academic advisors in the College of Education. Majors in this program must complete general education requirements, professional education requirements, reading course requirements, and curriculum content requirements.

Prior to student teaching, all early childhood majors must complete a Teacher Education Center (TEC) clinical experience. A TEC, conducted in local schools, is defined as University faculty presenting theory and methods, and subsequently observing the students' teaching of lessons. This field experience requires a substantial time commitment, as students spend the entire day in schools during designated weeks. Early Childhood TEC is scheduled during the fall and spring semesters. Applications for TEC

must be submitted (1) one year in advance to BCOE Room 2101 by September 15 for Fall TEC; by February 15 for Spring TEC. Contact the Beechly College of Education academic advisors for minimum TEC prerequisites.

### Early Childhood License (P-3)

The B.S. in Ed. degree requires the courses listed below to total 127 s.h. This teaching field also requires passage of the Praxis II test with a score of 166 on the Specialty Test: Education of Young Children (021) and a 157 on the PLT (621) in order to be eligible to student teach.

All courses meeting requirements specified on this page require a minimum "C" grade. Exceptions are ENGL 1550 and 1551 which require a "B" average.

### General Education Requirements (49 s.h.)

*The specific coursework required in general education for early childhood education majors is as follows:*

#### Writing

ENGL 1550 Writing 1 .....	3
ENGL 1551 Writing 2 .....	3

#### Speaking

CMST 1545 Comm Theory & Practice.....	3
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#### Mathematics

MATH 2651 Math for Early Childhood Teachers 1.....	3
MATH 2652 Math for Early Childhood Teachers 2.....	3

#### Natural Science

*Two of the following Natural Science courses, with one lab:*

ASTR 1504 .....	3
ASTR 1504L.....	1
*BIOL 1505.....	3
BIOL 1505L.....	1
CHEM 1500 .....	3
CHEM 1500L.....	1
*ENST 1500.....	3
ENST 1500L.....	1
GEOG 2630 .....	3
GEOL 1504.....	3
*PHYS 1500 .....	3
PHYS 1500L.....	1

#### Social Science

PSYC 1560.....	3
PSYC 3755.....	3

#### Arts and Humanities

MUED 2621 .....	3
ART 1541 or 1542 or 1540.....	3

#### Social and Personal Awareness

*One from:*

HIST 1500 .....	3
HIST 1512 .....	3
HIST 2606 .....	3

*And one from:*

AFST 2600.....	3
CMST 2610 .....	3
COUN 1587 .....	3
ENGL 2651 .....	3
SOC 2690 .....	3

### General Education Elective

*One course from any of the four knowledge domains.*

### Curriculum Content Requirements in Early Childhood Education (33 s.h.)

ART 3737 Pre-K - 4 Visual Arts Ed .....	3
CHFM 2633 Early Child: Intg Dev & Educ .....	3
CHFM 3750 Parent and Prof Relationships.....	3
CHFM 3770 Wellness in Early Childhood.....	3
*CHFM 3733L Pract/Preprimary Set.....	3
ECE 2629 Teaching Young Children: Best Practices in ECE.....	3
ENGL 3703 Children's Literature .....	3
HPES 2624 PE Child in Early Childhood Settings .....	3
MUED 3722 Music Settings .....	3
*SPED 4831 Assessment in Early Childhood.....	3
*ECE 3760 Cross Curr Application .....	3

<sup>†</sup> Indicates upper-division status

### Professional Education Requirements in Early Childhood Education (51 s.h.)

*The specific coursework required in professional education is as follows:*

FOUN 1501 Intro to Education .....	3
*FOUN 3708 Education & Society.....	3
EDTC 3771 Tech for Teaching.....	3
PSYC 3709 Psych of Education.....	3
SPED 2630 Individuals W/Except in Society.....	3

*The specific course work required in reading is as follows:*

TERG 2601 Rdg Appl in Content Areas, P-12.....	3
*TERG 3701 Phonics in Rdg Instruction.....	3
*TERG 3702 Dev Rdg Inst & Lit Strat P-9 .....	3

### TEC Block

*ECE 3713 Teaching Math: Early Years .....	3
*ECE 3715 Tchng Sci.....	3
*ECE 3780 Social Studies for Young Children.....	3
*ECE 4814 Lang Arts Methods in the Early Years (3-8).....	3
<i>and</i>	
*TERG 3703 Assess & Inst in Reading, P-9 .....	3

### Student Teaching Block

*ECE 4841 Student Teaching: Early Childhood Education .....	10
*ECE 4842 Student Teaching: Early Childhood Education .....	2

<sup>†</sup> Indicates upper-division status

**Learning Outcomes**

Content majors need to check with their area of major for other relevant learning outcomes besides those listed in the conceptual framework.

**MIDDLE CHILDHOOD EDUCATION**

In cooperation with various academic discipline departments in the University, the Department of Teacher Education offers programs leading to licensure in middle childhood education programs approved by the Ohio Department of Education. Advisement is provided by the academic advisors in the Beeghly College of Education, and faculty in the content areas of the concentrations. Majors in this program must complete general education requirements, professional education requirements, reading requirements, and two of four curriculum concentration areas named on the teaching license: a) language arts; b) mathematics; c) science; d) social studies. While total credit hour requirements depend on the student's choice of concentration areas, the middle school program requires approximately 135 s.h.

Prior to student teaching, all middle childhood majors must complete an Internship. This Internship, conducted in local schools, is defined as University faculty presenting theory and methods, and subsequently observing the students' teaching of lessons. This field experience requires a substantial time commitment, as students are required to spend the entire day at a school site during designated weeks of the semester. The middle childhood Internship is scheduled during the fall semester only. Applications for the MCE Internship must be submitted 1 (one) year in advance to BCOE Room 2101, by September 15. Contact the Beeghly College of Education academic advisors for minimum prerequisites and to discuss course rotation.

**Middle Childhood License (4-9)**

The B.S. in Ed. degree requires the courses listed below to total a minimum of 124 s.h. This teaching field also requires the passage of the Praxis II exam with a score of 160 on the PLT 5-9 (623) test and passing scores on the Specialty Tests designated for the concentration areas.

All courses meeting requirements specified on this page require a minimum "C" grade. Exceptions are ENGL 1550 and 1551 which require a "B" average.

**General Education Requirements in Middle Childhood Education**

*(Subject to change upon GER completion) (40 s.h.) The specific coursework required in general education is as follows:*

**Writing**

ENGL 1550 Writing 1 .....	3
ENGL 1551 Writing 2 .....	3

**Speaking**

CMST 1545 Communication Theory and Practice .....	3
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**Mathematics**

*(If math is one of the concentrations see the concentration area.)*

MATH 2623 .....	3
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**Natural Science**

*(If science is one of the concentrations see the concentration area.)*

Natural Science with a Lab .....	4
Course from Natural Science.....	3

**Arts and Humanities**

*(If language arts is one of the concentrations see the concentration area.)*

Course from Arts and Humanities .....	3
Course from Arts and Humanities .....	3

**Social Science**

*(If social science is one of the concentrations see the concentration area for the additional SS course required.)*

PSYC 1560 General Psychology .....	3
Course from Social Science .....	3

**Social and Personal Awareness**

Course from Social and Personal Awareness.....	3
Course from Social and Personal Awareness.....	3

**General Education Elective**

Choose one course from any of the four domains (NS, AH, SS, or SPA) .....	3
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**Professional Education Requirements in Middle Childhood Education (53 s.h.)**

*The specific course work required in professional education is as follows:*

FOUN 1501 Intro to Education .....	3
*FOUN 3708 Education & Society.....	3
SPED 2630 Individuals w/Except in Society .....	3
*TEMC 3702 Char of Early Adolescents & Implications for Curr & Instr .....	3
EDTC 3771 Tech for Teaching.....	3
<i>For science concentration area candidates only:</i>	
*TEMC 3707 Science/Technology/Society .....	3

\*Indicates upper-division status

**Reading Course Requirements in Middle Childhood Education**

*The specific coursework required in reading is as follows:*

*TERG 3710 Rdg Appl in Content Areas, Middle Years.....	3
*TERG 3701 Phonics in Reading Instruction .....	3
*TERG 3702 Dev Rdg Instr & Lit Strat P-9.....	3
*TERG 3703 Assessment & Inst in Reading, P-9 .....	3

**Middle Childhood Internship**

\*TEMC 4801 Middle School Learning Comm .....

*Depending on the student's teaching concentrations, two or more of the following:*

*TEMC 3703 Thematic Instruc & Assess Methods in Social Studies .....	4
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*TEMC 3704 Tchng Math in the Mid Sch.....	4
*TEMC 3705 Tchng Sci in the Mid Sch .....	4
*TEMC 3706 Teaching of Lang Arts in the Middle School.....	4

**Student Teaching**

*Student teaching candidates will register for the following student teaching course:*

*TEMC 4802 .....	5-10
*TEMC 4803 Student Teaching Seminar MCE .....	2

\*Indicates upper-division status

**Content Areas 48-70 s.h. Must choose two.**

*Note that the sciences and social studies concentrations include courses which completely fulfill the general education requirements in those areas; reading/language arts includes a literature requirement which fulfills a general education/humanities.) The specific coursework required in the curriculum content areas is as follows:*

**A. Language Arts, 24 s.h. required.** (See notes in Artistic & Literary GER) A passing score of 156 on the Middle Childhood Language Arts Test (049)

*Two of the following (Artistic & Literary):*

ENGL 2610 Introduction to World Literature* .....	3 s.h.
ENGL 2617 Women in Literature* .....	3 s.h.
ENGL 2618 American Literature and Diversity* .....	3 s.h.
ENGL 2631 Mythology in Literature* .....	3 s.h.

*All of the following:*

ENGL 2602 Media Writing.....	3 s.h.
ENGL 2651 Introduction to Language .....	3 s.h.
ENGL 3700 Introduction to Literary Studies ..	3 s.h.
ENGL 3704 Literature for Middle School Readers .....	3 s.h.
ENGL 3739 Writing for Middle School Teachers .....	3 s.h.
CMST 2656 Interpersonal Communication.....	3 s.h.

\*Fulfills GER AL requirement

**B. Mathematics, 24 s.h. required.** (See notes in Math GER) A passing score of 143 on the Middle Childhood Mathematics Test (069).

MATH 1564 Foundations of Middle School Math 1 (Fall).....	4 s.h.
MATH 2665 Foundations of Middle School Math 2 (Spring) .....	4 s.h.
MATH 3767 Int Alg, Geom & Calc for Mid Sch Teachers 1 (Fall).....	4 s.h.
MATH 3768 Int Alg, Geom & Calc for Mid Sch Teachers 2 (Spring).....	4 s.h.
MATH 4869 Int Probability & Stats for Middle School Teachers .....	3 s.h.
MATH 4870 Mathematics Seminar for Middle School Teachers .....	2 s.h.
STAT 2601 Introductory Statistics <i>or</i> .....	3 s.h.
MATH 2624 Probability and Critical Reasoning .....	3 s.h.

**C. Science, 28 s.h. required.** (See notes in Science GER) A passing score of 144 on the middle childhood science test (439).

BIOL 1505 Biology & the Modern World (section for Education Majors).....	3 s.h.
CHEM 1500 Chemistry & Modern Living (section for Education Majors).....	3 s.h.
GEOL 1505/L Physical Geology and Lab .....	4 s.h.
PHYS 2607 Physical Science for Early and Middle Childhood Education .....	4 s.h.

**Elective Courses (14 s.h. minimum)** *The following courses also cover topics that are included on the Praxis exam. Students are encouraged to complete as many as possible.*

ASTR 1504 Descriptive Astronomy .....	3 s.h.
ENST 2600 Foundations of Environmental Studies .....	3 s.h.
ENST 2600L Foundations of Environmental Studies Lab .....	1 s.h.
GEOG 2630 Weather .....	3 s.h.
GEOL 2602 Introduction to Oceanography.....	3 s.h.
GEOL 2605 Historical Geology .....	4 s.h.
GEOL 3720 Field Investigations in Geology ....	4 s.h.

**D. Social Studies, 33 s.h. required.** A passing score of 151 on the Middle Childhood Social Studies Test (089)

HIST 1511 Introduction to World History 1 .....	3 s.h.
HIST 1512 Introduction to World History 2.....	3 s.h.
HIST 2605 United States History 1 .....	3 s.h.
HIST 3748 History of Ohio.....	3 s.h.
LASS 4805 Integrated Social Studies Seminar.....	3 s.h.

Eighteen semester hours electives: **each** discipline must be selected once; **two** discipline areas must be selected twice:

**Geography**

GEOG 2650	GEOG 3715	GEOG 3717	GEOG 3719
GEOG 3721	GEOG 3722	GEOG 3741	GEOG 3745
GEOG 4813	GEOG 4850	GEOG 2640	

**Political Science**

POL 1560 American Government .....	3 s.h.
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*One course from the following:*

POL 2640	POL 2660	POL 3700
POL 3704	POL 3706	POL 3722

**Economics**

ECON 2610 Principles 1: Microeconomic Theory & Policy.....	3 s.h.
ECON 2630 Principles 2: Microeconomic Theory & Policy.....	3 s.h.

**Sociology/Anthropology**

ANTH 1500 Introduction to Anthropology .....	3 s.h.
SOC 1500 Introduction to Sociology .....	3 s.h.

## ADOLESCENT, MULTI-AGE, AND CAREER/TECHNICAL EDUCATION

In cooperation with various academic discipline departments in the University, the Department of Teacher Education offers programs leading to licensure in many adolescent, multi-age, and career/technical teaching fields approved by the Ohio Department of Education. Advisement in these areas is provided by faculty in the academic disciplines of the teaching fields, the professional secondary education faculty in the Department of Teacher Education, and the academic advisors in the Beeghly College of Education. The College of Education assumes full responsibility for approval of matters dealing with licensure requirements (regardless of teaching field or degree involved) and for graduation requirements for the Bachelor of Science in Education degree.

Majors in these programs must complete general education requirements, professional education requirements, and teaching field requirements. The total credit hours required depend on choice of teaching field(s); students in programs with less than 124 s.h. must add electives to reach 124 s.h. for the B.S. in Ed. degree. Prior to student teaching, the majors listed below complete a SED Cluster. The Cluster is partially conducted in local schools, and is defined as University faculty presenting theory and methods, and subsequently observing the students' teaching of lessons. This field experience requires a substantial time commitment. Applications for SED Cluster must be submitted 1 (one) year in advance to BCOE Room 2101, by September 15 for fall and February 15 for spring.

The Cluster for Earth Science, Life Science, Physical Science, and Integrated Science consists of TERG 3711, FOUN 3710, SED 3706, and SED 4800C. The Cluster for Integrated Mathematics consists of TERG 3711, FOUN 3710, SED 3706, and SED 4800M. For Integrated Language Arts, the Cluster contains FOUN 3710, SED 3706, and SED 4800E. Integrated Social Studies Cluster consists of TERG 3711, FOUN 3710, SED 3706, and SED 4800S. Lastly, Health, Family and Consumer Science, French, Italian, and Spanish majors take TERG 3711, FOUN 3710, and SED 3706. Teacher Education candidates have the option of taking one content course with the Cluster. Note: Some of the SED courses are only offered during a specific term. Contact the Beeghly College of Education Academic Advisors for minimum SED Cluster prerequisites and to discuss the course rotation.

### Adolescent, Multi-Age and Career/Technical License

The B.S. in Ed. degree requires the courses listed below in addition to the courses required for the major/licensure field with a minimum to total 124 s.h. Licensure also requires passing the Ohio Praxis II Exams.

All courses meeting requirements specified on this page require a minimum "C" grade. Exceptions are ENGL 1550 and 1551 which require a "B" average.

### General education requirements in Adolescent, Multi-Age and Career/Technical Education (40 s.h.)

*The specific course work required in general education is as follows:*

#### Writing

ENGL 1550 Writing 1 .....	3
ENGL 1551 Writing 2 .....	3

#### Speaking

CMST 1545 Communication Theory and Practice .....	3
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#### Mathematics

See appropriate concentration sheet for Math requirement.

#### Natural Science

Natural Science with a Lab .....	4
Natural Science .....	3

#### Arts and Humanities

Course from Arts and Humanities .....	3
Course from Arts and Humanities .....	3

#### Social Science

PSYC 1560 General Psychology .....	3
Course from Social Science .....	3

#### Social and Personal Awareness

Course from Social and Personal Awareness .....	3
Course from Social and Personal Awareness .....	3

#### General Education Elective

Choose one course from any of the four domains (NS, AH, SS, or SPA) .....	3
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*GER distribution varies with the teaching discipline. Please check with your academic advisor in your major teaching field. Students are encouraged to check with their advisors, because 1) in some licensure areas, teaching field requirements may be used to meet some general education requirements, and 2) some licensure areas recommend alternatives within these general education requirements that are particularly relevant to the teaching field.*

### Professional Education Requirements in Secondary, Multi-Age, and Career/Technical Education

*The specific course work required in professional education is as follows:*

FOUN 1501 Introduction to Education .....	3
<sup>†</sup> FOUN 3708 Education and Society .....	3
<sup>†</sup> FOUN 3710 Educational Assessment .....	3
PSYC 3709 Psychology of Education .....	3
*EDTC 3771 Technologies for Teaching .....	3
<sup>†</sup> TERG 3710 Rdg Appl Content Area, Middle Years .....	3

or

†TERG 3711 Rdg Appl Content Area, Secondary Years 3	
†*SED 3706 Principles of Teaching Adolescents.....	5
†*MULT 4807 Teaching Across Curriculum.....	2
†*TEMC 3707 Science/Technology/Society.....	3
†*SED 4800 Reflective Teaching Methods .....	3
†SED 4842 Student Teaching .....	10
†SED 4842A Student Teaching Seminar.....	2

**Note #1:** Several professional education courses have field components which require the student to spend various amounts of time in local elementary, middle, and secondary schools, as well as in meetings on campus. FOUN 1501, 3708, SED 3706, and student teaching with the student teaching seminar have such requirements. Check with individual course descriptions regarding important sequence and prerequisite information.

**Note #2:** Professional education exception courses above listed with an asterisk (\*) may have alternative or specialized courses approved by the Department of Teacher Education for particular teaching fields. See the curriculum advisement sheets in the College of Education academic advising office and in the offices of the academic discipline and/or professional education faculty advisors.

† Indicates upper-division status

## Adolescent, Multi-Age, and Career/Technical Teaching Fields

These teaching fields are built around a secondary education major. All prospective students majoring in these teaching areas are advised to read carefully the sections relative to requirements for admission to upper-division status, for student teaching, and for licensure which appear at the beginning of this College of Education section. In addition to the subject area teaching field requirements, all majors must complete the secondary education professional-education course sequence as specified by the Department of Teacher Education.

YSU recommends that students complete courses of study which lead to qualification in more than one teaching field and/or in teaching fields projected to be available in the job market at the time of licensure. Students should see the coordinator in Career Services for current job market information which may promote ultimate employment.

The State of Ohio adopted new teacher licensure standards effective September 1, 1998 and YSU's programs below reflect these changes.

### VISUAL ARTS (P-12) Multi-Age License

*All of the following:*

ART 1521 Foundation Drawing.....	3 s.h.
ART 1522 Intermediate Drawing.....	3 s.h.
ART 1501 Fund. of 2-D Design.....	3 s.h.
ART 1502 Fund of 3-D Design.....	3 s.h.

†ART 1503 Foundation Portfolio Review	
ART 3721 Expressive Drawing.....	3 s.h.
ART 2691 Intro to Digital Imaging .....	3 s.h.
ART 2661 Intro to Graphic Design .....	3 s.h.
ART 2631 Intro to Ceramic .....	3 s.h.
ART 2611 Intro to Sculpture.....	3 s.h.
ART 2671 Intro to B&W Photography .....	3 s.h.
ART 2650 Intro to Painting .....	3 s.h.
ART 2653 Watercolor.....	3 s.h.
ART 2615 Intro to Metals .....	3 s.h.
ART 1541 Sur of Art History .....	3 s.h.
ART 1542 Sur of Art History .....	3 s.h.
ART 3788 Theory of Art .....	3 s.h.
ART 5882, 20 <sup>th</sup> Cent. Art from 1960 .....	3 s.h.
ART 37xx, Art history elective.....	3 s.h.

*One of the following:*

ART 2625 Introduction to Printmaking: Intaglio and Relief.....	3 s.h.
ART 2626 Introduction to Printmaking: Lithography and Screen Printing.....	3 s.h.

*All of the following Art Methods: (These courses replace SED 4800 Methods)*

ART 3737 Pre-K - 4, Visual Arts Ed .....	3 s.h.
ART 4837 Prof Prac/Middle School .....	3 s.h.
ART 4838 Prof Prac/Sec School .....	3 s.h.
*ART 4839 Seminar in Art Education.....	1 s.h.

**Professional education exception:** Candidates in this major take MULT 4807 (Teaching Across Curriculum) instead of SED 3706 (Principles of Teaching Adolescents).

†All students must complete and pass this review to take additional studio classes.

\*With student teaching.

Note: This licensure area has specific GER requirements. Please refer to the curriculum advisement sheet in the College of Education Academic Advisement Office.

### EARTH SCIENCE (7-12) Adolescent License

*All of the following:*

GEOL 1505 Physical Geology.....	4 s.h.
GEOL 2602 Introduction to Oceanography.....	3 s.h.
GEOL 2605 Historical Geology .....	4 s.h.
GEOL 2615 Geology & Environment 1 .....	3 s.h.
GEOL 5815 Geology & Environment 2 .....	3 s.h.
GEOG 2630 Weather .....	3 s.h.
ASTR 1504 Descriptive Astronomy .....	3 s.h.
ASTR 2609 Moons & Planets .....	3 s.h.

EARTH SCIENCE Electives selected from the following: 6 s.h.

GEOG 3730 Global Climate .....	3 s.h.
ENST 2600 Found of Environment Study.....	3 s.h.
GEOL (any upper-division course) .....	3 s.h.

*Choose from the following:*

MATH 1552 Applied Math for Management...4 s.h.	
MATH 1570 Applied Calculus 1 .....	4 s.h.

OR

MATH 1571 Calculus 1.....	4 s.h.
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Select 15 s.h. from the following three areas with at least 1 course in each area:

- BIOL
- CHEM
- PHYS

*Professional education exception:* Candidates in this major are required to take TEMC 3707 (Science/Technology/Society).

**FRENCH (P-12)  
Multi-Age License**

- FRNC 1550 Elementary French .....4 s.h.
- FRNC 2600 Intermediate French.....4 s.h.
- FRNC 2600 Intermediate French is waived if student starts with FRNC 2605 Advanced Intermediate French – a FRNC 3700 or 4800 level course must be substituted

All fourteen (14) courses listed below are required:

- FRNC 2605 Advanced Intermediate French (required for Admission to Teacher Education Program) ..... 3 s.h.
- FRNC 2606 Intensive French Review .....3 s.h.
- FRNC 3710 Applied French Phonetics .....3 s.h.
- FRNC 3716 Adv. French Gram. & Comp.....3 s.h.
- FRNC 3717 Advanced French Conversation .....3 s.h.
- FRNC 3720 Lit. & Culture: France .....3 s.h.
- FRNC 3725 Francophone Lit. & Culture .....3 s.h.
- FRNC 3736 Intro. to French Linguistics.....3 s.h.
- FRNC 3740 French for Bus. & Comm. ....3 s.h.
- FRNC 3750 French Civ. and Culture .....3 s.h.
- FRNC 4885 French Conv. & Comp. Capstone.....3 s.h.
- ENGL 4851 Language Acquisition.....3 s.h.
- FNLG 4801 Methods of Foreign Lang. Teaching.....3 s.h.
- FNLG 4899 Professional Development for Teachers.....1 s.h.

This licensure area has specific GER requirements. Please refer to the curriculum advisement sheet in the College of Education academic advising office.

*Professional education exception:* Candidates in this major take MULT 4824 (Methods of Teaching P-12). In addition, they do not take SED 4800 (Reflective Teaching Methods).

Studying abroad in a French-speaking country is highly recommended.

Note: Courses marked with \* are taken only once when acquiring license in multiple languages.

Courses within this area must average a 2.67.

**HEALTH EDUCATION (P-12)  
Multi-Age License**

- PHLT 1568 Healthy Lifestyles .....3 s.h.
- MATC 1501 Medical Terminology .....3 s.h.
- FNUT 1551 Normal Nutrition.....3 s.h.
- HPES 2605 Sports First Aid & Inj. Prev. ....3 s.h.
- PHLT 2692 Human Sexuality .....3 s.h.
- HPES 3702 Foun. of Health Ed. Theory & Methods .....3 s.h.
- HPES 3715 Health Ed. For Grades P-6.....3 s.h.
- HPES 3716 Health Ed. For Grades 7-12 .....3 s.h.
- PHLT 3731 Drug Use and Abuse .....3 s.h.
- PHLT 3757 Health and Disease.....4 s.h.

- PHLT 3791 Community Health.....3 s.h.
- HPES 4808 Standards Based Asses. in Health & PE .....3 s.h.
- HPES 4888 Selected Topics in HPES.....2 s.h.
- HPES 4899 Physiology of Ex. for PE .....2 s.h.
- HPES 4899L Physiology of Ex. for PE Lab.....1 s.h.
- AHLT 5807 Epidemiology .....3 s.h.

Current CPR and First Aid certification required at time of graduation.

This licensure area has specific GER requirements. Please refer to the curriculum advisement sheet in the College of Education academic advising office.

Candidates majoring in both health education and physical education should see an advisor in the Department of Human Performance & Exercise Science to determine if there are changes to the individual curriculum requirements for each program as a result of double majoring.

*Professional education exception:* Candidates in this major do not take SED 4800 (Reflective Teaching Methods).

**FAMILY AND CONSUMER SCIENCE  
(4-Adult)  
Career/Technical License**

- HMEC 1550 Human Ecology Professions .....1 s.h.
- FNUT 1512 Food Safety and Sanitation.....1 s.h.
- MRCH 1506 Clothing Selection and Image Development .....3 s.h.
- PHLT 2692 Human Sexuality ..... 3 s.h.
- FNUT 1551 Normal Nutrition.....3 s.h.
- FNUT 1553 Food Science & Management Principles..... 3 s.h.
- FNUT 1553L Food Science & Management Principles Lab .....1 s.h.
- CHFM 3731 Individual & Family Development. ....3 s.h.
- CHFM 3750 Parent & Professional Relationships .....3 s.h.
- PSYC 3755 Child Development.....3 s.h.
- PSYC 3756 Adolescent Development

or

- PSYC 3758 Lifespan Development .....3 s.h.
- MRCH 3764 Family Housing & Technology...3 s.h.
- HMEC 3780 Consumer Economics.....3 s.h.
- HMEC 4800 Teaching in Family & Consumer Science.....3 s.h.
- HMEC 4890 Communicating Contemporary Issues .....3 s.h.
- HMEC 4852 Family Resource Management ...3 s.h.
- HMEC 5893 Work & Family .....3 s.h.

This licensure area has specific GER requirements. Please refer to the curriculum advisement sheet in the College of Education academic advising office.

*Professional education exception:* Candidates in this major do not take SED 4800 (Reflective Teaching Methods).

**INTEGRATED LANGUAGE ARTS (7-12)  
Adolescent License**

The following nine required:

- ENGL 2651 Introduction to Language .....3 s.h.
- ENGL 3700 Introduction to Literary Studies.....3 s.h.

ENGL 3705	Young Adult Literature.....	3 s.h.
ENGL 3710	British Literature 1.....	3 s.h.
ENGL 3711	British Literature 2.....	3 s.h.
ENGL 3712	American Literature 1.....	3 s.h.
ENGL 3713	American Literature 2.....	3 s.h.
ENGL 3741	Advanced Writing for Teachers ...	3 s.h.
ENGL 4881	Shakespeare and His World .....	3 s.h.

*All of the following (Journalism):*

ENGL 2622	News Reporting .....	3 s.h.
ENGL 4821	Advising Student Publications....	3 s.h.

*Two of the following (Communications):*

CMST 2653	Group Communications .....	3 s.h.
CMST 2656	Interpersonal Communication*** .....	3 s.h.
THTR 2670	Oral Interpretation .....	3 s.h.

*One of the following (World/Multicultural Lit):*

ENGL 2610	Introduction to World Literature* .....	3 s.h.
ENGL 2617	Women in Literature*.....	3 s.h.
ENGL 2618	American Literature and Diversity* .....	3 s.h.
ENGL 2620	Introduction to African Literature .....	3 s.h.
ENGL 3732	Images of Women.....	3 s.h.
ENGL 3738	Selected Topics in World Literature .....	3 s.h.
ENGL 3790	Selected Topics in Multicultural Literature .....	3 s.h.

*One of the following (Linguistics):*

ENGL 3750	Language and Culture .....	3 s.h.
ENGL 3757	Development of the English Language.....	3 s.h.
ENGL 4850	Sociolinguistics .....	3 s.h.
ENGL 4851	Language Acquisition .....	3 s.h.
ENGL 4855	Advanced Linguistics .....	3 s.h.
ENGL 4856	TESOL Methods .....	3 s.h.
ENGL 4858	English Grammar .....	3 s.h.

*One of the following (Media Literacy):*

TCOM 1595	Survey of American Mass Communication** .....	3 s.h.
THTR 1590	History of Motion Pictures* .....	3 s.h.
ENGL 2665	Intro to Film Studies*.....	3 s.h.
ENGL 3743	Prof & Tech Communication.....	3 s.h.

*One of the following (Upper Division American Lit):*

ENGL 3770	American Literature in Historical Perspective.....	3 s.h.
ENGL 3780	American Genres.....	3 s.h.
ENGL 4862	Themes in American Literature ...	3 s.h.
ENGL 4864	American Literary Conversations.....	3 s.h.
ENGL 4871	Black Experience in American Literature .....	3 s.h.

*One of the following (Upper Division British Lit):*

ENGL 4830	Major Figures in British Literature .....	3 s.h.
ENGL 4831	British Genres/Circles/ Movements .....	3 s.h.

ENGL 4860	The Medieval World .....	3 s.h.
ENGL 4882	The English Renaissance.....	3 s.h.
ENGL 4886	Restoration and 18th Century British .....	3 s.h.
ENGL 4887	The Romantic Period .....	3 s.h.
ENGL 4892	19th Century British Studies .....	3 s.h.
ENGL 4895	Early 20th Century British Studies .....	3 s.h.
ENGL 4896	British Literature from WWII to Present.....	3 s.h.

*One of the following (Advanced English Studies):*

ENGL 3706	Literary Theory.....	3 s.h.
ENGL 4890	Senior Seminar.....	3 s.h.
Additional Upper Division American Additional Upper Division British		

\*Fulfills GER AL requirement

\*\*Fulfills GER SI requirement

\*\*\*Fulfills GER PS requirement

*One of the following (Early British Literature):*

ENGL 4860	The Medieval World .....	3 s.h.
ENGL 4882	The English Renaissance .....	3 s.h.
ENGL 4886	Restoration/18th Century Brit Lit.....	3 s.h.
ENGL 4830	Major Figures in Brit Lit.....	3 s.h.
ENGL 4831	Genres, Circles & Movements in Brit Lit .....	3 s.h.

*One of the following (Later British Literature):*

ENGL 4887	The Romantic Period .....	3 s.h.
ENGL 4892	19 <sup>th</sup> Century British Studies .....	3 s.h.
ENGL 4895	Early 20 <sup>th</sup> Century British Studies .....	3 s.h.
ENGL 4896	British Literature from WWII to Present.....	3 s.h.
ENGL 4830	Major Figures in British Literature.....	3 s.h.
ENGL 4831	Genres, Circles & Movements in Brit Lit .....	3 s.h.

*One of the following (World/Multicultural Literature):*

ENGL 2610*	Introduction to World Literature.....	3 s.h.
ENGL 2617*	Woman in Literature.....	3 s.h.
ENGL 2620	Introduction to African Literature.....	3 s.h.
ENGL 2631*	Mythology in Literature .....	3 s.h.
ENGL 3732*	Images of Women .....	3 s.h.
ENGL 3738*	Selected Topics World Literature.....	3 s.h.
ENGL 3790	Selected Topics in Multicultural Stud .....	3 s.h.

**Linguistics--(required)**

ENGL 2651	Intro to Language.....	3 s.h.
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*One of the following:*

ENGL 3750	Language & Culture .....	3 s.h.
ENGL 3757	Development of the English Language.....	3 s.h.
ENGL 4850	Sociolinguistics.....	3 s.h.
ENGL 4851	Language Acquisition .....	3 s.h.
ENGL 4855	Advanced Linguistics .....	3 s.h.

ENGL 4856 TESOL Methods .....3 s.h.  
 ENGL 4858 English Grammar.....3 s.h.

**Writing**

ENGL 3741 Advanced Writing for  
 Teachers..... 3 s.h.

(SPECIAL NOTE: TERG 3711 and ENGL 3741 are taken together  
 the semester before taking the SED cluster.)

**Oral Communication**

*Select two of the following:*

CMST 2653 Group Communication.....3 s.h.  
 CMST 2656 Interpersonal  
 Communication ..... 3 s.h.  
 THTR 2670 Oral Interpretation ..... 3 s.h.

**Journalism**

ENGL/JOUR 2622 News Reporting.....3 s.h.  
 ENGL/JOUR 4821 Advising Student  
 Publications .....3 s.h.

*One of the following:*

ENGL 2665\* Intro to Film Study .....3 s.h.  
 ENGL 3743 Professional and Technical  
 Communication ..... 3 s.h.  
 ENGL 3765 Film Genres..... 3 s.h.  
 ENGL 4865 Selected Topics in Film..... 3 s.h.  
 TCOM 1595 Survey of Mass American  
 Communication .....3 s.h.  
 THTR 1590\* History of Motion Pictures..... 3 s.h.  
 JOUR 3723 Edit/Design Newspapers .....3 s.h.

Note: This licensure area has specific GER requirements. Please  
 refer to the curriculum advisement sheet in the College of Educa-  
 tion academic advising office.

\*These courses satisfy the Artistic & Literary Perspectives  
 General Requirements (GER).

**INTEGRATED MATHEMATICS (7-12)  
 Adolescent License**

*All of the following:*

MATH 1571 Calculus 1..... 4 s.h.  
 MATH 1572 Calculus 2..... 4 s.h.  
 MATH 2673 Calculus 3..... 4 s.h.  
 MATH 3715 Discrete Math ..... 3 s.h.  
 MATH 3720 Linear Algebra Matrix Theory .... 3 s.h.  
 MATH 3721 Abstract Algebra ..... 4 s.h.  
 STAT 3743 Probability & Statistics..... 4 s.h.  
 MATH 3750 History of Math..... 3 s.h.  
 MATH 3751 Real Analysis 1 ..... 4 s.h.  
 MATH 4830 Foundations of Geometry..... 3 s.h.  
 MATH 4896 Senior Research Project..... 2 s.h.  
 MATH 5832 Euclidian Transformations ..... 3 s.h.  
 CSIS 2610 Program/Problem Solving..... 4 s.h.  
 Elective from: MATH 3705, 5822, 5828,  
 5835, 5845 or 5895 .....3 s.h.

**INTEGRATED SCIENCES (7-12)  
 Adolescent License**

*All of the following:*

MATH 1571 Calculus 1.....4 s.h.  
 MATH 1572 Calculus 2.....4 s.h.

A course in computer science is recommended, but  
 not required.

*Choose one of the following course sequences as a primary  
 science concentration:*

**1. BIOLOGY**

BIOL 2601/L Principles of Biology & Lab ..... 4 s.h.  
 BIOL 2602/L Principles of Biology 2 & Lab .....4 s.h.

*Select 14 s.h. from the following:*

BIOL 3741 Animal Diversity ..... 4 s.h.  
 BIOL 3702 Microbiology ..... 4 s.h.  
 BIOL 3721 Genetics ..... 3 s.h.  
 BIOL 3762 Field Botany ..... 4 s.h.  
 BIOL 3780 Evolutionary Ecology ..... 5 s.h.  
 BIOL 4890 Molecular Genetics ..... 3 s.h.  
 BIOL 4890L Molecular Genetics Lab ..... 1 s.h.  
 BIOL 3730 Human Physiology ..... 5 s.h.

**2. CHEMISTRY**

*All of the following:*

CHEM 1515 General Chemistry 1..... 4 s.h.  
 CHEM 1516 General Chemistry 2..... 4 s.h.  
 CHEM 2604 Quantitative Analysis .....5 s.h.  
 CHEM 3719 Organic Chemistry 1 .....4 s.h.  
 CHEM 3720 Organic Chemistry 2 ..... 4 s.h.  
 Any 3000 or 4000 level chemistry course..... 3 s.h.

**3. PHYSICS**

*All of the following:*

PHYS 2608 Sound..... 3 s.h.  
 PHYS 2610 General Physics 1.....4 s.h.  
 PHYS 2610L General Physics Lab 1..... 1 s.h.  
 PHYS 2611 General Physics 2..... 4 s.h.  
 PHYS 2611L General Physics Lab 2.....1 s.h.

*Select a minimum of 11 s.h. in Physics from the following:*

PHYS 2607 Physical Science for Middle  
 and Secondary Education.....4 s.h.  
 PHYS 3701 Intermed Class Mech 1 .....3 s.h.  
 PHYS 3702 Intermed Class Mech 2 .....3 s.h.  
 PHYS 3704/3704L Modern Physics..... 4 s.h.  
 PHYS 3705 Thermo/Class Stat Mech.....3 s.h.  
 PHYS 3705L Thermo/Class Stat Mech Lab ..... 1 s.h.  
 PHYS 3722/3722L Advanced Optics Light ..... 4 s.h.  
 PHYS 4805 Undergrad Research..... 3 s.h.  
 PHYS 5890 Physics & Astronomy for  
 Educators ..... 1-3 s.h.

**4. EARTH/SPACE SCIENCE**

*All of the following:*

GEOL 1505 Physical Geology ..... 4 s.h.  
 GEOL 2605 Historical Geology .....4 s.h.  
 GEOL 2602 Introduction to Oceanography... 3 s.h.  
 GEOG 2630 Weather ..... 3 s.h.  
 ASTR 1504 Descriptive Astronomy ..... 3 s.h.  
 ASTR 2609 Moon & Planets..... 3 s.h.

*Select one from the following:*

GEOL 3720 Field Investigations in Geology ... 4 s.h.  
 GEOL 2615 Geol in the Environment 1 .....3 s.h.  
 ENST 2600 Foundation of Environmental  
 Studies .....3 s.h.

Select one of the following:

GEOG 3703 Human Impacts on the Environment.....	3 s.h.
GEOG 3730 Global Climate.....	3 s.h.
GEOG 3737 Soils and Land Use.....	3 s.h.

Then take three (3) remaining science fields of the following course sequences as secondary concentrations:

#### a. BIOLOGY

BIOL 2601/L Principles of Biology & Lab .....	4 s.h.
BIOL 2602/L Principles of Biology 2 & Lab .....	4 s.h.

Select 5 s.h. from the following:

BIOL 3741 Animal Diversity .....	4 s.h.
BIOL 3702 Microbiology .....	4 s.h.
BIOL 3721 Genetics .....	3 s.h.
BIOL 3762 Field Botany .....	4 s.h.
BIOL 3780 Evolutionary Ecology .....	5 s.h.
BIOL 4890 Molecular Genetics .....	3 s.h.
BIOL 4890L Molecular Genetics Lab .....	1 s.h.
BIOL 3730 Human Physiology .....	5 s.h.

#### b. CHEMISTRY

CHEM 1515 General Chemistry 1.....	4 s.h.
CHEM 1516 General Chemistry 2.....	4 s.h.
CHEM 3719 Organic Chemistry 1 .....	4 s.h.

Select one course from the following:

CHEM 2604 Quantitative Analysis .....	5 s.h.
CHEM 3720 Organic Chemistry 2 .....	4 s.h.
CHEM 3785 Biochemistry 1.....	3 s.h.

#### c. PHYSICS

All of the following:

PHYS 2607 Physical Science for Middle and Secondary Education.....	4 s.h.
PHYS 2608 Sound.....	3 s.h.
PHYS 2610 General Physics 1.....	4 s.h.
PHYS 2610L General Physics Lab 1.....	1 s.h.
PHYS 2611 General Physics 2.....	4 s.h.
PHYS 2611L General Physics Lab 2.....	1 s.h.

Select a minimum of 3 s.h. in Physics from the following:

PHYS 3701 Intermed Class Mech 1 .....	3 s.h.
PHYS 3702 Intermed Class Mech 2 .....	3 s.h.
PHYS 3704/L Thermo/Class Stat Mech .....	4 s.h.
PHYS 3705/L Modern Physics.....	4 s.h.
PHYS 3722/L Advanced Optics Light .....	4 s.h.
PHYS 4805 Undergrad Research.....	3 s.h.
PHYS 5890 Physics & Astronomy for Educators .....	1-3 s.h.

#### d. EARTH/SPACE SCIENCE

GEOG 1505 Physical Geology.....	4 s.h.
GEOG 2602 Introduction to Oceanography... ..	3 s.h.
GEOG 2630 Weather .....	3 s.h.
ASTR 1504 Descriptive Astronomy .....	3 s.h.

Select one of the following:

ENST 2600 Foundations of Environmental Study.....	3 s.h.
GEOG 2615 Geol in the Environment 1 .....	3 s.h.
GEOG 3703 Human Impact on the Environment.....	3 s.h.

GEOG 3720 Field Investigations in Geology ....	3 s.h.
GEOG 3730 Global Climate.....	3 s.h.

**Professional education exception:** Candidates in this major are required to take TEMC 3707 (Science/Technology/Society).

### INTEGRATED SOCIAL STUDIES (7-12) Adolescent License

All of the following:

HIST 1511 World Civilization to 1500.....	3 s.h.
HIST 1512 World Civilization since 1500.....	3 s.h.
HIST 2605 Turning Points in US 1 .....	3 s.h.
HIST 2606 Turning Points in US 2 .....	3 s.h.
HIST 3748 History of Ohio.....	3 s.h.
History Upper Division Elective.....	3 s.h.
History Upper Division Elective.....	3 s.h.
GEOG 2640 Human Geography .....	3 s.h.
POL 1560 American Government .....	3 s.h.
LASS 4805 Intr Social Science Seminar .....	3 s.h.
ECON 2610 Principles 1 .....	3 s.h.

Select one of the following:

SOC 1500 Introduction to Sociology .....	3 s.h.
ANTH 1500 Intro to Anthropology .....	3 s.h.

**\*\*Four courses (12 s.h.) in two of the following disciplines total (24 s.h.):**

Political Science	
Economics	<u>ECON 2630</u>
Sociology/Anthropology	
Geography	

**\*\*One course (3 s.h.) in two remaining (not taken in the above) disciplines: (6 s.h.)**

Political Science	
Economics	<u>ECON 2630</u>
Sociology/Anthropology	
Geography	

**\*\*must include 12 s.h. of courses at upper division level. In Geography, a physical geography course may be selected.**

### ITALIAN (P-12) Multi-Age License

ITAL 1550 Elementary .....	4 s.h.
ITAL 1550 Elementary is waived if student starts with 2600 Intermediate. An ITAL 3700 or 4800 level course must be substituted	
ITAL 2600 Intermediate.....	4 s.h.
ITAL 2600 Intermediate is waived if student starts with 2605 Advanced Intermediate. An ITAL 3700 or 4800 level course must be substituted	

All thirteen (13) courses listed below are required:

ITAL 2605 Advanced Intermediate (required for Admission to Teacher Education Program) .....	3 s.h.
ITAL 3735 Civilization.....	3 s.h.
ITAL 3720 Advanced Grammar and Composition .....	3 s.h.
ITAL 3725 Phonetics .....	3 s.h.
ITAL 3730 Conversation .....	3 s.h.
ITAL 3750 Literature of the 20th Century.....	3 s.h.
ITAL 4800 "Risorgimento," Romanticism, and Roma (1800-1860).....	3 s.h.
ITAL 4285 Viability, "Verismo," and Verga (1860-1920).....	3 s.h.

ITAL 4880 Research and Writing .....	3 s.h.
*FNLG 4801 Methods of Foreign Lang Teaching .....	3 s.h.
*ENGL 4850 Sociolinguistics .....	3 s.h.
*ENGL 4851 Language Acquisition .....	3 s.h.
FNLG 4899 Prof. Development for Teachers.....	1 s.h.

*Professional education exception:* Candidates in this major take MULT 4824 (Methods of Teaching P-12). In addition, they do not take SED 4800 (Reflective Teaching Methods).

Studying abroad in Italy is highly recommended.

Note: Courses marked with \* are taken only once when acquiring licensure in multiple languages.

**LIFE SCIENCES (7-12)  
Adolescent License**

*All of the following:*

BIOL 2601/L Princ of Biology 1 & Lab .....	4 s.h.
BIOL 2602/L Princ of Biology 2 & Lab.....	4 s.h.
BIOL 3741 Animal Diversity .....	4 s.h.
BIOL 3702 Microbiology .....	4 s.h.
BIOL 3721 Genetics .....	3 s.h.
BIOL 3762 Field Botany .....	4 s.h.
BIOL 3780 Evolutionary Ecology .....	5 s.h.
BIOL 4890 Molecular Genetics .....	3 s.h.
BIOL 4890L Molecular Genetics Lab .....	1 s.h.
BIOL 3730 Human Physiology .....	5 s.h.

*Choose from the following:*

MATH 1552 Applied Math for Management...4 s.h.	
or	
MATH 1570 Applied Calculus 1 .....	4 s.h.
or	
MATH 1571 Calculus 1.....	4 s.h.

*Professional education exception:* Candidates in this major are required to take TEMC 3707 (Science/Technology/Society).

Select 15 s.h. from the following three areas with at least 1 course in each area:

- CHEMISTRY
- EARTH/SPACE SCIENCE
- PHYSICS

A course in computer science is recommended but not required.

**PHYSICAL EDUCATION (P-12)  
Multi-Age License**

HPES 1506 Perf./Anlys. of Track & Field.....	1 s.h.
HPES 1567 Perf./Anlys. of Invasion Games .....	2 s.h.
HPES 1573L Tactcl. Apprch. to Tchng Team Spts. ....	1 s.h.
HPES 1574 Perf./Anlys. of Lifetime Sports.....	1 s.h.
HPES 1575 Perf./Anlys. of Net/Wall Games.....	2 s.h.
HPES 1577 Perf./Anlys. of Aquatic Act. ....	1 s.h.
HPES 1579 Rhythmic Movement for Children .....	1 s.h.
HPES 1589 Scientific Basis of Fitness .....	2 s.h.
HPES 1595 Intro. & Concepts of PE & Exercise Sci. ....	2 s.h.
HPES 2605 Sports First Aid & Inj. Prev. ....	3 s.h.
HPES 2610 Intro. to Outdoor Pursuits .....	1 s.h.
HPES 2628 Movement for Early Childhood.....	3 s.h.
HPES 2661 Games Analysis.....	3 s.h.

HPES 2672L Intro. to Biomechanics .....	3 s.h.
HPES 3766L Princ & Analysis of Motor Dev....	3 s.h.
HPES 3767 Pedagogy in P-12 Physical Education .....	4 s.h.
HPES 3780 Methods of Teaching Dance .....	2 s.h.
HPES 4808 Standards Based Asses. in Health & PE .....	3 s.h.
HPES 4851 Cultural Aspects of PE & Sport.....	3 s.h.
HPES 4876 Teaching Elementary PE.....	3 s.h.
HPES 4878 Teaching Middle/Secondary PE.....	3 s.h.
HPES 4895 Adapted Physical Education.....	3 s.h.
HPES 4899 Physiology of Ex. for PE .....	2 s.h.
HPES 4899L Physiology of Ex. for PE Lab.....	1 s.h.

This licensure area has specific GER requirements. Please refer to the curriculum advisement sheet in the College of Education academic advising office.

Candidates majoring in both health education and physical education should see an advisor in the Department of Human Performance & Exercise Science to determine if there are changes to the individual curriculum requirements for each program as a result of double majoring.

*Professional education exception:* Candidates in this major take MULTI 4807 (Teaching Across Curriculum) instead of SED 3706 (Principles of Teaching Adolescents). In addition, they do not take SED 4800 (Reflective Teaching Methods).

**PHYSICAL SCIENCES (7-12)  
Adolescent License**

*All of the following:*

CHEM 1515 General Chemistry 1.....	4 s.h.
CHEM 1516 General Chemistry 2.....	4 s.h.
CHEM 2604 Quantitative Analysis .....	5 s.h.
CHEM 3719 Organic Chemistry 1 .....	4 s.h.
CHEM 3720 Organic Chemistry 2 .....	4 s.h.
Any 3000 or 4000 level chemistry course.....	3 s.h.

*All of the following:*

PHYS 2607 Physical Science for Middle and Secondary Educ.....	4 s.h.
PHYS 2608 Sound.....	3 s.h.
PHYS 2610 General Physics 1.....	4 s.h.
PHYS 2610L General Physics Lab 1.....	1 s.h.
PHYS 2611 General Physics 2.....	4 s.h.
PHYS 2611L General Physics Lab 2.....	1 s.h.

*Select a minimum of 12 s.h. in Physics from the following:*

PHYS 3701 Intermed Class Mech 1 .....	3 s.h.
PHYS 3702 Intermed Class Mech 2 .....	3 s.h.
PHYS 3704/3704L Thermo/Class Stat Mech & Lab .....	4 s.h.
PHYS 3705/3705L Modern Physics & Lab .....	4 s.h.
PHYS 3722/3722L Advanced Optics Light & Lab .....	4 s.h.
PHYS 4805 Undergrad Physics Research .....	3 s.h.
PHYS 5890 Physics & Astronomy for Educators .....	1-3 s.h.

*6 s.h. from the following:*

BIOL 2601 Principles of Biology 1 & Lab .....	4 s.h.
BIOL 2602 Principles of Biology 2 & Lab.....	4 s.h.
GEOL 1505 Physical Geology .....	4 s.h.
GEOL 2602 Intro to Oceanography .....	3 s.h.
GEOG 2630 Weather .....	3 s.h.
ASTR 1504 Descriptive Astronomy .....	3 s.h.

All of the following mathematics courses:

_____ MATH 1571 Calculus 1.....	4 s.h.
_____ MATH 1572 Calculus 2 .....	4 s.h.
_____ MATH 2673 Calculus 3.....	4 s.h.

**Professional education exception:** Candidates in this major are required to take TEMC 3707 (Science/Technology/Society).

A course in computer science is recommended, but not required.

### SPANISH (P-12) Multi-Age License

SPAN 1550 Elementary Spanish .....	4 s.h.
SPAN 2600 Intermediate Spanish .....	4 s.h.

SPAN 2600 Intermediate is waived if student starts with SPAN 2605 Advanced Intermediate Spanish – a SPAN 3700 or 4800 level course must be substituted

All nine (9) courses listed below are required:

SPAN 2605 Advanced Intermediate Spanish (required for Admission to Teacher Education Program) .....	3 s.h.
SPAN 3702 Intensive Spanish Review .....	3 s.h.
SPAN 3724 Spanish Pronunciation.....	3 s.h.
SPAN 3735 Adv. Spanish Gram. & Comp .....	3 s.h.
SPAN 3736 Intro. to Spanish Linguistics .....	3 s.h.
SPAN 3755 Advanced Spanish Conversation ..	3 s.h.
ENGL 4851 Language Acquisition .....	3 s.h.
FNLG 4801 Methods of Foreign Lang. Teaching .....	3 s.h.
FNLG 4899 Professional Development for Teachers.....	1 s.h.

Select four (4) of the following:

SPAN 3758 Cult./Lit. Sp. Spkg Gps. in US.....	3 s.h.
SPAN 3762 Culture: Spain .....	3 s.h.
SPAN 3763 Intro. to Lit.: Spain.....	3 s.h.
SPAN 3766 Culture: Spanish-America.....	3 s.h.
SPAN 3767 Intro. to Lit.: Spanish-America .....	3 s.h.

Select one (1) of the following:

SPAN 5855 Topics In Sp. Lang. and Ling .....	3 s.h.
SPAN 5870 Topics In Span. Lit.: Spain.....	3 s.h.
SPAN 5885 Topics In Hisp. Lit. and Film .....	3 s.h.
SPAN 5890 Topics In Span. Lit: Sp.-America .....	3 s.h.

**Professional education exception:** Candidates in this major take MULT 4824 (Methods of Teaching P-12). In addition, they do not take SED 4800 (Reflective Teaching Methods).

Studying abroad in a Spanish-speaking country is highly recommended.

Note: Courses marked with \* are taken only once when acquiring license in multiple languages.

## Endorsement Programs

The Department of Teacher Education offers endorsement programs in some areas. These endorsements may be added to an existing teacher license, valid for teaching the subjects or learners named. Thus, endorsements are not majors and do not stand by themselves as areas of study. Individuals who complete an endorsement area are limited to the age and grade levels listed on the teacher license. Youngstown State University offers the following undergraduate endorsement areas:

Early Childhood Generalist  
Middle Childhood Generalist

Advisement is provided by the academic advisors in the College of Education. See the curriculum advisement sheets for these endorsements in the College of Education academic advising office for additional information.







# The College of Fine and Performing Arts

*Bryan DePoy, Dean*



The College of Fine and Performing Arts consists of the Department of Art, the Department of Communication, the Dana School of Music, and the Department of Theater and Dance.

The Art Department is accredited by the National Association of Schools of Art and Design and the Dana School of Music is a member of the National Association of Schools of Music. The National Association of Schools of Theatre accredits the Department of Theater and Dance.

The degrees granted are the Bachelor of Arts (B.A.), Bachelor of Fine Arts (B.F.A.), Bachelor of Music (B.M.). Majors are offered in applied music (performance), music education, art history, music history and literature, communication studies, studio art, telecommunication studies, theater, musical theater, dance management, music theory, or composition; and art education (in conjunction with the Beeghly College of Education).

The activities of the college are conducted primarily in the fine and performing arts center, Bliss Hall. This structure houses the administrative offices of the College as well as classrooms, studios, laboratories and performance areas serving most of the curricular and co-curricular programs in art, communication,

theater, and music. Additional activities are held in the John J. McDonough Museum of Art, The Butler Institute of American Art, Stambaugh Auditorium, Powers Auditorium, SMARTS Center, Meshel Hall, Maag Library, and Kilcawley Center.

The College holds as its major objective the highest quality of instruction, including pre-professional training in areas such as studio art, applied music, communication studies, telecommunication studies, theater and dance; the training of teachers\*; and the offering of a wide variety of courses to non-majors from all areas of the University.

The major programs in the College constitute an excellent basis for a liberal education. Students not pursuing degrees in the College of Fine and Performing Arts are welcomed and encouraged to participate in special opportunities in art, music, communication, or theater and dance as a means of broadening and complementing their university experience.

Another important objective of the College is to provide the University community maximum opportunity for experiencing the fine arts.

\*For the Institutional Report on the Quality of Teacher Preparation, Title II, Higher Education Act, please see Appendix B of this *Bulletin*.

## Degree Requirements

### High School Preparation

Please refer to the “High School Preparation” section in the front section of this *Bulletin* under Admissions.

Music majors will need to have sufficient musical performance ability to undertake college-level music courses. Voice majors will benefit from taking French, German, and/or Italian in high school.

### Requirements for the B.F.A., B.M., and B.A. Degrees

	<b>Semester Hours Of Credit</b>		
	<b>B.F.A.</b>	<b>B.M.</b>	<b>B.A.</b>
<b>Basic Skill Courses</b> (See “General Education Requirements” under “Academic Policies and Procedures” in the front section of this <i>Bulletin</i> )			
English 1550, 1551, Writing 1, 2.....	6	6	6
Math 2623 .....	3	3	3
COMM 1545 .....	3	3	3
<b>Domain Courses</b> (See “General Education Requirements” under “Academic Policies and Procedures” in the front section of this <i>Bulletin</i> )			
Arts & Humanities.....	6	6	6
Social Science .....	6	6	6
Natural Science (Includes one lab science).....	7	7	7
Social & Personal Awareness.....	6	6	6
Elective (from any above category).....	3	3	3
Foreign Language .....	0	0-12*	0-8**

### Professional Courses

These are listed under the appropriate department or school curricula.

Fine and Performing Arts students pursuing the B.S. in Ed. degree should consult the Beeghly College of Education section of this catalog.

\*This requirement is for voice majors only. Each student must take the equivalent of an introductory course (1550) in French, German, and Italian. Consult the Department of Foreign Languages and Literatures for information about the Foreign Language Placement Test.

\*\*Students must complete the equivalent of intermediate study (2600) in one language. Consult the Department of Foreign Languages and Literatures for information about the Foreign Language Placement Test.

## Additional Degree Requirements

- Upper-division status (including completion of any specified preparatory units lacking at entrance)
- Major and minor requirements
- Course-level requirements
- Point index requirement
- Residency requirement
- Completion of semester hours required for the degree
- Application for graduation

## Courses of Instruction

Course descriptions can be found in a separate section in the back of this *Bulletin*.

## DEPARTMENT OF ART 330-941-3627

*Professors Moring, Sarro, Smith; Associate Professors Adu-Poku, Christiansen Erb, McCullough, Nelson; Assistant Professors Berlinski, Chalmers, Crnjak, D’Uva, Gill, Helfrich, McCormick, Sperry, Thompson.*

The Department of Art offers courses which satisfy major requirements in art for the degrees of Bachelor of Fine Arts, Bachelor of Arts and Bachelor of Science in Education. These degrees may be earned in eight semesters if students average 16 hours per semester, with the exception of art education which requires nine semesters. The Department also offers a Museum Studies Certificate requiring 18 semester hours.

The requirements for curricula and for graduation are in accordance with the published regulations of the National Association of Schools of Art and Design.

For the Bachelor of Fine Arts degree, the programs in studio art are designed to familiarize the student with the basic concepts in art and the language of visual form. Concentration is on the development and involvement of the student with the processes and practices of art. A minimum of 127 semester hours is required for the B.F.A. degree. Most B.F.A. students require four and a half years to complete the degree. Passing Art 1503, Foundation Portfolio Review, is required at the completion of the foundation sequence to continue in the program. In addition, B.F.A. students are required to exhibit in a senior show at the John J. McDonough Museum of Art. The curricula for studio art are listed below.<sup>†</sup>

For the Bachelor of Arts degree, the curriculum in art history is listed below. The art history major is required to complete a minimum of 40 semester hours in art history beyond the freshman level, plus

6 hours of studio art electives. In addition, art history majors must complete 11 semester hours in a foreign language to include upper division.

A minimum GPA of 2.5 is required to transfer into a Department of Art degree program.

Students majoring in art who wish to qualify for licensure in Pre-K–12 art are required to complete a minimum of 66 semester hours, at least 15 of them in art history. These students, after completing two years of study with a point average of 3.0, may apply for admission to the Beeghly College of Education. (Other requirements for admission are listed under the College of Education section.) No minor is required for the special certificate.

Studio art credit for transfer students is awarded based on a combination of portfolio work and prior college credit. Transfer credit is not awarded solely on a listing of courses on a transcript except for state mandated transfer courses. Transfer students should make an appointment to show their portfolios.

## Bachelor of Fine Arts Curricula

The areas of studio art emphasis for the B.F.A. degree are: interdisciplinary studio arts, graphic and interactive design, painting, photography, printmaking and 3 dimensional studies.

The general requirements for this degree are listed at the beginning of the College of Fine and Performing Arts section.

Please note that lab fees are charged for all studio classes which help pay for some supplies, lab assistants, software, and small equipment.

## Learning Outcomes

The student learning outcomes for studio art are as follows:

- Students will demonstrate thorough knowledge of arts vocabulary.
- Students will demonstrate skills in communicating verbally and visually in their knowledge about the arts.
- Students will achieve the highest possible level of technical skills in the appropriate medium.
- Students will achieve the highest possible level of content expression in the appropriate medium.
- Students will demonstrate working knowledge of trends in general art history and theory with an emphasis in 20th century art.

## Studio Art

### Interdisciplinary Studio Arts Emphasis

ART 1521	Foundation Drawing	.....3 s.h.
ART 1522	Intermediate Drawing	.....3 s.h.
ART 1501	Fundamentals of 2-D Design	.....3 s.h.
ART 1502	Fundamentals of 3-D Design	.....3 s.h.

<sup>†</sup>Not all emphases or programs are available in the evening. Students seeking a degree in art through an evening program should consult with the department chair to determine if it is possible.

ART 1503	Foundation Portfolio Review .....	1 s.h.
ART 3721	Expressive Drawing .....	3 s.h.
ART 2691	Intro. to Digital Imaging .....	3 s.h.
ART 2621	Life Drawing .....	3 s.h.
ART 2625	Intro. to Printmaking: Intaglio and Relief .....	3 s.h.

or

ART 2626	Intro. to Printmaking: Lithography and Screenprinting .....	3 s.h.
ART 2631	Intro. to Ceramics .....	3 s.h.
ART 2611	Intro. to Sculpture .....	3 s.h.
ART 2671	Intro. to B&W Photography .....	3 s.h.
ART 2650	Intro. to Painting .....	3 s.h.
ART 2653	Watercolor .....	3 s.h.
ART 2615	Intro. to Metals .....	3 s.h.
ART 37XX/48XX	Studio Art Elective .....	24 s.h.
ART 3703	Junior Portfolio Review .....	1 s.h.
ART 4803	Senior Seminar .....	3 s.h.
ART 4802	Senior Project .....	3 s.h.

**Art History and Theory**

ART 1541	Survey of Art History 1.....	3 s.h.
ART 1542	Survey of Art History 2 .....	3 s.h.
ART 3788	Theory of Art .....	3 s.h.
ART 5882	20 <sup>th</sup> Century from 1960 .....	3 s.h.
ART 37XX	Art history electives .....	6 s.h.

**Studio Art****Graphic and Interactive Design Emphasis**

ART 1521	Foundation Drawing .....	3 s.h.
ART 1522	Intermediate Drawing .....	3 s.h.
ART 1501	Fundamentals of 2-D Design .....	3 s.h.
ART 1502	Fundamentals of 3-D Design.....	3 s.h.
ART 1503	Foundation Portfolio Review .....	1 s.h.
ART 2650	Intro. to Painting .....	3 s.h.
ART 2691	Intro. to Digit Imaging .....	3 s.h.
ART 2625	Intro. to Printmaking: Intaglio and Relief .....	3 s.h.

or

ART 2626	Intro. to Printmaking: Lithography and Screenprinting .....	3 s.h.
ART 2631	Intro. to Ceramics.....	3 s.h.
ART 2611	Intro. to Sculpture .....	3 s.h.
ART 2661	Intro. to Graphic Design .....	3 s.h.
ART 2662	Intro. to Typography .....	3 s.h.
ART 2669	Introduction to Interactive .....	3 s.h.
ART 3761	Intermediate Graphic Design .....	3 s.h.
ART 3703	Junior Portfolio Review .....	1 s.h.
ART 3763	Illustration .....	3 s.h.
ART 3762	Advanced Typography.....	3 s.h.
ART 4863	Identity Systems .....	3 s.h.
ART 3765	Motion for the Web .....	3 s.h.
ART 2671	Intro. to B&W Photo .....	3 s.h.
ART 4802	Senior Project .....	3 s.h.

or

ART 4867	Graphic Design Internship.....	3 s.h.
ART 3764	Typeface Design.....	3 s.h.
ART 3768	Pre-Press Production .....	3 s.h.
ART 3769	Intermediate Interactive Design.....	3 s.h.
ART 4864	Package Design .....	3 s.h.
ART 4861	Publication Design .....	3 s.h.
ART 4803	Senior Seminar.....	3 s.h.

ART 37XX	Studio Art Elective .....	3 s.h.
ART 3748	Special Topics (varies).....	3 s.h.
ART 4769	Advanced Interactive Design .....	3 s.h.
ART 4868	Graphic Design Practicum.....	3 s.h.

**Art History and Theory**

ART 1541	Survey of Art History 1 .....	3 s.h.
ART 1542	Survey of Art History 2 .....	3 s.h.
ART 3788	Theory of Art .....	3 s.h.
ART 3783	History of Graphic Design.....	3 s.h.
ART 37XX	Art History Elective .....	6 s.h.
ART 5881	20 <sup>th</sup> Century to 1960.....	3 s.h.

or

ART 5882	20 <sup>th</sup> Century from 1960 .....	3 s.h.
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**Studio Art****Painting / Printmaking Emphasis**

ART 1501	Fund. of 2-D Design.....	3 s.h.
ART 1502	Fund. of 3-D Design.....	3 s.h.
ART 1521	Foundation Drawing .....	3 s.h.
ART 1522	Intermediate Drawing.....	3 s.h.
ART 1503	Foundation Portfolio Review .....	1 s.h.
ART 2611	Intro. To Sculpture .....	3 s.h.
ART 2621	Life Drawing.....	3 s.h.
ART 2625	Intro. to Printmaking: Intaglio and Relief .....	3 s.h.
ART 2626	Intro. to Printmaking: Lithography and Screenprinting .....	3 s.h.
ART 2631	Intro. To Ceramics.....	3 s.h.
ART 2650	Intro. to Painting.....	3 s.h.
ART 2653	Watercolor Painting.....	3 s.h.
ART 2671	Intro to B/W Photography .....	3 s.h.
ART 2691	Intro. To Digital Imaging .....	3 s.h.
ART 3721	Expressive Drawing.....	3 s.h.
ART 3703	Junior Portfolio Review.....	1 s.h.
ART 3751	Intermediate Painting 1 .....	3 s.h.
ART 3752	Intermediate Painting 2.....	3 s.h.
ART 4802	Senior Project.....	3 s.h.
ART 4803	Senior Seminar .....	3 s.h.
ART 3725	Intermediate Printmaking: Intaglio and Relief .....	3 s.h.

**Art History and Theory**

ART 3726	Intermediate Printmaking: Lithography and Screenprinting.....	3 s.h.
ART 3748	Special Topics, Studio Art.....	3 s.h.
ART 4824	Advanced Printmaking.....	3 s.h.
ART 4852	Advanced Painting .....	3 s.h.
ART 37xx/48xx	Studio Art Elective .....	12 s.h.

**Art History and Theory**

ART 1541	Survey of Art History 1 .....	3 s.h.
ART 1542	Survey of Art History 2 .....	3 s.h.
ART 3788	Theory of Art .....	3 s.h.
ART 5881	20 <sup>th</sup> Century Art to 1960.....	3 s.h.
ART 5882	20 <sup>th</sup> Century Art from 1960.....	3 s.h.
ART History elective (37xx).....		6 s.h.

**Studio Art****Photography Emphasis**

ART 1521	Foundation Drawing .....	3 s.h.
ART 1522	Intermediate Drawing .....	3 s.h.
ART 1501	Fundamentals of 2-D Design .....	3 s.h.
ART 1502	Fundamentals of 3-D Design .....	3 s.h.

ART 1503	Foundation Portfolio Review .....	1 s.h.
ART 2650	Intro. to Painting .....	3 s.h.
ART 2625	Intro. to Printmaking: Intaglio and Relief .....	3 s.h.

or

ART 2626	Intro. to Printmaking: Lithography and Screenprinting ...	3 s.h.
ART 2691	Intro. to Digital Imaging.....	3 s.h.
ART 2661	Intro. to Graphic Design or Art elective .....	3 s.h.
ART 2631	Intro. to Ceramics .....	3 s.h.
ART 2611	Intro. to Sculpture .....	3 s.h.
ART 2671	Intro. to B&W Photo.....	3 s.h.
ART 2672	Intro. to Color Photography .....	3 s.h.
ART 2673	Intro. to Digital Photography .....	3 s.h.
ART 3703	Junior Portfolio Review .....	1 s.h.
ART 3748	Special Topics .....	6 s.h.
ART 3774	Intermediate Digital .....	3 s.h.
ART 5873	Topics in Advanced Photography ...	3 s.h.
ART 4802	Senior Project .....	3 s.h.
ART 4803	Senior Seminar .....	3 s.h.
ART 37XX	Studio Art Elective .....	6 s.h.

**Art History and Theory**

ART 1541	Survey of Art History 1 .....	3 s.h.
ART 1542	Survey of Art History 2 .....	3 s.h.
ART 3788	Theory of Art .....	3 s.h.
ART 5881	20 <sup>th</sup> Century to 1960 or	
ART 5882	20 <sup>th</sup> Century from 1960 .....	3 s.h.
ART 3785	History of Still Photography .....	3 s.h.
ART 37XX	Art Hist. Elec. ....	3 s.h.

**Studio Art**

**3-Dimensional Studies Emphasis**

ART 1521	Foundation Drawing .....	3 s.h.
ART 1522	Intermediate Drawing .....	3 s.h.
ART 1501	Fundamentals of 2-D Design .....	3 s.h.
ART 1502	Fundamentals of 3-D Design .....	3 s.h.
ART 1503	Foundation Portfolio Review.....	1 s.h.
ART 3721	Expressive Drawing .....	3 s.h.
ART 2691	Intro. to Digital Imaging .....	3 s.h.
ART 2621	Life Drawing .....	3 s.h.
ART 2625	Intro. to Printmaking: Intaglio and Relief .....	3 s.h.

or

ART 2626	Intro. to Printmaking: Lithography and Screenprinting ...	3 s.h.
ART 2650	Intro. to Painting .....	3 s.h.
ART 2671	Intro. to B&W Photo .....	3 s.h.
ART 2631	Intro. to Ceramics.....	3 s.h.
ART 3732	Intermediate Ceramics .....	3 s.h.
ART 3733	Advanced Ceramics .....	3 s.h.
ART 2611	Intro. to Sculpture .....	3 s.h.
ART 3712	Intermediate Sculpture .....	3 s.h.
ART 3713	Advanced Sculpture .....	3 s.h.
ART 4834	Advanced Studio .....	9 s.h.
ART 37XX /48XX	Studio Art Electives .....	9 s.h.
ART 3703	Junior Portfolio Review .....	1 s.h.
ART 4803	Senior Seminar .....	3 s.h.
ART 4802	Senior Project .....	3 s.h.

**Art History and Theory**

ART 1541	Survey of Art History.....	3 s.h.
ART 1542	Survey of Art History.....	3 s.h.
ART 3788	Theory of Art.....	3 s.h.
ART 5881	20 <sup>th</sup> Century to 1960.....	3 s.h.
ART 5882	20 <sup>th</sup> Century from 1960 .....	3 s.h.
ART 37XX	Art History Electives.....	3 s.h.

**Bachelor of Arts Curriculum—Art History**

**Learning Outcomes**

The student learning outcomes for art history are as follows:

- Students will recognize the works and artists of all major periods and cultures.
- Students will learn the basic forms of analysis, including stylistic, iconographic, technical, and social analysis.
- Students will develop the research skills needed for the study of primary visual materials, and for the use of primary and secondary sources.

**Major Requirements**

ART 1541	Survey of Art History 1.....	3 s.h.
ART 1542	Survey of Art History 2.....	3 s.h.

*Two of the following:*

ART 3741	Topics in Medieval Art.....	3 s.h.
ART 3742	Topics in Renaissance Art.....	3 s.h.
ART 3744	17 <sup>th</sup> /18 <sup>th</sup> Century American Art .....	3 s.h.
ART 3743	Baroque Art .....	3 s.h.
ART 5940	Topics in Ancient Art .....	3 s.h.

*Two of the following:*

ART 3745	19 <sup>th</sup> Century European Art.....	3 s.h.
ART 3746	19 <sup>th</sup> Century American Art.....	3 s.h.
ART 3747	African-American Art .....	3 s.h.
ART 3785	History of Still Photography .....	3 s.h.
ART 5881	20 <sup>th</sup> Century Art to 1960.....	3 s.h.
ART 5882	20 <sup>th</sup> Century Art from 1960 .....	3 s.h.

*One of the following:*

ART 3780	African Art.....	3 s.h.
ART 3782	Pre-Columbian Art .....	3 s.h.
ART 3781	Native North American Art .....	3 s.h.

*Art History Electives:*

Three of any 3700 or higher Art History, 3 s.h. each

*Capstone:*

ART 4889	Seminar in Art History .....	3 s.h.
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Studio Art Electives .....

**Required Support Courses**

*One*

Foreign Language .....	11 s.h.
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<i>Any</i>	
Religious Studies.....	3 s.h.
<i>Any</i>	
English Literature, Music Literature, or Intro to Theater Arts .....	3 s.h.

### Bachelor of Science in Education Visual Arts Pre-K–12\*

#### Learning Outcomes

The student learning outcomes for visual arts Pre-K-12 are as follows:

- Students will demonstrate thorough knowledge of arts vocabulary.
- Students will demonstrate skills in communicating verbally and visually in their knowledge about the arts.
- Students will achieve the highest possible level of technical skills in the appropriate medium.
- Students will achieve the highest possible level of content expression in the appropriate medium.
- Students will demonstrate working knowledge of trends in general art history and theory with an emphasis in 20th century art.
- Students will demonstrate pedagogical skills and insights as they pertain to specific classroom needs.
- Students will demonstrate awareness and growth in confidence in teaching contemporary strategies while teaching the visual arts.
- Students will demonstrate skill in discriminating between creative (divergent) experiences and those that do not promote the artistic growth of the child (convergent).

ART 1521	Foundation Drawing .....	3 s.h.
ART 1522	Intermed Drawing.....	3 s.h.
ART 1501	Fund. of 2-D Des.....	3 s.h.
ART 1502	Fund of 3-D Des.....	3 s.h.
ART 1503	Foundation Portfolio Review.....	1 s.h.
ART 3721	Expressive Drawing .....	3 s.h.
ART 2691	Intro to Digit Imaging.....	3 s.h.
ART 2625	Intro. to Printmaking: Intaglio and Relief .....	3 s.h.

or

ART 2626	Intro. to Printmaking: Lithography and Screenprinting ...	3 s.h.
ART 2661	Intro. to Graph Design.....	3 s.h.
ART 2631	Intro. to Ceramics .....	3 s.h.
ART 2611	Intro. to Sculpture .....	3 s.h.
ART 2671	Intro. to B&W Photo.....	3 s.h.
ART 2650	Intro. to Painting.....	3 s.h.
ART 2653	Watercolor .....	3 s.h.
ART 2615	Intro. to Metals.....	3 s.h.

#### Art Education Requirements

ART 3737	Pre-K–4, Vis Arts Ed.....	3 s.h.
ART 4837	Prof Prac/Middle Sch.....	3 s.h.
ART 4838	Prof Prac/Sec Sch .....	3 s.h.
ART 4839	Art Education Seminar .....	1 s.h.

#### Education Requirements

FOUN	1501	Intro to Educ.....	3 s.h.
MULT	4807	Tchg Across Curric.....	2 s.h.
EDTC	3771	Technology for Tchg .....	3 s.h.
TERG	3710	Reading Applications in Content Areas.....	3 s.h.
PSYC	3709	Psych of Educ .....	3 s.h.
FOUN	3708	Educ & Society .....	3 s.h.
SPED	2630	Individuals with Exceptionalities in Society .....	3 s.h.
SED	4842	Student Tchg.....	10 s.h.
SED	4842A	Stu Tchg Sem .....	2 s.h.

#### Art History and Theory

ART	1541	Sur of Art Hist .....	3 s.h.
ART	1542	Sur of Art Hist .....	3 s.h.
ART	3788	Theory of Art .....	3 s.h.
ART	5882	20th C. from 1960 .....	3 s.h.
ART	37XX	Art history elective .....	3 s.h.

\*Note: Students can be licensed to teach Pre-K–12 by completing the BFA in Studio Art and the Art Education and Education requirements as well.

## DEPARTMENT OF COMMUNICATION

### 330-941-3631

*Professors McCloud, O'Neill, Owens; Associate Professor Crawford, Earnheardt, Horvath (Chair), Mathews; Assistant Professors Curnalia, Tyus; Instructors Jackson, Mermer.*

The Department of Communication offers coursework which satisfies major requirements for the degree of Bachelor of Arts.

### Bachelor of Arts

The Bachelor of Arts degree for communication studies, and telecommunication studies requires 38-40 credit hours within the department. For further information about the department, including meeting with a faculty member who will discuss the requirements with you, contact the department office, located in Bliss Hall, Room 2000. These degrees may be earned in eight semesters if students average 16 hours per semester.

### COMMUNICATION STUDIES

Courses in this major provide students with the necessary communication skills for today's job market and future career demands. Communication Studies courses address the universal emphasis placed on effective communication skills by employ-

ers and recruiters. The core curriculum of 18 credit hours includes courses covering these communication skills.

The curriculum is then divided into three unique tracks to better prepare students for a particular career. Each of the tracks is described below. Students interested in:

- human resources or management careers in profit or nonprofit organizations should consider the *interpersonal / organizational track*.
- a career path in media management, public relations, advertising, or computer-applications choose the *media track*.
- career goals of pharmaceutical, industrial, retail, or corporate sales, politics, or law school should choose the *persuasion track*.

The overriding goal of each track is to challenge each student to discover and study the many forms of communication.

**Learning Outcomes**

Regardless of track, students graduating with a Bachelor of Arts degree in communication studies will:

- differentiate between key theories and concepts in communication
- synthesize academic research in communication studies
- demonstrate verbal and nonverbal competence

Students completing their degree in communication studies are uniquely qualified to enter the job market and compete effectively throughout their careers for advancement and promotion.

Through course offerings and applied learning experiences, the communication studies program combines a rich liberal arts emphasis with a much needed specialized professional and career focus for undergraduate students.

**Admission Policy for Communication Studies**

To major in communication studies, entering freshmen may simply declare a communication studies major. Transfer students from outside the university must have a GPA of 2.00 and be in "good academic standing." Transfer students from within the university must have a minimum GPA of 2.50.

Students are expected to meet with their communication studies faculty advisor prior to registration and are encouraged to meet with them whenever they have questions or concerns, and to monitor progress.

**Bachelor of Arts Degree in Communication Studies**

Students majoring in communication studies must successfully complete all core courses and one of the specified tracks for a total of 39 semester hours.

**CORE COURSES** (take all 6 courses)

CMST 2600	Communication Theory.....	3 s.h.
CMST 2653	Group Communication.....	3 s.h.
CMST 2656	Interpersonal Communication.....	3 s.h.
CMST 2657	Organizational Communication.....	3 s.h.
CMST 3700	Designing Communication Research .....	3 s.h.
CMST 4899	Senior Project .....	<u>3 s.h.</u>
<b>TOTAL.....</b>		<b>18 s.h.</b>

**INTERPERSONAL / ORGANIZATIONAL TRACK**  
(take 5 of 6 courses plus 6 s.h. of upper division electives in CMST)

CMST 2610	Intercultural Communication.....	3 s.h.
CMST 3756	Interviewing.....	3 s.h.
CMST 3750	Gender Communication.....	3 s.h.
CMST 4850	Computer Mediated Communication.....	3 s.h.
CMST 4855	Interpersonal Relationships.....	3 s.h.
CMST 4659	Organizational Cultures.....	3 s.h.
CMST 5852	Conflict Management .....	<u>3 s.h.</u>
<b>TOTAL.....</b>		<b>21 s.h.</b>

**MEDIA TRACK**

CMST 3717	Media Campaigns .....	3 s.h.
CMST 3756	Interviewing.....	3 s.h.
CMST 3757	Media Relations Writing .....	3 s.h.
CMST 4850	Computer Mediated Communication.....	3 s.h.
CMST 4851	New Communication Media....	3 s.h.
CMST 4859	Organizational Cultures.....	3 s.h.
CMST 4898	Media Analysis.....	<u>3 s.h.</u>
<b>TOTAL.....</b>		<b>21 s.h.</b>

**PERSUASION TRACK**

CMST 2610	Intercultural Communication....	3 s.h.
CMST 2645	Presentational .....	3 s.h.
CMST 3754	Argumentation .....	3 s.h.
CMST 3756	Interviewing.....	3 s.h.
CMST 3760	Persuasion .....	3 s.h.
CMST 4850	Computer Mediated Communication.....	3 s.h.
CMST 4851	New Communication Media....	<u>3 s.h.</u>
<b>TOTAL.....</b>		<b>21 s.h.</b>

Students must complete 18 s.h. of 3000- and 4000-level courses in the CMST major. Students must also complete all requirements for a Bachelor of Arts degree, including the completion of an approved academic minor.

Students seeking a degree in communication studies through an evening program should consult with the department chair to determine if it is possible.

## Minor in Communication

Students interested in improving their communication skills beyond CMST 1545 should consider the communication studies minor. The core of the minor focuses on developing competent communication skills desired by today's employers and recruiters – interpersonal communication, working in groups, listening, and public speaking.

To complete the minor in communication studies, a student must successfully complete 18 s.h.. The combination of hours is described below.

*Both of these courses:*

CMST 2600	Communication Theory .....	3 s.h.
CMST 3756	Interviewing .....	<u>3 s.h.</u>

**TOTAL..... 6 s.h.**

*Three of the following courses:*

CMST 2645	Presentational Speaking.....	3 s.h.
CMST 2653	Group Communication.....	3 s.h.
CMST 2656	Interpersonal Communication..	3 s.h.
CMST 2657	Organizational Communication ..	<u>3 s.h.</u>
		<b>9 s.h.</b>

*One of these courses:*

CMST 4855	Interpersonal Communication Relationships .....	3 s.h.
CMST 4859	Organizational Cultures .....	3 s.h.
CMST 5852	Conflict Management .....	<u>3 s.h.</u>
		<b>3 s.h.</b>

**GRAND TOTAL..... 18 s.h.**

## TELECOMMUNICATION STUDIES

A major in the telecommunication studies curriculum provides in-depth knowledge and intellectual challenge in electronic communication. Students receive practical orientation to the skills and techniques of broadcasting. Further, they explore contemporary theories and problems which are central to telecommunications media, as well as examine new communication media.

From a liberal arts perspective, the telecommunication studies curriculum is designed to aid the student in pursuit of careers not only in broadcasting but also in recently expanding avenues of communication such as non-commercial broadcasting, corporate communications, industrial communications, cablecasting, and independent production. Internships are available in media organizations to students of superior academic achievement.

### Learning Outcomes

The student learning outcomes for the major in telecommunication studies are as follows:

- The student will construct arguments using basic reasoning skills and avoiding fallacies.
- The student will compose messages using multi-media technology.

- The student will design written, oral, and visual messages to communicate ideas to a specific audience.
- The student will appraise the values, attitudes, and goals of a potential audience using demographic and psychographic variables.
- The student will describe the prevailing theories of electronic media and appraise the relative value of each.

## Admission Policy for Telecommunication Studies

When students declare an intent to major in telecommunication studies, they will be assigned to the "Pre-Telecommunication" (Pre-TCom) category. Upon completion of 30 semester hours with a GPA of 3.0 or higher (4.0 scale) for courses taken while in the Pre-TCom category, students will be reassigned to "Telecommunication Studies" (TCom). These 30 hours must include satisfactory completion of the course TCom 1500 (Orientation).

Students may transfer to the Pre-TCom, but not TCom, category from another program at YSU or from another institution. Upon completion of 30 semester hours with a GPA of 3.0 or higher for courses taken while in the Pre-TCom category, students will be reassigned to TCom.

Students who have interrupted their attendance at YSU for three consecutive semesters or more will be assigned to the Pre-TCom category upon their return. After completing 30 semester hours with a GPA of 3.0 or higher for courses taken while in the Pre-TCom category, they will be reassigned to TCom.

## Telecommunication Studies Major

TCOM 1500	Orientation to Telecommunication Studies
ENGL 1550	English 1
TCOM 1580	Introduction to Telecommunication Studies
TCOM 1581	Telecommunication Technologies
	<i>then</i>
TCOM 2682	Scriptwriting for Electronic Media
TCOM 2683	Media Operations and Performance
	<i>then</i>
TCOM 3780	Principles and Practices of Media Announcing
TCOM 3781	Audio Production <i>or</i>
TCOM 3782	Video Production 1
TCOM 3783	Telecommunication Regulation
TCOM 4887	Theories and Criticism of Telecommunication
TCOM 4897	Seminar in Telecommunication
TCOM 4899	Capstone

*Plus additional credits in Telecommunication Studies to total 40 hours.*



## THE DANA SCHOOL OF MUSIC

*Professors Ausmann, Crist (Director), Engelhardt, Gage, Gelfand, Krummel, Mosher, Oltmanns, Perkins, Rollin, J. Umble, Wilcox; Associate Professors, Lee, Morgan, Schaft, K. Umble, Yun; Assistant Professors Boczkowska, Fowler, Goldberg, Kiser, J. Paul Louth, Payne, Reale, Root, Wang; Instructor Wolfgang.*

The Dana School of Music began in 1869 as Dana's Musical Institute in Warren, Ohio. It was merged with Youngstown College in 1941.

The School complements the general objectives of the University by providing intensive professional training in music based on a thorough understanding of the fundamental skills and theory upon which all music rests and also providing an opportunity for the non-music major to develop a background of musical knowledge.

The requirements for entrance and for graduation are in accordance with the published regulations of the National Association of Schools of Music, of which the Dana School of Music is a member.

### Learning Outcomes

The student learning outcomes for the major in music are as follows:

- Students will demonstrate proficiency on a voice or instrument.
- Students will demonstrate an understanding of music theory including, but not limited to: harmony, form, sight singing, and dictation.
- Students will demonstrate an understanding of the various historical periods including styles, composers, performance media, and performance practice.
- Students will demonstrate basic keyboard proficiency including scales, chords, transpositions, and modulations.

### Programs

The curriculum may be divided into six components: music education, music theory, music history, performance, music recording, and liberal arts. Courses are available leading to the degree of Bachelor of Music with the major in piano, organ, voice, standard string or wind instruments, percussion, composition, music education, and jazz. In addition, it is possible to obtain the degree of Bachelor of Arts with majors in music history, music theory, or applied music and a Bachelor of Music degree with emphasis in Music Recording.

In cooperation with the College of Education, the music education program prepares students for licensure as music teachers in the public schools and also provides other courses necessary for general elementary teaching certificates. Music education students have a variety of opportunities for observation and practice teaching through excellent cooperation between the University and area schools.

### Facilities

The Dana School is one of four departmental units in the College of Fine and Performing Arts. The School is housed in Bliss Hall, which provides practice rooms, faculty studios, classrooms, rehearsal rooms and a recital hall with a seating capacity of 237. Additional use is made of Stambaugh and Powers auditoriums.

### Equipment

Equipment includes 92 Steinway pianos, 30 MIDI pianos, harpsichords by Dowd, two Schlicker pipe organs, three Flentrop pipe organs, consorts of Renaissance wind and brass instruments, and a comprehensive collection of standard band and orchestral instruments.

Many University-owned instruments are available for use by students enrolled in related courses. There is no charge for use of these instruments, although failure to comply with check-in deadlines will result in a \$5.00-a-day fine or replacement for each instrument.

### MIDI Lab

Bliss Hall offers students the opportunity to work with state-of-the-art music computer software and hardware, including advanced music notation, music sequencing (composition/arranging) and automatic accompaniment applications. The Center features Macintosh workstations, each fully MIDI-equipped.

### Music Recording Studio

The Dana Recording Studio is equipped with state-of-the-art analog to digital equipment. The 32-track studio features a G5 Mac computer running Digital Performer, Logic, and Pro Tools.

### Libraries

The school's extensive libraries of band, orchestral, and choral music represent musical periods from the Renaissance to the present. Maag Library contains books, printed music, records, CDs, videos, and CD ROMs.

## Scholarships and Loans

The Dana School of Music offers a wide range of scholarships, which are awarded, after competitive auditions, on the basis of talent and academic achievement. Applications should be submitted to the Director of the Dana School of Music. For other scholarships, see Loans and Scholarships in the Scholarships and Financial Aid section.

## Musical Activities, Ensembles

The Dana School of Music supplements the concerts offered by community ensembles with the Dana Concert Series. This series brings to the University and to the public artistic solo and ensemble programs featuring faculty members and guest artists, composers, and musicologists.

The School has numerous performing ensembles: the Dana Chorale, the University Chorus, the Wind Ensemble, the Concert Band, the Marching Band, Dana Symphony Orchestra, Opera Workshop; the Jazz Ensemble; Jazz Combos; Woodwind, Brass, String and Percussion Ensembles; the Chamber Orchestra; and the Early Music and Composer's Ensembles.

## Student Activities

Music students may participate in all Youngstown State University student activities. Of special interest to music students are the student chapters of the Ohio Collegiate Music Educators Association, Early Music Society, New Music Society, Dana Opera Society, the Jazz Society, Phi Mu Alpha and Sigma Alpha Iota.

## Fees

See the Fees and Expenses section of this *Bulletin*.

## Application and Admission Examinations

An applicant for admission to the Dana School of Music must satisfy the general requirements for admission to the University (see the Admission section).

Applicants are required to pass entrance auditions in their performance area and to take placement examinations in music theory and piano. These auditions and examinations are on announced dates preceding the commencement of classes in the fall.

### Admission to Courses for the Degree of Bachelor of Music

The applicant's high school courses should include the preparatory courses specified under High School Preparation on p. 12 of this *Bulletin*.

## Musical Proficiency

It is expected that the applicant will have developed a certain proficiency in one or more branches of applied music before entering the University, as certain standards in technique and repertory must be met. Qualifications are determined by the placement tests mentioned above; the student not qualifying for the first regular course in a major branch of applied music must take preparatory work until ready to undertake the regular courses.

The Dana School of Music theory placement examination is used to determine theory proficiency. Those scoring less than the 80th percentile will be assigned to Music 1520, while those scoring above the 80th percentile will be assigned to Music 1531.

Prospective composition majors must present evidence of ability to handle the materials of music by placing at or above the 80th percentile of the Dana School of Music theory entrance examination. Proficiency on a musical instrument sufficient for admission to the freshman level of applied music must be demonstrated before the appropriate applied faculty in an audition.

## Admission from Other Institutions

The general policy is stated in the Academic Policies and Procedures section. Advanced standing in musical performance and in music theory is granted tentatively and must be validated by examinations.

## Requirements for the Degree Bachelor of Music

It is the student's responsibility to see that all the graduation requirements for the degree sought are satisfied. These degrees may be earned in eight semesters if students average 16-18 hours per semester. For the Bachelor of Music degree, these consist of:

1. **Pre-college or preparatory study, of two kinds:**
  - A. Academic. The specific courses are listed on p. 12 of this *Bulletin*. These courses are normally taken in high school. Deficiencies must be overcome prior to completing 60 semester hours at YSU.
  - B. Musical. An entrant lacking suitable proficiency must develop it before undertaking the required college-level music courses.
2. **University requirements.** Non-music courses and other requirements to be completed in the University are listed in the Degree Requirements chart at the beginning of the College of Fine and Performing Arts section.
3. **Degree requirements.** Curricula leading to music degrees require from 126 to 137 semester hours of credit and are designed to be completed in four academic years.

## Double Major: Music Performance and Music Education

Students who wish to complete a major (Bachelor of Music degree) in an instrument or in voice, theory, or composition, and also a major in music education, should consult the director of the Dana School of Music.

While the Dana School of Music offers a variety of degrees and majors in music, it is our desire that all music students have significant musical experiences as a foundation for more specialized training.

## CURRICULA

### For All Music Majors

Acceptance into a performance area is contingent upon an audition. The student not qualifying for Music 1501 may take the relevant course 1500 until the deficiency is corrected.

Advanced standing in performance may be granted tentatively after an examination given by members of the faculty. The final classification is made at the end of the first semester of resident study.

Enrollments in applied music are contingent upon the approval of the director of the Dana School of Music, with priority given to full-time music majors and music minors participating in major ensembles.

**Teacher Assignment.** Assignment of students to teachers is made by the area coordinator. Requests for change of teacher should be addressed to the coordinator in writing. A student's choice of teacher will be respected as far as possible, but final assignment rests with the director of the School of Music.

**Lessons.** Students registered for 4 s.h. courses receive individual instruction and one 50-minute seminar weekly. They are required to practice three hours daily. Students registered for 2 and 3 s.h. courses receive individual instruction and one 50-minute seminar weekly; they are required to practice two hours daily. Students registered for A and B applied courses receive individual instruction for 30 minutes each week and are required to practice one hour daily.

No credit will be given in a performance course if the student misses more than three lessons in any semester. Lessons missed due to legal holidays or school closings will not be made up. In case of prolonged illness the lessons may be made up at the discretion of the teacher.

**Recitals.** Recognizing that performing before an audience plays a vital role in musical development, the Dana School offers its students many opportunities to appear in public as a way to foster that development. Attendance at 30 recitals is mandatory in the first two years.

**Convocation.** The assistant director of the School arranges weekly programs of lectures, student and faculty performances. Attendance at 36 convocations is mandatory in the first two years.

**Young Artist Competition.** An annual concert by the Dana Symphony Orchestra features student soloists chosen by competition.

**Degree and Non-degree Recitals.** Each candidate for the degree Bachelor of Music must present a senior recital in partial fulfillment of the graduation requirements. Performance majors must present a half-hour recital their junior year and a one-hour recital their senior year. Composition majors must present 75 minutes of music, and music education majors a half-hour recital of music. Outstanding students may present non-degree recitals, subject to certain conditions (for particulars, consult the coordinator of the Dana Concert Series). Planning for all these recitals should include selection of varied and balanced repertory, preparation of properly detailed copy for the printed program and program notes, and consideration of performance aspects such as attire, stage deportment, and ways to attract an audience. A recital hearing will be held no later than 21 days prior to the projected recital date. During that time a student who plans to present a degree recital must be prepared to perform the recital program for faculty approval.

All students registered for major-level applied lessons must attend weekly seminars as posted in the schedule of classes.

**Examinations.** During examination week of each term, performance faculty members convene to determine whether or not students may proceed to the next higher proficiency level (performance course number). Frequency of required examinations differs among the various performance areas (for specifics consult the syllabus of the performance area concerned). Transfer students are examined at the end of their first or second term of study, as established by the individual performance area. Students presenting an approved degree recital may be granted a waiver of examination for the term of the recital. Students may be retained in the same proficiency level with a grade of C or lower or with a grade of PR. Students who fail to meet the standards of the examining faculty may be required to reduce the number of credits for which they register in subsequent terms; or they may be required to withdraw completely from the course sequence.

Each applied area (keyboard, brass, etc.) may vary the above to meet certain needs. Consult with area coordinator for details.

## Jazz or Applied/BA Major

The following courses differ only in degree from those listed under Performance Major according to the credit hours earned. (See courses Applied Studio

Instruction for specific requirements.) A high standard of proficiency is expected. For the jazz major, junior and senior recitals are required.

1501, 1502. See Performance Major	2+2 s.h.
2603, 2604. See Performance Major	3+3 s.h.
3703, 3704. See Major/Performance	3+3 s.h.
4803, 4804. See Major/Performance	3+3 s.h.

## Music Education Major

The following courses differ only in degree from those listed under Performance Major according to the credit hours earned. (See courses Applied Studio Instruction for specific requirements.) Concentration in the development of basic technics relative to teaching in the elementary and secondary school systems is an integral component of study. A high standard of proficiency is expected. Senior recital required. This degree may be earned in eight semesters if students average 17 hours per semester.

1501, 1502. See Performance Major	2+2 s.h.
2601, 2602. See Performance Major	2+2 s.h.
3701, 3702. See Performance Major	2+2 s.h.
4801. See Performance Major	2 s.h.

## Music Minor

The following courses are for the student who has a requirement of study on a secondary instrument or voice or who does not meet the standards required in the major courses. No seminar is required. Initial enrollment is contingent upon successful completion of an audition.

1500 A,B	1+1 s.h.
2600 A,B	1+1 s.h.
3700 A,B	1+1 s.h.
5800 A,B	1+1 s.h.

## ENSEMBLES

There are two types of ensembles in the Dana School of Music—large ensembles and chamber ensembles. Large ensembles rehearse a total of three or four hours per week, and chamber ensembles for two hours per week.

All music majors (except guitar, organ, and piano performance majors) are required to participate in a large ensemble each semester in which they are enrolled in applied music.<sup>†</sup>

### Large Ensembles

Course Number	Cr. Hrs.
0002 <i>Dana Chorale</i> .....	0-1 s.h.
0003 <i>Dana Madrigal</i> .....	0-1 s.h.
0004 <i>University Chorus</i> .....	0-1 s.h.
0005 <i>Concert Band</i> .....	0-1 s.h.
0006 <i>Marching Band (fall only)</i> .....	0-1 s.h.
0007 <i>Wind Ensemble</i> .....	0-1 s.h.

0008 <i>Symphony Orchestra</i> .....	0-1 s.h.
0023 <i>Jazz Ensemble</i> .....	0-1 s.h.
0040 <i>University Band (spring only)</i> .....	0-1 s.h.

### Chamber Ensembles

0009 <i>Percussion Ensemble</i> .....	0-1 s.h.
0010 <i>String Ensemble</i> .....	0-1 s.h.
0012 <i>Opera Workshop</i> .....	0-3 s.h.
0013 <i>Studio Ensemble</i> .....	0-1 s.h.
0014 <i>Women's Chorus</i> .....	0-1 s.h.
0015 <i>Early Music Ensemble</i> .....	0-1 s.h.
0016 <i>Flute Ensemble</i> .....	0-1 s.h.
0017 <i>Brass Ensemble</i> .....	0-1 s.h.
0018 <i>Horn Choir</i> .....	0-1 s.h.
0019 <i>Trombone Ensemble</i> .....	0-1 s.h.
0020 <i>Tuba Ensemble</i> .....	0-1 s.h.
0021 <i>Brass Chamber Ensemble</i> .....	0-1 s.h.
0022 <i>Trumpet Ensemble</i> .....	0-1 s.h.
0024 <i>Composer's Ensemble</i> .....	0-1 s.h.
0026 <i>Chamber Orchestra</i> .....	0-1 s.h.
0028 <i>Chamber Winds</i> .....	0-1 s.h.
0029 <i>Guitar Ensemble</i> .....	0-1 s.h.
0030 <i>Jazz Combo</i> .....	0-1 s.h.
0035 <i>Saxophone Quartet</i> .....	0-1 s.h.
0036 <i>Clarinet Choir</i> .....	0-1 s.h.
0041 <i>Basketball Pep Band (spring only)</i> .....	0-1 s.h.
0051 <i>Piano Chamber Ensemble</i> .....	0-1 s.h.

Ensemble courses are open to all students in the University who are qualified for them and any ensemble course may be repeated any number of semesters.

Instrumental (music education) majors are required to spend one (1) semester in a vocal ensemble.

Requirements in addition to the above but unique to each ensemble:

- Opera workshop 0012 culminates in the production of one or more operas. Credit is given in accordance with the amount of work chosen by the student, ranging from one to three semester hours.
- Woodwind and brass ensembles may include quartets, quintets, and various other combinations of instruments. 1 s.h. each.

## CURRICULUM FOR PERFORMANCE DEGREES

### I. General University Requirements

Courses	Cr. Hrs.
Writing 1 and 2 .....	6
Communications .....	3
Math .....	3
Domains:	
Social and Personal Awareness .....	6
Arts and Humanities .....	6
(MUHL 3771, 3772, 3773)	
Natural Sciences .....	7
Social Science .....	6

**II. Core Music Requirements**

Music Theory 1531-3750.....19  
 Music History 3771-3774.....12  
 Junior/Senior Recitals ..... N/C

**III. Requirements unique to area of emphasis**

**1. Instrumental**

Applied Major 1501-4806 .....28  
 Keyboard Musicianship 1581-2682.....4  
 Large Ensemble  
 (guitar majors/guitar ensemble) .....8  
 Chamber Ensemble .....2  
 Conducting 3715.....3  
 Theory/History Electives  
 (must represent both areas).....9  
 Music Electives .....11

**2. Jazz**

Applied Major 1501-4804 .....22  
 Keyboard Musicianship 1581-1582.....2  
 Jazz Keyboard 3781-3782 .....2  
 Jazz Ensemble .....8  
 Jazz Combo .....2  
 Jazz Fundamentals 1525.....2  
 Jazz History 2616.....3  
 Jazz Arranging 3712-3713 .....6  
 Jazz Improv 2667-4868.....12  
 Conducting 3715.....3  
 Theory/History Elective .....3

**3. Organ**

Applied Major 1501-4806 .....28  
 Accompanying 2691-2694 .....4  
 Major Ensemble .....4  
 Applied Piano 1500A, B; 2600A, B.....4  
 Conducting 3715.....3  
 Pedagogy 5858 .....3  
 Voice Class/Applied Voice .....2  
 Theory/History Electives  
 (must represent both areas).....9  
 Music Electives .....8

**4. Piano**

Applied Major 1501-4806 .....28  
 Accompanying 2691-2694 .....4  
 Large Ensemble .....4  
 Piano Chamber Ensemble.....4  
 Conducting 3715.....3  
 Pedagogy 5858 .....3  
 Voice Class/Applied Voice .....2  
 Theory/History Electives  
 (must represent both areas).....9  
 Music Electives .....8

**5. Voice**

Applied Major 1501-4806 .....28  
 Keyboard Musicianship 1581-2682.....4  
 Large Ensemble .....8

Conducting 3715.....3  
 Vocal Pedagogy 5880 .....1  
 Diction 1556, 1557, 1558.....3  
 Theory/History Electives  
 (must represent both areas).....6  
 Italian/French/German .....12

**CURRICULUM FOR BACHELOR OF MUSIC IN COMPOSITION**

**I. General University requirements**

<b>Courses</b>	<b>Cr. Hrs.</b>
Writing 1 and 2 .....	6
Communications .....	3
Math .....	3
Domains:	
Social and Personal Awareness.....	6
Arts and Humanities.....	6
(MUHL 3771, 3772, 3773)	
Natural Sciences.....	7
Social Science.....	6

**II. Core music requirements**

Music Theory 1531-3750.....19  
 Music History 3771-3774.....12  
 Composition 1501-4804 .....20  
 Large Ensemble .....7  
 Music Theory Electives .....12  
 Music History Elective .....3  
 Music Electives .....4  
 Recitals..... N/C  
 Language .....8  
 Applied Lessons .....8  
 Keyboard Musicianship 1581-2682.....4

**CURRICULUM FOR MUSIC EDUCATION DEGREES**

**I. General University Requirements**

<b>Courses</b>	<b>Cr. Hrs.</b>
Writing 1 and 2 .....	6
Communications .....	3
Math .....	3
Domains:	
Social and Personal Awareness.....	6
Arts and Humanities.....	6
(MUHL 3771, 3772, 3773)	
Natural Sciences.....	7
Social Science.....	6

**II. Core Music Requirements**

Applied Major 1501-4801 .....14  
 Music Theory 1531-3750.....19  
 Music History 3771-3774.....12  
 Conducting 3715.....3  
 Music Education 2611,  
 4823, 4824, 4825 and elective .....9  
 Senior Recital ..... N/C

**III. Requirements unique to each area of emphasis****1. Instrumental**

Large Ensemble .....	7
Keyboard Musicianship 1581-2682.....	4
Methods/Applied Classes.....	5
Music Education 4826.....	2

**2. Keyboard**

Large Ensemble .....	4
Accompanying 2691-2694.....	4
Voice Class/Applied Voice.....	2
Pedagogy 5858.....	3
Methods/Applied Classes.....	3
Music Education 4826 or 4827.....	2

**3. Voice**

Large Ensemble .....	7
Keyboard Musicianship 1581-2682.....	4
Pedagogy 5880.....	1
Diction .....	1
Methods/Applied Classes.....	3
Music Education 4827.....	2

**IV. College of Education Licensure Requirements**

PSYC 3709.....	3
FOUN 1501.....	3
FOUN 3708.....	3
SPED 2630 .....	3
TERG 3710.....	3
MULT 4807.....	2
SED 4844 and seminar.....	12
Students are required to complete the Senior Recital before student teaching	

**CURRICULUM FOR BACHELOR OF ARTS DEGREE****I. General University Requirements**

<b>Courses</b>	<b>Cr. Hrs.</b>
Writing 1 and 2 .....	6
Communications .....	3
Math .....	3
Domains:	
Social and Personal Awareness.....	6
Arts and Humanities.....	6
(MUHL 3771, 3772, 3773)	
Natural Sciences.....	7
Social Science.....	6
Foreign Language .....	8
Minor Field.....	18

**II. Core Music Requirements**

Music Theory 1531-3750.....	19
Music History 3771-3774.....	12
Conducting 3715.....	3
Keyboard Musicianship (1581-2682 for non-keyboard majors) (2691-2694 for keyboard majors).....	4

**III. Requirements unique to each area of emphasis****1. Applied Music**

Applied Instrument/Voice 1501-4802.....	16
Large Ensemble .....	8
Music Theory/History Electives (must represent each area).....	6
Senior Recital .....	N/C

**2. Music History**

Applied Instrument/Voice 1501-2602.....	8
Large Ensemble .....	4
Music History/Literature Electives.....	12
Music Theory Electives .....	6

**3. Music Theory**

Applied Instrument/Voice 1501-2602.....	8
Large Ensemble .....	4
Theory/Composition Electives.....	12
Music History Electives.....	6

**CURRICULUM FOR BACHELOR OF MUSIC WITH EMPHASIS IN MUSIC RECORDING****MUSICIANSHIP****I. General University Requirements**

<b>Courses</b>	<b>Cr. Hrs.</b>
Writing 1 and 2 .....	6
Communications .....	3
Math .....	3
MUCO 3715.....	3
Domains:	
Social and Personal Awareness.....	6
Arts and Humanities.....	6
(MUHL 3771, 3772, 3773)	
Natural Sciences.....	7
Social Science.....	6

**I. Music Theory (19 s.h.)**

MUTC 1531/1531L.....	4
MUTC 1532/1532L.....	4
MUTC 2631/2631L.....	4
MUTC 2632/2632L.....	4
MUTC 3750 .....	3

**II. Music History and Literature (15 s.h.)**

MUHL 2616 .....	3
MUHL 2618 .....	3
MUHL 3771 or 3772 .....	3
MUHL 3773 .....	3
MUHL 3774 .....	3

**MUSIC PERFORMANCE AND MUSIC ELECTIVES****I. Applied Major (16 s.h.)**

MUS 1501.....	2
MUS 1502.....	2
MUS 2601.....	2

MUS 2602.....2  
 MUS 3701.....2  
 MUS 3702.....2  
 MUS 4801.....2

**II. Keyboard Musicianship (4 s.h.)**

MUAC 1581.....1  
 MUAC 1582.....1  
 MUAC 2681.....1  
 MUAC 2682.....1

**III. Ensembles (8 s.h.)**

MUEN.....1  
 MUEN.....1  
 MUEN.....1  
 MUEN.....1  
 MUEN.....1  
 MUEN.....1  
 MUEN.....1  
 MUEN.....1

**IV. Music Theory/Music History Electives (6 s.h.)**

MUTC 5834.....2  
 MUHL 58XX.....2

**MUSIC RECORDING AND OTHER  
 REQUIRED COURSES**

**I. Music Recording (22 s.h.)**

MURC 1561.....4  
 MURC 3762.....2  
 MURC 3763.....2  
 MURC 3764.....2  
 MURC 3765.....2  
 MURC 4866.....6  
 MURC 4867.....4

**II. Conducting (3 s.h.)**

MUCO 3715.....3

**III. Business Management (2 s.h.)**

MGT 58XX.....2

**DEPARTMENT OF THEATER  
 AND DANCE  
 330-941-3810**

*Professors Castronovo (Chair), Murphy; Associate Professors Cobb, Shanabarger; Assistant Professor Mazuroski; Instructor Wolfgang.*

The Department of Theater and Dance offers coursework leading to the Bachelor of Arts degree in theater studies, the Bachelor of Arts degree in Dance Management, or the Bachelor of Fine Arts degree in theater or musical theater. Minors in dance and theater are also available.

All theater programs are fully accredited by the National Association of Schools of Theatre (NAST).

**Learning Outcomes**

The student learning outcomes for the major in theater are as follows:

- **Public Performances** – Students demonstrate competence in the creation and presentation of public theater events, either as performers, designers or technicians.
- **Knowledge of History and Cultural Dimensions** – Students demonstrate knowledge of the history and cultural influences of and upon the institution of theater throughout the ages.
- **Informed Assessments of Quality** – Students demonstrate the ability to critically evaluate works of theater.
- **Critical Thinking** – Students demonstrate the ability to define a desired goal in creating a work of theater, and finding solutions to achieve that goal.

In addition to the above, learning outcomes in musical theater also include:

- **Musical Knowledge** – Students demonstrate an understanding of music theory, and the keyboard, and the ability to read music.
- **Vocal Competence** – Students demonstrate an ability to sing and act a musical selection in the musical theater style.

Learning outcomes for the degree in dance management include:

- **Basic Management Process** – Students demonstrate an understanding of basic management principles and entrepreneurship.
- **Dance Techniques** – Students demonstrate competence in a number of dance techniques and styles, including a basic understanding of world dance forms and styles.
- **Pedagogy** – Students demonstrate competence in transferring the knowledge, skills, aesthetics, and art of dance through teaching assessment.
- **Choreography and Composition** – Students demonstrate the ability to create movement combinations leading to successful compositional studies and performance choreography.

**B.A. IN THEATER STUDIES**

The Bachelor of Arts in theater studies combines an array of liberal arts coursework with extensive practical training in the techniques of theater production. Students work closely with their instructors in the classroom as well as in laboratory settings. As with any liberal arts degree, the B.A. is primarily designed to provide students with a broad general education,

but its location in a department of theater also provides special opportunities to develop production/performance skills, as well. This degree program is fully accredited by NAST, The National Association of Schools of Theatre.

#### Major Requirements for a B.A. in Theater Studies:

THTR 1500	Auditions and Portfolios.....	1
THTR 1559	Play Production.....	3
THTR 1561	Stagecraft.....	3
THTR 2600	Theater Participation I (taken three times).....	1+1+1
THTR 2668	Acting 1: Fundamentals.....	3
THTR 2670	Oral Interpretation.....	3
THTR 3700	Theater Participation 2 (taken four times).....	1+1+1+1
THTR 3762	Directing 1.....	3
THTR 3768	Script Analysis.....	3
THTR 4891	Theater History to 1700.....	3
THTR 4860	Theater History after 1700.....	3
THTR 4899	Topics in Theater.....	3
THTR 4898	Senior Project.....	3
<i>One of the following:</i>		
THTR 3763	Scene Design.....	3
THTR 3765	Lighting Design.....	3
<i>Plus 9 credits of theater or dance electives, a minor, and a foreign language.</i>		

### Bachelor of Fine Arts in Theater

The Bachelor of Fine Arts in Theater is designed to provide intensive training, preparing students for careers in the professional or academic theater. It is fully accredited by NAST, the National Association of Schools of Theatre, and admission to this program is available by audition/interview only. Students admitted to this B.F.A. program will combine a basic foundation of general studies with an extensive selection of performance-oriented coursework (acting, directing, design and dance) and participation in the co-curricular production activities of the Department. This degree may be earned in eight semesters if students average 16 hours per semester. Retention in the program is contingent upon an annual progress review presented by each student.

#### Requirements for a B.F.A. in Theater:

THTR 1500	Auditions and Portfolios.....	1
THTR 1559	Play Production.....	3
THTR 1561	Stagecraft.....	3
THTR 2600	Theater Participation I (taken three times).....	1+1+1
THTR 2668	Acting 1: Fundamentals.....	3
THTR 3761	Makeup.....	3
THTR 3762	Directing 1.....	3
THTR 2667	Voice for the Actor.....	3
THTR 3700	Theater Participation 2 (taken four times).....	1+1+1+1
THTR 3766	Stage Combat.....	3

#### *Two of the following three:*

THTR 3763	Scene Design.....	3
THTR 3765	Stage Lighting.....	3
THTR 3769	Costume Design.....	3

#### *Plus either*

THTR 3791	Rehearsal & Performance (taken twice) <i>or</i>	
THTR 3792	Projects in Production (taken twice).....	6

#### *Plus*

THTR 4891	Theater History to 1700.....	3
THTR 4860	Theater History after 1700.....	3
THTR 3764	History of Stage Costume.....	3
THTR 3768	Script Analysis.....	3
THTR 4898	Senior Project.....	3

#### *Plus 12 credits taken from:*

THTR 1563	Costume Construction.....	3
THTR 2670	Oral Interpretation.....	3
THTR 4863	Acting 3: Styles.....	3
THTR 4870	Acting 4: Acting on Camera.....	3
THTR 4899	Topics in Theater.....	3
THTR 5864	Directing 2.....	3

#### *Plus 3 credits in movement taken from:*

DNCE 1570	Tap and Jazz.....	1
DNCE 1572	Ballet 1.....	1
DNCE 1540	Modern Dance 1.....	1
DNCE 1571	Tap and Jazz 2.....	2
DNCE 1541	Modern Dance 2.....	2
HPES 1514	Fencing 1.....	1
HPES 1558	Physical Fitness.....	1
HPES 1557	Weight Training.....	1

*Plus 12 credits of theater or dance electives emphasizing either performance or design/technology*

### Bachelor of Fine Arts in Musical Theater

The Bachelor of Fine Arts in Musical Theater is designed to provide intensive training, preparing students for professional careers as actor/singers. It is fully accredited by NAST, the National Association of Schools of Theatre, and admission to this program is available by audition/interview only. This degree may be completed in eight semesters if students average 16 hours per semester. Retention in the program is contingent upon an annual progress review presented by each student.

#### Requirements for a B.F.A. in Musical Theater:

THTR 1500	Auditions and Portfolios.....	1
THTR 1512	Survey of Musical Theater.....	3
THTR 1559	Play Production.....	3
THTR 1561	Stagecraft.....	3
THTR 2600	Theater Participation I (taken three times).....	1+1+1
THTR 2668	Acting 1: Fundamentals.....	3
THTR 2664	Musical Theater Lab (taken twice).....	1+1
THTR 3700	Theater Participation 2 (taken four times).....	1+1+1+1
THTR 3761	Makeup.....	3
THTR 3762	Directing 1.....	3
THTR 2667	Voice for the Actor.....	3
THTR 3766	Stage Combat.....	3
THTR 3791	Rehearsal & Performance.....	3
THTR 4891	Theater History to 1700.....	3
THTR 4860	Theater History after 1700.....	3
THTR 3764	History of Stage Costume.....	3
THTR 4863	Acting 3: Styles.....	3
THTR 4898	Senior Project.....	3



Plus 6 credits taken from

THTR 1563	Costume Construction.....	3
THTR 3768	Script Analysis.....	3
THTR 4870	Acting 4: Acting on Camera .....	3
THTR 4893	Independent Study .....	1-3
THTR 2670	Oral Interpretation.....	3
THTR 4899	Topics in Theater .....	3
THTR 5864	Directing 2.....	3

Plus 16 credits of Applied Voice

Plus 2 credits of Applied Keyboard

Plus 4 credits of Music Theory

Plus 5 credits in movement taken from

DNCE1572	Ballet 1.....	1
DNCE1540	Modern Dance 1 .....	1
DNCE1541	Modern Dance 2 .....	2
DNCE1571	Tap and Jazz 2.....	2
DNCE3767	Choreography for Musical Theater ..	2
HPES 1514	Fencing 1.....	1
HPES 1515	Fencing 2.....	1
HPES 1557	Weight Training.....	1

Curriculum guides detailing the B.F.A. programs are available in the department office.

## BACHELOR OF ARTS IN DANCE MANAGEMENT

This is an interdisciplinary degree combining a solid selection of practical dance coursework and a protocol of management and entrepreneurial studies offered by the Williamson College of Business Administration. It is designed to provide skills applicable to teaching dance, with an understanding of basic practices related to creating or managing a small business, such as a dance studio or performance company.

### Major Requirements for the B.A. in Dance Management:

#### Business/Management Sequence (25% of the major):

BUS 1500	Exploring Business .....	3
BUS 3700	Entrepreneurship – New Venture Creation .....	3
MGT 3725	Fundamentals of Management .....	3
BUS 4800	Entrepreneurship – Business Plan .....	3
	Development .....	3
MKTG 3740	Professional Selling .....	3

Plus one of the Following:

MGT 3734	Human Resource Management .....	3
MKTG 3703	Marketing Concepts and Practice .....	3
PREL 3710	Basic Public Relations .....	3

#### Dance Sequence (53% of the major):

DNCE 1540	Modern Dance 1 .....	1
DNCE 1541	Modern Dance 2 .....	2
DNCE 1542	Dance Composition .....	1
DNCE 1550	Wellness for Actors and Dancers .....	1
DNCE 1565	Topics in Dance .....	1-2
	(2 semester hours required)	
DNCE 1570	Tap and Jazz 1 .....	1
DNCE 1571	Tap and Jazz 2 .....	2

DNCE 1572	Ballet 1 .....	1
DNCE 1573	Ballet 2 .....	2
DNCE 2606	Creative Dance for Children .....	1
DNCE 2680	Tap Dance 3.....	1
DNCE 2698	Survey of Dance .....	3
DNCE 3730	Music for Dance .....	1
DNCE 3751	Modern Dance 3 .....	2
DNCE 3767	Choreography for Musical Theater... ..	2
DNCE 3770	Jazz Dance 3 .....	2
DNCE 3781	Ballet 3 .....	2
DNCE 4871	Jazz 4 .....	2
DNCE 4881	Ballet 4 .....	2
DNCE 4885	Dance Kinesiology .....	3
DNCE 4892	Pedagogy of Dance Technique .....	3

Theater Sequence (22% of the major):

THTR 1561	Stagecraft .....	3
THTR 1563	Costume Construction and Craft .....	3
THTR 3791	Rehearsal and Performance .....	3
THTR 4898	Senior Project .....	3
	(capstone course in theater or dance)	

Plus one of the following:

THTR 3765	Stage Lighting .....	3
THTR 3761	Stage Makeup .....	3

### Minors:

Minors are available in theater and dance, and consist of the following course sequence:

### MINOR IN THEATER

To complete a minor in theater, a student must take a minimum of 18 hours as described below:

#### All of these (9 hrs.):

THTR 1559	– Play Production (3)
THTR 1561	– Stagecraft (3)
THTR 2668	– Acting 1: Fundamentals (3)

#### Two Theater Production Courses (6 hrs.), taken from:

THTR 3761	Makeup.....	3
THTR 3762	Directing 1 .....	3
THTR 3769	Costume Design .....	3
THTR 3763	Scene Design .....	3
THTR 3765	Lighting Design.....	3

#### One Theater Support Course (3 hrs.) taken from:

Theater 4891	Theater History to 1700 .....	3
Theater 4860	Theater History from 1700.....	3

### MINOR IN DANCE

To complete a minor in dance, a student must complete a minimum of 23 hours of coursework as described below:

#### Required Courses

One-third of the dance minor (7 credit hours) must be 3000 level or above.

DNCE1540	Modern Dance 1*.....	1
DNCE1541	Modern Dance 2 .....	2
DNCE1542	Dance Composition .....	1

DNCE1550 Wellness for Actors and Dancers .....1  
 DNCE1570 Tap and Jazz 1\* .....1  
 DNCE1571 Tap and Jazz 2.....2  
 DNCE1572 Ballet 1\* .....1  
 DNCE1573 Ballet 2.....2  
 DNCE2698 Survey of Dance .....3  
 THTR 3791 Rehearsal and Performance.....3  
 DNCE4892 Pedagogy of Dance Technique .....3  
 or  
 DNCE3767 Choreography for Musical Theater ...2

Plus a minimum of 3 or 4 additional credit hours selected from the following, depending on whether one takes DNCE 4892 or DNCE 3767:

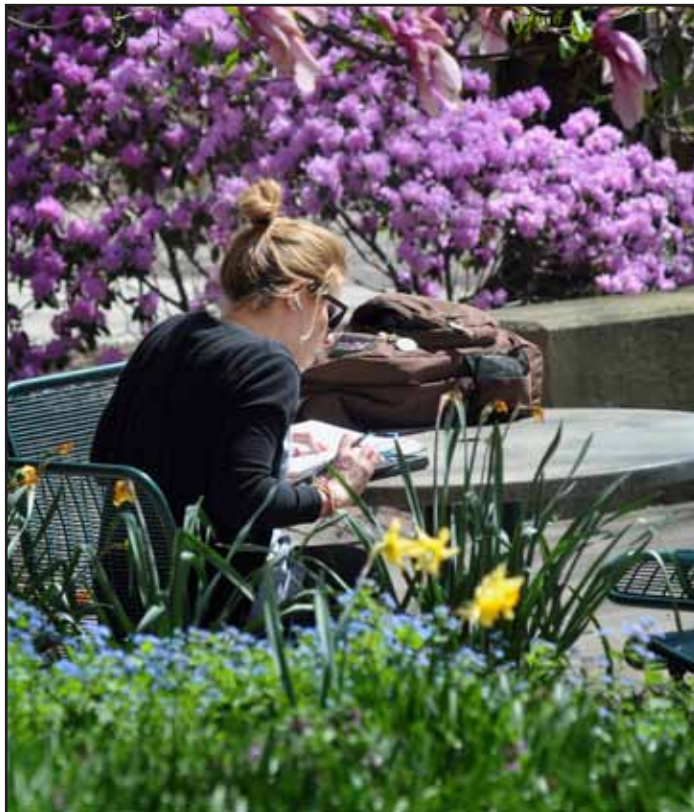
DNCE2606 Creative Dance for the Child.....1  
 DNCE2680 Tap Dance 3.....1  
 DNCE3751 Modern Dance 3 .....2  
 DNCE3770 Jazz Dance 3.....2  
 DNCE3781 Ballet 3.....2  
 DNCE4871 Jazz 4 .....2  
 DNCE4881 Ballet 4.....2

\*All dance minors are required to demonstrate proficiency at level 2 in modern, tap and jazz, and ballet technique. Level-one technique classes may be waived for students with more advanced technical proficiency.

## Professional Societies

### Alpha Psi Omega

The Department of Theater and Dance is a member of Alpha Psi Omega, the National Honorary Dramatics Fraternity. Students may become members of the local chapter by (1) achieving the prescribed cumulative grade average, and (2) earning a prescribed number of points through participation in dramatic activities. Membership requires sophomore standing.



# The Dr. Dominic A. and Helen M. Bitonte College of Health and Human Services

*Joseph L. Mosca, Dean*

*Tammy A. King, Associate Dean*



In support of the University mission to provide a wide range of educational opportunities in higher education, The Dr. Dominic A. and Helen M. Bitonte College of Health and Human Services assumes a broad focus. That focus entails preparing students for competent practice in positions in both the health and human service professions. The College is committed to excellence in education through the quality programs it provides. To assure continuity and opportunity for health and human service majors, the College has encouraged the development of two-plus-two curricula in several majors that allow students to efficiently progress from associate to baccalaureate degree program completion. Master's degree programs further expand and advance the competencies of graduates in the delivery and administration of health care and human services.

## Accreditation

—The emergency medical technology (EMT), medical assisting technology, and respiratory care programs are accredited by the Commission on Accreditation of Allied Health Education Programs. The EMT program is also accredited by the Ohio Department of Public Safety—Division of EMS.

—The dental hygiene program is accredited by the American Dental Association Commission on Dental Accreditation.

—The clinical laboratory technology, clinical laboratory science, and histotechnician programs are accredited by the National Accrediting Agency for Clinical Laboratory Sciences.

—The Bachelor of Science in respiratory care and polysomnography certificate programs are accredited by the Commission on Accreditation for Respiratory Care.

—The dietetic technology program, the coordinated program in dietetics, and the didactic program in dietetics are approved by the Commission on Accreditation for Dietetics Education.

—The Department of Human Ecology is accredited by the American Association of Family and Consumer Sciences.

—The health education, physical education, and family and consumer sciences education programs are accredited by the National Council for Accreditation of Teachers Education.

—The Bachelor of Science in Nursing program is accredited by the National League for Nursing Accrediting Commission and approved by the Ohio Board of Nursing Education and Nurse Registration.

—The nursing home administration program is approved by the State of Ohio Board of Examiners of Nursing Home Administrators.

—The physical therapy program is accredited by the Commission on Accreditation in Physical Therapy Education.

—The social work program is accredited by the Council on Social Work Education.

## Unique Requirements of the College

*Beginning with students admitted to YSU in spring 2013, if a student enters the College as an undetermined major, select pre-major student (see department's requirements), a student requiring remedial/developmental course work, or a student returning to the College after a suspension, the student must complete HAHS 1500, Introduction to the Bitonte College of Health and Human Services, within the student's first 31 semester hours of coursework.*

Students need to be aware that many of the programs in the College require a criminal background check. Some require drug testing and a physical fitness examination. In a few cases, there may be a

requirement for a psychological evaluation. In addition to programs requiring some or all of the checks/evaluations listed above, some of the agencies where students complete clinical training, internships, or other related activities, may also require these checks/evaluations. If you are concerned that you may not be able to complete a program or one of its requirements due to any of these checks/evaluations, please speak with an Academic Advisor or the Chairperson of the Department.

## Organization/Majors

The Bitonte College of Health and Human Services consists of eight departments: Criminal Justice and Forensic Sciences, Health Professions, Human Ecology, Human Performance and Exercise Science, Military Science, Nursing, Physical Therapy, and Social Work. In cooperation with the College of Education, Community and School Health provides a health education major, Human Performance and Exercise Science provides a physical education major, and Human Ecology provides a family and consumer sciences major. The College offers Air Force Reserve Officer Training Corps (AFROTC) through an agreement with Kent State University. Graduate courses are offered by the Departments of Human Ecology and Social Work. The Department of Criminal Justice and Forensic Sciences offers a master's degree, the Department of Nursing offers a master's degree in nursing, and the Department of Health Professions offers a Master in Health and Human Services degree. The Northeastern Ohio Universities Master of Public Health program operates through a partnership of YSU, The University of Akron, Cleveland State University, Kent State University, and Northeastern Ohio Universities College of Medicine (NEOUCOM).

The eight departments are listed below with their associate (A) and baccalaureate (B) offerings and (M) master's offerings. Students whose needs are not completely met by existing conventional programs may wish to investigate and apply for the Individualized Curriculum Program (see the Academic Policies and Procedures section).

### Department of Criminal Justice and Forensic Sciences

- Basic Peace Officer Training Academy (Certificate)
- Criminal Justice and Forensic Sciences (AAS, BSAS, MS)
- Forensic Science (BSAS)
- \*\* Master of Public Administration (MPA)

### Department of Health Professions

- \* Allied Health (BSAS)
- † Clinical Laboratory Technology (AAS)
- † Clinical Laboratory Science (BSAS)
- \*\* Public Health (BSAS)
- † Dental Hygiene (BSDH)
- Emergency Medical Technician—Basic (Certificate)
- Emergency Medical Technician—Paramedic (Certificate)

Emergency Medical Technology (AAS)  
 Health and Human Services (MHHS)  
 Healthcare Management (Graduate Certificate)  
 Medical Assisting Technology (AAS)  
 Polysomnography (Certificate)  
 Public Health (MPH)  
 † Respiratory Care (BSRC)

#### Department of Human Ecology

Dietetic Technician (A)  
 \*\* Family and Consumer Sciences Education (BSEd)  
 Family and Consumer Studies (BSAS)  
 Food and Nutrition (BSAS)  
 Hospitality Management Technology (AAS, BSAS)  
 Merchandising: Fashion and Interiors (BSAS)  
 Pre-Kindergarten Associate (AAS)

#### Department of Human Performance and Exercise Science

Exercise Science (BSAS)  
 †† Physical Education (BSEd)  
 Physical Education - non-teaching (BA)  
 School Health Education (BSED)

#### Department of Military Science

Military Science (minor only)  
 ††† Army ROTC program

#### Department of Nursing

† Nursing (BSN, MSN)  
 † School Nurse Licensure

#### Department of Physical Therapy

† Physical Therapy (DPT)

#### Department of Social Work

Social Services Technology (AAS)  
 † Social Work (BSW, MSW)  
 Nursing Home Administration (BSAS)

#### Aerospace Studies Program

††† Air Force ROTC program

\*This degree is made available at Cuyahoga Community College and Lorain County Community College in addition to the YSU campus offerings.

\*\*For the Institutional Report on the Quality of Teacher Preparation, Title II, Higher Education Act, please see Appendix C of this *Bulletin*.

†Restricted admission; see department for further information.

††In collaboration with the Beeghly College of Education, for the B.S. in Ed. degree.

†††ROTC students are allowed certain modifications of the requirements, as explained in the Military Science section. ROTC programs are offered in agreement with Kent State University.

\*In collaboration with the College of Liberal Arts and Social Sciences and the College of Science, Technology, Engineering, and Mathematics.

\*\*Through Cleveland State University.

It is the student's responsibility to satisfy all the graduation requirements for the degree sought. These consist of:

1. The pre-college or preparatory courses for each degree as covered in the Academic Policies and Procedures section.

2. The courses and other requirements to be completed in the University as explained in the Academic Policies and Procedures section.

3. The specific curriculum requirements of a given program.

Course descriptions can be found in a separate section in the back of this *Bulletin*.

## DEPARTMENT OF CRIMINAL JUSTICE AND FORENSIC SCIENCES

### 330-941-3279

*Associate Professor Hazy; Assistant Professors Bellas, Clutter, Falinski, Frissora, Onwudike, Rogers, Wagner (Chair), Wardle.*

Youngstown State University offers two undergraduate programs in Criminal Justice and Forensic Sciences: a two-year program in Criminal Justice and Forensic Sciences leading to the degree Associate in Applied Science and a four-year program leading to the degree Bachelor of Science in Applied Science with a major in Criminal Justice and Forensic Sciences. The four-year degree is built upon a core-track concept with emphasis (track) areas in law enforcement, corrections, legal processes, and loss prevention/assets protection.

The department also offers eight (8) minors in several emphasis areas.

In each undergraduate area and certificate program, a grade of C or better must be received in each required Criminal Justice and Forensic Sciences course.

A graduate program is also available leading to the Master of Science degree in Criminal Justice and Forensic Sciences. Refer to the *Graduate Bulletin* for details.

### Learning Outcomes

The student learning outcomes for majors within the Criminal Justice and Forensic Sciences Department are as follows:

- Students will identify the key aspects to the elements of law (Certificate in Basic Police Training and job preparation).
- Students will develop knowledge about criminological theories and public policy practices (legal, economic, and social) that influence the American Criminal Justice and Forensic Sciences system (Associate in Applied Science degree in Criminal Justice and Forensic Sciences).
- Students will communicate their knowledge about criminological theories and public policy practices (legal, economic, and social) that influence the institutions of the American Criminal Justice and Forensic Sciences system through details of its subsystems—policing, courts, and corrections (Bachelor of Science in Applied Science in Criminal Justice and Forensic Sciences).

- Students will understand the basic principles of the scientific disciplines (i.e. chemistry and biology) included in their curriculum. (Bachelor of Science in Applied Science in forensic science).

### Admission Policy

Students wishing to transfer into the Department of Criminal Justice and Forensic Sciences must have a cumulative GPA of at least 2.0. **Note: individuals with a felony, drug, and/or domestic violence conviction will experience difficulty gaining employment in the criminal justice and forensic sciences or forensic science field.** Students with misdemeanor convictions should seek advice from an advisor in the Criminal Justice and Forensic Sciences program. Students with juvenile sex offense convictions should also seek advice.

### Retention Policy

The Department of Criminal Justice and Forensic Sciences expects its majors and students enrolled in its courses to engage in **legal**, ethical, professional, and civil behavior which respects the rights of all persons. Disruptive and inappropriate behavior (as defined in department, college, or University policy) may lead to removal from, or non-acceptance into, the department as a major or as an enrolled student in one of its courses. YSU requires a 2.0 overall GPA in order to graduate.

### Certificate Program

#### Basic Police Officer Training

The certificate program in basic police officer training is considered appropriate for persons who are beginning a career in law enforcement. This certificate is considered a starting point in the new officer's education. The certificate serves as an incentive to continue towards an associate or baccalaureate degree. All of the courses needed for the certificate are applicable for advanced degrees. A placement test is required for all English courses. Students must complete police academy training (OPOT), introduction to Criminal Justice and Forensic Sciences, policing, and writing 1. Students then must complete one of the following courses: introduction to sociology, introduction to philosophy, applied pathophysiology, or criminal courts.

### Associate in Applied Science Degree

The Associate in Applied Science (AAS) degree in Criminal Justice and Forensic Sciences is considered appropriate for persons preparing for employment in many municipal, state and private police agencies as well as persons considering employment in local, state, federal, and private correctional facilities. The associate degree also is a stepping stone for those students who plan to go on for a bachelor's degree. The associate degree in Criminal Justice and Forensic Sciences has three tracks: a law enforcement track, a corrections track, and a loss prevention/assets protection track. The program requires 64 semester hours,

with 34 hours in general degree requirements, 18 hours in Criminal Justice and Forensic Sciences core courses, 12 hours in the selected track. The Associate in Applied Science degree can be completed in four semesters if students average 16 hours per semester. There are 15 hours of course work in GERs: ENGL 1550, ENGL 1551, CMST 1545, PSYC 1560, and an ART/Lit. course. There also are 15 hours of required basic related studies: SOC 1500, CJFS 1500, AHLT 1502, PHIL 2625, and STEM 2600. Transfer students must take at least 20 hours of YSU courses. Sixteen semester hours of Criminal Justice and Forensic Sciences course work must be taken at Youngstown State University.

The associate degree is built upon core/track concept with emphasis (track) areas in law enforcement, corrections, and loss prevention/assets protection. Core courses for an associate degree are: CJFS 2601, 2602, 2603, 3735, and 3719. Students choose an additional 12 credit hours from one of the emphasis areas. See department for course options.

### Police Academy and Internships

YSU's Criminal Justice and Forensic Sciences department now offers a full-service police academy, Basic Peace Officer Training Academy. Admission to the academy is open to all qualified applicants who meet admission standards of YSU and the Ohio Peace Officer Training Commission. All instructors in the Academy are certified by the Ohio Peace Officer Training Commission and meet all of the requirements to teach in the Basic Police Academy. YSU students who successfully complete the Academy will receive 12 semester hours of credit and a letter from the Ohio Peace Officers Training Commission that will qualify them for certification upon being commissioned. The new curriculum consists of a minimum 558 hours of training. Application packets can be picked up at the Academy Office, Cushwa Hall Room 2033.

YSU's Criminal Justice and Forensic Sciences and Forensic Studies Department has an internship experience that provides students with an opportunity to integrate academic studies with the daily operation of a Criminal Justice and Forensic Sciences agency. Internships also foster the development of networking relationships with practitioners who can assist in procuring future employment. **Certain criminal convictions may prohibit students from being eligible for an internship experience.** Student interns register for 3 to 12 semester credit hours. Each credit hour requires approximately 45 on-site hours. This program is for seniors. Students can enroll in the Police Academy or an internship—*not both*.

### Bachelor of Science in Applied Science Degree

A Bachelor of Science in Applied Science (BSAS) degree in Criminal Justice and Forensic Sciences requires a minimum of 124 semester hours. All Bachelor of Science in Applied Science students must

complete a minimum of 45 semester hours of Criminal Justice and Forensic Sciences courses of which 36 semester hours or more must be taken from upper-division courses. This degree can be earned in eight semesters if students average 16 hours per semester.

Transfer students must complete a minimum of 18 hours in Criminal Justice and Forensic Sciences courses at YSU. All majors must complete the core requirements: CJFS 2601, 2602, 2603, 3710, 3712, 3715, 3719, and 3735; the courses required in the student's chosen emphasis area; and 12 hours of CJFS electives not in the emphasis area (as designated on the department's curriculum sheet).

The purpose of each emphasis area is as follows:

- The law enforcement track is designed for persons preparing for employment in municipal, state, and private agencies; federal law enforcement agencies; homeland security; administrative positions in municipal or state agencies; or as instructors in police education programs. Courses required: CJFS 3714, 3714L, 3740, 5825, and 4870.
- The corrections track is offered for students preparing for a career in probation, parole, or institutional services with either adults or juveniles. Courses required: CJFS 3702, 3702L, 5802, and 4803.
- The legal processes track is designed for students preparing for law school, court administration, paralegal work or legal research positions. Courses required: CJFS 3720, 3721, 5825, and 4890.
- The loss prevention/assets protection track is offered to students preparing for a career in private or homeland security or the protection of assets in corporate, retail, or industrial settings. Courses required: CJFS 3700, 3740, 3751, and 4848.
- A generalist track is available for transfer students and students seeking a nontraditional area of study such as victim's rights and juvenile justice. This track is available to students at institutions participating in the interactive distance learning (IDL) agreements with the University. Department approval and 15 hours of course work are required.
- A grade of C or better must be received in each required Criminal Justice and Forensic Sciences course in order to satisfy the departmental requirements for the degree.

**Certificate in Basic Peace Officer Training**

General Certificate Requirements Courses	Semester Hrs.
CJFS 1500 .....	3 s.h.
CJFS 2601 .....	3 s.h.
CJFS 3777 .....	12 s.h.
ENGL 1550 .....	3 s.h.

Choose one of the following:

SOC 1500 .....	3 s.h.
PHIL 2600 .....	3 s.h.

AHLT 1502 .....	4 s.h.
CJFS 2602 .....	3 s.h.

**Associate in Applied Science—Criminal Justice**

General Degree Requirements Courses	Semester Hrs.
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<b>Writing</b>	
ENGL 1550 .....	3 s.h.
ENGL 1551 .....	3 s.h.

<b>Psychology</b>	
PSYC 1560 .....	3 s.h.

<b>Sociology</b>	
SOC 1500 .....	3 s.h.

<b>Philosophy</b>	
PHIL 2625 .....	3 s.h.

<b>Natural Sciences</b>	
Choose one course .....	3 s.h.

<b>Allied Health</b>	
AHLT 1502 .....	4 s.h.

<b>Speech</b>	
CMST 1545 .....	3 s.h.

<b>Art/Humanities</b>	
Select one course .....	3 s.h.

**Electives ..... 5 s.h.**

**Department Requirements (A.A.S.)**

1500 Introduction to Criminal Justice and Forensic Sciences .....	3 s.h.
2601 Policing .....	3 s.h.
2602 Criminal Courts .....	3 s.h.
2603 Corrections .....	3 s.h.
3735 Crime and Delinquency* .....	3 s.h.
3719 Criminal Law .....	3 s.h.

\* Students should not take SOC 2630 or 3735 if taking CJFS 3735.

Select 12 hours from one of the following tracks:

LAW ENFORCEMENT (select 12 hours) 3700, 3714, 3714L, 3715, 3736, 3740, 3765, 3777, 4870
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CORRECTIONS (select 12 hours) 3702, 3702L, 3715, 3736, 3740, 3765, 4803
--

LOSS PREVENTION / ASSETS PROTECTION (select 12 hours) 3751, 3700, 3714, 3714L, 3715, 3736, 3740, 3765, 4848
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TOTAL Criminal Justice and Forensic Sciences HOURS .....	30 s.h.
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**Bachelor of Science in Applied Science—Criminal Justice**

General Degree Requirements Courses	Semester Hrs.
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<b>Criminal Justice and Forensic Sciences</b> CJFS 1500 .....	3 s.h.
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<b>Writing</b>		
ENGL 1550 .....	3 s.h.	
ENGL 1551 .....	3 s.h.	
<b>Psychology</b>		
PSYC 1560 .....	3 s.h.	
<b>Sociology</b>		
SOC 1500 .....	3 s.h.	
<b>Philosophy</b>		
PHIL 2625 .....	3 s.h.	
<b>Natural Sciences</b>		
Select one or two courses .....	3-6 s.h.	
<b>Speech</b>		
CMST 1545 .....	3 s.h.	
<b>Art/Humanities</b>		
Select two-three courses .....	6-9 s.h.	
<b>Mathematics</b>		
MATH 2623 .....	3 s.h.	
<b>Social Science</b>		
Select one course .....	3 s.h.	
<b>Allied Health</b>		
AHLT 1502 .....	4 s.h.	
<b>Selected Topics (see advisor)</b> .....	3 s.h.	
<b>Electives</b> .....	approx. 26 s.h.	
<b>Department Requirements (B.S.A.S.)</b>		
2601 Policing .....	3 s.h.	
2602 Criminal Courts .....	3 s.h.	
2603 Corrections .....	3 s.h.	
3710 Social Statistics.....	3 s.h.	
3712 Criminal Justice and Forensic Sciences Research.....	3 s.h.	
3715 Criminal Justice and Forensic Sciences Management Concepts.....	3 s.h.	
3719 Criminal Law .....	3 s.h.	
3735 Crime and Delinquency .....	3 s.h.	
Elective CJFS hours .....	12 s.h.	
<i>Complete one of the following tracks (12 hours each):</i>		
<b>LAW ENFORCEMENT</b>		
3714, 3714L, 3740, 4870, and 5825 .....	12 s.h.	
<b>CORRECTIONS</b>		
3702, 3702L, 4803, and 5802 .....	12 s.h.	
<b>LOSS PREVENTION / ASSETS PROTECTION</b>		
3700, 3740, 3751, and 4848.....	12 s.h.	
<b>LEGAL PROCESSES</b>		
3720, 3721, 4890, and 5825.....	12 s.h.	
<b>GENERALIST (approved by advisor select 5 courses)</b> .....		15 s.h.
<b>Total Criminal Justice and Forensic Sciences Hours</b> .....		45 s.h.

## FORENSIC SCIENCE PROGRAM

*Multidisciplinary program between the departments of Criminal Justice and Forensic Sciences, Biological Sciences, Chemistry, and Sociology and Anthropology.*

Youngstown State University offers an undergraduate degree, Bachelor of Science in Applied Science, in Forensic Science. The program is housed in the Department of Criminal Justice and Forensic Sciences. Forensic science can be broadly defined as the application of science to law. This program is designed to give students both a theoretical and practical background in the scientific, legal, and investigative aspects of forensic science. Graduates of the program are prepared for continued education in graduate programs or for immediate employment in forensic science related facilities. Many careers in or related to forensic science require academic preparation beyond the undergraduate level. Students should be prepared to pursue advanced degrees within their discipline.

### Admission Policy

Students wishing to transfer into the forensic science program must have and maintain a cumulative GPA of at least 2.5. **Note: individuals with a felony, drug, and/or domestic violence conviction will experience difficulty gaining employment in the fields of forensic science and/or criminal justice.** Students with misdemeanor convictions or juvenile sex offense convictions should seek advice from an advisor in the Department of Criminal Justice and Forensic Sciences.

### Internships

YSU's forensic science program requires a six semester hour internship experience which will provide students with the opportunity to integrate academic studies with the daily operations of a forensic science related facility. Each semester hour requires approximately 45 on-site hours. Internships also foster the development of networking relationships with practitioners who can assist in procuring future employment. Certain criminal convictions may prohibit students from being eligible for an internship experience.

### Bachelor of Science in Applied Science Degree—Forensic Science

A Bachelor of Science in Applied Science degree in Forensic Science requires a minimum of 124 semester hours. The program is designed to be rigorous and multi-disciplinary and allows for fewer electives in lower level courses, but an increased flexibility in upper division coursework



A minor is intended to contrast with or deepen a major or General Education. Forensic Science is an interdisciplinary major. Courses that are required for, and count toward, the Forensic Science major cannot be counted toward a minor.

**General Degree Requirements**

Courses	Semester Hrs.
<b>Writing</b>	
ENGL 1550 .....	3 s.h.
ENGL 1551 .....	3 s.h.
<b>Speech</b>	
CMST 1545 .....	3 s.h.
<b>Math</b>	
MATH 1571 .....	4 s.h.
MATH 1572 .....	4 s.h.
<b>Natural Sciences</b>	
BIOL 2601 & 2601L .....	4 s.h.
BIOL 2602 & 2062L .....	4 s.h.
<b>Art / Humanities</b>	
Select two courses .....	6 s.h.
<b>Social Science</b>	
CJFS 1500 .....	3 s.h.
ANTH 1500 .....	3 s.h.
<b>Social and Personal Awareness</b>	
Select two courses .....	6 s.h.
<b>Core Requirements</b>	
<b>Chemistry</b>	
CHEM 1515 & 1515L .....	4 s.h.
CHEM 1516 & 1516L .....	4 s.h.
CHEM 3719 & 3719L .....	4 s.h.
CHEM 3720 & 3720L .....	4 s.h.
CHEM 3785 & 3785L .....	4 s.h.
<b>Criminal Justice and Forensic Sciences</b>	
CJFS 1510 .....	3 s.h.
CJFS 2602 .....	3 s.h.
CJFS 3714 & 3714L .....	3 s.h.
CJFS 3716 & 3716L .....	3 s.h.
CJFS 3700 .....	6 s.h.
CJFS 4807 .....	3 s.h.
CJFS 4850 .....	3 s.h.
CJFS 5814 .....	3 s.h.
<b>Physics</b>	
PHYS 2610 & 2610L .....	5 s.h.
PHYS 2611 & 2611L .....	5 s.h.
<b>Other</b>	
BIOL 3721 .....	3 s.h.
STAT 2601 .....	3 s.h.

Complete *one* of the following emphasis areas:

**BIOLOGY**

Upper-division science electives..... 18 s.h.

**CHEMISTRY**

Upper-division science electives..... 18 s.h.

**ANTHROPOLOGY**

Upper-division science electives..... 18 s.h.

**DEPARTMENT OF HEALTH PROFESSIONS**

**330-941-3327**

*Professors Boyd, Delost, Feld, Juruaz, Mistovich (Chair), Vendemia; Associate Professors Kandray, Sanders; Assistant Professors Robinson, Yacovone, Volsko; Instructor Kearns.*

The department offers certificate programs and associate, baccalaureate, and master's degree programs for future members of the health care delivery, public health, and health education team. Certificate programs are offered in medical coding, EMT, paramedic, and polysomnography. Associate degree programs are offered in dental hygiene, emergency medical technology, medical assisting technology, clinical laboratory technician, and histotechnology. Baccalaureate programs are offered in allied health, public health, clinical laboratory science (medical technology), and respiratory care. The allied health major courses can also be completed in a web-based format. A master's degree program in health and human services offers two tracks: health promotion and administration for health and human service professionals. Details on program requirements appear under the specific program heading.

Admission to all programs except medical assisting technology and public health, is on a restricted basis, since only a limited number of students can be accommodated. Detailed information on admission criteria and closing dates for application is available in the Department of Health Professions, the Bitonte College of Health and Human Services Dean's Office, or the Admissions Office.

For the graduate program leading to a Master of Health and Human Services degree refer to the Graduate School catalog for program details.

**ALLIED HEALTH PROGRAM**

*Associate Professor Sanders (Program Director).*

The department offers a baccalaureate program leading to the degree Bachelor of Science in Applied Science (BSAS) with a major in allied health. This program is intended to serve paramedical professional health associate degree graduates who wish to upgrade their academic credentials to include the baccalaureate degree. Major courses in this program are available on-line, allowing students to complete coursework at a time and location convenient to them.

**Learning Outcomes**

The student learning outcomes for the major in allied health are as follows:

- Students will conduct a quantitative, qualitative, or mixed method research project involving data collection and analysis.

- Students will utilize current technologies such as, computer and online systems/services, to access and communicate information.
- Students will be able to analyze health care related issues.
- Students will demonstrate effective written and verbal communication skills.

### Allied Health Baccalaureate-Completion Program

Graduates with an associate degree in dental hygiene, emergency medical technology, respiratory care, medical assisting technology, clinical laboratory technology, or in a medical/health related discipline (for example, radiological technology, physical therapy assistant, or dietetics) will be admitted to the BSAS in allied health program as juniors.

Graduates of non-accredited programs will be provisionally admitted and placed at a level determined by an evaluation of their academic transcripts.

### Curriculum

#### Associate Degree in Health-Related

Discipline .....64+ s.h.

#### Requirements

##### General Education Requirements

##### Writing

ENGL 1550 ..... 3 s.h.  
 ENGL 1551 ..... 3 s.h.

##### Speech

CMST 1545 ..... 3 s.h.

##### Math

MATH 2623 or above ..... 3 s.h.

##### Natural Sciences (NS)

2 Courses - One must have a lab.

##### Arts/Humanities (AH)

2 Courses

##### Social Sciences (SS)

2 Courses

##### Social/Personal Awareness (SPA)

2 Courses

1 additional course from NS, AH, SS, or SPA.

GER information is available at: [www.ysu.edu/ger/](http://www.ysu.edu/ger/)

#### Allied Health Major Courses..... 24 s.h.

AHLT 3708 Preventive Public Health Care ..... 3 s.h.  
 AHLT 4804 Stress and the Health Professional ..... 3 s.h.  
 AHLT 4805 Health Education for Allied Health . 3 s.h.  
 AHLT 4806 Research Methods ..... 3 s.h.  
 AHLT 4810 Management Skills for Health Professionals ..... 3 s.h.  
 AHLT 4820 Directed Research ..... 2 s.h.  
 AHLT 5807 Epidemiology ..... 3 s.h.

AHLT 5840 Comparative Health Systems..... 4 s.h.

#### Allied Health Electives ..... Select 6 s.h.

AHLT 3705 Pharmacotherapeutics..... 3 s.h.  
 AHLT 3706 Practice Management for Dental Hygiene (YSU only) ..... 3 s.h.  
 AHLT 3709 Elements of Urban Environmental Health Practice ..... 3 s.h.  
 AHLT 3710 Gerontology (YSU only)..... 3 s.h.  
 AHLT 3720 EMS Management (YSU only) ..... 3 s.h.  
 AHLT 3721 Pediatric Emergency Care (YSU only) ..... 3 s.h.  
 AHLT 3740 Pathology of Infectious Diseases .. 3 s.h.  
 AHLT 3755 Principles of Occupational Health/Safety ..... 3 s.h.  
 AHLT 4801 Special Topics ..... 1-3 s.h.  
 AHLT 4808 Environmental Health Concerns .. 3 s.h.  
 AHLT 4812 Advanced Cardiac Life Support (YSU only) ..... 3 s.h.  
 AHLT 4830 Pediatric Life Support (YSU only) ..... 2 s.h.  
 AHLT 4831 Industrial Hygiene ..... 3 s.h.  
 AHLT 4831L Industrial Hygiene Lab (YSU only) ..... 1 s.h.  
 AHLT 4835 Health Care Diversity ..... 1 s.h.  
 AHLT 5816 Environmental Regulations..... 3 s.h.

Minor (Optional) or elective courses..... 18+ s.h.

Upper-Division Courses or above Required 48 s.h.

Total Hours ..... 124 s.h. Minimum

Pre-admission counseling is required for students seeking entry to the B.S.A.S. in Allied Health. For greater detail on program content or admissions, students should contact the Department of Health Professions.

## CLINICAL LABORATORY PROGRAMS

*Professor Delost (Program Director) and Professor Boyd.*

Laboratory tests play an important role in the detection, diagnosis, and treatment of many diseases. Laboratory professionals perform a myriad of such tests to aid the physician in the management of disease.

### Learning Outcomes

The student learning outcomes for the clinical laboratory programs (CLS-BSAS and CLT-AAS) are as follows:

- Graduates will be prepared to function as entry-level health care professionals in the clinical laboratory as clinical laboratory technicians and clinical laboratory scientists. At entry level, the clinical laboratory graduate will be able to demonstrate the ability to comprehend, apply and evaluate information relative to the clinical laboratory professional.
- For the CLT and CLS programs, this includes comprehension of the theory and the ability to apply and evaluate the didactics of hematology,

clinical chemistry, immunohematology, microbiology, immunology, coagulation, molecular, and other emerging diagnostics.

- Graduates will be prepared to function as entry-level health care professionals in the clinical laboratory as clinical laboratory technicians and clinical laboratory scientists. Upon completion of the program, graduates will demonstrate technical proficiency in laboratory applications.
- For the CLT and CLS programs, this includes the performance of laboratory procedures in hematology, clinical chemistry, immunohematology, microbiology, immunology, coagulation, molecular, and other emerging diagnostics. The graduate will demonstrate proficiency in the functions of all phases of laboratory analysis (pre-analytical, analytical, and post-analytical processes).
- Graduates will demonstrate professional conduct and interpersonal communication skills consistent with the clinical laboratory profession.
- Students will exhibit the ability to critically think across all 37—level courses through the application of fundamental didactic and psychomotor skills to assess the clinical relevance and significance of specific aspects of laboratory testing.

### Clinical Laboratory Technician (Medical Laboratory Technician)

The clinical laboratory technician (medical laboratory technician) program is a two-year program leading to the Associate in Applied Science degree. The curriculum focuses on the knowledge and basic skills necessary to understand and master the procedures performed in the medical laboratory. Included are the principles, methods, calculations, and interpretation of laboratory procedures, computer technology, and communication and interpersonal skills. Technical instruction includes procedures in hematology, microbiology, immunohematology, clinical chemistry, and body fluids. This program requires five semesters of study including one summer semester.

Clinical laboratory technicians (CLT) work in a supportive role in a hospital laboratory, private laboratory, clinic, public health facility, or pharmaceutical laboratory. The CLT performs laboratory tests under the supervision or direction of pathologists and other physicians, and clinical laboratory scientists (medical technologists). Physicians use these tests to determine the presence and extent of disease, the etiologic implications about the cause of disease, and to monitor the treatment of the disease.

The CLT collects samples from patients and develops data on the blood, tissues and body fluids by using a variety of precise methodologies and technologies. Clinical laboratory technicians use modern

instruments, with the ability to discriminate between similar items and correct errors using preset strategies. The CLT has knowledge of specific techniques and instrumentation and is able to recognize factors that affect laboratory procedures. The CLT also monitors quality assurance procedures.

The CLT program is accredited through the National Accrediting Agency for Clinical Laboratory Sciences (5600 N. River Rd., Suite 720, Rosemont, IL 60018-5119; phone 773-714-8886; [www.naacls.org](http://www.naacls.org)) and meets the standards developed by the American Society of Clinical Pathologists (ASCP). Graduates are eligible to take the certification examinations for MLT/CLT offered through ASCP and become certified as an MLT (ASCP).

Students in the program must have a physical examination and provide records of their immunizations. The hepatitis B vaccine series is strongly recommended for each new student. A criminal background check is also required.

Completion of the program requires a semester of clinical internship. Students receiving a total of 6 semester hours of D or F grades in CLT, biology, or chemistry courses will not be placed in a clinical internship. Only those students who have completed the first four semesters of the program with a minimum GPA of 2.5 will be considered for placement in a clinical internship. CLT's are expected to function with a maximum degree of effectiveness in professional attitude, patient relations, and integrity. The capacity for competent performance at all levels must be assured before the student will be assigned to a clinical internship. The student must be competent in the didactic (knowledge), psychomotor (laboratory skills), and affective realm (attitude and responsibility) prior to clinical placement.

### Clinical Laboratory Technician (CLT-AAS) Curriculum

#### FIRST YEAR

##### FALL – 1

Courses	Semester Hrs.
CLTC 1501/1501L: Introduction to Clinical Laboratory Science & Lab .....	2+1 s.h.
CHEM 1515/1515L: General Chemistry 1 with Lab .....	4+0 s.h.
BIOL 2601/2601L: General Biology: Molecules & Cells with Lab .....	4+0 s.h.
ENGL 1550: Writing 1 .....	3 s.h.
General Education Course .....	3 s.h.
	17 s.h.

##### SPRING – 1

Courses	Semester Hrs.
CLTC 1502/1502L: Urinalysis & Lab.....	2+1 s.h.
CLTC 1503/1503L Immunohematology & Lab .....	3+1 s.h.
CLTC 2601/2601L: Clinical Chemistry 1 & Lab .....	2+1 s.h.

BIOL 2602/2602L: General Biology: Organisms & Ecology with Lab .....	4+0 s.h.
ENGL 1551 Writing 2 .....	3 s.h.
	<u>17 s.h.</u>

**SUMMER – 1**

<b>Courses</b>	<b>Semester Hrs.</b>
CLTC 3701/L: Hematology 1 .....	3 s.h.
CLTC 3700 & 3700L: Clinical Chemistry II & Lab .....	3+1 s.h.
	<u>7 s.h.</u>

**SECOND YEAR****FALL – 2**

<b>Courses</b>	<b>Semester Hrs.</b>
CLTC 3702L: Clinical Hematology 2 .....	3 s.h.
CLTC 2603: Topics in CLTC .....	4 s.h.
CLTC 3703L: Clinical Immunology Lab .....	1 s.h.
CLTC 3787/3787L: Diagnostic Microbiology & Lab .....	3+2 s.h.
MATH 2625: Mathematical Literacy & Critical Reasoning .....	3 s.h.
	<u>15 s.h.</u>

**SPRING – 2**

<b>Courses</b>	<b>Semester Hrs.</b>
CLTC 3706: Seminar .....	2 s.h.
CLTC 3716: Clinical Practicum .....	8 s.h.
CLTC 3708: Interpretation of Lab Results .....	1 s.h.
General Education Course .....	3 s.h.
	<u>14 s.h.</u>

Total program hours ..... 71 s.h.

## Clinical Laboratory Science (Medical Technology)

*Professor Delost (Program Director) and Professor Boyd.*

The clinical laboratory science (medical technology) program is a four-year program leading to a Bachelor of Science in Applied Science degree with a major in clinical laboratory science. Students in the program must have a physical examination and provide records of their immunizations. The Hepatitis B vaccine series is strongly recommended.

All course work in the CLS program must be completed with a minimum grade of "C". Students must maintain an overall GPA of 2.5 and a GPA of 2.5 in all CLTC courses. Students receiving a total of 6 semester hours of D or F grades in CLTC, biology, or chemistry courses will be dismissed from the program. Readmission to the program is based on GPA and on the availability of space in the class.

The program follows the "3+1" format with the student completing a pre-professional phase of courses in clinical laboratory technology, general chemistry, biological sciences, organic and biochemistry, microbiology, immunology, and mathematics during the first three years of the program. The final year of the program is completed at an accredited CLS/MT hospital program. The program meets the

requirements of NAACLS. Upon successful program completion, graduates are qualified to take the certification examinations offered through ASCP and become certified as a MLS (ASCP).

Clinical laboratory scientists (medical technologists) perform hundreds of scientific procedures that have been devised to detect subtle changes that occur in disease. The CLS/MT performs a full range of laboratory tests, ranging from simple blood cell counts to more complex tests to uncover diseases such as leukemia and diabetes. Studying blood cells under the microscope, the analysis of the chemical composition of blood, the isolation and identification of disease causing bacteria, and blood typing and cross matching for transfusions are examples of the complicated procedures performed by clinical laboratory scientists. Positions are available as bench-level technologists, supervisors, and laboratory managers.

In addition to traditional laboratory careers, there are opportunities in education and research, and in industry as technical and sales representatives. In their quest to aid the physician, laboratory professionals do much more than look through a microscope. They operate complex electronic equipment, compute, and precision instruments, acting as an integral part of the health care team. Because of their academic and diverse clinical experience, graduates are well qualified for post-graduate programs in medicine, clinical chemistry, and biology.

## Clinical Laboratory Science (CLS-BSAS) Curriculum

**FIRST YEAR****FALL – 1**

<b>Courses</b>	<b>Semester Hrs.</b>
CLTC 1501/1501L: Introduction to Clinical Laboratory Science & Lab .....	2+1 s.h.
CHEM 1515/1515L: General Chemistry 1 with Lab .....	4+0 s.h.
BIOL 2601/2601L: General Biology: Molecules & Cells with Lab .....	4+0 s.h.
ENGL 1550: Writing 1 .....	3 s.h.
	<u>14 s.h.</u>

**SPRING – 1**

CHEM 1516/1516L: General Chemistry 2 with Lab .....	4+0 s.h.
BIOL 2602/2602L: General Biology: Organisms & Ecology with Lab .....	4+0 s.h.
ENGL 1551: Writing 2 .....	3 s.h.
General Education Course* .....	3 s.h.
	<u>14 s.h.</u>

**SECOND YEAR****FALL – 2**

<b>Courses</b>	<b>Semester Hrs.</b>
CHEM 3719/3719L: Organic Chemistry 1 with Lab .....	4+0 s.h.
BIOL 3702: Microbiology with Lab .....	4+0 s.h.
CMST 1545: Communication Foundations .....	3 s.h.

MATH 2625: Mathematical Literacy & Critical Reasoning .....	4 s.h.
General Education Course* .....	3 s.h.
	18 s.h.

**SPRING – 2**

<b>Courses</b>	<b>Semester Hrs.</b>
CHEM 3720/3720L: Organic Chemistry 2 with Lab .....	4+0 s.h.
Two General Education Courses* .....	6 s.h.
BIOL 1545/1545L: Allied Health Anatomy & Physiology with Lab .....	5+0 s.h.
	15 s.h.

**SUMMER – 2**

<b>Courses</b>	<b>Semester Hrs.</b>
CLTC 3701/L: Clinical Hematology 1 .....	3 s.h.
CLTC 3700/3700L: Clinical Chemistry 2 and Lab .....	3+1 s.h.
	7 s.h.

**THIRD YEAR**

**FALL – 3**

<b>Courses</b>	<b>Semester Hrs.</b>
CHEM 3785/3785L: Biochemistry 1 & Lab .....	3+1 s.h.
CLTC 3702L: Clinical Hematology 2 .....	3 s.h.
CLTC 3787/3787L: Diagnostic Microbiology and Lab .....	3+2 s.h.
	12 s.h.

**SPRING – 3**

<b>Courses</b>	<b>Semester Hrs.</b>
CLTC 3703/3703L: Clinical Immunology & Lab .....	3+1 s.h.
Two General Education Courses* .....	6 s.h.
BIOL 3711: Cell Biology: Fine Structure .....	3 s.h.
	13 s.h.

**SUMMER – 3**

<b>Courses</b>	<b>Semester Hrs.</b>
CLTC 4811: Clinical Experience 1 .....	12 s.h.

**FALL – 4**

<b>Courses</b>	<b>Semester Hrs.</b>
CLTC 4821: Clinical Experience 2 .....	12 s.h.

**SPRING – 4**

<b>Courses</b>	<b>Semester Hrs.</b>
CLTC 4831: Clinical Experience 3 .....	12 s.h.

\*General education courses must fulfill the requirements for the baccalaureate degree. Students must take two courses in each of the following general education areas: two courses from Arts & Humanities, two courses from Social Science, and two courses from Social and Personal Awareness.

**Total Program Hours** .....129 s.h.

**CLS Internship Guidelines**

Students should apply for clinical internship upon completion of the second year of the program or after completing approximately 60-65 semester hours. Application packets containing information on clinical affiliations and the application process

are available from the program director or in the Department of Health Professions. Students should apply for graduation at the beginning of the junior year so that their transcripts may be evaluated by an academic advisor in the Bitonte College of Health and Human Services. This will help ensure that all of the requirements for internship and graduation have been fulfilled.

The University **does not** guarantee acceptance into the fourth year of hospital clinical internship. Selection and acceptance into a particular hospital program is based on that program’s admission and selection process. Thus, students are selected by the hospital programs, which are very competitive. Students are urged to maintain a minimum 3.0 GPA, especially in all science and clinical laboratory courses. To enhance their chances of acceptance into clinical internship, students are encouraged to apply to several accredited programs. A list of these programs is available through the program director. Students should notify the program director upon their acceptance by a professional program.

**DENTAL HYGIENE**

*Professors Maureen Vendemia, Debbie Juruaz; Associate Professors Madeleine Haggerty (Program Director), Diane Kandray.*

The Bachelor of Science in dental hygiene requires nine semesters of study including three semesters of coursework in the basic sciences and general education, which precede admission into the program. In the spring semester of the second year, students will begin taking the dental hygiene courses. The program is designed to prepare students as clinical dental hygienists, and to pursue other possible career options such as education, public health, and research. Prospective students complete educational requirements that provide a broad academic background while attaining comprehensive dental hygiene knowledge and clinical experience.

At the end of the fourth year of the program, students are eligible to take state, regional and national board examinations. Upon successful completion of these comprehensive written and clinical examinations, the student may apply for a license to practice dental hygiene in the state as a registered dental hygienist.

The registered dental hygienist is a licensed professional who provides dental hygiene treatment and related preventive services. Clinical skills of the hygienist include the administration of local anesthesia; recording medical and dental histories; exposing radiographs; making study models; performing extra-oral and intra-oral examinations which include cancer screenings; dietary management; dental charting; preliminary periodontal evaluations; scaling and root planing; polishing; patient education; placing sealants, and administering fluoride therapy. Many states permit the hygienist to perform additional duties such as placing temporary restorative materials.

The dental hygienist also functions as a dental health educator and is responsible for the preventive dental health program in private dental practices as well as in other settings. The hygienist teaches patients proper oral health care in order to reduce dental diseases and disorders.

The hygienist’s role in service to the community may include increasing public awareness of dental health by coordinating Give Kids A Smile! Day in the community, serving as a resource person to school systems, providing screenings to various children or local groups and making visits to nursing homes, hospitals and/or schools for the mentally retarded or handicapped.

**Accreditation**

The dental hygiene program is accredited by the American Dental Association Commission on Dental Accreditation. The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at (312) 440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611. The Commission’s web address is: <http://www.ada.org/100.aspx>.

**Learning Outcomes**

The student learning outcomes for the dental hygiene program are as follows:

- The graduates will recognize and apply legal, ethical and regulatory concepts in the practice of dental hygiene.
- The graduates will demonstrate competency in performing the clinical skills to achieve and maintain the oral health of their patients.
- The students will develop and conduct research that includes data collection statistical analysis, and dissemination of results.

**Admission to the Program**

Admission to the University provides students with the opportunity to complete a core of pre-dental hygiene courses. All students must complete and/or be registered for all of the pre-dental hygiene courses (the first year fall semester, the first year spring semester, and the second year fall semester as listed in Section A) after which they may apply and compete for a position in the Bachelor of Science in dental hygiene program. *Please note that due to limited clinical capacity and available resources, admission to the university and completion of the pre-dental hygiene courses does not guarantee admission to the program.* The courses in **BOLD** will be used in the calculation of the student’s pre-dental hygiene GPA which will be used in ranking students

Admitted students who voluntarily withdraw from the Dental Hygiene Program will be allowed to reapply only one additional time. This is enforced in fairness to other applicants.

A criminal background check which includes fingerprinting for the Ohio Bureau of Criminal Identification and Investigation (BCI &I) and the Federal Bureau of Investigation (FBI) is required for licensure in Ohio. If a student has been convicted of a felony or misdemeanor related to substance abuse or crime involving moral turpitude, licensure may be denied by the Ohio State Dental Board. For further information regarding licensure and the results of finger printing call the Ohio State Board at (614) 466-2580.

Students can access u.select at [www.transfer.org](http://www.transfer.org), a free web-based source where they can find accurate information regarding courses that transfer and apply to a degree program.

Students accepted to the program must have completed Human Anatomy and Physiology for Allied Health majors prior to fall semester of their first year. Current, former, and transfer students must meet all the requirements for freshman admission, and have a minimum 2.5 overall college average and a program grade point average of 2.7 (on a 4.0 system). In addition, one laboratory science course is required in the program, either biology (BIOL 1545/1545L Allied Health Anatomy & Physiology) or chemistry (CHEM 1505/1505L Allied Health Chemistry I) must be completed by the end of the fall semester of the year of application. Meeting minimum requirements does not assure acceptance into the dental hygiene program.

Prospective students must complete a minimum of 12 hours of observation of a registered dental hygienist in two separate dental offices or clinics. Observation forms are available on the Dental Hygiene website. Each prospective student must print the form and fill it out and return by December 31 of the year of application. Mail with appropriate signatures to: Youngstown State University, Dental Hygiene Program, One University Plaza, Youngstown, OH 44555.

**New, Current, Former and Transfer Students**

Students must apply and compete for conditional acceptance into the dental hygiene program by September 15 for spring semester admittance. Rankings for admission will include a minimum GPA of 2.70, in the bolded courses and a cumulative grade point average of 2.5 or greater. ALL pre-dental hygiene courses must be completed with a “C” or better at the end of the fall semester of the second year (as outlined below).

**Pre-Dental Hygiene Courses**

**FIRST YEAR  
FALL SEMESTER**

<b>Courses</b>	<b>Semester Hrs.</b>
ENGL 1550 Writing 1.....	3 s.h.
SOC 1500 Introduction to Sociology .....	3 s.h.
BIOL 1545/L Allied Health Anatomy and Physiology.....	5 s.h.
CHEM 1505 Allied Health Chemistry 1 .....	3 s.h.
	<b>18 s.h.</b>

**FIRST YEAR  
SPRING SEMESTER**

<b>Courses</b>	<b>Semester Hrs.</b>
ENGL 1551 Writing 2.....	3 s.h.
CMST 1545 Communication Foundations .....	3 s.h.
CHEM 1506 Allied Health Chemistry 2.....	3 s.h.
PSYCH 1560 General Psychology .....	3 s.h.
MATH 2623 Survey of Mathematics .....	3 s.h.
or	
MATH 2625 Mathematics and Critical Thinking.....	4 s.h.
	<b>15-16 s.h.</b>

**SECOND YEAR  
FALL SEMESTER**

<b>Courses</b>	<b>Semester Hrs.</b>
BIOL 1560 Microbiology for the Health Professions .....	2 s.h.
CLTC 2687/L Microbiology for Health Care Laboratory.....	1 s.h.
PHIL 2625 Introduction into Professional Ethics.....	3 s.h.
PHIL 2630 Critical Thinking .....	3 s.h.
Artistic and Literary Perspective Elective .....	3 s.h.
	<b>12 s.h.</b>

**Current Students**

Current students must apply by September 15 for spring semester admittance. Application packets are in the Dean's office, Bitonte College of Health and Human Services, Cushwa Hall, Room 2064. All necessary reports and transcripts must be received by October 15. No applications will be considered after this deadline.

**New, Transfer and Former YSU Students**

Must first apply and be admitted to the University by completing the undergraduate admissions form and indicating dental hygiene as the intended major.

Submit transcripts from each of the post secondary institutions and high school(s) attended. Transcripts of any academic work being completed during the academic year of the requested admission date must be submitted to YSU Admissions Office by October 15. No applications will be considered after this deadline.

**Observation Requirement**

All prospective students must complete a minimum of 12 hours of observation of a registered dental hygienist in at least two separate dental offices or dental clinics. Please dress appropriately. Do not wear shorts, jeans, tennis shoes, flip-flops or other unprofessional clothing. Hair must be pulled away from the face and make-up and perfume should be moderately applied. Observation forms are available on the dental hygiene website ([http://web.ysu.edu/gen/bcohhs/Dental\\_Hygiene\\_m29.html](http://web.ysu.edu/gen/bcohhs/Dental_Hygiene_m29.html)). Each prospective student must print the form and fill it out. Mail with the appropriate signatures to: Youngstown State University, Dental Hygiene Program, One University Plaza, Youngstown, OH 44555.

**Factors affecting admission will include:**

1. Completion of all pre-dental hygiene courses with a "C" or better
2. Pre-Dental Hygiene G.P.A.
3. Cumulative G.P.A.
4. Number of repetitions of BOLD pre-dental hygiene courses (as indicated in Section A).

5. As the number of repetitions increases, the likelihood of being admitted decreases. Applicants will have within the last 5 years, no more than 2 repeated classes in all the pre-dental hygiene courses. A repeated course must be completed with a grade of "C" or better and all incompletes must be removed before beginning the dental hygiene curriculum.

6. Satisfactory completion of the dental hygiene observation forms.

Upon receiving admission to the Dental Hygiene Program, and as a condition of admission, students must show satisfactory evidence of the following:

- A. Current CPR/BLS certification.
- B. Completed physical and dental exam.
- C. Proof of required immunization requirements.

**EMERGENCY MEDICAL TECHNOLOGY**

*Professor Mistovich; Instructor Kearns (Program Director).*

Emergency medical services programs are designed to educate persons to provide emergency prehospital care to people experiencing health crises. The goals of these programs are on three different levels: emergency medical technician, paramedic certification, and the Associate in Applied Science degree.

The emergency medical technician course follows the Department of Transportation's national emergency medical services education standards, meeting all the knowledge requirements for entry-level emergency medical technician certification. To be eligible for the National Registry of Emergency Medical Technicians' certifying examination at the EMT level, the student must:

- Receive a grade of C or greater in EMTC 1500, EMTC 1500L, and EMTC 1500C.
- Successfully complete the field internship objectives

The Emergency Medical Technician Paramedic Certificate can be attained after successfully completing four semesters of study. The course of study provides the student with knowledge about the recognition, assessment, and practice of emergency medical care in the pre-hospital setting on an advanced life-support unit. It meets and exceeds all

U.S. Department of Transportation national emergency medical services education standards. The Youngstown State University emergency medical services program is accredited by the Commission on Accreditation of Allied Health Education Programs ([www.caahep.org](http://www.caahep.org)) 1361 Park Street, Clearwater, FL 33756, 727-210-2350, upon the recommendation of the Committee on Accreditation of Educational Programs for the EMS Professions ([www.coaemsp.org](http://www.coaemsp.org) [CoAEMSP #600045]) 8301 Lakeview Parkway Suite 111-312, Rowlett, TX 75088, 214-703-8445, fax 214-703-8992.

The Associate in Applied Science degree is awarded following the completion of the advanced training program with clinical paramedical experiences. This program includes coursework for critical care paramedicine and multi-skilled EMS practitioner. Thirty percent of all teaching and clinical rotations are physician-instructed and/or precepted. To obtain the Associate in Applied Science degree (including the Emergency Medical Technician Certificate and the Paramedic Certificate), will require six semesters of study including two summer semesters.

For the certificate, admission requirements and procedures are the same as those applicable to the University and the Department of Health Professions with the addition of a minimum age of 18 years, and a current driver's license or state-issued I.D. The student must be Ohio EMT certified prior to being accepted into the paramedic program. Anatomy & Physiology (BIO 1545) or the equivalent is a required prerequisite for admission into the paramedic program. A physical examination to attest to good health, finger printing, and a criminal background check are required. Drug testing may be required by the clinical or field internship site. Admission into the Associate in Applied Science degree program is restricted. Please refer to the admission policies available from the Department of Health Professions.

## Learning Outcomes

Graduates in the paramedic program will

- Demonstrate the ability to comprehend, apply, and evaluate clinical information relevant to their role as a paramedic (cognitive).
- Demonstrate technical proficiency in all skills necessary to fulfill the role as a paramedic. (psychomotor).
- Demonstrate personal behavior consistent with professional and employer expectations for the paramedic (affective).

## Emergency Medical Technology Curriculum

### FIRST YEAR

#### FIRST SEMESTER (FALL)

Courses	Semester Hrs.
EMTC 1501 Introduction to Prehospital Medicine .....	1 s.h.

EMTC 1502 General Patho. and Techniques for Prehospital Medicine .....	2 s.h.
EMTC 1503 Patient Assessment and Airway Management .....	1 s.h.
EMTC 1504 Principles of Trauma .....	2 s.h.
EMTC 1505 Emergency Medical Techniques I - Lab .....	1 s.h.
EMTC 1506 Emergency Department Clinical I .....	1 s.h.
BIOL 1545 Human Anatomy and Physiology for Allied Health Majors .....	5 s.h.
	<b>13 s.h.</b>

### SECOND SEMESTER (SPRING)

Courses	Semester Hrs.
EMTC 1510 Cardiopulmonary Emergencies.....	3 s.h.
EMTC 1511 Cardiopulmonary Techniques Lab .....	1 s.h.
EMTC 1512 Medical Emergencies .....	2 s.h.
EMTC 1513 Emergency Medical Techniques II - Lab .....	2 s.h.
EMTC 1514 Emergency Medical Services Operations.....	1 s.h.
EMTC 1515 Clinical Experience I.....	1 s.h.
EMTC 1516 Prehospital Internship Experience I.....	1 s.h.
MATC 2605 General Pharmacology .....	3 s.h.
	<b>14 s.h.</b>

### THIRD SEMESTER (SUMMER)

Courses	Semester Hrs.
EMTC 2600 Emergency Medicine Special Topics .....	3 s.h.
EMTC 2601 Emergency Medicine Special Topics - Lab.....	1 s.h.
EMTC 2602 Emergency Medicine Special Certifications.....	2 s.h.
EMTC 2603 Clinical Experience II .....	2 s.h.
EMTC 2604 Prehospital Internship Experience II.....	2 s.h.
	<b>10 s.h.</b>

### Award Paramedic Certificate after 36 semester hours

### FOURTH SEMESTER (FALL, SECOND YEAR)

Courses	Semester Hrs.
EMTC 2610 Pathophysiology for Critical Care Paramedicine .....	2 s.h.
EMTC 2611 Assessment and Mngt. for Critical Care Paramedicine .....	4 s.h.
ENGL 1550 Basic Composition 1 .....	3 s.h.
CHEM 1505 Chemistry for Health Sciences with Lab .....	3 s.h.
PSYC 1560 Introduction to Psychology .....	3 s.h.
CMST 1545 Public Speaking.....	3 s.h.
	<b>18 s.h.</b>

### FIFTH SEMESTER (SPRING, SECOND YEAR)

Courses	Semester Hrs.
EMTC 2620 Research Methodology for EMS .....	2 s.h.



EMTC 2630 Multiskilled EMS Practitioner .....	2 s.h.
EMTC 2631 Advanced Clinical and Field Internship Experience .....	2 s.h.
ENGL 1551 Composition II .....	3 s.h.
SOC 1500 Introduction to Sociology .....	3 s.h.
Art and Lit.....	3 s.h.
	<u>15 s.h.</u>

**Award Associate Degree**

**Total Program Hours: 70 semester hours**

**MEDICAL ASSISTING TECHNOLOGY**

*Professor Feld (Program Director).*

The medical assisting technology program is a two-year program leading to the Associate in Applied Science degree. The program requires five semesters of study averaging 15 hours per semester to complete.

The two-year Associate in Applied Science degree program in medical assisting technology at Youngstown State University is accredited by the commission on Accreditation of Allied Health Education Programs ([www.caahep.org](http://www.caahep.org)) upon the recommendation of the Medical Assisting Education Review Board (MAERB).

The Commission on Accreditation and Allied Health Education Programs.  
1361 Park Street  
Clearwater, FL 33756  
727-210-2350

Upon graduation, the student is eligible to apply for the certification exam given by the American Association of Medical Assistants (AAMA). Successful completion of the exam confers the designation Certified Medical Assistant, or CMA (AAMA). Grounds for denial of eligibility for the CMA credential is falsifying information on the application or being guilty of a felony.

The curriculum provides graduates with the skills necessary to perform dual roles as administrative and/or clinical assistants in private physician offices, clinics, or hospital outpatient departments. The administrative skills include: public relations, receptionist activities, record management, secretarial skills, bookkeeping, insurance and coding, banking, payroll and managerial responsibilities. Clinical skills include: preparing the patient for examination and procedures, taking medical histories and patient assessment, operating and maintaining medical equipment, collecting specimens, performing laboratory tests, and teaching and counseling patients. Admission to the program is not restricted, but high school prerequisites include a science, math, and computer or typing course.

A grade of C or better is required in all MATC courses and a 2.0 over-all grade point average (GPA) is required to register for MATC 2692, Medical Assisting Externship (Practicum). The student is not allowed to receive any type of compensation, mon-

etary or otherwise, from the externship site. Prior to scheduling the practicum, the student's records will be reviewed by the program director to determine if all MATC courses have been satisfactorily completed and all deficiencies have been made up.

The student must have a physical examination report with a negative tuberculin-screening test and hepatitis B vaccination prior to MATC 2620, MATC 2680 and the practicum.

The student must have current certification in Red Cross First Aid and CPR to participate in the externship experience. The semester prior to the practicum the student will be required to have a background check submitting to fingerprint for a FBI (federal) and BCI (civilian) criminal records check.

**Learning Outcomes**

Graduates of the medical assisting technology program will:

- Demonstrate the ability to comprehend, apply, and evaluate relevant information presented in medical assisting and related courses to the role of the entry-level medical assistant in a variety of medical settings.
- Demonstrate technical proficiency in the performance of the administrative and clinical competencies as outlined in the essentials for the Commission on Accreditation on Allied Health Education Programs and the American Association of Medical Assistants Endowment accreditation process.
- Demonstrate interpersonal skills and participate in professional activities including continuing educational opportunities consistent with the professional expectations of a (certified) medical assistant.
- Be able to function as an entry-level medical assistant by demonstration of proficiency in administrative and clinical competencies in a variety of medical settings.

**Medical Assisting Technology Curriculum**

**General University Requirements**

<b>Courses</b>	<b>Semester Hrs.</b>
ENGL 1550, 1551 Writing 1 and 2 .....	6 s.h.
COMM 1545 Communication Theory and Practice .....	3 s.h.
PSYC 1560 General Psychology .....	3 s.h.
BIOL 1545/1545L Allied Health Anatomy/ Physiology .....	5 s.h.
Artistic & Literary Perspective Elective .....	3 s.h.
	<u>20 s.h.</u>

**Major Requirements**

<b>Courses</b>	<b>Semester Hrs.</b>
MATC 1501 Medical Terminology .....	3 s.h.
MATC 1502 Medical Law & Ethics.....	3 s.h.
MATC 2600 Medical Insurance Forms.....	2 s.h.

MATC 2602 Diagnostic & Procedure Coding ..2 s.h.	
MATC 2605 Intro. to Pharmacology .....	3 s.h.
MATC 2610 Intro. to Disease Processes .....	3 s.h.
MATC 2611L Clinical Procedures Lab .....	1 s.h.
MATC 2612 Medical Records Management.....	2 s.h.
MATC 2614 Medical Office Procedures .....	3 s.h.
MATC 2620 Advanced Clin. Procedures .....	3 s.h.
MATC 2620L Advanced Clin. Procedures Lab .....	1 s.h.
MATC 2680 Medical Laboratory Procedures...	1 s.h.
MATC 2680L Medical Laboratory Procedures Lab .....	1 s.h.
MATC 2692 Medical Assisting Externship, (Practicum) .....	3 s.h.
	<b>31 s.h.</b>

**Related Course Requirements**

HSC 1568 Healthy Lifestyles .....	3 s.h.
ACCT 2602 Financial Accounting .....	3 s.h.
AHLT 4810 Management Skills for Health Professionals .....	3 s.h.
CSIS 1514 Business Computer Systems .....	3 s.h.
INFO 1575 Document Preparation .....	4 s.h.
BIOL 1560 Paramedical Microbiology.....	2 s.h.
BIOL 1560L Paramedical Microbiology Lab.....	1 s.h.
	<b>19 s.h.</b>
<b>Total Semester Hours .....</b>	<b>70 s.h.</b>

**PUBLIC HEALTH**

*Assistant Professor Robinson.*

The public health program offers the Bachelor of Science in Applied Science (B.S.A.S.) degree and can be completed in eight semesters if students average 16 hours per semester. The program offers a minor in public health and community health planning and evaluation. It contributes to the University's general education requirements by offering PHLT 1531 Fundamentals of Public Health and PHLT 1568 Healthy Lifestyles, which meet the general education requirements for Social Sciences/Social and Personal Awareness and Social and Personal Awareness, respectively. To be admitted to the public health program, a student must have a minimum GPA of 2.0. To continue enrollment in the major, students must maintain a 2.0 GPA. If a student falls below a 2.0 GPA, he or she can only reapply to the major after a minimum GPA of 2.0 has been achieved.

There are five standard areas in public health training that enable students to perform the essential services of public health. These are epidemiology, biostatistics, public health administration, environmental health, and behavioral science/health education and health promotion. The curriculum for the YSU bachelor's degree in public health addresses each of the five core areas through multiple courses. This curriculum enables mastery at the bachelor's



level of the nationally recognized Public Health Core Competencies, and requires an internship tailored to the area of public health interests of each student. This contemporary major also includes two 2-semester hour courses in bioterrorism, mass casualty, and crisis management in public health. All of the major courses for the degree can be completed through online distance learning options.

The B.S.A.S. in public health can also prepare the student to become a Certified Health Education Specialist (CHES). CHES assess individual and community health needs; plan and implement effective health education and health promotion programs; coordinate and manage the provision of health education and promotion services; effectively communicate health and health education needs, concerns, and resources; and conduct program evaluation. Public health graduates are employed in public health agencies, non-profit organizations, hospitals and other health care settings, and governmental agencies.

### Learning Outcomes

The student learning outcomes for public health are as follows:

- The public health student will demonstrate skill in competence in core public health content including program planning and evaluation, program implementation, coordination of effective communication, use of resources, and cultural competence by achieving a score of at least 85% on a program comprehensive exam taken as part of PHLT 4899 senior seminar course.
- The public health student will demonstrate mastery of entry-level Public Health competency by receiving an internship score of at least 85% by his/her community-based internship supervisor.

During the freshman and sophomore years, students are expected to take the courses that meet the requirements for general education. In addition to the English and communication requirement, specific general education courses for the B.S.A.S. public health degree include PHLT 1531, PHLT 1568, BIOL 1545 and Lab, FNUT 1551, and SOC 1500. Additional required courses during the first two years of study include: a 3 semester hour approved philosophy course, two 3 semester hour social/cultural issues courses, and required prerequisites from selected courses. Core requirements of the major: PHLT 2692, 3702, 3709, 3725, 3731, 3757, 3791, 4826, 4827, 4828, 4891, 4899, 5893M, 5893W; AHLT 3708, 3740, 4804, 4806, 4808, 4810, 4820, 5807; GEOG 2611 and 5810; GERO 1501. A total of 124 semester hours are required for the B.S.A.S. in public health. No minor is required for this professional B.S.A.S. degree.

## RESPIRATORY CARE

*Assistant Professor Yacovone (Program Director).*

Respiratory care is an allied health profession concerned with the diagnostic evaluation, treatment, and management of patients with cardiopulmonary disorders. The respiratory care practitioner (RCP) is proficient in the therapeutic administration of medical gases and aerosols, intermittent and continuous mechanical ventilation, broncho-pulmonary hygiene, basic and advanced cardiac life support techniques, non-invasive patient monitoring, pulmonary function evaluation, arterial blood gas analysis, airway management procedures and pulmonary rehabilitation techniques. A licensed RCP must also be knowledgeable regarding various assessment techniques and patient education models. These skills are used with neonatal, pediatric, and adult patients in acute, subacute, and home care settings.

To function effectively as a member of the multi-disciplinary health care team, the RCP must have a sound understanding of the physiological, psychological, and cultural needs of the patient, the role of the various therapeutic interventions in the patient care plan, and development of broad-based skills to more effectively contribute to the overall care of the patient. Theory and laboratory experiences are provided prior to the student's entry into the clinical education phase of the program. This program can be completed in four calendar years. It includes three summer sessions. A sleep diagnostics option is also available.

### Accreditation

The YSU respiratory care and polysomnography certificate programs are accredited by the Commission on Accreditation for Respiratory Care ([www.coarc.com](http://www.coarc.com)).

Students with questions regarding accreditation of the YSU respiratory care or polysomnography programs can contact CoARC by mail at 1248 Harwood Road; Bedford TX 76021-4244 or by phone at 817-283-2835.

### Learning Outcomes

The student learning outcomes for the major in respiratory care are as follows:

- Upon completion of the program, graduates will demonstrate the ability to comprehend, apply, and evaluate clinical information relevant to their roles as advanced-level respiratory therapists (cognitive domain).

- Upon completion of the program, graduates will demonstrate technical proficiency in all the skills necessary to fulfill their role as advanced-level respiratory therapists (psychomotor domain).
- Upon completion of the program, graduates will demonstrate professional behavior consistent with employer expectations as advanced-level respiratory therapists (affective domain).

## Respiratory Care Curriculum

### YEAR 1

#### FALL SEMESTER

Courses		Semester Hrs.
BIOL 1545	Allied Hlth. Anat. and Phys. ....	5 s.h.
MATH 1501	Medical Terminology .....	3 s.h.
MATH 2623	Survey of Math.....	3 s.h.
ENGL 1550	Writing 1.....	3 s.h.
CHEM 1505	Chemistry for Hlth. Prof. 1.....	3 s.h.
		<u>17 s.h.</u>

#### SPRING SEMESTER

Courses		Semester Hrs.
CHEM 1506	Chem for Hlth. Prof. 2.....	3 s.h.
COMM 1545	Comm Theory & Prac.....	3 s.h.
ENGL 1551	Writing 2.....	3 s.h.
PHLT 1568	Healthy Lifestyles .....	3 s.h.
or		
PHLT 1531	Intro to Public Health.....	3 s.h.
		<u>12 s.h.</u>

#### SUMMER SEMESTER

Courses		Semester Hrs.
SOC 1550	Intro. to Sociology.....	3 s.h.
PSYC 1560	General Psychology.....	3 s.h.
		<u>6 s.h.</u>

### YEAR 2

#### FALL SEMESTER

Courses		Semester Hrs.
RESC 1529	Resp. Care Orientation.....	2 s.h.
RESC 1531	Resp. Care Essentials.....	3 s.h.
MATC 2605	Intro to Pharmacology .....	3 s.h.
CLTEC 2687L	Microbiology for Hlth. Care... 1 s.h.	
BIOL 1560	Microbiology for Hlth. Prof....	2 s.h.
PHIL 2625	Intro to Prof. Ethics.....	3 s.h.
		<u>14 s.h.</u>

#### SPRING SEMESTER

Courses		Semester Hrs.
RESC 1503	Resp. Procedures 1.....	4 s.h.
RESC 1520	Resp. Assessment 1.....	3 s.h.
PHYS 1506	Physics for Health Care .....	3 s.h.
AHLT 3705	Pharmacotherapeutics.....	3 s.h.
		<u>13 s.h.</u>

#### SUMMER SEMESTER

Courses		Semester Hrs.
RESC 2620	Resp. Assessment 2.....	3 s.h.
RESC 2621	Cardiopulmonary Disease .....	4 s.h.
		<u>7 s.h.</u>

### YEAR 3

#### FALL SEMESTER

Courses		Semester Hrs.
RESC 3706	Resp. Procedures 2.....	3 s.h.
RESC 3720	Mech. Ventilation 1 .....	3 s.h.
AHLTH 4806	Research Methods.....	3 s.h.
AHLTH 5840	Comp. H.C. Systems .....	4 s.h.
		<u>13 s.h.</u>

#### SPRING SEMESTER

Courses		Semester Hrs.
RESC 2699	Clinical Practice 1 .....	1 s.h.
RESC 3708	Clinical Specialties.....	3 s.h.
RESC 3709	Pediatric Resp. Care .....	4 s.h.
RESC 3725	Mech. Ventilation 2.....	3 s.h.
RESC 3731	Respiratory Care Mgmt.....	2 s.h.
		<u>13 s.h.</u>

#### SUMMER SEMESTER

Courses		Semester Hrs.
RESC 3740	Respiratory Clinics 2.....	4 s.h.
RESC 3750	Pulmonary Rehab.....	2 s.h.
		<u>6 s.h.</u>

### YEAR 4

#### FALL SEMESTER

Courses		Semester Hrs.
RESC 3765	Adv. R.C. Diagnostics .....	3 s.h.
RESC 3741	Respiratory Clinics 3 .....	3 s.h.
RESC 4831	Pulmonary Case Mgmt.....	3 s.h.
AHLT 4812	ACLS .....	3 s.h.
RESC 4838	Resp Seminar 1 .....	1 s.h.
(RESC 4846	<i>Sleep Diagnostics 1 .....</i>	<i>3 s.h.)</i>
(RESC 4847	<i>Sleep Clinics 1 .....</i>	<i>1 s.h.)</i>
		<u>13 s.h.+ (4 s.h.)</u>

#### SPRING SEMESTER

Courses		Semester Hrs.
RESC 4835	Resp. Clinics 4.....	3 s.h.
RESC 4842	Resp Seminar 2 .....	1 s.h.
AHLT 4820	Directed Ind. Res. ....	2 s.h.
Elective	(Art & Humanities) .....	3 s.h.
(RESC 4848	(Social & Personal Awaerness) ..	3 s.h.)
(RESC 4849	<i>Sleep Diagnostics 2 .....</i>	<i>3 s.h.)</i>
	<i>Sleep Clinics 2 .....</i>	<i>1 s.h.)</i>
		<u>12 s.h.+ (4 s.h.)</u>

**Total Semester Hours ..... 126 s.h.**  
*Sleep Diagnostics option ..... 8 s.h.*

## DEPARTMENT OF HUMAN ECOLOGY

330-941-3344

*Professors Elias (Chair), Pavia; Associate Professors Pohle-Krauza, Shah-Rowlands, Hawkins; Assistant Professors Gitimu, Leson, Mincher, Turel; Instructor Zetts.*

The Department of Human Ecology offers nine degree programs. The early childhood associate/pre-k, dietetic technician and hospitality management programs lead to the Associate of Applied Science degree

and can be completed in two years. Baccalaureate programs in food and nutrition, (didactic program in dietetics and the coordinated program in dietetics), family and consumer studies, merchandising: fashion & interiors, hospitality management, each lead to the Bachelor of Science in Applied Science degree; and (in conjunction with the Beeghly College of Education) a bachelor's program in family and consumer sciences education leads to the Bachelor of Science in Education degree with the teaching field licensure in family and consumer sciences.

Curriculum sheets for all programs are available at the department office Room 3044, Cushwa Hall.

## FAMILY AND CONSUMER SCIENCES EDUCATION

The family and consumer sciences education program prepares students to teach in educational programs grade four through adult levels and meets the course requirements for the Family and Consumer Sciences Career/Technical Teaching License required to teach in Ohio's schools. The four-year program includes 100 hours of supervised field work and one semester of student teaching in a secondary school. Graduates will receive a Bachelor of Science in Education degree and will be required to pass the Praxis II examination for teachers in order to receive a teaching license. This program is jointly administered by the Beeghly College of Education and the Department of Human Ecology. Academic advisors in the Beeghly College of Education as well as the teacher educator in the Department of Human Ecology should be consulted regularly.

### Learning Outcomes

- Career, Community, and Family Connections: Analyze family, community, and work inter-relationships; investigate career paths; examine family and consumer sciences careers; and apply career decision making and transitioning processes.
- Consumer Economics and Family Resources: Use resources responsibly to address the diverse needs and goals of individuals, families, and communities in family and consumer sciences areas such as resource management, consumer economics, financial literacy, living environments, and textiles and apparel.
- Family and Human Development: Apply principles of human development, interpersonal relationships, and family to strengthen individuals and families across the lifespan in contexts such as parenting, care giving, and the workplace.
- Nutrition, Food, and Wellness: Promote nutrition, food, and wellness practices that enhance individual and family well being across the lifespan and address related concerns in a global society.

- Curriculum Development: Develop, justify, and implement curricula that address perennial and evolving family, career, and community issues; reflect the integrative nature of family and consumer sciences; and integrate core academic areas.
- Instructional Strategies and Resources: Facilitate students' critical thinking and problem solving in family and consumer sciences through varied instructional strategies and technologies and through responsible management of resources in schools, communities, and the workplace.
- Learning Environment: Create and implement a safe, supportive learning environment that shows sensitivity to diverse needs, values, and characteristics of students, families, and communities.
- Professionalism: Engage in ethical professional practice based on the history and philosophy of family and consumer sciences and career and technical education through civic engagement, advocacy, and ongoing professional development.
- Student and Program Assessment: Assess, evaluate, and improve student learning and programs in family and consumer sciences using appropriate criteria, standards, and processes.
- Student Organization Integration: Integrate the Family, Career and Community Leaders of America student organization into the program to foster students' academic growth, application of family and consumer sciences content, leadership, service learning, and career development.

## Family and Consumer Sciences Education Curriculum

### General Education Requirements

ENGL 1550	Writing 1.....	3 s.h.
ENGL 1551	Writing 2.....	3 s.h.
CMST 1545	Communication Foundations ..	3 s.h.
MATH 2623	Survey of Mathematics .....	3 s.h.
AH Elective	.....	3 s.h.
AH Elective	.....	3 s.h.
CHEM 1500	Chemistry in Modern Living ..	4 s.h.
or		
ENST 1500/L	Intro to Envir. Science .....	4 s.h.
or		
BIOL 1505/L	Biol. and the Modern World ...	4 s.h.
NS Elective	.....	3 s.h.
SOC 1500	Foundations of Sociology .....	3 s.h.
ECON 2610	Principles I .....	3 s.h.
or		
ECON 1501	Economics in Action.....	3 s.h.
PSYC 1560	General Psychology.....	3 s.h.
PHLT 1568	Healthy Lifestyles .....	3 s.h.
FNUT 1551	Normal Nutrition.....	3 s.h.

**Major Requirements—Teaching Field**

HMEC 1550	Human Ecology Professions.....1 s.h.
FNUT 1512	Food Safty and Sanitation .....1 s.h.
MRCH 1506	Clothing Slections & Image Development ..... 3 s.h.
PHLT 2692	Human Sexuality .....3 s.h.
or	
PSYC 2692	Human Sexuality .....3 s.h.
FNUT 1551	Normal Nutrition (SPA).....(3) s.h.
FNUT 1553	Food Science & Mgmt. Principles.....3 s.h.
FNUT 1553L	Food Science & Mgmt. Lab .....1 s.h.
CHFM 3731	Individual & Family Development.....3 s.h.
CHFM 3750	Parent & Professional Relationships .....3 s.h.
PSYC 3755	Child Development .....3 s.h.
PSYC 3756	Adolescent Development .....3 s.h.
or	
PSYC 3758	Lifespan Development.....3 s.h.
MRCH 3764	Family Housing and Technology.....3 s.h.
HMEC 3780	Consumer Economics.....3 s.h.
HMEC 4890	Communicating Contemp. Issues .....3 s.h.
HMEC 4852	Family Resource Mgmt.....3 s.h.
HMEC 5893	Work and Family (P) .....3 s.h.

**Professional Education Requirements**

FOUN 1501	Introduction to Education .....3 s.h.
SPED 2630	Individuals w/Except in Society .....3 s.h.
FOUN 3708	Education and Society.....3 s.h.
PSYC 3709	Psychology of Education.....3 s.h.
EDTC 3771	Technologies for Teaching.....3 s.h.
AYA Cluster:	
TERG 3711	Rdg. Appl. Content Area, P-12..3 s.h.
SED 3706	Principles of Teaching Adolescents.....3 s.h.
FOUN 3710	Assessment .....3 s.h.
HMEC 4800	Teaching Family & Consumer Sciences .....3 s.h.
SED 4842	Student Teaching CA (P).....10 s.h.
SED 4842A	Student Teaching Seminar.....2 s.h.
Electives	.....6 s.h.

**FAMILY AND CONSUMER STUDIES**

The family and consumer studies program is designed to provide an in-depth understanding of individuals and families across the life span and to prepare students to work in agencies serving children, families, and consumers. Students can create a unique program that reflects their career interests or graduate school goals. Students find employment in a variety of community agencies and businesses related to their areas of study. This program prepares the student to attain CFCS (Certified in Family and Consumer Sciences) certification.

**Learning Outcomes**

Graduates in the family and consumer studies major will be able to

- Use family science research and human systems theory to describe the internal dynamics of families and the interrelationships of individuals and families with their environments.
- Identify factors that influence human development across the life span.
- Apply appropriate technologies, critical-thinking, research methods, and communication skills to address significant family and consumer issues.
- Use concepts of resource development, management, and sustainability to evaluate individual, family, and community resource allocation practices.
- Analyze ethical questions that affect families and consumers.
- Relate to others with concern and respect for diversity of family forms, cultural variations among families, and individual differences.
- Follow professional and ethical standards in professional practice settings.
- Evaluate public policies that impact the well-being of individuals, families, consumers, and communities.
- Plan, implement, and evaluate educational programs serving children, families, and consumers.

**Family and Consumer Studies Curriculum**

ENGL 1550	Writing 1.....3 s.h.
ENGL 1551	Writing 2.....3 s.h.
CMST 1545	Communication Foundations ..3 s.h.
GER	Arts and Humanities.....6 s.h.
ECON 2610	Principles 1.....3 s.h.
SOC 1500	Intro to Sociology.....3 s.h.
PSYC 1560	General Psychology .....3 s.h.
PSYC 3758	Life Span Development.....3 s.h.
GER	Natural Science .....7 s.h.
MATH 2623	Survey of Math.....3 s.h.
PHLT 1568	Healthy Lifestyles .....3 s.h.
FNUT 1551	Normal Nutrition.....3 s.h.
CHFM 3731	Individual & Family Development .....3 s.h.
MRCH 3764	Family Housing & Technology.....3 s.h.
HMEC 1550	Human Ecology Professions ....1 s.h.
HMEC 3780	Consumer Economics.....3 s.h.
HMEC 4836	Internship.....3 s.h.
HMEC 4890	Communication of Contemporary Issues .....3 s.h.
HMEC 4852	Family Resource Management.....3 s.h.

PSYC 2617	Research Methods and Statistics.....	4 s.h.
or		
FNUT 4802	Research in Dietetics .....	2 s.h.
HMEC 4876	Undergraduate Research .....	2 s.h.
HMEC 4877	Research Capstone.....	2 s.h.

Electives to reach 124 total hours

**Family Studies Option**

HMEC 5893	Work and Family .....	3 s.h.
CHFM 3750	Parent/Professional Relationships .....	3 s.h.
PHLT 2692	Human Sexuality .....	3 s.h.
PSYC 3755	Child Development .....	3 s.h.
Department Electives .....		15 s.h.
Minor.....		18 s.h.

or

**Consumer Studies Option**

MRCH 3705	Fashion Textiles.....	3 s.h.
MRCH 3730	Social Psychology of Clothing.....	3 s.h.
FNUT 1553	Food Science & Mgmt. Principles.....	3 s.h.
FNUT 1553L	Food Science & Mgmt. Principles Lab.....	1 s.h.
Department Electives .....		17 s.h.
Minor.....		18 s.h.

**FOOD AND NUTRITION/ DIETETICS**

**Dietetic Technician (DT)**

*Assistant Professor Mincher (Program Coordinator).*

Dietetic Technicians, Registered (DTRs), are trained in food and nutrition and are an integral part of health care and foodservice management teams. The associate degree course work for dietetic technicians includes a variety of classes in food and nutrition sciences, foodservice systems management and a range of general science courses. Dietetic Technicians, Registered work independently or in teams with registered dietitians in a variety of employment settings, including health care, business and industry, public health, foodservice and research.

Upon satisfactory completion of the DT program, graduates are issued a verification statement that confirms their eligibility to sit for the Commission on Dietetic Registration (CDR) examination for dietetic technicians. Successful completion of the exam allows the graduate to use "DTR" as the practice credential.

Most of the required courses can be applied to the B.S. in A.S. degree with a major in food and nutrition.

The associate degree program is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the American Dietetic Association (120 South Riverside Plaza, Suite 2000, Chicago, Illinois, 1-800-877-1600, [www.eatright.org](http://www.eatright.org)).

**Learning Outcomes**

At the completion of the dietetic technician program, graduates will

- Be able to practice as competent dietetic technicians.
- Meet the workforce needs for DTRs in the Mahoning Valley.
- Practice a high degree of professionalism.

**Dietetic Technician Curriculum**

**FIRST YEAR**

BIOL 1551/L	Anatomy & Physiology/ Lab .....	4 s.h.
*HMEC 1550	Human Ecology Professions.....	1 s.h.
*FNUT 1553	Food Science & Management Principles .....	3 s.h.
*FNUT 1553/L	Food Science & Management Principles Lab.....	1 s.h.
*FNUT 1551	Normal Nutrition .....	3 s.h.
*FNUT 2652L	Nutrition Assessment Lab.....	1 s.h.
ENGL 1550	Writing 1 .....	3 s.h.
BIOL 1552/L	Anatomy & Physiology/ Lab .....	4 s.h.
*FNUT 1512	Food Safety & Sanitation .....	1 s.h.
*FNUT 2612	Food Systems: Operation, Production and Service.....	3 s.h.
*FNUT 2612/L	Food Systems: Operation, Production and Service Laboratory .....	2 s.h.
PSYC 1560	General Psychology.....	3 s.h.

**SECOND YEAR**

ENGL 1551	Writing 2.....	3 s.h.
CHEM 1505/L	Allied Health Chemistry/ Lab .....	3 s.h.
BIOL 1560/L	Microbiology/Health Profession/Lab.....	3 s.h.
*FNUT 2603/L	Medical Nutrition Therapy 1/Lab .....	4 s.h.
COUN 2651	Helping Skills for Human Ecology.....	2 s.h.
ACCT 2602	Financial Accounting .....	3 s.h.
*FNUT 2610	Organization & Mgmt.....	3 s.h.
*FNUT 2609L	Food Systems: Supervised Practice .....	3 s.h.
*FNUT 2613/L	Nutritional Care Clinical Experience.....	4 s.h.
SOC 1500	Intro to Sociology.....	3 s.h.
CSIS 1514	Business Computer Systems ..	3 s.h.
CMST 1545	Communication Foundations.....	3 s.h.

**SUMMER SEMESTER**

*FNUT 2628	DT Practicum.....	3 s.h.
AH Elective .....		3 s.h.

**Total Program Hours ..... 71 s.h.**

\*Final grade of C or better required in all major courses. Courses cannot be taken Credit/No Credit.

## Food and Nutrition Didactic Program in Dietetics (DPD)

*Associate Professor Rowlands (Program Coordinator).*

This baccalaureate program is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics (AND) (See "Dietetic Technician" for contact information). Upon satisfactory completion of the DPD, students are issued a verification statement confirming eligibility to apply for an ACEND accredited Dietetic Internship (DI) or pre-professional practice program.

Completion of the DI, or an approved pre-professional practice program, establishes eligibility to sit for the Commission on Dietetic Registration (CDR) examination for dietitians. Successful completion of the examination results in nationally recognized credentialing as a registered dietitian (R.D.).

Didactic program in dietetics (DPD) graduates may also take the registration examination for dietetic technicians and become Dietetic Technicians, Registered (DTR).

### Learning Outcomes

- Achieve comprehension/competence in nutrition care process with specific emphasis on standardized nutrition diagnoses, i.e., use the nutrition care process to make decisions, identify nutrition-related problems, and determine and evaluate nutrition interventions, including medical nutrition therapy, disease prevention, and health promotion.
- Demonstrate understanding of dietetics evidence-based practice principles; locate, interpret, evaluate and use professional literature to make ethical, evidence-based practice decisions.
- Demonstrate competence in food preparation and the modification and evaluation of recipes, menus, and food products for diverse groups.
- Be able to identify different health care delivery systems and current reimbursement issues, policies, and regulations on food and nutrition services.

### Curriculum

#### General Education Requirements

##### Basic Skills

ENGL 1550	Writing 1 .....	3 s.h.
ENGL 1551	Writing 2 .....	3 s.h.
CMST 1545	Communication foundations ..	3 s.h.
MATH 2623	Survey of Math .....	3 s.h.
-or-		
MATH 2625	Math Literacy & Critical Reasoning .....	3 s.h.

##### Arts & Humanities

Elective	.....	3 s.h.
Elective	.....	3 s.h.

##### Social and Personal Awareness

FNUT 1551	Normal Nutrition .....	3 s.h.
Elective	.....	3 s.h.

##### Social Sciences

SOC 1500	Intro to Sociology .....	3 s.h.
PSYC 1560	Intro to Psychology .....	3 s.h.

##### Natural Sciences

CHEM 1505/L	Allied Health Chem 1 .....	3 s.h.
CHEM 1506/L	Allied Health Chem 2 .....	3 s.h.
BIOL 1551/L	Anat. & Phys 1 .....	4 s.h.
BIOL 1552/L	Anat & Phys 2 .....	4 s.h.

### Additional Program Requirements

ACCT 2602	Financial Accounting .....	3 s.h.
or		
HMG 2603	Hospitality Managerial Accounting .....	3 s.h.
BIOL 1560	Microbiology .....	2 s.h.
BIOL 1560L	Microbiology Lab .....	1 s.h.
COUN 2651	Foundations of Helping Skills ...	1 s.h.
MATC 1501	Medical Terminology .....	3 s.h.
MGT 3725	Fundamentals of Management .....	3 s.h.
Elective	.....	3 s.h.

### Major Courses

FNUT 1512	Food Safety and Sanitation .....	1 s.h.
HMEC 1550	Human Ecology Professions ...	1 s.h.
FNUT 1551	Normal Nutrition .....	3 s.h.
FNUT 1553	Food Science & Mgmt. Prin. ...	3 s.h.
FNUT 1553L	Food Sci & Mgmt. Prin. Lab ...	1 s.h.
FNUT 2603	Medical Nutr Therapy 1 .....	3 s.h.
FNUT 2603L	Medical Nutr Therapy 1 Lab ..	1 s.h.
FNUT 2612	Food Systems .....	3 s.h.
FNUT 2612L	Food Systems Lab.....	2 s.h.
FNUT 2652L	Nutrition Assessmt. Lab .....	1 s.h.
CHFM 3731	Individ & Family Develop. ....	3 s.h.
FNUT 3735	Nutritional Biochemistry .....	2 s.h.
FNUT 3759	Advanced Nutrition.....	3 s.h.
FNUT 3760	Medical Nutr Therapy 2 .....	3 s.h.
FNUT 3761	Sci of Nutr In Exercise .....	3 s.h.
FNUT 4802	Research Methods in Dietetics...2	s.h.
FNUT 4802L	Research Methods in Dietetics Lab .....	1 s.h.
FNUT 4810	Experimental Foods .....	2 s.h.
FNUT 4810L	Experimental Foods Lab .....	1 s.h.
FNUT 4858	Foodservice Systems Mgt. ....	3 s.h.
FNUT 4860	Medical Nutr Therapy 3 .....	3 s.h.
FNUT 4874	Community Nutr and Wellness .....	3 s.h.
FNUT 4872	Maternal & Child Nutr. ....	2 s.h.
FNUT 4873	Nutrition & Aging. ....	2 s.h.
HMEC 4890	Comm. of Contemporary Issues .....	3 s.h.
FNUT 4895	DPD Capstone.....	3 s.h.
FNUT 5862	Food and Culture .....	2 s.h.
FNUT 5862L	Food and Culture Lab.....	1 s.h.
<b>Suggested - Other Electives</b>		
SPAN 1550	Elementary Spanish .....	4 s.h.
SOC 3745	Soc. Of Health, Illness, & Health.....	3 s.h.



GEOG 2626	World Geography.....	3 s.h.
PSYC 3700	Social Psychology.....	3 s.h.
PHLT 1531	Intro to Public Health .....	3 s.h.
PHIL 2628	Business Ethics.....	3 s.h.

**Minimum upper-division hours (3700 or higher)  
= 48; total hours for degree 124**

## **Food and Nutrition Coordinated Program in Dietetics (CPD) Dietitian (Registration Eligible)**

*Assistant Professor Leson (Coordinator).*

The coordinated program in dietetics (CPD) is an upper-division generalist dietetics program with an emphasis in community wellness. The program prepares students for professional practice and establishes eligibility for graduates to sit for the examination to become Registered Dietitians (RD) and Licensed Dietitians in the state of Ohio. During the five semester program each student spends a minimum of 1,200 supervised practice hours covering medical nutrition therapy, community nutrition and wellness, maternal and child, foodservice, and aging.

A community wellness emphasis has been identified as a need in the regional area that Youngstown State University serves. Graduates of the coordinated program in dietetics will be positioned to assume major roles in community health programs. The program is currently accredited through the Accreditation Council for Nutrition and Dietetics Education (ACEND) within the Academy of Nutrition and Dietetics (AND).

Academy of Nutrition and Dietetics Accreditation Council for Education in Nutrition and Dietetics  
120 South Riverside Plaza, Suite 2000  
Chicago, IL 60606-6995  
312-899-0040 Ext. 5400  
[www.eatright.org/CADE](http://www.eatright.org/CADE)

Admission to the CPD is restricted since only 12 students can be accommodated. Satisfactory completion of a minimum of 63 semester hours (to qualify for junior status) is required before the student begins the program. Detailed information regarding criteria and procedures is available from the Department of Human Ecology. Students are accepted to the CPD in spring, and start the program during fall semester. The current closing date for applications is February 15 for the following fall semester.

Upon satisfactory completion of the CPD, graduates are issued a verification statement that confirms their eligibility to sit for the Commission on Dietetic Registration (CDR) registration examination for dietitians. CPD graduates who successfully write the registration examination are entitled to use the R.D. credential to signify professional competence.

## **Learning Outcomes**

At the completion of the coordinated program in dietetics, graduates will be able to

- Communicate effectively.
- Effectively integrate biochemical concepts into dietetics practice.
- Effectively integrate physiological concepts into dietetics practice.
- Effectively apply theory from the social sciences to dietetics practice.
- Effectively present results of research study.
- Effectively apply concepts from food, nutrition, management, and health care systems to dietetics practice.
- Practice effectively as members of an interdisciplinary team.
- Demonstrate competency in medical nutrition therapy.
- Demonstrate competency in foodservice management practice.
- Demonstrate competency in community nutrition practice.

## **Coursework Plan**

### **THIRD YEAR—FALL SEMESTER**

CHFM 3731	Individual & Family Development.....	3 s.h.
FNUT 3759	Advanced Nutrition .....	3 s.h.
FNUT 3760	Med Nutr Therapy 2 .....	3 s.h.
FNUT 3760R	Med Nutr Therapy 2 Recitation .....	2 s.h.
FNUT 3760L	Med Nutr Therapy 2 Lab.....	2 s.h.
FNUT 4802	Research Methods .....	2 s.h.
Elective	.....	3 s.h.
<b>Total</b>	.....	<b>18</b>

### **THIRD YEAR—SPRING SEMESTER**

MGT 3725	Fundamentals of Management.....	3 s.h.
FNUT 3761	Science of Nutrition in Exercise .....	3 s.h.
FNUT 4802L	Research Methods Lab.....	1 s.h.
FNUT 4860	Med Nutr Therapy 3 .....	3 s.h.
FNUT 4860L	Med Nutr Therapy 3 Lab.....	3 s.h.
FNUT 5862/L	Food and Culture.....	3 s.h.
<b>Total</b>	.....	<b>16</b>

### **THIRD YEAR—SUMMER SEMESTER**

CHFM 3731	Individual & Family Development.....	3 s.h.
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### **FOURTH YEAR—FALL SEMESTER**

FNUT 4858	Foodservice System Management.....	4 s.h.
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FNUT 4858L	Foodservice Sys. Mgmt. Lab.....	3 s.h.
FNUT 4873	Nutrition & Aging .....	2 s.h.
FNUT 4873L	Nutrition & Aging Lab.....	2 s.h.
HMEC 4890	Communication of Contemp. Issues .....	3 s.h.
SOC 3745	Sociology of Health, Illness, & Health Care.....	3 s.h.
<b>Total</b> .....		<b>17</b>

**FOURTH YEAR—SPRING SEMESTER**

FNUT 4810L	Experimental Foods.....	2 s.h.
FNUT 4810L	Experimental Foods Lab.....	1 s.h.
HMEC 4874	Communnity Nutrition & Wellness.....	3 s.h.
HMEC 4874L	Communnity Nutrition & Wellness Lab.....	3 s.h.
FNUT 4872	Maternal & Child Nutrition ...	2 s.h.
FNUT 4872L	Maternal & Child Nutrition Lab .....	2 s.h.
<b>Total</b> .....		<b>13</b>

**FOURTH YEAR—SUMMER SEMESTER**

FNUT 4885	Practicum in Dietetics .....	4 s.h.
<b>Total</b> .....		<b>4</b>

**HOSPITALITY MANAGEMENT**

The hospitality management program provides students with the knowledge and skills needed to be successful and competent in this fast-growing field, not only in the United States but throughout the world.

Students may earn an associate degree and/or a bachelor’s degree with a major in hospitality management. The Associate of Applied Science degree articulates with the bachelor’s degree. The Bachelor of Science in Applied Science program exposes students to advanced management concepts in lodging, food and beverage, or event management.

**Learning Outcomes**

At the completion of the hospitality management program, graduates will be able to

- Demonstrate appropriate customer and guest service practices, skills and behaviors required during customer involvement that contribute to customer satisfaction.
- Demonstrate the knowledge of fundamental principles of leadership and the ability to work with a group of people to formulate rational solutions to hospitality operational problems.
- Demonstrate quality food preparation and presentation skills, using appropriate health, safety, sanitation and environmental protection procedures in hospitality.
- Demonstrate the use and knowledge of current technologies in the hospitality industry. Explain key factors in the design, development and

maintenance of the industry facilities and apply relevant technologies in ways that enhance organizational performance.

- Demonstrate the ability to market hospitality goods and services effectively and responsibly.
- Analyze legal, ethical, and socio-political considerations affecting organizations to make management decisions.
- Demonstrate use of accepted accounting practice and sound financial management.

**Associate Degree Curriculum**

**General Education Requirements**

**Essential Skills**

ENGL	1550	Writing 1 .....	3 s.h.
ENGL	1551	Writing 2 .....	3 s.h.
CMST	1545	Communication Foundations.	3 s.h.
MATH	2623	Survey of Math .....	3 s.h.
Social & Personal Awareness elective*		.....	3 s.h.
		-or-	
Natural Science		1 elective .....	3 s.h.
		*Students who take FNUT 1551 for the GER SPA will not be required to take FNUT 1543	
Arts & Humanities		1 elective .....	3 s.h.
Social Science		1 elective .....	3 s.h.

**Other requirements**

CSIS	1514	Business Computer Systems ..	3 s.h.
MGT	2604	Legal Environment of Business.....	3 s.h.
FNUT	2610	Organization & Management	3 s.h.
		-or-	
*MGT	3725	Fund. of Management.....	3 s.h.

**Major Courses**

Must have C or better; courses cannot be taken Credit/No Credit

HMGT	1500	Intro. to Hospitality Industry.	3 s.h.
FNUT	1512	Food Safety & Sanitation .....	1 s.h.
FNUT	1543	Personal Nutrition .....	1 s.h.
		or	
FNUT	1551	Normal Nutrition (SPA).....	1 s.h.
HMEC	1550	Human Ecology Professions ..	1 s.h.
FNUT	1553	Food Science & Management Principles.....	3 s.h.
FNUT	1553L	Food Science Lab .....	1 s.h.
HMGT	2603	Hospitality Managerial Accounting 1 (P).....	4 s.h.
*HMGT	2691	Hospitality Cooperative Work Experience (P) .....	3 s.h.
HMGT	3719	Hospitality Facilities Management (P) .....	4 s.h.
HMGT	3745	Hospitality Marketing (P).....	4 s.h.

**Concentrations**

**Restaurant and Foodservice Management**

FNUT	2612	Food Systems .....	3 s.h.
FNUT	2612L	Food Systems Lab.....	2 s.h.
HMGT	3725	Food & Bev. Mgt.....	3 s.h.
<b>Total Hours for Degree.....</b>			<b>69</b>

**Hotel and Lodging Management**

HMGT	2622	Hotel Management.....	3 s.h.
HMGT	3734	Front Office Management .....	3 s.h.
<b>Total Hours for Degree.....</b>			<b>67</b>

**Event Management**

FNUT	2612	Food Systems .....	3 s.h.
FNUT	2612L	Food Systems Lab.....	2 s.h.
HMGT	4846	Events Mgt.....	3 s.h.
<b>Total Hours for Degree.....</b>			<b>69</b>

Codes: \*Permit required, see advisor; (P) prerequisite, see catalog. Student must sign up for permit prior to registration.

Some courses offered only once a year; see your advisor for proper prerequisites and sequence of courses. This curriculum articulates perfectly with the Bachelor of Science program in Applied Science in hospitality management. See your advisor regarding prerequisites for ACCT, MGT, and MKTG courses.

**Bachelor's Degree Curriculum**

**General Education Requirements**

ENGL	1550	Writing 1 .....	3 s.h.
ENGL	1551	Writing 2 .....	3 s.h.
CMST	1545	Communication Foundations. 3 s.h.	
MATH	2623	Survey of Math (P) .....	3 s.h.

**Social & Personal Awareness (Spa)**

FNUT	1551	Normal Nutrition .....	3 s.h.
SPA		Elective .....	3 s.h.

**Arts & Humanities (Ah)**

PHIL	2625	Introduction to Prof. Ethics.....	3 s.h.
or			
PHIL	2628	Business Ethics.....	3 s.h.
AH		Elective.....	3 s.h.

**Social Sciences**

PSYC	1560	General Psychology .....	3 s.h.
ECON	2610	Principles 1 .....	3 s.h.
ECON	2620	Principles 2.....	3 s.h.

**Natural Sciences (Ns)**

Lab Science	.....	4 s.h.
Other	.....	3 s.h.

**Support Courses**

CSIS	1514	Business Computer Systems... 3 s.h.
MGT	2604	Legal Environment of Business 1 .....
		3 s.h.
MKTG	3703	Market Concepts/Practice (P) ... 3 s.h.
MGT	3725	Fundamentals of Management (P) .....
		3 s.h.

**Major Courses**

(Must have C or better, Courses cannot be taken Credit/NoCredit)

HMGT	1500	Intro to Hospitality.....	3 s.h.
HMEC	1550	Human Ecology Professions... 1 s.h.	
FNUT	1553	Food Science & Mgmt. Principles .....	
		3 s.h.	
FNUT	1553L	Food Science Lab .....	1 s.h.
HMGT	2603	Hospitality Managerial Acct. (P).....	
		4 s.h.	
FNUT	2612	Food Systems (P) .....	3 s.h.
FNUT	2612L	Food Systems Lab (P).....	2 s.h.
HMGT	2622	Hotel Management.....	3 s.h.
HMGT	2691	Hospitality Coop. Work Exper. (P) .....	
		3 s.h.	
HMGT	3719	Facilities Management (P).....	3 s.h.
CHFM	3731	Individual & Family Develop (P) .....	
		3 s.h.	
HMGT	3745	Hospitality Marketing & Sales (P).....	
		4 s.h.	
HMGT	4804	Hospitality Law & Ethics (P) ..	3 s.h.
HMEC	4836	Internship .....	6 s.h.
HMEC	4890	Communication of Contemporary Issues (P) .....	
		3 s.h.	
HMGT	4896	Hospitality Operations Mgmt. (CA) .....	
		3 s.h.	

**Concentration (or Minor) & Elective 24 s.h**

A. Concentration & Electives..... 24 s.h. (12 s.h. from upper-division courses in HMGT, FNUT, HMEC 6 s.h. upper-division electives, 6 s.h. electives) or

B. Minor & Electives .....

(Must include 18 upper-division hours)

**MERCHANDISING: FASHION AND INTERIORS**

The merchandising: fashion and interiors program prepares students for a broad range of careers related to the fashion and interiors industries. Merchandising is a specialized management function within these industries. Graduates find employment in manufacturing, marketing, and distribution of apparel, accessories, personal care products, home furnishings, home interiors goods, and other housing related products. In both fashion and interiors merchandising positions, planning, development and presentation of product lines for identified target markets with regard to price, assortment, style, and timing are the main activities. Some of the possible work activities merchandising graduates may find themselves engaged in are: attending market functions where styles and trends in the industry are showcased; making seasonal visits to wholesale markets, e.g., New York, Chicago, Los Angeles, High Point and Atlanta; managing the major functions of merchandising, i.e., analyzing influences on market trends, managing the movement of merchandise from concept to production to distribution; research-

ing and developing new products; planning and designing visual displays of merchandise; maintaining a showroom in a market center; or selling to clientele at trade shows or at their own location.

Students may also earn a minor, take additional courses in marketing or another academic area related to their career choice, or they may take additional courses in merchandising and human ecology. Students may study abroad or in New York City. New York City study options include the Fashion Institute of Technology, the Marist College internship program or the Kent State University Studio Experience.

**Fashion Institute of Technology  
Visiting-Student Option**

Students may attend The Fashion Institute of Technology in New York City (one of the State Universities of New York) for one year as a visiting student. They may take courses to complement their studies at YSU or complete a program that leads to an associate degree in: accessories design, advertising and marketing communications, advertising design, fashion design, fashion merchandising management, manufacturing management: apparel products and related industries, textile development and marketing or textile/surface design. Students must complete 60 semester hours and the general education requirements, have at least a 3.0 GPA, and follow a specified program of study at YSU before entering the FIT program. Upon completion of the baccalaureate degree (B.S.A.S.) requirements at YSU, those students who pursued the degree option will be awarded an Associate of Applied Sciences (A.A.S.) from the Fashion Institute of Technology. Students who plan to participate in the FIT visiting-student program should notify their advisor as soon as possible so that the appropriate courses are completed to qualify for admission as a visiting student. For more information on FIT programs, visit the FIT web site: <http://www.fitnyc.edu>.

**Learning Outcomes**

At the completion of the merchandising: fashion and interiors program, graduates will be able to

- Analyze and appropriately apply principles of merchandising and product development to solve manufacturing and marketing problems.
- Interpret needs and wants of target customers.
- Develop a financially sound product line.
- Integrate and apply merchandising, principles in workplace settings.
- Evaluate product quality and serviceability.

**Fashion Merchandising Curriculum**

**ESSENTIAL SKILLS**

ENGL	1550	Writing 1.....	3 s.h.
ENGL	1551	Writing 2.....	3 s.h.
CMST	1545	Communication Foundations.....	3 s.h.

MATH	2623	Survey of Math (P).....	3 s.h.
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**SOCIAL AND PERSONAL AWARENESS (SPA)**

SPA	Elective.....	3 s.h.
SPA	Elective.....	3 s.h.

**ART & HUMANITIES (AH)**

ART	1540	Masterpieces of World Art.....	3 s.h.
or			
ART	1541/2	Survey of Art History 1 or 2 ...	3 s.h.
PHIL	2625	Introduction to Professional Ethics.....	3 s.h.
or			
PHIL	2668	Business Ethics.....	3 s.h.

**SOCIAL SCIENCE (SS)**

SOC	1500	Introduction to Sociology.....	3 s.h.
PSYC	1560	General Psychology.....	3 s.h.
ECON	2610	Principles 1.....	3 s.h.

**NATURAL SCIENCE (NS)**

CHEM	1500/L	Chemistry in Modern Living.....	4 s.h.
or			
CHEM	1505/L	Allied Health Chemistry.....	3 s.h.
or			
CHEM	1515/L	General Chemistry.....	3 s.h.
NS	Elective.....		3 s.h.

**REQUIRED SUPPORT COURSES**

CSIS	1514	Business Computer Systems ...	3 s.h.
MGT	2604	Legal Environment of Business.....	3 s.h.
**MKTG	3703	Marketing Concepts/Practices (P).....	3 s.h.
**MKTG	3709	Retail Marketing (P).....	3 s.h.
**MGT	3725	Fundamentals of Management (P).....	3 s.h.
ACCT	1503	Elementary Accounting.....	3 s.h.
or			
ACCT	2602	Financial Accounting.....	3 s.h.

**Total Hours** ..... 58 s. h

ELECTIVES OR MINOR ..... 19-20 s.h.  
9- MUST BE UPPER DIVISION

**MAJOR REQUIREMENTS**

(Must have a C or better, Courses cannot be taken Credit/No Credit)

HMEC	1550	Human Ecology Professions ...	1 s.h.
FNUT	1543	Personal Nutrition.....	1 s.h.
or			
FNUT	1551	Normal Nutrition (Also counts as SPA).....	3 s.h.
MRCH	2625	The World of Fashion.....	3 s.h.
MRCH	3705	Textiles (P).....	3 s.h.
MRCH	3713	Merchandise Buying (P).....	3 s.h.
CHFAM	3731	Indiv. & Family Development (P).....	3 s.h.
*HMEC	4836	Internship (P).....	3 s.h.
MRCH	4880	Merchandise Mgmt. (P) CA.....	3 s.h.

HMEC	4890	Comm. Contemporary Issues (P) .....	3 s.h.
MRCH	3730	Soc/Psych. Clothing (P).....	3 s.h.
or			
MRCH	3764	Family Housing & Technology (P).....	3 s.h.
MRCH	4877	History of Fashion .....	3 s.h.
OR			
MRCH	4879	History of Furnishings & Interiors(P) .....	3 s.h.
Choose THREE –Lower Division Courses (min 9 s.h.)			
MRCH	1506	Clothing & Image Development .....	3 s.h.
MRCH	1508	Apparel Production.....	3 s.h.
MRCH	1510	Apparel Evaluation .....	3 s.h.
MRCH	2661	Fundamentals of Interior Design.....	3 s.h.
MRCH	2663	Materials and Methods .....	3 s.h.
MRCH	2662	Computer Appl. Housing & Inter.....	3 s.h.
or			
DDT	1503	Auto CAD 1 .....	
Choose THREE –Upper Division Courses (min 9 s.h.)			
MRCH	3740L	Computer App. Fashion and Textiles (P).....	3 s.h.
MRCH	3742	Applied Fabric Design (P) .....	3 s.h.
MRCH	3745	Product Development (P) .....	3 s.h.
MRCH	3760	Visual Merchandising (P) .....	3 s.h.
MRCH	3795	Fashion Tour .....	1-3 s.h.
MRCH	4870	Global Fashion Economy (P)....	3 s.h.
HMEC	4875	Directed Individual Study (P).....	1-3 s.h.
<b>Total Program Hours .....</b>			<b>124 s.h.</b>

\* Electives must include 6 s.h. of upper division (3700-4899) level courses  
(P) Course has prerequisites

## EARLY CHILDHOOD ASSOCIATE/PRE-K

This associate degree leads to Associate Licensure in Pre-Kindergarten Education. Graduates are qualified to teach in, or manage, licensed daycare and preschool programs, and are eligible for associate pre-kindergarten teacher licensure after passing the PreK Praxis. Most of the coursework can be applied toward a bachelor’s degree in family and consumer science or early childhood education. Within the framework of their required courses, students complete 300 hours of clinical/field work. This program normally requires five semesters of study averaging 15 hours per semester.

### Learning Outcomes

At the completion of the prekindergarten program, graduates will be able to

- Design and implement developmentally appropriate lessons.
- Involve families in learning

- Assess a child’s development in five developmental domains.
- Recognize and use ethical guidelines and professional standards related to early childhood practice.

## Curriculum

### General Education Requirements

ENGL	1550	Writing 1 .....	3 s.h.
ENGL	1551	Writing 2 .....	3 s.h.
CMST	1545	Communication Foundations.....	3 s.h.
PSYC	1560	General Psychology .....	3 s.h.

### ARTS & HUMANITIES

(1 approved elective) .....			
SOC	1500	Introduction to Sociology.....	3 s.h.
PSYC	3755	Child Development.....	3 s.h.

### Major Courses

CHFM	1514	Introduction to Early Childhood Education.....	3 s.h.
CHFM	1530	Infants and Toddlers: Development and Care.....	3 s.h.
HMEC	1550	Human Ecology Professions... 1 s.h.	
HPES	2624	PE for Children in Early Childhood Settings.....	3 s.h.
SPED	2630	Intervention Strategies with Special Needs Children in Early Childhood .....	3 s.h.
CHFM	2633	Early Childhood: Integrating Development and Education..	3 s.h.
CHFM	2650	Introduction to Assessment of Young Children .....	3 s.h.
CHFM	2664	Managing Classroom Behavior and Staff Relationships in Early Childhood Settings .....	3 s.h.
CHFM	2675	Integrated Curriculum for Prekindergarten.....	3 s.h.
MUED	3722	Music in Early Childhood .....	3 s.h.
CHFM	3733L	Practicum in Preprimary Settings.....	3 s.h.
ART	3737	Prek-4 Visual Arts Education .	3 s.h.
CHFM	3750	Parent and Professional Relationships.....	3 s.h.
CHFM	3770	Wellness During the Early Childhood Years .....	3 s.h.
CHFM	3790	Directed Practice in PreK Education.....	4 s.h.
CHFM	3790S	Directed Practice Seminar .....	2 s.h.

## DEPARTMENT OF HUMAN PERFORMANCE AND EXERCISE SCIENCE

330-941-3654

*Professors Bosso, Matanin, Walker (Chair); Associate Professors Mullins, Pintar; Assistant Professors Knutson, Smith, Tessmer.*

The goals of the Department of Human Performance and Exercise Science are to improve motor performance, develop health related lifetime fitness

for the university community, and prepare students for related professions. These goals are achieved by promoting and integrating scientific research related to human performance and exercise science as presented through focused programs of study and outreach services.

Students interested in majoring in exercise science, physical education, or health education should consult with an advisor in the Department of Human Performance and Exercise Science.

### Important Notice

Finger printing, a criminal background check, and drug testing may be required as a condition for working with a variety of sites used by programs offered in this department. Some sites used by programs offered in the Department require that a person have no felony convictions and have passed a drug test within the past year. Any student unable to meet these site requirements may not be able to complete their degree from the Department. If you have questions concerning these requirements, please see an advisor in the Department.

### General Education Courses

The Department offers one course that satisfies general education requirements. HPES 1500—*Physical Activity Core Concepts* may be applied in the Social and Personal Awareness domain. Please note that in order for HPES 1500 to count in the SPA domain students must take two HPES activity courses in addition to HPES 1500. These courses do not have to be taken concurrently.

### Elective Courses

Activity classes may count for general education credit and may count as elective credit. Please refer to the paragraph above for general education information. For a complete listing of activity courses, see the activity course listings in the online Bulletin.

It is suggested that all students confer with their physician prior to enrolling in activity classes. Students with physical disabilities are urged to see their physician, or the nurse in the Student Health Services office, to review activities which might be appropriate. Most activity classes can be adapted to one's personal abilities and students are encouraged to discuss this with the instructor. Students with disabilities are encouraged to focus on their physical abilities and consider the social and physical benefits that accrue from physical activity. If a disabled student finds only one appropriate activity class, permission may be requested from the department chair (Beeghly Center 307) to take the same class twice for credit.

Veterans who have served at least one full year can receive physical education credit for service. This is detailed on page 20 in this *Bulletin*.

Members of the men's or women's varsity teams may receive physical activity credit through enrollment in HPES 1549, varsity competition. This class may be repeated one time per year for each sport in which an athlete is participating.

Students must provide their own clothing for activity classes, and this attire must be appropriate to the activity. In addition, students who wish to use the locker facilities, must bring their own lock and towel for use during activity classes. Most of the other equipment for physical education classes is supplied by the department (an asterisk beside the catalog number indicates a lab fee will be charged).

### EXERCISE SCIENCE—B.S. IN APPLIED SCIENCE

The Department of Human Performance and Exercise Science offers a Bachelor of Science in Applied Science degree with a major in exercise science. This program prepares students for certification through the American College of Sports Medicine (ACSM) as health/fitness instructors. As such, graduates will be able to design safe and effective exercise prescriptions, and conduct individual exercise programs, fitness testing, and health education for low-to moderate-risk individuals, individuals with controlled diseases, and individuals in special populations (e.g. pregnancy, hypertension, diabetes mellitus). Graduates are employed in a wide variety of settings that include: public and private fitness clubs, hospital based wellness programs, corporate wellness programs, strength and conditioning, and clinical rehabilitation programs such as cardiac rehabilitation. In addition, the program serves as a strong foundation for students wishing to pursue advanced degrees in the field of exercise science or enter professional schools such as physical or occupational therapy.

### Learning Outcomes

The student learning outcomes for the B.S.A.S. in exercise science are as follows:

- Students will accurately perform fitness evaluations for both healthy and clinical populations.
- Students will demonstrate the ability to teach fitness skills.
- Students will demonstrate the ability to develop an exercise prescription tailored to healthy and clinical populations.
- Students will display professional knowledge, skills and abilities during their internship.

### Admission

Application forms and other information for formal admittance to the Department of Human Performance and Exercise Science may be obtained in the department office, Room 307, Beeghly Center.

This program can be completed in eight semesters if students average 16 hours per semester.

For individual semester advisement, including general education, minor, and additional requirements, see assigned departmental advisor.

The following are HPES courses required in the major for this degree:

**HPES:** 1559, 1560, 1595, 2605, 2625, 3700, 3705, 3710, 3710L, 3720, 3720L, 3730, 3760, 4805, 4810, and 4880.

## PHYSICAL EDUCATION—B.S. IN EDUCATION

### Professional Teacher Education Program

Youngstown State University is fully approved by the Ohio State Department of Education for the preparation of physical education teachers for public schools. The degree of Bachelor of Science in Education with a major in physical education leads to a license in multi-age education.

Those students seeking upper-division admission in physical education must have achieved Beeghly College of Education upper-division status and must supply the Department with written verification of this status. For more information concerning this requirement and for formal admission to the Department of Human Performance and Exercise Science please contact the main office in Room 307, Beeghly Center.

### Learning Outcomes

The student learning outcomes for the B.S. in Education in physical education are as follows:

- Students know and apply discipline-specific scientific and theoretical concepts critical to the development of educated individuals.
- Students demonstrate the ability to: organize content for student/client learning, create an environment for student/client learning, extend student/client comprehension, and display professionalism.
- Students are reflective practitioners.
- Students understand and use varied assessments to inform instruction, and to evaluate and ensure student/client learning

### Curriculum Guide

For individual semester advisement, including general education requirements, students should see their assigned departmental advisor. It is also recommended that, once students have applied for and been accepted to upper division in the Beeghly College of Education, they see an advisor in the BCOE for individual advisement related to education courses. The physical education program can be completed in nine semesters if students average 15 hours per semester.

The following are HPES and Beeghly College of Education (BCOE) courses required in the physical education major for this degree:

**HPES:** 1506, 1567, 1573L, 1574, 1575, 1577, 1579, 1589, 1595, 2605, 2610, 2628, 2661, 2672L, 3766L, 3767, 3780, 4808, 4851, 4876, 4878, 4895, 4899, 4899L

**BCOE:** FOUN 1501, SPED 2630, PSYC 3709, EDTC 3771, TERG 3710, FOUND 3708, MULT 4807, SED 4846, SED 4842A

## HEALTH EDUCATION – B.S. IN EDUCATION

### Professional Teacher Education Program

Youngstown State University is fully approved by the Ohio State Department of Education for the preparation of health education teachers for public schools. The degree of Bachelor of Science in Education with a major in health education leads to a license in multi-age education.

Those students seeking upper-division admission in health education must have achieved Beeghly College of Education upper-division status and must supply the Department with written verification of this status. For more information concerning this requirement and for formal admission to the Department of Human Performance and Exercise Science, please contact the main office in Room 307, Beeghly Center.

### Learning outcomes

The student learning outcomes for the B.S. in Education in health education are as follows:

- Students know and apply discipline-specific scientific and theoretical concepts critical to the development of educated individuals
- Students demonstrate the ability to: organize content for student/client learning, create an environment for student/client learning, extend student/client comprehension, and display professionalism.
- Students are reflective practitioners.
- Students understand and use varied assessments to inform instruction, and to evaluate and ensure student/client learning.

### Curriculum Guide

For individual semester advisement, including general education requirements, students should see their assigned departmental advisor. It is also recommended that, once students have applied for and been accepted to upper division in the Beeghly College of Education, they see an advisor in the BCOE for individual advisement related to education courses. The health education program can be completed in nine semesters if students average 16 hours per semester.

The following are HPES and Beeghly College of Education (BCOE) courses required in the health education major for this degree:

MATC 1501, HPES 2605, HPES 3702, HPES 3715, HPES 3716, HPES 4808, HPES 4888, HPES 4899, HPES 4899L, PHLT 2692, PHLT 3731, PHLT 3757, PHLT 3791; AHLT 5807

BCOE: FOUN 1501, SPED 2630, PSYC 3709, EDTC 3771, TERG 3710, FOUND 3708, FOUN 3710, SED 3706, MULT 4807, SED 4845, SED 4842A

Students choosing to double major in physical education and health education should see an advisor in the Department to determine the best sequence to follow to complete all requirements for both degrees in the least amount of time possible.

### PHYSICAL EDUCATION—BACHELOR OF ARTS

This program is intended for students seeking careers in recreation or sport related commercial fields. The Bachelor of Arts degree does not offer teacher licensure. For teacher licensure information please see the B.S. in Education section above.

#### Learning Outcomes

The student learning outcomes for the A.B. in physical education are as follows:

- Students will demonstrate an understanding of physical education content and disciplinary concepts related to the development of a physically educated person.
- Students will demonstrate an ability to facilitate competent motor skill performance.
- Students will demonstrate the ability to successfully intern with an organization, other than a public or private school, associated in some way with the field of physical education.

#### Admission

Application forms and other information for formal admittance to the Department of Human Performance and Exercise Science may be obtained in the department office, Room 307, Beeghly Center. This program can be completed in eight semesters if students average 16 hours per semester.

For individual semester advisement, including general education and minor requirements, see assigned departmental advisor.

The following are HPES courses required in the major for this degree:

HPES: 1559, 1560, 1577, 1589, 1595, 2605, 2610, 2618, 2661, 2672, 3766, 3767, 4808, 4851, 4884, 4899, 4899L, 4895.

## DEPARTMENT OF MILITARY SCIENCE

330-941-3205

*Assistant Professors Williams (Chair), and Instructors Ericksen, and Billett.*

Army ROTC has served the University and the nation since 1949 by preparing students for service as professional officers in the United States Army. The military science program at YSU offers a four year course of study that adds practical management training and leadership experience to students' chosen degrees.

ROTC expands a student's education by providing leadership and management experience. This training helps students develop self-discipline, physical stamina, and poise—qualities basic to success in any worthwhile career. Students genuinely interested in military service can earn commission as second lieutenants in the U.S. Army (which includes the Active Army, Army National Guard, and Army Reserve) while earning their college degrees. Through ROTC, the Army gains officers with diverse educational backgrounds and contemporary ideas. At the same time, ROTC graduates have the chance to use their training in positions of leadership, and they enable the Army to relate to the thoughts and feelings of our ever-changing society. At present, over 80 percent of all second lieutenants for the U.S. Army come from ROTC programs nationwide. Students who have career goals outside the Army that require leadership or managerial skills, with interests in national defense structure, and who wish to explore the benefits of the Army are encouraged to enroll in the introductory lower-division military science courses. These courses can be applied as elective credit toward graduation. **Participation in these classes is voluntary and carries no military obligation.**

Army ROTC is one of the programs at YSU that provides leadership training. In Army ROTC, students quickly gain the confidence and self-discipline necessary to succeed in college. As they progress, students acquire skills and experience in taking charge of activities, setting goals, managing people and resources, and making decisions in demanding circumstances. When they complete the Army ROTC program and graduate from YSU, students will have gained both leadership and academic credentials necessary to take on responsibility as Army officers and/or step into corporate America. A minor in Military Science is available in consultation with the academic major advisor and the Military Science Department.

#### Four-year Program

The four-year Army ROTC program is divided into two parts: the Basic Course and the Advanced Course.



The Basic Course is usually taken during the freshman and sophomore years: MSCI 1510, MSCI 1520, MSCI 2610, and MSCI 2620. No military commitment is incurred during this time. After completing the Basic Course, students who have demonstrated officer potential and meet physical and scholastic standards are eligible to enroll in the Advanced Course. The Advanced Course is normally taken during the junior and senior years of college: MSCI 3710, MSCI 3720, MSCI 4810, and MSCI 4820.

Advanced Course cadets attend a four-week ROTC Leader Development and Assessment Course (LDAC) (MSCI 3740) during the summer between their MS III and MS IV (junior and senior) years. In this course students put into practice the leadership and tactical skills they have acquired in the classroom.

All students in the Advanced Course receive uniforms, pay for the Leader Development and Assessment Course (LDAC), and a living allowance each school year.

Before entering the Advanced Course, an individual signs a contract that certifies an understanding of the service obligation. This obligation may be fulfilled in a variety of ways depending on the individual's personal preference and the needs of the Army at the time of commissioning.

Scholarship graduates incur an eight-year obligation and are required to serve one of the following obligations: two years on active duty and four years in an Army Reserve or National Guard unit then two years in the Individual Ready Reserve (IRR); or three years on active duty and five years in the IRR; or four years on active duty and four years in the IRR; or eight years in Army Reserve or National Guard unit.

Nonscholarship graduates are required to serve one of the following obligations: two years on active duty and six years in the IRR; or three years on active duty and five years in the IRR; or four years on active duty and four years in the IRR; or six years in an Army Reserve or National Guard unit and two years in the IRR; or eight years in the IRR.

All commissionees incur a service obligation of eight years with service being either full time active duty or part time in the reserves. The mix of active and reserve duty is determined by the needs of the Army, the cadets performance and the type of contract the cadet signed (scholarship or nonscholarship, guaranteed Reserve Forces Duty or participation in the Simultaneous Membership Program of the Army Reserve/National Guard).

## Two-year Program

The two-year program permits students who attended a junior college, transfer students, or those who did not take Military Science Basic Courses during their first two years of school, and students entering a two-year post graduate course of study to enter the ROTC Advance Course. Students can

take advantage of this opportunity by successfully completing a paid four-week ROTC Leaders Training Course (MSCI 2640), usually after their sophomore year, and enrolling in the ROTC Advanced Course, normally in their junior year. Except for this camp, the requirements for and obligations incurred in the two- and four-year programs are the same.

All students in the Advanced Course receive uniforms, pay for the Leader Development and Assessment Course (LDAC), and a living allowance each school year.

Before entering the Advanced Course, an individual signs a contract that certifies an understanding of the service obligation. This obligation may be fulfilled in a variety of ways depending on the individual's personal preference and the needs of the Army at the time of commissioning.

Scholarship graduates incur an eight-year obligation and are required to serve one of the following obligations: two years on active duty and four years in an Army Reserve or National Guard unit then two years in the Individual Ready Reserve (IRR); or three years on active duty and five years in the IRR; or four years on active duty and four years in the IRR; or eight years in Army Reserve or National Guard unit.

Nonscholarship graduates are required to serve one of the following obligations: two years on active duty and six years in the IRR; or three years on active duty and five years in the IRR; or four years on active duty and four years in the IRR; or six years in an Army Reserve or National Guard unit and two years in the IRR; or eight years in the IRR.

All commissionees incur a service obligation of eight years with service being either full time active duty or part time in the reserves. The mix of active and reserve duty is determined by the needs of the Army, the cadets performance and the type of contract the cadet signed (scholarship or nonscholarship, guaranteed Reserve Forces Duty or participation in the Simultaneous Membership Program of the Army Reserve/National Guard).

## Opportunities for Veterans/Junior ROTC Graduates

Because military experience may serve as total credit for the ROTC Basic Course, most veterans and students with three years of Junior ROTC (high school) are eligible for the ROTC Advanced Course without further instruction.

## Army ROTC/Army Reserve/Army National Guard

Students can further broaden their college experience and earn extra income by combining ROTC with service in the Army Reserve or Army National Guard through the two-year Simultaneous Membership Program (SMP). If students qualify, and SMP vacancies are available, they may join the Army Reserve or Army National Guard unit as officer trainees and

simultaneously enroll in the Army ROTC Advanced Course. In addition to an annual subsistence allowance received for Advanced ROTC, SMP participants are paid for their Reserve or Guard drills and summer training sessions.

### Army Nurse Corps

To qualify for appointment in the Army Nurse Corps, the student must complete the ROTC program and obtain a baccalaureate degree in nursing. Students who meet all professional requirements will serve as Army nurses on Active Duty, in the Army National Guard, or in the Army Reserve.

### Scholarship Programs

See ROTC Military Science (Gold Bar) Scholarships and Army ROTC Scholarships at [www.yсу.edu/finaid](http://www.yсу.edu/finaid).

### Leadership Laboratory

A practical exercise period for both Basic and Advanced courses. Provides hands-on experience in practical military skills and the development of essential characteristics of leadership through progressive evaluation and counseling, MSCI 1530L, MSCI 2630L, MSCI 3730L and MSCI 4830L.

### Extra-Curricular Activities

Cadets are given the opportunity to participate in numerous extra-curricular activities during the school year. During fall semester, cadets can try out for the Ranger Challenge Team, which competes each October against 40 other universities in Ohio, Kentucky, Indiana, Michigan, and Tennessee. The weekend competition takes place at Fort Knox, Kentucky. A Ranger Challenge Team consists of 9 primary members and one alternate and is coached by a cadre member. The competition consists of several events to include basic rifle marksmanship, one rope bridge, land navigation, 10K forced march, Army Physical Fitness Test, obstacle course, and typically an event or two that are not known until the teams arrive.

Additionally, cadets will take part in a field training exercise at Camp Ravenna Joint Training Center, in Ravenna, Ohio and attend a military dining-in on the YSU campus.

During spring semester, cadets will fire on a rifle range, attend a military ball, and take part in a joint field training exercise with Kent State, John Carroll, and Akron universities as well as Mount Union College. Seniors only (MSIV-level cadets) participate in a battle analysis which consists of a battle analysis briefing and a two-day tour of Gettysburg National Battlefield.

Other optional activities that cadets can participate in include the ROTC Cannon Crew which is a group of cadets that support YSU football games by firing a miniature cannon and performing push-ups after each Penguin touchdown at home football games.

The Military Science Department also sponsors several tailgates during the football season that require cadet involvement. Numerous cadets also take part in performing color guards for various on- and off-campus events in support of the University and local community.

### Optional Summer or Winter Break Training

An order of merit list is maintained between the three partner ROTC schools (Kent State, Youngstown State, and Mount Union University) to determine the top cadets who are eligible for limited slots in various US Army training schools during the summer and winter break. These schools can include and are not limited to the US Army Airborne School, Air Assault School, Scuba School, Robin Sage, Northern Warfare, Engineer SAPPER school, Helicopter Training Program, Summer Nurse Training Program, and others (see Military Science Department for a complete listing).

## DEPARTMENT OF NURSING

330-941-3293

*Professors Hoyson (Chair), Mosca, Schuster; Associate Professors Aurilio, Bosley, Serroka, Wagner, Wood; Assistant Professors Lisko, O'Dell; Instructors Daniels, Janosik, McManus, Rendano, Roche, Shields, Shortreed, Thompson, and Weaver.*

The Department of Nursing offers a Bachelor of Science in Nursing (BSN) degree, a Bachelor of Science in Applied Science (BSAS) degree in Nursing Home Administration, and a School Nurse Licensure Program. Graduate programs leading to a Master of Science in Nursing (MSN) degree are also available. Refer to the *Graduate Bulletin* for details.

### Bachelor of Science in Nursing Program

Two programs are offered—a generic (pre-licensure) and RN completion program. The generic program is a four-year program for new or transfer students entering YSU without a previous degree or diploma in nursing. The generic program prepares students for entry level professional nursing. Graduates are eligible to sit for the NCLEX examination for licensure as a Registered Nurse.

The RN/BSN Completion Program is offered for students who are currently licensed as registered nurses and are returning to YSU to complete requirements for a baccalaureate degree. The RN/BSN Completion Program takes two or more academic years on a part-time basis, depending on the student's academic background.

### Accreditation

The BSN program is approved by the Ohio Board of Nursing (17 S. High Street Suite 400 Columbus, Ohio 43125 phone: 614-466-3947) and is accredited by the National League for Nursing Accrediting Commission (3343 Peachtree Road NE, Suite 500, Atlanta, GA 30326 phone: 404-975-5000).

## Admission Requirements for the Bachelor of Science in Nursing Program

Admission into the BSN degree program is restricted. Generic students complete admission requirements as pre-nursing majors before formal admission to the BSN program. Admission to the University provides these students with the opportunity to complete a core of pre-nursing courses after which they may apply and compete for a position in the Nursing Program. First-time freshman students who graduate in the top 20% of their high school class and score a Composite ACT of 24 or an equivalent combined SAT score of 1650 (new) are guaranteed a position in the Nursing Program. To maintain this guaranteed position in the Nursing Program, these students must maintain a pre-nursing GPA of 3.0 with at least a "C" in all required pre-nursing courses (with no course repetitions). In addition to these grade requirements, all other admission requirements must be met. Students who do not meet the criteria for maintaining their guaranteed position, but meet the general requirements for admission into the Nursing Program, will be considered for fall admission with all other nursing applicants. Admission for the generic BSN program is held only once a year for Fall registration. Students who are scheduled to complete all admission requirements by the end of spring semester are eligible to apply for fall semester admission. Students who are scheduled to complete all admission requirements by the end of summer semester are eligible to apply for *late admission*. Late admission applicants will be considered if, and only if, there are slots available after all earlier submitted applicants have been considered.

Students who are currently registered nurses and seeking BSN completion requirements are admitted on an individual basis. RN admission is held any semester depending on their transferable prerequisites

Applicants for the BSN degree program must meet the following minimum requirements:

1. General University pre-college requirements for the Bachelor of Science degree.
2. Completion of required pre-nursing courses with a grade of "C" or better and a cumulative GPA in these courses of 2.80.
3. A cumulative GPA of 2.5 in all college course work.
4. Evidence of current CPR for Health Care Provider Certification.
5. Completed physical examination and immunization requirements.
6. Fingerprinting by the YSU Police Department for BCI&I and FBI criminal records check.
7. Photocopy of valid YSU ID.
8. YSU Student Conduct Review.

Registered nurses in the RN/BSN-Completion Program must meet all of the above requirements in addition to being a registered nurse with a current license to practice in Ohio.

### Required pre-nursing courses for generic BSN students include:

BIOL 1551/L, 1552/L  
 CHEM 1505/L and 1506/L  
 PSYC 1560 and 3758  
 ENGL 1550 and 1551  
 SOC 1500  
 MATH 2625

Admission to the University, meeting minimal program admission requirements, and completion of pre-nursing courses does not guarantee admission into the nursing program. Pre-nursing students are encouraged to seek advisement on a regular basis from the pre-nursing advisor in the Dr. Dominic A. and Helen M. Bitonte College of Health and Human Services.

### Course Enrollment/Scheduling

All nursing courses except NURSG 2610 are available only to students formally admitted into the BSN program. Courses identified in the *Schedule of Classes* for RNs only are limited to registered nurses enrolled in the RN/BSN Completion Program.

Many nursing courses include an off-campus clinical component. These courses are designated on the curriculum list with semester hours in parentheses. Example: NURS 3743...5(3+2). This course has three semester hours of lecture and two semester hours of clinical. Generally, one semester hour of credit is earned for each three clock hours of on-campus laboratory skills instruction and for each three off-campus clock hours of clinical instruction. The exceptions are NURS 3741 clinical, where it is 2.7 clock hours per semester hour and NURS 4853 clinical, where it is 4 clock hours per semester hour. Personal responsibility for transportation is required for travel to off-campus clinical sites.

Malpractice insurance is required for all clinical nursing experiences and is provided by the University when the student registers for the specified courses. Some risk is inherent to nursing students during their clinical education, but precautions are taken to minimize this risk.

### Academic Requirements for the Bachelor of Science in Nursing Degree

The generic BSN program consists of 127 total semester hours; 71 semester hours are nursing courses and include 90 on-campus lab hours and 960 clinical contact hours.

Students are responsible for adhering to the prescribed BSN curriculum sequence including, but not limited to, course prerequisites and mandated

sequencing of nursing courses. It is also the students' responsibility to see that all graduation requirements for the BSN degree are satisfied. It is recommended that students frequently seek guidance from their nursing advisor. A copy of the BSN curriculum is available from the Department of Nursing. This program can be completed in eight semesters if students adhere to a curriculum schedule of 14-17 credit hours per semester.

After admission to the program, a grade of "C" or better is mandatory for all nursing courses, required non-nursing support courses, required elective, and general education hours. Only one nursing or one non-nursing support course (BIOL 1560/L Microbiology or FNUT 1551 Nutrition) may be repeated. A repeated course must be successfully completed with a grade of "A," "B," or "C" and all incompletes must be removed before progressing in the nursing curriculum. A grade of less than "C" in a second nursing or required non-nursing support course will result in permanent removal from the nursing program.

A Bachelor of Science in Nursing degree will be granted to the student who has completed the required baccalaureate nursing curriculum with a minimum grade point average of 2.00.

The Department of Nursing reserves the right to remove a student from the program when that student's performance in any nursing course is deemed to be unsafe as characterized by dangerous, inappropriate, irresponsible or unethical behavior. The Department reserves the right to dismiss a student who, for legal, ethical, academic, emotional, or physical reasons, cannot be advised to continue in the program.

Current immunizations, CPR for Health Care Professionals certification, and annual fingerprinting by the Youngstown State University Police Department for BCI&I and FBI criminal background checks are required of all nursing students. If the criminal record check reveals an egregious felony, the Ohio Board of Nursing will not consider the applicant for licensure. Please refer to the Ohio Board of Nursing website, <http://www.nursing.ohio.gov/> for additional information. Some lesser offenses may impede student placement at a clinical site, which will affect the student's ability to progress in the program. Students must adhere to a dress code which includes the wearing of specific nurse's uniform for nursing clinical courses. All policies/requirements stated in this *Bulletin* and the *BSN Undergraduate Handbook* must be adhered to by students throughout the program.

**Learning Outcomes**

**Baccalaureate Nursing Program Objectives/Competencies**

The integration of nursing theory, clinical practice, and critical thinking serves as the foundation for the program and upon completion of the program, the graduate is able to:

- Use the American Nurses Association Standards of Care when providing care for individuals, families, groups, and communities across the life span.
- Use critical thinking in decision-making and problem-solving while adhering to the Professional Code of Ethics for Nurses.
- Use effective and appropriate interpersonal communications and information technology.
- Apply theories and research findings from nursing and other disciplines to provide evidence-based, clinically, competent care.
- Provide culturally sensitive care and health education to individuals, families, groups, and communities.
- Demonstrate leadership and apply management skills that promote accountability, legal and ethical conduct, and maintenance of standards of care.
- Collaborate with the interdisciplinary health-care team in planning, coordinating, and evaluating outcomes for quality cost-effective care and continuous improvement of the healthcare system.
- Manage human and material resources to provide access to healthcare for individuals, families, groups, and communities.
- Advocate for public policy to provide and protect the health of the public.
- Demonstrate commitment to life-long learning and service to the nursing profession.

**Curriculum leading to the Bachelor of Science in Nursing Degree for Generic Students (Non-RN)**

**FIRST YEAR**

**FIRST SEMESTER (Pre-Nursing)**

<b>Courses</b>	<b>Semester Hrs.</b>
BIOL 1551/L Anatomy & Physiology .....	4 (3+1)
CHEM 1505/L Chemistry 1 .....	3 (2+1)
ENGL 1550 Writing 1 .....	3
PSYC 1560 Gen. Psychology .....	3
MATH 2625 Mathematical Literacy & Critical Reasoning.....	4
	<u>17</u>

**SECOND SEMESTER (Pre-Nursing)**

<b>Courses</b>	<b>Semester Hrs.</b>
BIOL 1552/L Anatomy & Physiology .....	4 (3+1)
PSYC 3758 Life Span Development.....	3
ENGL 1551 Writing II .....	3
SOC 1500 Sociology .....	3
CHEM 1506/L Chemistry 2 .....	3 (2+1)
	<u>16</u>

**SECOND YEAR**

**FIRST SEMESTER (Nursing Majors)**

<b>Courses</b>	<b>Semester Hrs.</b>
BIOL 1560/L Microbiology.....	3 (2+1)
NURS 2610 Contemporary .....	3
NURS 2643/L Health Assessment.....	4 (3+1)
NURS 2646 Pathophysiology .....	4
	<b>14</b>

**SECOND SEMESTER**

<b>Courses</b>	<b>Semester Hrs.</b>
FNUT 1551 Nutrition.....	3
CMST 1545 Communications.....	3
NURS 2650 Pharmacology.....	3
NURS 2645/L Professional Nursing 1 .....	8 (3+5)
	<b>17</b>

**THIRD YEAR**

**FIRST SEMESTER**

<b>Courses</b>	<b>Semester Hrs.</b>
NURS 3741/L Prof. Nursing 2 .....	6 (3+3)
NURS 3710/L Nursing in the Community ....	5 (3+2)
Arts & Humanities.....	3
Elective.....	2
	<b>16</b>

**SECOND SEMESTER**

<b>Courses</b>	<b>Semester Hrs.</b>
NURS 3743/L Prof. Nursing 3.....	5 (3+2)
NURS 3749 Nursing Research.....	3
*NURS 3731/L Childbearing, Family & .....	5 (3+2)
Women's Health	
Arts & Humanities (AH) GER.....	3
	<b>16</b>

**FOURTH YEAR**

**FIRST SEMESTER**

<b>Courses</b>	<b>Semester Hrs.</b>
*NURS 4840/L Complex Care.....	5 (3+2)
*NURS 4832/L Nursing Care of Children.....	5 (3+2)
NURS 4844 Com. Health Nursing.....	3
Elective.....	3
	<b>16</b>

**SECOND SEMESTER**

<b>Courses</b>	<b>Semester Hrs.</b>
*NURS 4842/L Mental Health Nursing.....	5 (3+2)
Elective.....	3
NURS 4852 Senior Capstone Seminar.....	1
NURS 4853/L Nursing Transitions .....	4 (2+2)
NURS 4855 Comprehensive Nursing	
Summary .....	2
	<b>15</b>

\*Will be taken either spring or fall semester.

**Curriculum leading to the Bachelor of Science in Nursing Degree for RN Students (RN/BSN-completion)**

1. Nursing credit hours awarded after completion of NURS 2643, NURS 2650, and NURS 2646 with a cumulative GPA of 2.00..... 44 hrs.

Equates to the following courses:  
 NURS 2645, NURS 3731, NURS 3741,  
 NURS 3743, NURS 4832, NURS 4840,  
 NURS 4842

2. Required Support Courses ..... Total 19 hrs.  
 MATH 2625..... 4 hrs.  
 ARTS & HUMANITIES (AH) GER..... 6 hrs.  
 CMST 1545..... 3 hrs.  
 Electives ..... 6 hrs.
3. Required Nursing Courses..... Total 30 hrs.  
 NURS 3720..... 3 hrs.  
 NURS 3749..... 3 hrs.  
 NURS 3770..... 3 hrs.  
 NURS 3772..... 3 hrs.  
 NURS 4804..... 3 hrs.  
 NURS 4846/L..... 4 hrs.  
 NURS 4854/L..... 4 hrs.  
 NURS 4852 Senior Capstone Seminar..... 1 hr.  
 NURS Electives ..... 6 hrs.

4. Additional academic courses to meet the following minimum requirements:

127 *minimum* program hours for graduation with at least 48 hours in upper division (3700 and 4800 level) classes.

The eight required nursing courses and electives are offered on a hybrid format, blending online presentations with regular class meetings on Tuesdays and Thursdays (late afternoon/early evening).

**School Nurse Licensure Program**

This program is designed to build on an undergraduate education and to prepare registered nurses for school nurse licensure. Courses are taught by both the Nursing Department and the Beeghly College of Education. The required curriculum consists of 6 courses plus a practicum. The practicum is a 150-hour (5 s.h. credit) learning experience under the supervision of a licensed school nurse preceptor and a nursing faculty member. This practicum may be taken in increments to accommodate the working student. Opportunities for practicum hours to be waived (up to 2 s.h.) are considered on an individual basis for nurses with school nurse experience.

Students seeking admission into the school nurse licensure program must have an undergraduate degree with coursework in growth and development, psychology, sociology, and community health. Students must be licensed to practice nursing in Ohio or eligible to be licensed (graduate of an approved school of nursing). An Ohio Registered Nurse license is required for practicum placement. Contact Dr. Nancy Mosca, Nursing, for further information.

## NURSING HOME ADMINISTRATION

The Department of Nursing offers a Bachelor of Science in Applied Science degree in nursing home administration. The program prepares students to become specialized, self-critical, accountable, licensed administrators in nursing and convalescent homes, retirement communities and related health care industries.

The program has been approved by the State of Ohio Board of Examiners of Nursing Home Administrators. Graduates are eligible to sit for the national and state licensure examinations.

Students must complete all required coursework for the university and major and have an overall GPA of 2.25, a "C" or better in all courses in the major, 1000 hours in an approved internship, 48 hours of upper-division courses, and 124 hours of coursework overall.

### Required Courses:

MATC 1501/ Medical Terminology  
 FNUT 1551/Normal Nutrition I  
     or FNUTR 5873/Nutrition and Aging  
 FNUT 2612/Food Systems I: Operations  
 NURS 2610/Contemporary Nursing  
 SOC 3703/Aging and Society  
 SCWK 3730/Social Services and the Aged  
 CSIS 1514/Business Computer Systems  
 ACCT 2602/Financial Accounting  
 ACCT 2603/Managerial Accounting  
 FIN 3720/Business Finance  
 MGT 3725/Fundamentals of Management  
 MGT 3735/Communication for Management  
     and Business  
     or PSYC 3712/Survey of Industrial/  
     Organizational Psychology  
 SCWK 4860/Health Issues for Social Work  
     Practice  
 CMST 3756/Interviewing  
 SOC 3701/Social Statistics I  
     or SCWK 3750/Analysis of Social Work  
     Practice Data  
 SOC 4850/Research Methods  
     or SCWK 3760/Research Methods for  
     Social Work  
     or AHLT 4806/Research Methods  
     or NURS 3749/Nursing Research  
 AHLT 5840/Comparative Health Systems

or AHLT 5816/Environmental Regulations  
 for Health Care

HSC 5893/Workshop in Health  
 SOC 4821/Internship in Sociology  
 SCWK 4827 / Integrated Capstone Seminar

### Required Support Courses:

PSYC 1560/General Psychology  
 SOC 1500/Introduction to Sociology  
 BIOL 1505/Biology and the Modern World  
 ECON 1501/Economics in Action

or ECON 2610/Principles 1: Microeconomics

## DEPARTMENT OF SOCIAL WORK

330-941-1598

*Professors: Keller, Silver; Associate Professors: Laing, Morawski (Chair); Assistant Professors: Allen, Causey, Hyppolite, Masalenhdan-Block; Instructor Wyan.*

The baccalaureate degree with a major in social work prepares students for entry into beginning, generalist, professional social work practice. Social workers are employed in a variety of settings such as public and private welfare agencies, mental health centers, health care settings, educational systems, correctional institutions, and business and industry. The Social Work Program is accredited by the Council on Social Work Education. A baccalaureate degree in social work qualifies a person to apply for state licensing in social work

### Learning Outcomes

The student learning outcomes for the major in social work are as follows:

- Prepare students for beginning, generalist social work practice with a strengths perspective
- Provide students with the ability to integrate the knowledge, values, and skills of the social work profession into competent practice with individuals, families, groups, organizations and communities.
- Develop the ability of students to work with a diversity of clients, presenting problems, and social service delivery systems.
- Facilitate the development of core values and ethics of the social work profession.
- Prepare students to address issues affecting social and economic justice to include poverty, oppression, racism and discrimination.
- Prepare students to sustain their effectiveness by instilling the value of continuing professional growth.

**Core Competencies of Social Work Practice**

The BSW program at Youngstown State University applies a competency-based curriculum that develops in students core competencies of generalist social work practice as defined by the Council on Social Work Education. Upon graduating from the BSW program students are expected to:

1. Identify as a professional social worker and conduct oneself accordingly.
2. Apply social work ethical principles to guide professional practice.
3. Apply critical thinking to inform and communicate professional judgments.
4. Engage diversity and difference in practice.
5. Advance human rights and social and economic justice.
6. Engage in research-informed practice and practice-informed research.
7. Apply knowledge of human behavior and the social environment.
8. Engage in policy practice to advance social and economic well-being and to deliver effective social work services.
9. Respond to contexts that shape practice.
10. Engage, assess, intervene, and evaluate with individuals, families, groups, organizations, and communities.

**Admission Policy**

Neither admission to the University nor enrollment in social work courses as a pre-social work major guarantees full admission to the social work program. Full admission to the program is required to become a social work major and to gain access to upper-division social work classes. Pre-social work majors who are not formally admitted to the social work program will be unable to obtain a permit to register for Social Work 3736 and subsequent social work courses for which Social Work 3736 is a prerequisite.

Qualified students who have been convicted of misdemeanor or felony offenses may be admitted to the program. However, field internship opportunities may be restricted due to agency prohibitions pertaining to the engagement of students in agency work in possession of criminal records. Additionally, students should be aware that state licensure in social work may not be possible for individuals with past convictions. Students with convictions are advised to become informed of requirements pertaining to social work licensure and possible avenues of appeal as they consider their enrollment in the Bachelor of Social Work program and the limitations prior convictions may impose on their ability to practice the profession of social work.

**PRE-SOCIAL WORK MAJOR**

Students enter the BSW program by declaring themselves as pre-social work majors and begin progress toward a degree by enrolling in General Education Requirements, support, and pre-social work courses. These courses are typically completed in the freshman and sophomore years. Neither admission to the University nor enrollment in social work courses as a pre-social work major guarantees full admission to the social work program.

**Pre-social work courses include the following:**

HAHS	1500	Introduction to the BCHHS	.....1	s.h.
ENG	1550	Writing 1	.....3	s.h.
ENG	1551	Writing 2	.....3	s.h.
SOC	1500	Introduction to Sociology	.....3	s.h.
CMST	1545	Communication Foundations	.....3	s.h.
PSYC	1560	General Psychology	.....3	s.h.
ANTH	1500	Introduction to Anthropology	.....3	s.h.
POL	1560	American Government	.....3	s.h.
SCWK	1510	Introduction to Social Work	.....3	s.h.
SCWK	2600	Health Issues for Social Work Practice	.....3	s.h.
SCWK	2622	Social Work Processes	.....3	s.h.
SCWK	2641	American Social Welfare	.....3	s.h.
SCWK	2642	Human Behavior and the Social Environment 1	.....3	s.h.
SCWK	2644	Human Behavior and the Social Environment 2	.....3	s.h.
PHIL	2625	Introduction to Professional Ethics	.....3	s.h.
PHIL	2630	Critical Thinking	.....3	s.h.
REL	2601	Introduction to World Religion	.....3	s.h.
<b>Total credit hours</b>			.....49	s.h.

Students also select general education math, natural science, social and personal awareness courses as well as electives as they complete pre-social work requirements the freshman and sophomore years of the program.

MATH	2623	Survey of Mathematics	.....3	s.h.
Natural Science With Lab		.....3+1	s.h.	
Natural Science		.....3	s.h.	
Social & Personal Awareness		.....3	s.h.	
Electives		.....17	s.h.	
<b>Total credit hours</b>			.....30	s.h.

**SOCIAL WORK MAJOR**

To gain entry into upper-division social work courses beginning with SCWK 3736, students must be formally admitted to the social work major. To be admitted to the social work major, students must be declared pre-social work majors and meet the following requirements:

1. Complete all pre-social work courses with a C or better;
2. Possess an overall GPA of 2.5 or better;
3. Submit a completed Social Work Program Admission Application (available online or from

the Department of Social Work) before the 4th week of the semester preceding the semester for which admission is sought.

- Participate in an admission interview and be approved for admission by the BSW Program Admission Committee.

Progress toward the BSW degree proceeds through enrollment in the following upper-division courses but prior to enrollment in field work in social services courses:

SCWK 3736	Social Work Methods with Individuals .....	3 s.h.
SCWK 3750	Analysis of Social Work Practice Data. ....	3 s.h.
SCWK 3760	Research Methods for Social Workers.....	3 s.h.
SCWK 5820	Social Policy.....	3 s.h.

*One special-populations course from the following:*

SCWK 3728	Social Work Methods with Families.....	3 s.h.
SCWK 3730	Social Services and the Aged ....	3 s.h.
SCWK 3731	Social Services and the Disabled .....	3 s.h.

*The following courses may be taken concurrently with the field work in social services:*

SCWK 4825	Field Work in Social Services – 2 SEMESTERS .....	6 s.h. 12 s.h.
SCWK 3737	Social Work Methods with Groups .....	3 s.h.
SCWK 3738	Social Work Methods with Families.....	3 s.h.
SCWK 5822	Social Work Methods with Organiza- tions and Communities .....	3 s.h.
SCWK 5823	Cultural Diversity in Practice.....	3 s.h.
SCWK 4826*	Integrated Field Work Seminar. ....	3 s.h.
SCWK 4827*	Integrated Capstone Seminar .....	3 s.h.

**Total credit hours ..... 45 s.h.**

**Total Semester Hours for Bachelor of Social Work Degree.....124**

\*Must be taken concurrently with SCWK 4825.

See course descriptions for pre-requisites.

A Bachelor of Social Work (BSW) degree is awarded after completion of 124 semester hours of credit which includes all required support courses and social work courses of the major. For more detailed information about admission to the social work program and field practicum, please refer to the Social Work Student Handbook and Social Work Field Internship Manual available in the Department of Social Work.

## SOCIAL SERVICES TECHNOLOGY

The Department of Social Work offers a two-year program in social services technology leading to the degree Associate in Applied Science. The primary purpose of this program is to provide a formal two-year degree for those currently employed social worker aides who wish to increase their professional qualifications, and for those who are entering the field of social work in the less complex positions. Students completing the SST requirements are eligible for licensing as a Social Service Assistant through the State of Ohio Counselor, Social worker and Marriage and Family Therapist Board.

### Learning Outcomes

The learning outcomes associated with the social services technology program are as follows:

- Prepare students for social service assistant roles.
- Provide students with the ability to integrate basic knowledge, values, and skills of the social work profession into basic practice with individuals.
- Develop the rudimentary ability of students to work with a diversity of clients within social services agencies.
- Facilitate the development of core values and ethics essential to competent work with clients.
- Increase students' awareness of issues concerning social and economic justice to include poverty, oppression, racism and discrimination.

The student must meet the general degree requirements and department course requirements as follows:

### General University Requirements

#### Courses Semester Hrs.

ENGL 1550, 1551 .....	6 s.h.
HAHS 1500 Introduction to BCHHS .....	1 s.h.
ENGL 1550 Writing 1 .....	3 s.h.
ENGL 1551 Writing 2 .....	3 s.h.
CMST 1545 Communication Foundations.....	3 s.h.
Social and Personal Awareness Elective .....	3 s.h.
SOC 1500 Introduction to Sociology .....	3 s.h.
PSYC 1560 General Psychology.....	3 s.h.
ANTH 1500 Introduction to Anthropology ....	3 s.h.
POL 1560 American Government .....	3 s.h.
SCWK 2600 Health Issues for Social Work Practice .....	3 s.h.
PHIL 2630 Critical Thinking.....	3 s.h.
REL 2601 Introduction to World Religions	3 s.h.
Elective.....	3 s.h.

**Total credit hours ..... 37 s.h.**



**Department Requirements for Social Services Technology**

**Courses Semester Hrs.**

SCWK 1510	Introduction to Social Work	....3 s.h.
SCWK 2622	Social Work Processes	.....3 s.h.
SCWK 2641	American Social Welfare	.....3 s.h.
SCWK 2642	Human Behavior and the Social Environment 1	.....3 s.h.
SCWK 2644	Human Behavior and the Social Environment 2	.....3 s.h.
SCWK 3736*	Social Work Methods with Individuals	.....3 s.h.
SCWK 2695*	Applied Social Work	.....6 s.h.
SCWK	Special Populations Elective	.....3 s.h.

**Total credit hours** ..... 27 s.h.

**Total Semester Hours for Associate of Applied Science Degree** .....64

\* Social Services Technology students must complete SCWK 3736 (Social Work Methods with Individuals) before taking SCWK 2695 (Applied Social Work).

To be eligible for the Social Service Technology degree students must earn a "C" or better in all support and major courses and have an overall GPA of 2.5 or greater.

**Social Work Minor**

All of the following courses:

SCWK 1510	Introduction to Social Work	....3 s.h.
SCWK 2622	Social Work Processes	.....3 s.h.
SCWK 2641	American Social Welfare	.....3 s.h.
SCWK 2642	Human Behavior and the Social Environment for Social Workers 1	.....3 s.h.
SCWK 5823	Cultural Diversity in Social Work Practice	.....3 s.h.

Plus 3 s.h. from the following courses:

SCWK 2600	Health Issues for Social Work Practice	.....3 s.h.
SCWK 3728	Social Services for Children	....3 s.h.
SCWK 3730	Social Services and the Aged	..3 s.h.
SCWK 3731	Social Services and the Disabled	.....3 s.h.

**Total Semester Hours** ..... 18 s.h.

**AEROSPACE STUDIES PROGRAM (Air Force ROTC)**

The Air Force ROTC program, offered through an agreement with Kent State University, provides professional preparation and leadership training for students considering service as officers in the U.S. Air Force. The program also offers information on Air Force career opportunities and the role of the military in the American society. Scholarships are available to help students complete their bachelor's and/or master's degrees.

**Overview.** There are two primary AFROTC programs under which officer candidates may earn their commissions. The first is a four-year AFROTC program. It includes membership in (and completion of) the General Military Course (GMC), a four-week field training course, and the Professional Officer Course (POC). The second is a two-year program designed for students who have two years of academic work remaining. In the two-year program, students are selected to participate in the POC program and attend a five-week field training course, which includes coursework covered during the freshman and sophomore years. Both programs result in a commission as a Second Lieutenant in the United States Air Force. A minor in aerospace studies is available in consultation with the academic major advisor and the Aerospace Studies Department.

**Registering.** Courses are normally taken for YSU academic credit as part of the students' electives. Entering freshmen and sophomores may register for aerospace studies courses at the same time, and in the same manner, as they enroll in their other YSU courses. Juniors and seniors wishing to enroll in AFROTC should call the AFROTC Unit Admissions Officer prior to enrollment to discuss the particular requirements. Students enrolled in the program must travel to Kent State University once a week to attend the courses. Arrangements can be made for carpools or pick-up if the students do not have transportation.

**Curriculum.** The curriculum in aerospace studies is divided into two parts: the General Military Course—usually taken during the freshman and sophomore years— and the Professional Officer Course, normally taken during the junior and senior years (see Overview, above). Air Force officers are assigned as full-time faculty members and teach all aerospace studies courses. *Freshmen* may register for AF 1501 and 1503 for the fall term and AF 1502 and 1504 for the spring term. *Sophomores* may register for AF 2601 and 2603 for the fall term and AF 2602 and 2604 for the spring term. The courses include one hour of academic instruction and a 1½-hour leadership laboratory each week. All courses are taught at the Kent State University main campus in Kent, Ohio. Non-scholarship students incur no military obligation when enrolled in freshman- and sophomore-level courses. *Juniors* will register for AF 3701 and 3703 for the fall term and AF 3702 and 3704 for the spring term. *Seniors* in the AFROTC program will register for AF 4801 and 4803 for the fall term and AF 4802 and 4804 for the spring term.

**The General Military Course.** The General Military Course (GMC) is offered in four-sequenced lower-division aerospace studies courses. Each course consists of one hour of academic instruction per week and 15 leadership laboratory contact hours per semester. Non-scholarship membership in the GMC does not confer any military status or commitment upon the students, but affords them the

opportunity to learn about the Air Force and its role in the American society. Students who do not want commissions may take the aerospace studies courses for academic credit only. There is no military obligation incurred by enrolling in the GMC.

**The Professional Officer Course.** The Professional Officer Course (POC) is a four-part upper division aerospace studies course. Each course consists of three hours of academic instruction per week and 15 leadership laboratory contact hours per semester. Entrance into POC is limited to qualified students desiring to compete for Air Force commissions. Enrollment in this program is based upon a cumulative grade point average, physical qualifications, and leadership.

**Veterans.** Veterans with previous honorable, active U.S. military service who wish to enroll in the POC may be eligible for a waiver of either the GMC or its equivalent as an entrance requirement.

**Uniforms and Textbooks.** AFROTC uniforms and textbooks are provided at no charge. Textbooks are returned upon completion of each academic year

or upon withdrawal from the course. Uniforms are returned upon completion of the program or withdrawal from the course.

**Financial Assistance.** Students who demonstrate academic and leadership potential may be selected by the professor of aerospace studies to compete for scholarships. The scholarship award includes tuition, textbook allowance, some course fees, and a monthly tax-free stipend.

**Scholarship Statement of Understanding.** Air Force ROTC scholarship recipients must meet and maintain certain academic and military retention standards and serve in the active-duty Air Force after graduation.

**Contact Information.** For further information, contact the Department of Aerospace Studies, AF-ROTC DET 630, 104 Terrace Hall, Kent State University, Kent, Ohio 44242 at (330) 672-2182, or e-mail us at: [det630@kent.edu](mailto:det630@kent.edu).



# The College of Liberal Arts and Social Sciences

*Shearle Furnish, Dean*

*Jane E. Kestner, Associate Dean*



The College grants two bachelor's degrees: Bachelor of Arts (B.A.) and Bachelor of General Studies (B.G.S.). Additionally an Associate in Arts (A.A.) degree is offered.

Included in the College are:

**Academic Departments**

Department of Economics

Department of English

Department of Foreign Languages and  
Literatures

Department of Geography

Department of History

Department of Philosophy and Religious Studies

Department of Political Science and Rigelhaupt

Pre-Law Center

Department of Psychology

Department of Sociology, Anthropology, and  
Gerontology

**Academic Programs**

Africana Studies  
 American Studies  
 Global Education  
 Islamic Studies  
 Judaic and Holocaust Studies  
 Peace and Conflict Studies  
 Women's Studies  
 Working Class Studies

## College of Liberal Arts and Social Sciences Mission

The mission of Youngstown State University's College of Liberal Arts and Social Sciences (CLASS) embraces interdependent aspects of teaching, scholarship, and service. The College seeks to meet the educational needs of students enrolled in its associate, bachelor's, and master's degree programs and to provide a core of liberal arts coursework for all YSU students.

Youngstown State University's College of Liberal Arts and Social Sciences, through its general education and major requirements, seeks to prepare students for productive and rewarding lives by developing critical and creative thinking, sound judgment, and effective communication skills. The College strives to impart knowledge of the liberal arts and social sciences and to produce educated citizens who value learning. It helps students develop regional, national and global perspectives and a better understanding of the individual and society in the past and present. The College prepares students for careers, or for further graduate or professional study, by immersing them in liberal arts and social science disciplines. College faculty members use their expertise in service to the University, their professions, and the community to serve as advisors, mentors, and career counselors to students. In addition, they contribute to knowledge within their disciplines by presenting conference papers and publishing books and articles.

Finally, the College values diversity, exposing students to experiences and coursework that affirm the richness of ethnic, cultural, gender, and racial differences.

## Programs

### For the B.A. degree

Africana Studies  
 American Studies  
 Anthropology  
 Economics  
 English  
 French  
 Geography  
 Gerontology  
 History  
 Italian  
 Journalism

Philosophy  
 Political Science  
 Professional Writing and Editing  
 Psychology  
 Religious Studies  
 Social Studies  
 Sociology  
 Spanish

### For the BGS degree

General Studies

### ICP Program

Students whose needs are not met by existing conventional programs may wish to investigate and apply for the **Individualized Curriculum Program** (see Academic Policies and Procedures).

### Minors

Minors are available in all program areas with many programs offering multiple and/or interdisciplinary minors. A minimum of eighteen (18) semester hours are required for the minor and 1/3 of the hours must be upper division.

### Certificates

Certificate programs are offered in historic preservation and applied gerontology.

### Prospective Teachers

Prospective elementary or secondary teachers may work toward a B.A. or B.S. in Ed. degree. Prospective high school teachers major in the College of Liberal Arts and Social Sciences department of their principal field and are advised by that department, except for the requirements for teacher certification, for which advisement is by the College of Education.

For the Institutional Report on the Quality of Teacher Preparation, Title II, Higher Education Act, please see Appendix B of this *Bulletin*.

## Degree Requirements

Requirements for completion of a baccalaureate degree (B.A., B.G.S.) within the College of Liberal Arts and Social Sciences include all University requirements detailed in the **Academic Policies and Procedures** section of the *Bulletin* (i.e., requirements regarding total General Education Requirements, university credits, course levels, majors, and minors, grade point average, residency and degree applications). Specific requirements for each major in the College of Liberal Arts and Social Sciences are listed by department.

### College Foreign Language Requirement for Bachelor's Degree

All candidates for the B.A. degree are required to complete the elementary (1550) and the intermediate level (2600) of any foreign language offered. Students

with a foreign language background may desire to take the foreign language placement test in order to place into the intermediate level (2600) to satisfy the requirement. It may be possible to satisfy the foreign language requirement through appropriate college transfer coursework and credit by exam.

### College Requirements for the Bachelor of General Studies Degree

The Bachelor of General Studies degree (BGS) is a degree-completion option for students who have completed significant coursework but not the requirements for a specific major. Through careful evaluation of coursework already completed at YSU or other colleges and universities, a degree completion plan is constructed for each student. The BGS may also be appropriate for students for whom a general bachelor's degree may lead to career advancement or for those students who seek the personal satisfaction of having completed a bachelor's degree.

Individuals who have a bachelor's degree are not eligible for the BGS degree, and the BGS degree may not be earned concurrently with another bachelor's degree.

All BGS students complete the requirements of the General Education curriculum (old or new). As such, the goals of the general education curriculum are met by BGS students. They are as follows:

- Write and speak effectively
- Acquire, process, and present quantitative and qualitative information using the most appropriate technologies, including computers
- Reason critically, both individually and collaboratively; draw sound conclusions from information, ideas, and interpretations gathered from various sources and disciplines; and apply those conclusions to one's life and society

The specific requirements for the completion of the Bachelor of General Studies (B.G.S.) degree are as follows:

A 48-semester-hour concentration with at least 24 s.h. of upper-division credit comprised of:

- Two focus areas consisting of 18-24 s.h. each ..... 36-48 s.h.
  - Support courses ..... 0-12 s.h.
  - An approved capstone course ..... 1-3 s.h.
- (Focus-area requirements are submitted by the departments offering the course work in the focus area and are approved by the director of General Studies in coordination with the General Studies Committee.)

Completion of a Cultural/Diversity Requirement.....6 s.h.  
(Students are required to complete two classes from an approved list.)

### Degree Requirements for Associate Degrees

Requirements for the completion of the Associate of Arts (A.A.) degree include those applicable to all associate degrees as detailed in the **Academic Policies and Procedures** section of the *Bulletin*: at least 64 semester hours of credit including 18-22 hours of general education. All associate degrees awarded in the College of Liberal Arts and Social Sciences require the following:

#### General Education Requirements

##### Semester hours of Credit

	<b>A.A.</b>
Writing I and Writing II.....	6
Mathematics 2623.....	see note*
<i>Four (4) additional courses from at least three (3) of the following areas with no more than one course from mathematics counted.</i>	

##### Semester hours of Credit

	<b>A.A.</b>
	<b>12-13</b>
Natural Sciences	
Arts & Humanities	
Social Science	
Social & Personal Awareness	
Mathematics 2623*	
Speech	
A.A. Concentration Area.....	21
Electives.....	25-24
<b>Total Degree Hours</b>	<b>64**</b>

*\*All students in A.A. degree programs who, based on the Math Placement Test, are placed in the developmental math courses (MATH 1500/1501) are required to complete these prior to taking MATH 2623. Math 1500/1501/1502/1503 are not included in the graduation total hours.*

**\*\*The last 20 semester hours must be completed at Youngstown State University.**

#### Associate of Arts Concentration Areas include:

*Humanities:* Applicable courses include: literature courses in English or Foreign Language Departments; courses in philosophy and religious studies; survey and/or appreciation courses in the Department of Art, the Department of Communication, the Department of Theater and Dance, or the Dana School of Music; Africana Studies 2601 or HPES 2698.

*Social Studies:* courses must be selected from the following disciplines: Africana Studies (AFST 2600 only), anthropology, economics, human and regional geography, history, political science, psychology, and sociology.

## Courses of Instruction and Curricula

In the following department sections, the course requirements for the various majors are given, but other requirements are not repeated from the list above.

Course descriptions can be found in a separate section in the back of this *Bulletin*.

### AFRICANA STUDIES 330-941-3097

*Professor Victor Wan-Tatah, Director.*

The Africana Studies program was established in the fall of 1970, and a program for an interdisciplinary major in black studies was approved by the University Senate in the winter of 1972. The purpose of this major is to facilitate the academic investigation and analysis of the historical, literary, social, and aesthetic impact of people of African descent on American society and the world. It also provides for the systematic study of problems confronting the modern multi-racial world. The Africana Studies major can serve as a valuable complement to teacher education, humanistic study, and preparation for various fields of employment such as business, law or social work. An Africana Studies minor complements majors in related areas, especially in economics, education, English, health and human services, history, philosophy, political science, religious studies and sociology. Both the major and minor programs can provide diverse opportunities for employment and for graduate and postgraduate experiences.

#### Africana Studies Advisory Committee

Dr. Samuel Adu-Poku	Art
Dr. Isam Amin	Geology
Dr. Daniel Ayana	History
Dr. Linda Causey	Social Work
Dr. Rosemary D'Apollito	Sociology
Dr. Priscilla Gitimu	Human Ecology
Dr. Beverly Gray	Psychology
Dr. Cryshanna Jackson	Political Science
Dr. Bonnie Laing	Social Work
Dr. Sherri Lovelace-Cameron	Chemistry
Dr. Ndinzi Masagara	Foreign Languages
Dr. Walter Mathews	Communications
Dr. Denise Narcisse	Anthropology & Sociology
Dr. Tom Oder	Physics & Astronomy
Dr. Christian Onwudiwe	Criminal Justice and Forensic Sciences
Dr. Dolores Sisco	English
Dr. Victor Wan-Tatah	Phil./Religious Studies

## Learning Outcomes

The student learning outcomes for the major in Africana studies are as follows:

- Students will demonstrate their knowledge of history, culture, politics, religion and philosophy of people of African descent and their contributions to world civilization.
- Students will demonstrate their ability to relate to issues of multiculturalism and diversity in national and global contexts.
- Students will effectively demonstrate writing skills and articulate critical ideas and concepts in research relating to the African American experience.
- Majors will effectively conduct independent research and demonstrate verbally and in writing, their understanding of the intellectual development of Africana Studies, including the theoretical underpinnings and its impact on their self understanding.
- Students will be able to critically analyze social, political, and cultural issues relevant to African Americans and the African Diaspora from a cross-cultural perspective.

## Major in Africana Studies

The major in Africana Studies is part of a program leading to the Bachelor of Arts degree, and students electing the major must satisfy all other requirements for that degree. The major must include a minimum of 32 hours in Africana Studies courses and other courses approved for Africana Studies. At least 48 hours must be in upper-division courses. A grade of C or better is required in every course counted toward either the major or a minor in Africana Studies.

All Africana Studies majors must complete the following courses:

#### Core Courses

Africana Studies 2600.....	3 s.h.
Introduction to Africana Studies I (GER–Societies and Institutions)	
Africana Studies 2601.....	3 s.h.
Introduction to Africana Studies II (GER–Artistic Literary Perspectives)	
Africana Studies 3700	
Colloquium 1 .....	3 s.h.
Africana Studies 3701	
Colloquium 2 .....	3 s.h.
Chemistry 2602	
African and African American Contributions to Science.....	3 s.h.
History 2663 African Civilization.....	3 s.h.
African Civilization	

#### Social Studies Courses (choose 2-3 courses)

American Studies 4801, 4802, 4803.....	9 s.h.
Perspectives on America	(total)

History 2630.....	3 s.h.
The Black Experience in American History	
History 4801.....	3 s.h.
Select Problems in American History	
History 3750.....	3 s.h.
History of Modern South Africa in the Sahara	
History 4860.....	3 s.h.
Select Problems in Third World History	
Political Science 3706.....	3 s.h.
Minority Group Politics	
Psychology 3745.....	3 s.h.
The Minority Individual	
Social Work 3726.....	3 s.h.
The African-American Family	
Social Work 3727.....	3 s.h.
The African-American Community	
Sociology 3700.....	3 s.h.
Minority Groups	
Religious Studies 3751.....	3 s.h.
Liberation Theologies and Revolutionary Change	

**Humanities (choose 2-3 courses)**

Art 3742.....	3 s.h.
African Art	
Art 3744.....	3 s.h.
African-American Art	
English 2620.....	3 s.h.
Introduction to African Literature	
English 4871.....	3 s.h.
The Black Experience in American Literature	
Music 2616.....	3 s.h.
Survey of Jazz	
Religious Studies 3708.....	3 s.h.
African American Religion	
Religious Studies 3710.....	3 s.h.
African and Neo-American Religion	

**Core Courses—18 s.h.**

Social Studies.....	6-9 s.h.
Humanities.....	<u>6-9 s.h.</u>

Total in Major.....32 s.h.

In addition to the minimum of 32 hours in Africana Studies and courses directly relevant to Africana Studies, the major may include as many as 16 hours in any other courses approved by the director of Africana Studies program.

**Suggested Minor**

A minimum of 18 hours in courses listed above including the five Core courses.

**AMERICAN STUDIES**

330-941-2978

*Professor Stephanie Tingley, Coordinator*

**Core faculty:**

*Gordon Frissora, Criminal Justice and Forensic Sciences*

*Qi Jiang, Sociology, Anthropology, and Gerontology*  
*Martha Pallante, History*

American Studies offers students the opportunity to examine the central themes and issues in American life using material and approaches from a variety of disciplines. Through interdisciplinary core and a set of courses in associated fields representing key areas of knowledge and primary methodologies in American Studies, students gain awareness of the broad outlines of American history and culture as well as an understanding of important theories of culture and ways of studying American life. Students also complete courses in a focus area and an independent senior project designed to deepen their understanding of one aspect of American culture. Each student develops an individual plan for completion of the major, selecting from a list of approved courses from Liberal Arts and Social Sciences, Business, Education, Fine and Performing Arts, and Health and Human Services. This degree may be earned in eight semesters if students average 16 hours per semester.

**Learning Outcomes**

- Students will develop complex analyses of the influence of cultural diversity on major developments and cases in American history and life, integrating cultural materials with concepts of social formation and process.
- Students will compare and connect historical trends, social issues, and/or cultural texts in the US with related examples from specific other countries and/or the global situation of the period under question.
- Students will design and implement significant individual research projects that explore complex questions using appropriate materials, concepts, and methods from multiple disciplines.
- Students will present their own research to multiple audiences, making appropriate choices about the format, content, organization, and the use of evidence that are appropriate for different purposes, audiences, and situations.

**Degree Planning Guidelines**

1. The American Studies major consists of 48 hours of coursework including 12 hours of American Studies core courses, 15 hours of courses to fulfill the Literacy goals, 6 hours to fulfill the competency goals, and 15 hours in a focus area (see below for descriptions of these goals and areas). Because the major is interdisciplinary, students do not need a minor.
2. At least 39 hours of coursework must be taken in courses numbered 3700 and above.
3. Students must take a different course to fulfill each literacy or competency goal; no single course may count in more than one category for an individual student.

4. Courses must be selected from at least 3 programs or departments other than American Studies, and these courses must reflect a range of historical periods.
5. Before registering for AMER 4801, American Studies Research Seminar, a student must submit a Major Proposal, listing individual goals, courses chosen, and possible topics for the senior project. The proposal must be approved by the Coordinator and the American Studies Advisory Committee.

## CURRICULUM

### Required Core Courses—12 hours

2601. *American Identity*  
 3701. *Approaches to American Studies*  
 4801. *American Studies Research Seminar*  
 4810. *Independent Project on American Culture*

### Literacy and Competency—21 hrs.

Choose one 3-hour course for each of seven learning goals listed on the following pages.

#### Literacies

**Textual:** Be able to analyze cultural texts such as visual materials, literary texts, artifacts, maps, historical documents, and others.

- American Studies 4815 American Material Culture*  
*Anthropology 3761 Cultures of the New World*  
*Art 3744 Seventeenth and Eighteenth Century American Art*  
*Art 3746 (W) Nineteenth Century American Art*  
*Art 3747 African American Art*  
*Art 3781 Native North American Art*  
*English 3732 Images of Women*  
*English 3765 Film Genres*  
*English 3780 American Genres*  
*English 4862 Themes in American Literature*  
*English 4864 Selected Topics in American Literature*  
*English 4865 Selected Topics in Film*  
*Geography 3750 Topics in Regional Geography*  
*History 4815 American Material Culture*  
*History 5808 American Architectural History*

*Music 2616 Survey of Jazz*

**Social:** Understand theories of culture and social processes, difference, and interactions between Americans as individuals and as members of groups.

- American Studies 5845 Work in America*  
*American Studies 5850 Class and Culture*  
*Anthropology 3705 (T/W) Cultural Anthropology*  
*Criminal Justice 5831 Violence in America*  
*Education 3708 Education and Society*  
*Geography 3723 Urban Geography*  
*History 3723 History of American Sports*  
*History 3736 History of American Cities*  
*Management 3750 Human Behavior in Organization*  
*Management 5845 Work in America*  
*Political Science 3712 Political Behavior*  
*Psychology 3707 Psychology of Intimate Relationships*  
*Sociology 2601 Social Problems*  
*Sociology 2640 Women in Society*  
*Sociology 3705 The Family*  
*Sociology 3707 Urban Sociology*  
*Sociology 3741 Social Movements*  
*Sociology 3743 Social Stratification and Inequality*  
*Social Work 2641 American Social Welfare*
- Historical:** Understand historical narratives of the U.S.
- American Studies 2605 Turning Points in U.S. History 1*  
*American Studies 2606 Turning Points in U.S. History 2*  
*American Studies 3770 American Literature in Historical Perspective*  
*Anthropology 4825 New World Archaeology*  
*English 2626 (O) American Journalism*  
*English 3770 American Literature in Historical Perspective*  
*Geography 3722 Historical Geography of the United States*  
*History 2605 (T) Turning Points in U.S. History I*  
*History 2606 (T) Turning Points in U.S. History 2*  
*History 3700 The Atlantic World*  
*History 3702 Early America*  
*History 3704 The Age of Jefferson and Jackson*  
*History 3706 The Age of Sectionalism*  
*History 3710 Incorporation of America: 1877-1919*



*History 3712 United States in Crises: 1920-1945*

*History 3713 Cold War America: 1945-1990*

*History 3732 The West in American History 1*

*History 3733 The West in American History 2*

*History 3734 History of Organized Crime in the United States*

*History 4801 Selected Problems in American History*

**Global and Cross-Cultural Perspectives:** Through study of other cultures or cross-cultural analysis, gain awareness of the complicated relationship between United States and other countries and cultures.

*American Studies 3705 Cultural Anthropology*

*Anthropology 3705 Cultural Anthropology*

*Anthropology 3790 Cross-Cultural Perspectives of Aging*

*Foreign Language 2660 (W) Women in the Ancient World*

*History 1511 (T) World Civilization to 1500*

*History 1512 (T) World Civilization since 1500*

*History 2663 African Civilizations*

*History 3727 Mexico and the Caribbean*

*Philosophy 3702 (O) History of Modern Philosophy*

*Philosophy 3760 Ethics of War and Peace*

*Political Science 2640 Comparative Government*

*Political Science 2660 (T) International Relations*

*Political Science 2695 Model United Nations*

*Political Science 3744 European Politics: National, Regional, International*

*Political Science 3751 Latin American Politics*

*Political Science 3763 International Law*

*Political Science 3764 International Organizations*

*Political Science 3768 International Conflict & Conflict Management*

*Political Science 5820 Select Problems of Global Affairs*

*Religion 2605 (O) Myth, Symbol, and Ritual*

*Religion 3710 African and Neo-African Religions*

*Religion 3726 Buddhism*

*Religion 3751 Liberation Theologies and Revolutionary Change*

*Theater 4860 (W) Dramatic Texts*

**Cultural Pluralism:** Explore the diversity of American culture, especially issues such as ethnicity, gender, race, class, language, and region.

*Africana Studies 2600 Introduction to Africana Studies 1*

*Africana Studies 2601 Introduction to Africana*

*Studies 2*

*Africana Studies 3700 Africana Studies Colloquium 1*

*Africana Studies 3701 Africana Studies Colloquium 2*

*American Studies 3700 Minority Groups*

*Art 3744 African American Art*

*English 2617 Women in Literature*

*English 2618 American Literature and Diversity*

*English 3790 Selected Topics in Multicultural Studies*

*English 4871 The Black Experience in American Literature*

*Foreign Languages 2630 German-Americans*

*History 3726 (W) History of Women in the United States*

*History 3730 The Black Experience in American History*

*History 3743 Labor in United States History*

*Management 3755 Managing Diversity*

*Political Science 3706 African-American Politics*

*Psychology 3730 (W) Psychology of Women*

*Psychology 3745 The Minority Individual*

*Religion 3708 African-American Religion*

*Religion 3710 African and Neo-African Religion*

*Religion 3720 Islam*

*Religion 3722 Christianity*

*Religion 3724 Judaism*

*Religion 3736 Buddhism*

*Sociology 2640 Women in Society*

*Sociology 3700 Minority Groups*

*Sociology 3743 Social Stratification and Inequality*

*Sociology 3703 Aging and Society*

*Spanish 3758 Culture and Literature of Spanish-Speaking Groups in the U.S.*

*Spanish 4885 Topics in Hispanic Literature and Film*

## Competencies

**Quantitative:** Be able to analyze quantitative data such as statistics, opinion polls, or content analysis, and use such information in cultural analysis.

*American Studies 3720 Applied Sociology*

*Anthropology 4850 Research Methods*

*Criminal Justice 3712 Criminal Justice Research*

*Political Science 3712 (T) Political Behavior*

*Political Science 3714 American Public Opinion*

*Sociology 3720 Applied Sociology*

*Sociology 4851 Social Research*

**Qualitative:** Be able to gather and analyze qualitative data through techniques such as interviewing, close reading, aesthetic interpretations, and making links among various kinds of sources.

*American Studies 3770 American Literature in Historical Perspective*

*American Studies 4815 American Material Culture*

*Anthropology 3702 Archaeology*

*Anthropology 3778 Archaeological Techniques*

*Anthropology 4877 Method and Theory in Archaeology*

*English 3770 American Literature in Historical Perspective*

*History 4811 Practicum in Historic Preservation*

*History 4815 American Material Culture*

*History 5809 Documentation and Interpretation of Historical Sites*

*History 5810 Conservation of the Historic Built Environment*

## Focus Area—15 hours chosen from the courses listed above

Students may propose other courses to be included in the focus area, with the approval of the coordinator.

## ANCIENT LANGUAGES AND LITERATURE

*See Greek; Latin; Philosophy and Religious Studies.*

## ANTHROPOLOGY

*See Sociology, Anthropology, and Gerontology.*

## DEPARTMENT OF ECONOMICS

330-941-3428

*Professors Petruska, Porter (Chair), Riley, Usip; Associate Professors Hu, Ovaska, Palardy, Sumell, Uppal, Wang.*

A student can earn either a Bachelor of Arts (B.A.) in economics through the College of Liberal Arts and Social Sciences or a Bachelor of Science in Business Administration (B.S. in B.A.) in business economics through the Williamson College of Business Administration. Either degree may be earned in eight semesters if students average 16 hours per semester.

The economics major is designed to prepare students for careers both in the public and private sectors and for additional study in the field of economics. Economics graduates are qualified for a wide

variety of positions in the financial sector, and jobs in business and government research. Students frequently use a major in economics as preparation for law school. Graduates choosing to pursue additional study in economics have been very successful in gaining admission to masters and doctoral programs.

To earn the B.A. degree the student must satisfy all the degree requirements in the College of Liberal Arts and Social Sciences and take 32 hours of courses from the Department of Economics. Required courses are: 2610, 2630, 3710, 3712, 3790, and 4880. Economics courses at the 1500 level cannot be counted towards the major. Students must take a course in calculus (MATH 1552, 1570, or 1571) prior to taking ECON 3710 and 3712. Students intending to apply for Ph.D. programs in economics should consider taking MATH 1571, 1572, 2673, and 3720.

For information on the B.S. in B.A. in Business Economics see the Williamson College of Business Administration.

## Learning Outcomes

To be competitive in the job market, economics majors must have knowledge of microeconomics, macroeconomics, and statistical techniques. They must also be able to apply the theory and statistical techniques they have learned to public policy issues and business problems and be able to present their conclusions. The learning objectives of the economics major are as follows:

- **Microeconomics** – The student will be able to discuss the characteristics of different market structures and how the structure of a market affects consumers. The student will also be able to explain the conditions that must be met for an economy to use its resources in the most efficient manner possible.
- **Macroeconomics** – The student will be able to explain the major macroeconomic goals: rapid economic growth, high employment, and stable prices and how the tools of monetary and fiscal policy can be used to achieve macroeconomic goals.
- **Statistical Analysis** – The student will be able to interpret descriptive statistics, the results of hypothesis tests, and regression estimates.
- **Communication Skills** – The student will be able to give a well-prepared presentation on an economic problem. By well-prepared, it is meant that the presentation clearly frames the topic of the presentation, discusses the relevant theory and evidence, correctly document references, and proposes a conclusion consistent with the theory and evidence.

## Specializations

The following are suggested curricula for students wishing to concentrate their studies in a specific area

of economics, students are not required to choose a specialization.

**Specialization in International Economics**

Recommended economics electives: ECON 3701, 3720, 5809, 5811, and 5812. Students should also consider taking electives outside the major in accounting, marketing, and international relations.

**Specialization in Money and Banking**

Recommended economics electives: ECON 3701, 3702, 5809, and 4810. Students should also consider taking electives in accounting and finance.

**Specialization in Quantitative Economic Methods**

Recommended economics electives: ECON 5824, 5853, and 5856. Suggested non-economics electives are MATH 1571, 1572, 2673, and 3720, as well as introductory courses in computer programming.

**Minors**

**Economics with Statistics**

ECON 2610 (Principles 1, Microeconomics), ECON 2630 (Principles 2, Macroeconomics), ECON 3790 (Statistics for Business and Economics), and 9 semester hours of electives.

**Economics**

ECON 2610 (Principles 1, Microeconomics), ECON 2630 (Principles 2, Macroeconomics) and 12 semester hours of electives. ECON 3790 cannot be counted as electives in this track.

Courses at the 1500 level cannot be counted toward either of the two minors.

**Courses Relevant to Other Majors**

Below are several different majors and the economics courses most relevant to those majors:

**Political Science:** Econ 3702, Econ 4843, and Econ 4855.

**Accounting and Finance:** Econ 3701, 3710, 3712, 5809, 5811, and 5812.

**Marketing:** Econ 3710, 3712, and 5801.

**Management:** Econ 3710, 3712, 4810, 5801, and 5831.

**Pre-Law:** Econ 3702, 3710, and 3712.

**Environmental Studies:** Econ 3710, 3712, and 3705.

**DEPARTMENT OF ENGLISH  
330-941-3414**

*Professors Ball, Barnhouse, Brady, Brown, Diamond, Finney, Gergits, Greenway, Hauschildt, Leonard, Linkon, Reese, Salvner (Chair), Schramer, Tingley; Associate Professors Buchanan, Francisco, Gordon, Strom; Assistant*

*Professors Andrews, Barzak, Caccia, Earnhardt, Lee, Lenhoff, Seamon, Sisco; Instructors Benton, Pittman, Shebat, Vigliotti.*

**Learning Outcomes**

The English Department has established the following learning outcomes for students completing the English major:

- English majors will deploy varied strategies for engaging with literature on the levels of words, appropriate parts of texts, whole texts, contexts, and criticism.
- English majors will be able to situate texts in the appropriate literary, historical, and cultural contexts.
- English majors will be able to analyze how the production and reception of language and literature are influenced by differences of form, culture, and identity.
- English majors will effectively present and discuss ideas about literature and language in a manner that is appropriate for the situation.

**Curriculum**

Beyond the freshman sequence, the English major comprises at least 40 hours. Students may elect either a broad-based English Studies strand in the major, or a more focused Literature Studies strand, either of which may be completed in eight semesters if students average 15-16 hours per semester.

**Core Courses** (19 s.h. required of all majors)

- ENGL 3700—Introduction to Literary Studies 3 s.h.
- ENGL 3710—Survey of British Literature 1 ..... 3 s.h.
- ENGL 3711—Survey of British Literature 2 .... 3 s.h.
- ENGL 3712—Survey of American Literature 1 ..... 3 s.h.
- ENGL 3713—Survey of American Literature 2 ..... 3 s.h.
- ENGL 4880—Oral Communication for English Majors ..... 1 s.h.
- ENGL 4890—Senior Seminar..... 3 s.h.

**ENGLISH STUDIES STRAND** (21 s.h. beyond core)

**Language Studies** 3 s.h.  
ENGL 3755—Principles of Linguistics

**British Literature Studies** (choose *one* from list below) 3 s.h.

- ENGL 4830—Major Figures in British Lit.
- ENGL 4831—Genres, Circles & Movements in British Lit.
- ENGL 4860—The Medieval World
- ENGL 4881—Shakespeare and His World
- ENGL 4882—The English Renaissance
- ENGL 4886—Restoration & 18th Century British Lit.
- ENGL 4887—The Romantic Period

ENGL 4892—19th Century British Lit.  
 ENGL 4895—Early 20th Century British Studies  
 ENGL 4896—British Lit. WWII – present

**American Literature Studies** (choose *one* from list below) 3 s.h.

ENGL 3770—American Literature in Historical Perspective  
 ENGL 3780—American Genres  
 ENGL 4862—Themes in American Literature  
 ENGL 4864—American Literary Conversation  
 ENGL 4871—The Black Experience in American Lit.

**Multicultural Studies** 3 s.h.

ENGL 2617—Women in Literature  
 ENGL 2618—American Literature & Diversity  
 ENGL 2620—African Literature  
 ENGL 3732—Images of Women  
 ENGL 3790—Selected Topics in Multicultural Studies  
 ENGL 4850—Sociolinguistics  
 ENGL 4871—The Black Experience in American Literature\*

NOTE: Courses that fulfill this requirement may NOT also be counted toward electives or American literary studies.

**Advanced Writing** (choose *one* from list below) 3 s.h.

ENGL 3716—Feature Writing  
 ENGL 3717—Editorial & Opinion Writing  
 ENGL 3721L—Journalism Workshop  
 ENGL 3740—Advanced Writing  
 ENGL 3741—Advanced Writing for Teachers  
 ENGL 3743—Professional and Technical Communication  
 ENGL 3744—Proposal and Report Writing  
 ENGL 3746—Fiction Writing Workshop  
 ENGL 3747—Poetry Writing Workshop  
 ENGL 3748—Screenwriting

NOTE: Courses that fulfill this requirement may NOT also be counted toward electives.

**Electives** (Two courses from any area in English, 2602 or higher) 6 s.h.

### Credit Hours Needed for English Studies Strand of English Major

Core Courses .....	19 s.h.
Language Studies .....	3 s.h.
British Literary Studies .....	3 s.h.
American Literary Studies .....	3 s.h.
Multicultural Studies .....	3 s.h.
Advanced Writing .....	3 s.h.
Electives .....	6 s.h.
Total .....	40 s.h.

Minor..... 18 s.h.

General Degree Requirement..... 124 s.h.

**LITERATURE STUDIES STRAND** (21 s.h. beyond core)

**Language Studies** 3 s.h.

ENGL 3755—Principles of Linguistics or  
 ENGL 3757—Development of the English Language

**Literary Studies** 3 s.h.  
 ENGL 3706—Introduction to Literary Theory

**Shakespeare** 3 s.h.  
 ENGL 4881—Shakespeare and His World

**British Literature Studies** 3 s.h.  
 ENGL 4830—Major Figures in British Lit.  
 ENGL 4831—Genres, Circles & Movements in British Lit.

ENGL 4860—The Medieval World  
 ENGL 4881—Shakespeare and His World  
 ENGL 4882—The English Renaissance  
 ENGL 4886—Restoration & 18th Century British Lit.  
 ENGL 4887—The Romantic Period  
 ENGL 4892—19th Century British Lit.  
 ENGL 4895—Early 20th Century British Studies  
 ENGL 4896—British Lit. WWII – present

**American Literature Studies** 3 s.h.  
 ENGL 3770—American Literature in Historical Perspective

ENGL 3780—American Genres  
 ENGL 4862—Themes in American Literature  
 ENGL 4864—American Literary Conversation  
 ENGL 4871—The Black Experience in American Lit.

**Additional British or American Literature Studies** 3 s.h.  
 Choose *one* additional course from British or American lists above.

**Multicultural Studies** 3 s.h.  
 ENGL 2617—Women in Literature  
 ENGL 2618—American Literature & Diversity  
 ENGL 2620—African Literature  
 ENGL 3732—Images of Women  
 ENGL 3790—Selected Topics in Multicultural Studies  
 ENGL 4850—Sociolinguistics  
 ENGL 4871—The Black Experience in American Literature\*

\*May NOT also be counted toward American literary studies requirement.

### Credit Hours Required for Literature Studies Strand of English Major

Core Courses .....	19 s.h.
Language Studies .....	3 s.h.
Literary Studies .....	3 s.h.
Shakespeare .....	3 s.h.
British Literature Studies .....	3/6 s.h.
American Literature Studies .....	3/6 s.h.
Multicultural Studies .....	3 s.h.
Total .....	40 s.h.

Minor ..... 18 s.h.

General Degree Requirement..... 124 s.h.

ENGL 3705 and ENGL 3741 are required of all English majors planning to apply for teacher licensure. ENGL 3741 is offered each fall as part of the English education block (TERG 3711 and ENGL 3741). Check with an English education advisor. English majors preparing to teach should take the SED 4800E methods course.

Because the discipline of English involves study of the controlled use of the language, students are expected to demonstrate their writing skills in all English courses.

The Department of English maintains the Writing Center for supplemental, noncredit instruction in writing. English majors may apply for student employment as peer tutors in the Center. (See the Student Services section for details.)

## JOURNALISM

*Professor Salvner (Chair); Associate Professor Francisco; Assistant Professors Earnheardt, Lenhoff, Seamon; Instructor Pittman.*

The journalism program seeks to train students for entry-level positions in reporting, editing and newspaper design. The curriculum is a blend of courses that support this goal, such as News Reporting, Editorial and Opinion Writing, Feature Writing, Editing and Design for Newspapers, a journalism practicum (Journalism Workshop) in which students write for the student newspaper, and a battery of professional writing and editing courses designed to enhance editing, writing and publishing skills. There are no separate tracks, and journalism majors are encouraged to declare minors that support their specific career objectives, such as public relations, photography, political science, telecommunications, or art/design.

### Learning Outcomes

The English Department has established the following learning outcomes for students completing the journalism major:

- Journalism students will demonstrate an understanding of what constitutes news.
- Journalism students will demonstrate an understanding of the First Amendment.
- Journalism students will demonstrate an understanding of how to find and extract news.
- Journalism students will demonstrate an understanding of how to write news, feature, and opinion stories.
- Journalism students will demonstrate an understanding of how to evaluate others' work.
- Journalism students will demonstrate an understanding of how to recognize bias in the media.

## Curriculum

Following are the major course requirements:

<b>Journalism Courses</b>		<b>s.h.</b>
ENGL 2622	News Reporting.....	3
ENGL 2626	American Journalism.....	3
ENGL 3716	Feature Writing.....	3
ENGL 3717	Editorial and Opinion Writing.....	3
ENGL 3721-L	Journalism Workshop.....	3
ENGL 3723	Editing & Design for Newspapers.....	3
ENGL 3760	Advanced News Reporting and Writing.....	3
ENGL 4824	Press Law and Ethics.....	3
ENGL 3743	Professional & Technical Communication.....	3
ENGL 4849	Professional & Technical Editing.....	3
ENGL 4898	Professional Writing Internship.....	3
ENGL 4899	Professional Writing Senior Project.....	3
Total major hours.....		36

## LINGUISTICS

*Barnhouse, Brown (Program Director), Vigliotti, English; Becerra, Corb , Masagara, Foreign Languages.*

The University offers an interdisciplinary minor in linguistics with the advice and approval of the chair of the department the student is majoring in and of an advisor from the linguistics faculty.

The minor requires completion of a minimum of 18 semester hours including ENGL 3755. See the Program Director for further details.

## PROFESSIONAL WRITING AND EDITING

*Professors Gergits, Salvner (Chair), Schramer; Associate Professor Gordon; Assistant Professors Andrews, Caccia, Lee; Instructor Shebat.*

### Learning Outcomes

The English Department has established the following learning outcomes for students completing the professional writing and editing major:

- PWE majors will define, state, and achieve a specific purpose and target audience, recognizing and adjusting for budgetary and timeline constraints.
- PWE majors will create and implement appropriate formats and designs for specific audiences and purposes.
- PWE majors will use a problem-solving approach and a variety of resources to investigate a problem, acquire and assess information, and organize it effectively.

- PWE majors will design documents professionally, using appropriate technological resources, software and hardware, as well as appropriate elements of design.
- PWE majors will evaluate others' writing, accept and implement the recommendations of others in revision and editing. They will edit appropriately, using conventional grammar, spelling, and diction, and they will apply the appropriate style guide.

## Curriculum

A major in professional writing and editing requires 61-63 semester hours, distributed as follows:

### PWE CORE COURSES (24 s.h.)

2622—Basic Journalism .....	3 s.h.
3723—Editing and Design for Newspapers.....	3 s.h.
3743—Professional & Tech Comm.....	3 s.h.
3744—Proposal and Report Writing.....	3 s.h.
3745—Online Text Workshop.....	3 s.h.
4843—Advanced Professional & Tech Writing	3 s.h.
4849—Professional & Tech Editing.....	3 s.h.
4899—Prof. Writing Senior Project*	3 s.h.

### REQUIRED (6 s.h.)

3701 or 3702—Brit. and Amer. Lit. I or II.....	3 s.h.
(prerequisite to all upper-division literature courses)	
3755—Principles of Linguistics.....	3 s.h.

### OTHER LITERARY STUDIES (3 s.h.)

#### Choose 1:

1590—Introduction to Literature	
2610—World Literature	
2617—Women in Literature	
2618—American Literature and Diversity	
2620—African Literature	
2631—Mythology in Literature	
2632—Images of Women	
2665—Introduction to Film Study	
3738—Topics in World Literature	
3765—Film Genres	
3790—Selected Topics in Multiculturalism	
4871—Black Experience in American Literature	

### LITERARY STUDIES (3 s.h.)

#### Choose 1:

3770—Am. Literature in Historical Perspective	
3780—American Genres	
4862—Themes in American Literature	
4864—Selected Topics in American Literature	
4871—The Black Experience in Am. Literature	
4830—Major Figures in British Literature	
4831—Genres, Circles, and Movements in Brit. Lit.	
4860—The Medieval World	
4881—Shakespeare & His World	
4882—The English Renaissance	
4886—Restoration and 18th-Century Brit. Lit.	
4887—The Romantic Period	

4892—19th-Century British Studies	
4895—Early 20th-Century British Studies	
4896—British Literature from WWII to the Present	

### SUPPORT COURSES (13-15 s.h.)

#### 4-6 hours from within the department:

3716—Feature Writing.....	3 s.h.
3717—Ed. and Opinion Writing.....	3 s.h.
3721L—Journalism Workshop .....	3 s.h.
3740—Advanced Writing.....	3 s.h.
3746—Fiction Writing Workshop or	
3747—Poetry Writing Workshop .....	3 s.h.
4898—Prof. Writing Internship .....	1-3 s.h.

#### 9 hours from:

Approved Courses in Communications	
Approved Courses in Art	
Approved Courses in Office Information Systems/Desktop Publishing	
Approved Courses in Computer Science	
Approved Engineering Courses	
Approved Marketing Courses	
Approved Public Relations Courses	
Approved Advertising Courses	

You must meet any prereqs. for these courses. Specific course numbers/titles will be added after other departments complete semester conversion.

### PROFESSIONAL AREA (15 s.h.)

Take 15 approved semester hours in journalism, desktop publishing, graphics, advertising/public relations, computer science, chemistry, or engineering. Courses and degrees from the Bitonte College of Health and Human Services may also meet the requirement. Ask your advisor for approved-curriculum sheet(s). See the PWE coordinator to propose any other area.

#### Credit Hours Needed for Major:

Required Courses .....	6
Literary Studies .....	9
Support Courses.....	13-15
PWE Core Courses.....	18
Professional Area .....	15

**TOTAL: 64-67 s.h.**

(See CLASS advisement sheet for graduation requirements)

**Required for Graduation:** 124 total hours (48 semester hours must be 3000 or 4000 level).

## DEPARTMENT OF FOREIGN LANGUAGES AND LITERATURES

330-941-3461

*Professors Becerra, del Pozo, Sarkissian (Chair), Smith; Associate Professor Masagara; Assistant Professors Corbé, Palardy, Simonini.*

See Degree Requirements at the beginning of the

College of Liberal Arts and Social Sciences section for information about foreign language requirements. Degrees in foreign languages may be earned in eight semesters if students average 16 hours per semester.

## Learning Outcomes

The department's learning outcomes for foreign language majors are as follows:

- **Cultural Understanding**—The student will develop an understanding and appreciation of the history and culture of those areas in which the target language is spoken.
- **Reading Comprehension**—The student will be able to read and understand a variety of materials written in the target language. These materials may include but are not limited to: novels, plays, poetry, newspaper and magazine articles, and private correspondence (e.g., business communications).
- **Listening Comprehension**—The student will be able to understand the target language when spoken in a variety of contexts. These contexts may include but are not limited to conversation with another individual or individuals, formal lectures, song, and film.
- **Oral Expression**—The student will be able to carry on a conversation and deliver a speech in the target language.
- **Written Expression**—The student will be able to compose in the target language a variety of written documents. These documents may include but are not limited to: formal and casual correspondence, essays, and creative works.

## Bachelor's Degree Programs

### FRENCH

*Assistant Professor Corbé, Associate Professor Masagara.*

A major in French requires 33 semester hours beginning with FRNC 2605. The following French courses are required: FRNC 2605, 2606, 3710, 3716, 3717, 3720, 3725, 3736, 3740, 3750, 4885.

### ITALIAN

*Assistant Professor Simonini.*

A major in Italian requires 31 semester hours beginning with ITAL 2600, 2605, 3720, 3725, 3730, 3735, 3750, 4800, 4825, 4880.

### SPANISH

*Professor del Pozo, Professor Becerra, Assistant Professor Palardy.*

A major in Spanish requires 33 semester hours beginning with Spanish 2605. The following Spanish

courses are required: 2605, 3702, 3735, 3755; plus 1 of the following: 3724, 3736, plus 4 of the following: 3758, 3762, 3763, 3766, 3767; plus 2 of the following: 5855, 5870, 5885, 5890. In addition the student must achieve the level of Intermediate High on the Oral Proficiency Interview and the Writing Proficiency Test, both administered by the American Council on the Teaching of Foreign Languages.

## Foreign Language Minors

Minors are available in French, Italian, Italian studies, Spanish and Spanish language and cultures. Each minor requires 18 or 19 semester hours beginning with 2600 or 2605. Contact department for details or the Minors section of this *Bulletin*.

## Foreign Language Education

For curricula leading to a multi-age license for teaching French or Italian or Spanish, see the Beeghly College of Education section of this *Bulletin*.

## DEPARTMENT OF GEOGRAPHY

330-941-3317

*Professors: Campbell, Maraffa, and Shaklee; Associate Professors: Buckler, Cerney (chair) and Shellito; Assistant Professor: Pugh; Professor Emeritus: Stephens*

Students majoring in geography earn the Bachelor of Arts degree. In addition to the University and CLASS requirements, a student majoring in geography must complete a minimum of 33 semester hours in geography following the course distribution listed below. At least 21 semester hours must be earned in upper-division geography courses. This degree may be earned in eight semesters if students average 16 hours per semester.

## Learning Outcomes

Geography majors, upon fulfilling the requirements of the major will:

- Demonstrate understanding of the fundamental themes of human and physical geography—region, movement, human/environment interaction, landscape and place.
- Demonstrate understanding of spatial patterns and processes in the human and physical environments.
- Effectively use, analyze, and interpret maps and other graphic representations of geographic information.
- Be proficient in geographic methods and techniques such as cartography, GIScience, remote sensing, and field methods.
- Effectively communicate geographic information in written and oral forms.

- Complete a research proposal that requires synthesis relevant literature and development of a viable geographic research project.

In addition to the above, students completing a certificate in GIScience will:

- Demonstrate proficiency in one or more applications of geospatial technology—geographic information systems, global positioning systems, and remote sensing.

## Curriculum

A major in Geography requires 33 semester hours distributed as follows:

### Required course:

GEOG 1503 Physical Geography .....3 s.h.

Select one course from the following:

GEOG 2626 World Geography.....3 s.h.

GEOG 2640 Human Geography .....3 s.h.

Select one from the following:

GEOG 2610 Map Use and Interpretation .....3 s.h.

GEOG 2611 Geo-Spatial Foundations.....3 s.h.

Select one course from the following:

GEOG 3713 Geography of South America .....3 s.h.

GEOG 3715 Geography of Middle America ..3 s.h.

GEOG 3717 Geography of Europe .....3 s.h.

GEOG 3719 Geography of the United States .3 s.h.

GEOG 3721 Geography of Ohio .....3 s.h.

GEOG 3722 Historical Geography of the United States .....3 s.h.

GEOG 3750 Topics in Regional Geography ...3 s.h.

GEOG 5850 International Area Study.....3 s.h.

Select two courses from the following:

GEOG 3775 Field Methods in Geography.....3 s.h.

GEOG 5805 Remote Sensing I.....3 s.h.

GEOG 5806 Remote Sensing II.....3 s.h.

GEOG 5810 Geographic Information Science I .....3 s.h.

GEOG 5811 Geographic Information Science II .....3 s.h.

GEOG 5812 Global Positioning Systems and GIS .....3 s.h.

GEOG 5814 3D Modeling and GI Science.....3 s.h.

### Required course:

GEOG 4890 Geography Capstone .....3 s.h.

Select an additional 12 hours of course work from the list below and or list above. At least nine s.h. must be upper division GEOG courses.

GEOG 2630 Weather .....3 s.h.

GEOG 2630L Weather Lab .....1 s.h.

GEOG 2650 Global Economic Landscapes.....3 s.h.

GEOG 3703 Human Impacts on the Environment .....3 s.h.

GEOG 3705 Mountain Geography .....3 s.h.

GEOG 3724	Themes in Cultural Geography.....	3 s.h.
GEOG 3726	Urban Geography .....	3 s.h.
GEOG 3730	Global Climates .....	3 s.h.
GEOG 3733	Severe and Hazardous Weather.....	3 s.h.
GEOG 3735	Water in the Earth System.....	3 s.h.
GEOG 3737	Soils and Land Use.....	3 s.h.
GEOG 3740	Business Geographics.....	3 s.h.
GEOG 3741	Transportation Geography.....	3 s.h.
GEOG 3745	Automobile in American Culture .....	3 s.h.
GEOG 3755	Tourism Geography .....	3 s.h.
GEOG 3780	Medical Geography .....	3 s.h.
GEOG 4825	Geography Internship .....	1-3 s.h.
GEOG 4840	Seminar in Geography.....	3 s.h.
GEOG 5802	Biogeography.....	3 s.h.
GEOG 5820	Directed Research in Geography.....	1-3 s.h.

Specialized areas of study provide information and skills needed by students seeking careers in many fields including: geographic information science (GIS), urban and regional planning, satellite data analysis and interpretation; elementary and secondary education, environmental studies, earth science, atmospheric science, business and retail, and to prepare students for graduate study in geography or a variety of professional degrees such as law, business, planning and public administration amongst others.

## Geographic Information Science Certificate, Individual Curriculum Program

The Department also offers an 18 s.h. certificate in geographic information science and coordinates an individual curriculum program (ICP) in spatial information systems that combines courses in geography and computer science and information systems; which leads to an applied science degree which does not require a foreign language.

## Geography Minors

Five minors in Geography are offered: Environmental Geography; General Geography, Geographic Information Science; Human Geography and; Regional Geography. A list of courses for each minor can be obtained from the Geography Department or the YSU Geography web page.

## Certificate in Geospatial Science and Technology (GSAT)

The certificate in geospatial science and technology provides a program for career-oriented students and professionals in the geospatial field (including geographic information science, remote sensing, global positioning systems, cartography, and spatial data handling and analysis). The certificate represents academic proficiency in geospatial science and technology and is administered by the Department



of Geography. It is rendered upon completion of the requirements and includes both a physical copy of the certificate plus an entry on student transcripts.

Students must take a minimum of 6 courses (18-19 s.h.) as listed below and complete them with a cumulative GPA of 3.00 (B) or higher and no grade below a C. The certificate is available to undergraduates and non-degree seeking professionals who meet the requirements. Note that some classes may require other prerequisites for entrance.

**Required Geography Courses:**

GEOG 2610	Map Use and Interpretation .....	3 s.h.
	or	
GEOG 2611	Geospatial Foundations .....	3 s.h.
GEOG 5805	Remote Sensing 1 .....	3 s.h.
GEOG 5810	Geographic Information Science 1.....	3 s.h.
GEOG 5806	Remote Sensing 2 .....	3 s.h.
	or	
GEOG 5811	Geographic Information Science 2.....	3 s.h.

Select two elective courses (6-7 s.h.) from the following:

GEOG 3712	Thematic Map Design and Symbolization .....	3 s.h.
GEOG 3775	Field Methods .....	3 s.h.
GEOG 3790	Seminar in Geography.....	3 s.h.*
GEOG 4825	Geography Internship .....	3 s.h.*
GEOG 5806	Remote Sensing 2 .....	3 s.h.**
GEOG 5811	Geographic Information Science 2.....	3 s.h.**
GEOG 5812	Global Positioning Systems and GIS.....	3 s.h.
GEOG 5814	3D Modeling and GIS.....	3 s.h.
GEOG 5820	Directed Research.....	3 s.h.*
CSIS 3722	Development of Databases .....	3 s.h.**
CSIS 3726	Visual / Object Oriented Programming.....	3 s.h.**
CEEN 2610/L	Surveying .....	3 s.h. + 1 s.h. lab

\* These courses are allowed for credit in the GSAT certificate only if they contain a significant geospatial science and technology-related component, as well as permission of the department chair.

\*\* These courses are allowed to count for elective credit only if they have not been taken under required courses.

\*\*\* These courses require CSIS 1590 and CSIS 2610 as prerequisites.

**GREEK**

*See Foreign Languages.*

**DEPARTMENT OF HISTORY  
330-941-3452**

*Professors Ayana, DeBlasio, Pallante (Chair), Viehe, York; Associate Professors Barnes, Bonhomme, Congdon, Leary, Simonelli, Sinnreich; Assistant Professor Gerardo.*

The student majoring in history must complete, in addition to the general University requirements (see Degree Requirements, at the beginning of the College of Liberal Arts and Social Sciences Section), the group requirements listed below. It is recommended that the student select courses with assistance from an advisor, since certain courses are preferable to others according to whether one contemplates graduate study, secondary school teaching, or some other career.

The Bachelor of Arts in history can be completed in eight semesters if students average 16 hours per semester.

**Learning Outcomes**

The student learning outcomes for the major in history embody the five basic goals that the Department of History faculty believes are central to our endeavors:

- Students will recognize the difference between primary and secondary resources and be able to critically read and analyze their contents.
- Students will understand the concepts of historiography and that historical interpretation is not stagnate but changes over time.
- Students will understand the significance of chronologies and the impact of cause and effect.
- Students will comprehend the importance and impact of cultural diversity on the past and its relevance in the present.
- Students will effectively communicate in written and oral media and exhibit the critical thinking and synthesis necessary to the historian’s work.

**Curriculum**

Group A: History 1511, 1512, 2605, 2606 or 1511H, 1512H, 2605H, 2606H.

Select eight courses from the following with no more than three from each group:

Group B: 2601, 3700, 3702, 3704, 3706, 3710, 3712, 3713, 3715, 3717, 3723, 3726, 3730, 3731, 3732, 3733, 3734, 3736, 3740, 3741, 3742, 3743, 3744, 3747, 3748, 3762, 4801, 4811, 4812, 4815, 5806, 5807, 5810.

Group C: 3745, 3752, 3753, 3755, 3756, 3757, 3758, 3759, 3760, 3761, 3762, 3763, 3764, 3765, 3766, 3767, 3769, 3774, 3778, 3779, 3780, 3782, 3783, 3784, 3785, 3787, 3788, 3790, 3791, 3792, 3794, 4850, 4851.

Group D: 3700, 3727, 3740, 3749, 3750, 3751, 3770, 3772, 3774, 3775, 3776, 3779, 3781, 3789, 3795, 3796, 3797, 3798, 4850, 4860.

CAPSTONE: 4870.

NOTE: No course can count in more than one group. Six courses in Groups B, C, and D must be at 3700 level or higher.

A history major must provide an essay examination, a book review, a research paper, and one additional paper for a portfolio (all produced in history classes) that will be maintained in the History Department. The essay examination should be from an upper-division course. The book review should include a title page, bibliographic entry at the beginning, content analysis and evaluation with a minimum of 1,000 words, typed in a 10-12 font, double-spaced, and one-inch margins. The research paper will be based on primary or secondary sources with a minimum of 3,500 words, typed in a 10-12 font, double-spaced with endnotes or footnotes, bibliographic entries based on *Chicago Manual of Style*, a title page, and one-inch margins. A second paper from an upper-division class is also to be included of at least 1,500 words.

Students transferring 20 or more semester hours in history to Youngstown State University from another institution must meet the group requirements listed above to obtain a major in History for graduation. At least five of the courses in Groups B, C, and D must be taken at Youngstown State University.

It is recommended that the student in choosing electives should acquire as broad a background as possible in the social sciences and the humanities. Particular attention is called to courses offered by the Departments of English, Economics, Political Science, Philosophy, Art, Music, Geography, and Sociology, and to the humanities courses. Students contemplating graduate work in history should consider taking more foreign language courses than the minimum necessary to meet the general degree requirement. Finally, the student is reminded that the Department of History takes seriously the University's emphasis on the importance of adequate competence in the English language (See Proficiency in English, in the Academic Policies and Procedures section of the *Undergraduate Bulletin*); when there is need, students majoring in history should include in their programs advanced composition courses and courses in speech.

### Certificate in Historic Preservation

Historic preservation specialists encourage the renovation and re-use of America's built environment—buildings and bridges, farms and factories, battlefields and business districts, even entire neighborhoods. Professionals in this fast-growing field find employment with consulting firms, or with local, state, or national preservation groups, museums, or government agencies.

Youngstown State University offers a Certificate in Historic Preservation for students at either the undergraduate or graduate level. Six courses from the undergraduate Preservation Course, beginning with Introduction to Historic Preservation (HIST 3715) and American Architectural History I and II (HIST 5806 and HIST 5807) and Conservation of the Historic Built Environment (HIST 5810). The Core concludes with a group project in the community, Practicum in Historic Preservation (HIST 4811), and Historic Preservation Internship (HIST 4812). Classes give students training in historic research skills plus direct experience in real-world preservation tasks.

Along with the Preservation Core, undergraduates must take two electives from the following list: HIST 3736, 3748, 4815; GEOG 3726, 3765, ANTH 4890, 4825; ART 2671, 4883; MRCH 4879.

In addition, hands-on instruction in preservation technology is available through arrangement with nationally renowned Belmont Technical College.

Undergraduates may earn the certificate as part of a history major, or as a minor supplementing work in a related field such as art history, anthropology, geography, or engineering.

### ITALIAN

*See Foreign Languages.*

### LATIN

*See Foreign Languages.*

### LINGUISTICS

*See English / Foreign Languages.*

## PEACE AND CONFLICT STUDIES PROGRAM

330-941-3437

*Associate Professor Keith John Lepak, Political Science (Coordinator and Co-Director) with Associate Professor David Porter, Political Science (Co-Director).*

The University offers a minor in Peace and Conflict Studies with the advice and approval of the chair of the department the student is majoring in. The multidisciplinary minor focuses on the historical, geographical, political, cultural, psychological, and philosophical dimensions of human conflict and conflict resolution, emphasizing the cross-cultural and global context of contemporary conflict situations and approaches to conflict management and resolution.

The following is a list of approved recommended courses for the minor; the minor consists of a minimum of 18 semester hours, of which at least 9 must be accumulated from approved upper-division courses (number 3000 and above):

History 1512. <i>World Civilization From 1500.</i>	3 s.h.
History 4860. <i>Select Problems in Third World History.</i>	3 s.h.
Religious Studies 2601. <i>Introduction to World Religions.</i>	3 s.h.
Religious Studies 2617. <i>Introduction to Eastern Religions.</i>	3 s.h.
Geography 2626. <i>World Geography.</i>	3 s.h.
Political Science 2660. <i>International Relations.</i>	3 s.h.
Political Science 3768. <i>International Conflict.</i>	3 s.h.
Philosophy 3760. <i>Ethics of War and Peace.</i>	3 s.h.
Psychology 4804. <i>Conflict and Group Dynamics.</i>	3 s.h.
Sociology 3708. <i>Political Sociology.</i>	3 s.h.

Students should consult with the program coordinator in determining the particular composition of the minor.

Students interested in further study in the program may design and pursue an Individualized Curriculum Program (ICP) in consultation with program directors. Currently, peace and conflict studies has an approved ICP that allows interested students to pursue coursework in areas of global and regional studies, communications and dispute resolution, and peace strategies. The ICP offers the possibility of a comprehensive and focused major and is especially useful to students considering graduate studies or employment with non-profit organizations that need individuals with appropriate background in conflict resolution and cross-cultural knowledge and skills.

## DEPARTMENT OF PHILOSOPHY AND RELIGIOUS STUDIES

330-941-3448

*Professors Mir, Palmer-Fernandez, Tessier, Waller (Chair), Wan-Tatah; Associate Professors Mower, Vopat; Assistant Professor Tomhawe.*

The YSU Department of Philosophy and Religious Studies offers a wealth of productive studies for life and technical knowledge for career opportunities. Selected subjects can make an excellent minor complementing any career, and the major in philosophy or religious studies can be a sound preparation for a wide range of graduate programs.

### PHILOSOPHY

A major in philosophy is available for students who plan to enter the field of philosophy, law, professional or medical ethics, the ministry, or other fields requiring a liberal arts background.

The major consists of 30 semester hours, including PHIL 2600; 2619; 3700 or 3705; 3702; 3711 or 3780; 4820; and 4861. This program can be completed in eight semesters if students enroll in 16 hours per semester and enroll in a combination of day and evening classes. The hours for the degree could increase depending upon the student's foreign language placement upon entering YSU.

### RELIGIOUS STUDIES

A major in religious studies is available for students who desire to prepare for a career in the ministry, counseling, religious education, social work or any field requiring a liberal arts background. The major consists of 30 semester hours, no more than 9 of which can be taken at the 2600-level. Majors must take REL 2601 and at least one upper-level course in each of the following areas: (1) History of Religion: 3708, 3710, 3720, 3722, 3724, 3726, 3741, 3743; (2) Methodologies in the Study of Religion: 3751, 3754, 3756, 3758, PHIL 3712, ANTH 4815; (3) Scriptural Studies: 3731, 3732, 3733; and REL 4850 and 4871. It is assumed that the remaining hours will be selected in religious studies. In some cases, courses outside religious studies may be accepted as part of the religious studies major if they deepen the student's understanding of religion. All such courses must have the approval of the chair. This program can be completed in eight semesters if students enroll in 16 hours per semester and enroll in a combination of day and evening classes. The hours for the degree could increase depending upon the student's foreign language placement upon entering YSU.

### PRE-COUNSELING TRACKS

The pre-counseling tracks in philosophy and in religious studies are designed to provide core knowledge and basic skills to philosophy and religious studies majors who are considering graduate work in counseling, mental health and other service-based professions. Courses are designed to promote self-awareness, effective decision-making skills, development of positive character traits, core knowledge of historical philosophical ideas and religious and cultural practices, and a deep understanding of rights and responsibilities in relationships across a wide range of contexts and settings.

#### Philosophy Pre-Counseling Track

The major consists of 30 required semester hours of credit in philosophy, in addition to: COUN 1587 and PSYC 1560 as GER prerequisites; and PSYC 3702, 3775 and 5807, and COUN 2650 as required university electives.

#### Religious Studies Pre-Counseling Track

The major consists of 30 required semester hours of credit in religious studies, in addition to: COUN 1587 and PSYC 1560 as GER prerequisites; and PSYC 3702, 3775 and 5807, and COUN 2650 as required university electives.

## Learning Objectives

The student learning objectives for the major in philosophy & religious studies are as follows:

### Joint Phil/RS Objectives

- The student will competently analyze and critically evaluate his/her own beliefs and the beliefs and traditions of others.
- The student will master the basics of theoretical writing, including the development of precise definitions, effective analysis of texts, traditions, and theoretical positions, and effective development, defense, and critique of arguments.

### Religious Studies Objectives

- The student will demonstrate a detailed understanding of the principal religious and spiritual beliefs and traditions throughout the world and an informed ability to compare, contrast, and critique them.
- The student will demonstrate skill in relating religious beliefs to cultural history, lifestyles, ritual, and religious practices.

### Philosophy Objectives

- The student will competently use principles of critical thinking, including assessment of definitions, recognition of fallacies, and application of the principles of good inductive and deductive reasoning.
- The student will exhibit knowledge of the principles of ethical reasoning, will competently evaluate ethical dilemmas using these principles, and will investigate contemporary problems in light of these principles.

### Pre-Counseling Objectives

- The student will exhibit knowledge of religious traditions and rituals, as well as cultural practices, beliefs, and values that guide behavior, decision-making, and social policy, and will demonstrate understanding of this diversity and skill in using this knowledge as a reference for understanding others.
- The student will exhibit a detailed understanding of personal yet timeless questions about spirituality, life after death, ethics, personal relationships, and well-being, and will competently use this knowledge to help others address similar questions and concerns.

## Minors

The department offers minors in religious studies, philosophy, professional ethics, criminal justice ethics and Islamic studies. Contact the department for details.

## Specialized Centers

The Department of Philosophy and Religious Studies houses The Dr. James Dale Ethics Center and the Center for Islamic Studies.

The **Dr. James Dale Ethics Center** was founded in 1993 to support the study and teaching of ethics and to promote moral reflection and conduct in personal and professional life. Its activities are guided by the conviction that institutions of higher education play a crucially important role in creating and sustaining a democratic people, concerned not only with private but also common purposes. To accomplish its mission, the Center:

- Sponsors ethics seminars, workshops, and conferences for regional professionals;
- Offers lectures to the University and general community;
- Provides ethics consultation for regional organizations;
- Promotes the scholarship of teaching and learning of ethics

The director of the Ethics Center is Dr. Gabriel Palmer-Fernandez, Professor of Philosophy and Religious Studies.

The **Center for Islamic Studies** is devoted to the scholarly study of Islam and to educating the community about Islamic religion, history, and culture. It was created through an agreement between the Youngstown Muslim community and Youngstown State University. To accomplish its mission, the Center:

- Offers lectures to the University and general community;
- Co-publishes (with the Iqbal Academy Pakistan) the *Iqbal Quarterly*, which aims to introduce the works of the South Asian poet-thinker Muhammad Iqbal to general readers in the English-speaking world;
- Participates in The Pluralism Project of the Department of Philosophy and Religious Studies, which publishes *E Pluribus*, a newsletter devoted to interfaith activities in the Mahoning Valley and to events of general interest in the field of religious pluralism.

The director of the Center for Islamic Studies is Dr. Mustansir Mir, University Professor of Islamic Studies in the Department of Philosophy and Religious Studies.

## The Philosophy Circle

The Philosophy Circle is a group of more than 140 faculty, alumni, and friends whose donations support special departmental activities, including awards for outstanding student papers and funding for the Dr. Thomas and Albert Shipka Speakers Series. The Shipka Speakers Series has sponsored over 35 lectures by outstanding scholars, on topics related to philosophy and religious studies that are of wide interest to both the university and the larger community.

## Departmental Scholarships

- Evangelos Michelakis Meshel Scholarship in Philosophy
- Robert G. & S. Ann Berich Meigetter Scholarships in Philosophy
- Dr. Earl Eugene Eminhizer Scholarship in Religious Studies
- Sister Jean Gillespie Memorial Award in Religious Studies

## Philosophy & Religious Studies Club

The Philosophy and Religious Studies Club is a student-run group open to all persons interested in philosophy and religious studies. The club hosts an annual educational fundraiser that showcases the interests of a department faculty member. Topics vary for this popular evening complete with music, food, and wine tasting. The students also organize bi-monthly “Eat Drink Think” events (EDT), which are social events focused on classic and modern texts held over food and drinks. EDT events provide a nice forum for majors, non-majors, and community members to delve deeply into persistent questions in philosophy and religion and their relation to public policy, national and global events, and academics. For more information, please visit our department website: <http://www.as.ysu.edu/~philrel/index.html>, and join our Facebook group, “YSU Philosophy and Religious Studies Club”, for updates about upcoming events at <http://www.facebook.com/?ref=home#!/group.php?gid=22856668696>.

## DEPARTMENT OF POLITICAL SCIENCE AND RIGELHAUPT PRE-LAW CENTER

330-941-3436

*Professors Sracic (Chair), Porter; Associate Professors Lepak; Assistant Professor Jackson.*

### POLITICAL SCIENCE

A major in political science comprises 33 semester hours with the requirement that the student complete at least two courses in American Government, two courses from Comparative Government and International Relations, one Political Thought course and a capstone course. This degree may be earned in eight semesters if students enroll in 16 hours per semester and take both day and evening classes.

### Learning Outcomes

The department’s learning outcomes for political science majors are as follows:

- Students will be able to summarize fundamental components of knowledge that have developed in relation to areas of political theory, American government, comparative politics, and international relations.
- Students will recognize and explain the fundamental ideas and constitutional principles that have shaped the American Republic, as well as the institutions and behaviors that provide the setting and substance of American politics.
- Students will recognize and explain the basic ideas, problems and processes of comparative politics and international relations relative to issues of Western and non-Western political development, different forms of national government, and foreign policy behaviors relative to a global economy.
- Students will use and apply the Style Manual of the American Political Science Association (APSA) in conjunction with their research and writing skills associated with the creation of credible political science projects.

### Related Studies

Related minors in history, economics, geography, and sociology are valuable to the political science major preparing for graduate study in political science, or for a career in journalism, law, public administration or the Foreign Service. The student who plans to do graduate study in political science or who expects to apply to the Foreign Service should achieve proficiency in at least one modern foreign language.

### FOREIGN AFFAIRS

The Foreign Affairs Program provides students with a broad background and understanding of international relations and comparative politics. Students study patterns of conflict and cooperation among nations, international organizations, and other international actors, while developing a broader understanding of the problems of governance, justice, economic development and political stability.

The program is designed to accommodate students seeking careers in such fields as diplomacy, international security, humanitarian and technical assistance, international education, international trade and public affairs.

### REQUIRED COURSES: s.h.

**Economics:**  
 ECON 1501, Economics in Action .....3  
 ECON 2610 or 2630 may be substituted

**Geography:**  
 GEOG 2626, World Geography, or one of the following: GEOG 3713—South America Geography, GEOG 3715—Middle America Geography or GEOG 3717—European Geog.....3

**History:**

HIST 1512 - World Civilizations from 1500.....3

**Total Credits for Required Courses.....9**

**MAJOR**

<b>Courses</b>	<b>s.h.</b>
POL 1560 American Government.....	3
POL 2640 Contemporary World Government.....	3
POL 2660 International Relations .....	3
POL One additional Upper-level course in American Government.....	3
POL 4801 Capstone—Sr. Status.....	3
POL One Political Thought Course	

*Plus Five upper-division courses:*

*Two or three courses from field of international relations*

POL 3760 International Political Economy .....	3
POL 3761 U.S. Foreign Policy .....	3
POL 3763 International Law .....	3
POL 3764 International Organizations .....	3
POL 3768 International Conflict.....	3

*Two or three courses from field of comparative politics*

POL 3741 Russia and China: From Revol. to Reform.....	3
POL 3742 Political Development & Political Regimes .....	3
POL 3744 European Politics .....	3
POL 3751 Latin American Politics.....	3
POL 3767 Asian Politics .....	3

**Total Credit..... 33 s.h.**

**MINOR**

<b>Courses</b>	<b>s.h.</b>
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*One Course is required:*

POL 1560 American Government .....

*One of the following two courses is required:*

POL 2640 Contemporary World Governments...	3
POL 2660 International Relations.....	3

*Plus four upper-division courses:*

*One to three courses from field of international relations:*

POL 3760 International Polit Economy .....	3
POL 3761 U.S. Foreign Policy .....	3
POL 3763 International Law .....	3
POL 3764 International Organizations.....	3
POL 3768 International Conflict.....	3

*One to three courses from field of comparative politics:*

POL 3741 Russia & China: From Revolution to Reform. ....	3
POL 3742 Polit Development & Polit Regimes ....	3
POL 3744 European Politics.....	3
POL 3751 Latin American Politics.....	3

**Total Credit Hours ..... 18 s.h.**

**PUBLIC MANAGEMENT PROGRAM**

The public management program is designed to provide a broad background in government and economics for students who plan a career in national,

state or local government. The program also gives students exposure to specific skills. The minor offers sufficient flexibility to permit the student to develop a specialization.

This major is designed to prepare students to directly enter the workforce in the public sector, pursue a master of public administration, and pursue careers in the non-profit sector.

Professional training of public servants contributes to the fulfillment of the Mission of Youngstown State University, which states that the "University and public service are seen, not only as interrelated, but also as fundamental to endeavors both within and outside the University."

**Public Management Requirements:**

**THE MAJOR**

<b>Courses</b>	<b>s.h.</b>
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POL 1560 American Government.....	3
ECON 2610 Principles of Microeconomics .....	3
ECON 2630 Principles of Macroeconomics.....	3
ECON 3702 Public Finance.....	3
POL 3718 Public Policy.....	3
POL 3720 Public Management .....	3
POL 3722 State & Local Government .....	3
POL 3724 Public Budgeting .....	3
POL 4801 Internship/Capstone .....	3-4

<b>Courses</b>	<b>s.h.</b>
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ACCT 2602 Financial Accounting .....	3
MGMT 3725 Fundamentals of Management OR.	3
MGMT 3750 Human Behavior in Organization ...	3
ECON 3780-3781 Economic Statistics OR .....	5
SOC 3701 Social Statistics I .....	3

Student is to select twelve (12) additional credits to define an area specialty.

*The following are examples:* Accounting, Finance, Urban Planning, Health Administration, Historic Preservation, Environmental Studies, or other relevant field.

See advisor in the Department of Political Science for details.

**COMBINED MAJOR IN SOCIAL STUDIES**

The program for the combined major in social studies provides appropriate foundation for the study of law, for graduate work in the disciplines which it includes, and for entry into the civil service field. It can also partially fulfill requirements for teacher licensure in the social sciences.

History 2605 and 2606 are required for the social studies major in addition to courses in economics, geography, history, political science, sociology, anthropology, and gerontology to be distributed as follows:

- A. A statistics course from a social science discipline.

- B. A minimum of 12 semester hours from 3 of the following disciplines: economics, geography, history, political science and combined sociology/anthropology.
- C. A capstone course offered by one of the 3 selected disciplines.
- D. A minimum of 48 semester hours, 27 of which must be upper division.

Any course offered by the participating departments may count toward the social studies major.

## PRE-LAW

*Political Science Faculty, Advisors.*

Pre-law advisement is available in the Rigelhaupt Pre-Law Center at the beginning of the student's college study to acquaint the student with the various fields of legal practice which require specialized undergraduate study, and in the junior year to arrange for law school entrance examinations and interviews.

Law school admission standards generally require an undergraduate point average of at least 3.00 and placement above the 50th percentile in the Law School Admissions Test, which is designed to measure capacity for analytic thought and for precision in the use of language. Regional and national law schools may have more rigorous requirements. Students are advised to consult *The Official Guide to U.S. Law Schools*, a publication of the Law School Admissions Council and the Association of American Law Schools, copies of which are available for use in the Rigelhaupt Pre-Law Center.

## DEPARTMENT OF PSYCHOLOGY

330-941-3401

*Professors Coldren, Ellyson, Flora, Fry, Gittis, Gray, Haynes, Kestner, Small, Stringer, White; Associate Professors Clayton, Giorgetti (Chair), Thomas; Assistant Professors Boron, Jameson-Cox, Newton, Ragozzine, Rosales.*

Psychology offers a major leading to the Bachelor of Arts degree as well as a master's degree program in applied behavior analysis. The Bachelor of Arts degree may be appropriate for students seeking (1) a general liberal arts degree; (2) paraprofessional employment; (3) certification with a B.A. degree to teach psychology in the secondary schools; (4) preparation for graduate study in psychology. The Bachelor of Arts in psychology can be earned in eight semesters if students average 16 hours per semester. Psychology majors must select an official minor as listed in the Bulletin.

### Learning Outcomes

The department's learning outcomes for psychology majors are as follows:

- Students will describe basic concepts and other information in sub-disciplines within the field. (Representative sub-disciplines include: research methods, statistics, clinical, developmental, social, learning, cognitive, and physiological psychology)
- Students will conduct and provide a written and oral report of a research project using APA style.
- Given typical real-life problems in a sub-discipline within the field, students propose solutions that involve applying psychological concepts.
- Given a psychological concept from a sub-discipline of psychology, students will describe how it could be applied to their daily lives.
- Students will describe changes in thought or attitude or action resulting from information acquired in class readings and discussions relating to diversity.

## Bachelor of Arts—Psychology

38 Hours

- A. PSYC 1560 (General); 2617 & 2618 (Research Methods and Statistics 1 & 2).
- B. At least one course must be taken from each of the following areas: (1) Clinical: PSYC 3702 or 3775. (2) Social/Developmental: PSYC 3700 or 3755 or 3756 or 3757 or 3758 (only two developmental courses may count towards the major). (3) Learning/Perception/Cognition: PSYC 3705 and 3705L, or 3760 and 3760L, or 3761 and 3761L. (4) Physiological: PSYC 3710 and 3710L or 3728.
- C. Two laboratories attached to any psychology course.
- D. Capstone course PSYC 4890 or 4895.
- E. An additional 9 hours in courses applicable to the psychology major, excluding 3770 or 3790.
- F. The remaining 3 hours in coursework may be taken in any course applicable to the major—38 s.h.

## Psychology Minor

A minor consists of at least 18 semester hours with grades of "C" or better. Courses taken Credit/No Credit may not be counted toward the minor. At least 1/3 of these hours must be upper division. See the required minor curricula under Developmental Psychology or General Psychology in the Minors section of this bulletin.

## RELIGIOUS STUDIES

*See Philosophy and Religious Studies.*

## RUSSIAN

*See Foreign Languages.*

**DEPARTMENT  
OF SOCIOLOGY,  
ANTHROPOLOGY, AND  
GERONTOLOGY**  
330-941-3442

*Professor Jiang (Chair); Associate Professors D’Apolito, Gordiejew, Lease, O’Mansky, Van Dussen; Assistant Professors Narcisse, Li.*

The Department of Sociology, Anthropology, and Gerontology offers majors and minors in all three programs. The department also offers a Certificate in Applied Gerontology.

**SOCIOLOGY**

A major in sociology is for advanced graduate/professional study of sociology, law, counseling, social work, criminal justice, urban development, education, and other fields requiring work beyond the bachelor’s level. A major in sociology also prepares students for employment in government agencies, businesses, hospitals, education, urban affairs, and personnel.

A major in sociology comprises of 31 semester hours. Majors must take SOC 1500, 3701, 3749, 4850, and 4851, in addition to at least 15 semester hours of sociology courses. The program can be completed in eight semesters if students enroll in 16 hours per semester and take both day and evening classes.

Students wishing to minor in sociology must complete 18 s.h. in an approved designated minor. Students are responsible for satisfying all prerequisites and maintaining a “C” or better in all minor requirements and cannot take courses on a “CR/NC” basis. The department also offers a minor in sociology.

See department for course requirements.

**Internships in Sociology**

Internships are available to all sociology majors. Internships may be either paid or unpaid. Sociology majors have the opportunity to apply the application of sociological knowledge during an internship and work in a variety of settings such as the Mahoning County Planning Commission, Mahoning County Sheriff’s Office, and Park Vista Retirement Community.

**Learning Outcomes**

The department’s learning outcomes for sociology majors are as follows:

- Students can demonstrate understanding of the discipline of sociology and its role in contributing to our understanding of social reality.
- Students can critically evaluate various theoretical perspectives in sociology.

- Students can demonstrate comprehension of the scientific process and evaluate various qualitative and quantitative methods.
- Students can synthesize theory and methods by designing, implementing, and completing an empirical research project.
- Students can evaluate research in at least on substantive area within sociology in depth.

**Curriculum**

**SUGGESTED COURSE SCHEDULE FOR  
SOCIOLOGY MAJORS**

**YEAR ONE  
FALL SEMESTER**

	<b>s.h.</b>
Writing I—ENGL 1550* .....	3
GER Math—MATH 2623* .....	3
GER Societies and Institutions (SI) .....	3
Foreign Language—1550* .....	3
Introduction to Sociology—SOC 1500 (SI) .....	<u>3</u>
Total .....	<u>15</u>

**SPRING SEMESTER**

	<b>s.h.</b>
Writing II—ENGL 1551* .....	3
GER Speech—COMM 1545 .....	3
Natural Sci Lab .....	4
Foreign Language—2600* .....	3
Sociology Elective (Upper Division) .....	<u>3</u>
Total .....	<u>16</u>

**YEAR TWO  
FALL SEMESTER**

	<b>s.h.</b>
GER Societies and Institutions (SI) .....	3
GER Natural Science (NS) .....	3
GER Art and Lit. Perspectives (AL) .....	3
Foreign Language .....	3
GER Pers and Soc Respons (PS) .....	<u>3</u>
Total .....	<u>15</u>

**SPRING SEMESTER**

	<b>s.h.</b>
GER Domain (AL, SI, NS) .....	3
GER Domain (AL, SI, NS) .....	3
Sociology Domain (Upper Division) .....	3
GER Art. And Lit. Perspectives (AL) .....	3
GER Pers and Soc. Respons (PS) .....	<u>3</u>
Total .....	<u>15</u>

**YEAR THREE  
FALL SEMESTER**

	<b>s.h.</b>
Social Theory—SOC 3749 .....	3
Sociology Elective (Upper Division) .....	3
Minor .....	3
Elective .....	3
Elective .....	<u>3</u>
Total .....	<u>15</u>



**SPRING SEMESTER**

	<b>s.h.</b>
Social Statistics I - SOC 3701.....	3
Sociology Elective (Upper Division) .....	3
Minor.....	3
Minor .....	3
Elective.....	<u>3</u>
Total.....	15

**YEAR FOUR  
FALL SEMESTER**

	<b>s.h.</b>
Research Methods—SOC 4850.....	3
Sociology Elective (Upper Division) .....	3
Minor.....	3
Minor (Upper Division) .....	3
Elective.....	<u>3</u>
Total.....	15

**SPRING SEMESTER**

	<b>s.h.</b>
Social Research—SOC 4851 (capstone).....	3
Elective.....	3
Elective.....	3
Elective.....	3
Minor (Upper Division) .....	3
Elective.....	<u>3</u>
Total.....	18

**Total Hours For Graduation.....124**

\*Placement exam in English, math, and foreign languages required before registration for classes.

**SOCIOLOGY MINOR**

SOC 1500	Introduction to Sociology.....	3
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**3 s.h. from the following courses:**

SOC 3705	The Family.....	3
SOC 3740	Complex Organizations .....	3
SOC 3741	Social Movements .....	3
SOC 3745	Sociology of Health, Illness, and Healthcare.....	3

**3 s.h. from the following courses:**

SOC 2640	Women in Society.....	3
SOC 3700	Minority Groups.....	3
SOC 3743	Social Stratification and Inequality.....	3

**3 s.h. from the following courses:**

SOC 2601	Social Problems.....	3
SOC 2630	Criminology .....	3
SOC 3707	Urban Sociology .....	3
SOC 3735	Juvenile Delinquency.....	3
SOC 3744	Social Deviance.....	3

**3 s.h. from the following courses:**

SOC 3703	Aging and Society .....	3
SOC 3755	Theories of Gerontology.....	3
SOC 3756	Aging and Ethnicity .....	3
SOC 3757	Aging and Social Policy.....	3
SOC 3759	Sociology of Dementia.....	3

**3 s.h. from the following courses:**

SOC 3720	Applied Sociology.....	3
SOC 4821	Internship in Sociology.....	3

**Total Number of Semester Hours.....18**

**ANTHROPOLOGY**

A major in anthropology can take several directions. A background in anthropology can be immediately useful in many professional fields such as law, elementary and secondary education, urban affairs, administration, business and industry. Others can use the bachelor's degree as a first step in acquiring an advanced degree and ultimately teaching and doing research at the college or university level. Recent evidence indicates that a large number of corporate managers have degrees in anthropology.

A major in anthropology comprises 40 semester hours. Majors must take Anthropology 1500, 3701, 3702, 3703, 3705, 4801, 4850, 4851, one area course from each of the three subfields, and two upper-division anthropology electives. This program can be completed in eight semesters if students enroll in 16 hours per semester and take both day and evening classes.

Students wishing to minor in anthropology must complete 18 s.h. in an approved designated minor. Students are responsible for satisfying all prerequisites and maintaining "C" or better in all minor requirements and cannot take courses on a "CR/NC" basis. Minors in anthropology offered from the department are as follows:

- General Anthropology
- Archaeology
- Biological Anthropology
- Cultural Anthropology
- Forensic Anthropology

See department for course requirements.

**Internships in Anthropology**

Internships are available to all Anthropology majors. Internships may be either paid or unpaid. Anthropology majors have the opportunity to apply the application of anthropological knowledge during an internship at the Mahoning County Coroner's Office.

**Learning Outcomes**

The department's learning outcomes for anthropology majors are as follows:

- Students can demonstrate comprehension of the fundamental principles and concepts of the four field holistic approach to anthropology.
- Students can evaluate anthropological theories and guiding ethics.
- Students can evaluate the scientific process and research methods.

- Students can evaluate the importance of past or present cultures, cultural variation, and cultural change in the global context.
- Students can analyze evolutionary biology using mechanisms of evolutionary change.

**Curriculum**

**SUGGESTED COURSE SCHEDULE FOR ANTHROPOLOGY MAJORS**

**YEAR ONE  
FALL SEMESTER**

	<b>s.h.</b>
English 1550*.....	3
Math 2623*.....	3
GER Domain (SI).....	3
Foreign Language 1550*.....	4
Anthropology 1500 (SI).....	<u>3</u>
Total.....	16

**SPRING SEMESTER**

	<b>s.h.</b>
English 1551*.....	3
Comm 1545.....	3
GER Domain (NS).....	3
Foreign Language 2600*.....	4
Anthropology 3705 (P).....	<u>3</u>
Total.....	16

**YEAR TWO  
FALL SEMESTER**

	<b>s.h.</b>
GER Domain (SI).....	3
GER Domain (NS) (A&S 2600).....	4
GER Domain (AL).....	3
Elective.....	3
GER Domain (PS).....	<u>3</u>
Total.....	16

**SPRING SEMESTER**

	<b>s.h.</b>
GER Domain (AL, SI, NS).....	3
GER Domain (AL, SI, NS).....	3
Anthropology 3702 (P).....	3
GER Domain (AL).....	3
GER Domain (PS).....	<u>3</u>
Total.....	15

**YEAR THREE  
FALL SEMESTER**

	<b>s.h.</b>
Anthropology 3703 (P).....	3
Anthropology Elective.....	3
Minor.....	3
GER Domain (ST).....	3
Elective.....	<u>3</u>
Total.....	15

**SPRING SEMESTER**

	<b>s.h.</b>
Anthropology 3701.....	3
Anthropology Elective.....	3
Minor.....	3
Minor.....	3
Elective.....	<u>3</u>
Total.....	15

**YEAR FOUR  
FALL SEMESTER**

	<b>s.h.</b>
Anthropology 4850 (P).....	3
Anthropology 4801 (P).....	3
Minor (Upper Division).....	3
Minor (Upper Division).....	3
Elective.....	<u>3</u>
Total.....	15

**SPRING SEMESTER**

	<b>s.h.</b>
Elective.....	4
Elective.....	3
Elective.....	3
Minor (Capstone).....	3
Anthropology 4851 (P).....	<u>3</u>
Total.....	16

**Total Hours For Graduation.....124**

\*Placement exam in English, math and foreign language required before registration of classes.

a) Student may test in ENGL 1540T/1540 or just 1540. These need to be taken before entry in 1550. ENGL 1550 & 1551 must be completed by 62 SH.

b) FNLG through level 2600 required unless satisfied through placement exam.

A grade of C or better is required in the major and minor.

Courses in the major cannot be used in the GER Domains. Must use two departments to satisfy each domain. AL, SI, NS must equal a minimum of eight classes. Domains may be taken in any order.

All non B science majors must take A&S 2600 unless they fulfill the laboratory requirement through substitute courses.

Classes taken and/or repeated out of sequence will not count toward graduation. **Check prerequisites.**

**GERONTOLOGY**

Gerontology is the interdisciplinary study of aging and is a rapidly growing field. The gerontology major prepares the students for a career in the field of aging. Since aging is a multifaceted, complex phenomenon, an interdisciplinary training in gerontology will give students an edge in working with the aging population. The field of aging provides diverse

occupational opportunities in health professions, non-profit organizations, recreation and leisure, for profit businesses, education, research, government, and service providers. Settings include community, human service and religious organizations, government agencies, health and long-term care facilities, retirement communities, academic and research settings, business, industry, legal, and professional organizations.

A major in Gerontology comprises of 49 semester hours. Majors must take GERO 1501, 3701, 3703, 3755, 4801, 4821, 4850, 4851, SOC/GERO/POL 3757 or POL 3717 or SCWK 3730, FNUTR 3720, PSYC 3757 and 4857. In addition to at least 12 semester hours from a list of gerontology related electives. The program can be completed in eight semesters if students enroll in 16 hours per semester and take both day and evening classes.

**Learning Outcomes**

Students can demonstrate understanding of the discipline of gerontology and its interdisciplinary approach to aging and society. (**Disciplinary Knowledge**)

- Students can explain the diversity and complexity of aging in our society.
- Students can dispel ageist stereotypes about aging and older adults.
- Students can explain theories, fundamental principles, theories, and core concepts of gerontology.
- Students can assess the scientific process including various qualitative and quantitative methods. Students can synthesize theory and methods by completing an original empirical research project.

**Curriculum**

**SUGGESTED COURSE SCHEDULE FOR GERONTOLOGY MAJOR**

**YEAR ONE  
FALL SEMESTER**

	s.h.
ENGL 1550 .....	3
MATH 2623 .....	3
GERO 1501 (PS) .....	3
FNLG 1550.....	4
SOC 1500 (SI) .....	<u>3</u>
Total.....	16

**SPRING SEMESTER**

	s.h.
ENGL 1551 .....	3
COMM 1545 & 1545L.....	3
FNLG 2600.....	4
PSYC 1560 (PS) .....	3
GERO Elective .....	<u>3</u>
Total.....	16

**YEAR TWO  
FALL SEMESTER**

	s.h.
GERO Elective .....	3
Writing Intensive.....	3
GER Domain (NS) A&S 2600.....	4
GER Domain (AL, NS, SI)*.....	3
GERO Elective .....	<u>3</u>
Total.....	16

**SPRING SEMESTER**

	s.h.
FNUTR 3720.....	3
Oral Intensive .....	3
GER Domain (AL, NS, SI)*.....	3
GER Domain (AL, NS, SI)*.....	3
Elective.....	<u>3</u>
Total.....	15

**YEAR THREE  
FALL SEMESTER**

	s.h.
GERO/SOC 3703 (SI)* .....	3
PSYC 3757.....	3
GER Domain (AL, NS, SI)*.....	3
GER Domain (AL, NS, SI)*.....	3
SOC/GERO 3755.....	<u>3</u>
Total.....	15

**SPRING SEMESTER**

	s.h.
GERO/SOCIO 4801 .....	3
PSYC 4857.....	3
SOCIO/GERO 3701 .....	4
GER Domain (AL, NS, SI)*.....	3
SOCIO/GERO 3757 or POLIT 3717 or SCWK 3730	<u>3</u>
Total.....	16

**YEAR FOUR  
FALL SEMESTER**

	s.h.
GERO 4821 (internship) .....	3
GER Domain (ST).....	3
SOCIO/GERO 4850 (Writing Intensive) .....	3
GERO Elective (Upper Division) .....	3
Elective (Upper Division).....	<u>3</u>
Total.....	15

**SPRING SEMESTER**

	s.h.
Elective (Upper Division).....	3
GERO 4852 Capstone.....	3
GERO Elective (Upper Division) .....	3
Critical Thinking Intensive .....	3
Elective (Upper Division).....	<u>3</u>
Total.....	15

Total Hours For Graduation ..... 124

**GERONTOLOGY MINOR**

**3 s.h. from the following courses:**

GERO 1501	Introduction to Gerontology .....	3
SOC 1500	Introduction to Sociology.....	3

**15 s.h. from the following courses:**

GERO 3703	Aging and Society .....	3
GERO 3755	Theories of Gerontology.....	3
GERO 3756	Aging and Ethnicity.....	3
GERO 3757	Aging and Social Policy.....	3
GERO 4801	Later Life Issues.....	3
GERO 4804	Family, Health, and Aging.....	3
GERO 4821	Internship .....	3
SOC 3759	Sociology of Dementia.....	3
FNUT 3720	Nutrition, Health, and Aging.....	3

**Total Number of Semester Hours .....**18

**Certificate in Applied Gerontology**

A Certificate in Applied Gerontology comprises 21 semester hours. Students must take GERO/SOC 3703, SOC 4801, PSYC 3757 and 4857, and complete fieldwork in GERO/SOC 4821 or PSYC 3720 for 3 semester hours either through the Sociology, Anthropology, and Gerontology Department or Psychology Department. Students must maintain a "C" or better in all course work, satisfy all prerequisites, and cannot take a course on a "CR/NC" basis.

**SPANISH**

*See Foreign Languages.*

**WOMEN'S STUDIES**

*G. Mehera Gerardo (Director), History; Burkhart, Elias, Fagan, Garr, Gertis, Jackson, Linkon, McNierney, Mower, Okawa, Sinnreich, Sisco, Smith, Stringer, Strom, Tessier, Thomas, Tingley, York.*

The University offers a minor in women's studies with the advice and approval of the chair of the department in which the student is majoring. The minor requires completion of 18 hours. For information about the Women's Studies minor, contact the director.

**Lower-Division Courses**

Women's Studies 2601.	<i>Introduction to Women's Studies.</i>	3 s.h.
English 2617.	<i>Women in Literature.</i>	3 s.h.
Foreign Languages 2660.	<i>Women in the Ancient World.</i>	3 s.h.
Sociology 2640.	<i>Women in Society.</i> Prereq.: SOC 1500.	3 s.h.

**Upper-Division Courses**

Biology 3718. *Women, Science, and Technology.* Prereq.: ENGL 1550; one Societies and Institutions General Education course, one Natural Sciences General Education course, or substitutes. 3 s.h.

Child and Family 3731: *Individual & Family Development.* Prereq.: ENGL 1551 and PSYC 1560. 3 s.h.

English 3732. *Images of Women.* Prereq.: ENGL 1551. 3 s.h.

History 3726. *History of Women in the United States.* Prereq.: HIST 2605 or 2606. 3 s.h.

Women's Studies 3750. *Special Topics in Women's Studies.* Prereq.: WMST 2601. 3 s.h.

History 3787. *History of Women in Europe.* Prereq.: HIST 1512. 3 s.h.

Management 3755. *Managing Diversity.* Prereq.: Junior standing and a declared major. 3 s.h.

Philosophy 3709. *Feminist Philosophy.* Prereq.: PHIL 2600 or WMST 2601. 3 s.h.

Psychology 3730. *Psychology of Women.* Prereq.: PSYC 1560. 3 s.h.

Psychology 3730L. *Psychology of Women Laboratory.* Concurrent: PSYC 3730. 1 s.h.

Religious Studies 3754. *Feminism, Ecology and Religion.* Prereq.: REL 2601 or 2631 or WMST 2601. 3 s.h.

Human Ecology 5893: *Work and Family.* Prereq.: CHF 3731 or SOC 3705 or PSYC 3707. 3 s.h.

Women's Studies 4850. *Senior Research Project.* Prereq.: Senior standing and completion of a minimum of 10 s.h. in Women's Studies. 1-3 s.h.

The student may select one of the following courses when offered with the appropriate focus to complete the 14 hours for a minor.

Africana Studies 3700. *Black Studies Colloquium 1.* Prereq.: AFST 2600. 3 s.h.

Africana Studies 3701. *Black Studies Colloquium 2.* Prereq.: AFST 2601. 3 s.h.

American Studies 3701. *Approaches to American Studies.* 3 s.h.

Art History 4880. *Special Topics in Art History.* Prereq.: ART 1541, 1542, or consent of instructor. 3 s.h.

English 3790. *Selected Topics in Multicultural Studies.* Prereq.: ENGL 1551. 3 s.h.

Foundations of Education 5880. *Special Topics in Foundations of Education.* Prereq.: Permission of chairperson. 2 s.h.

History 4801. *Select Problems in American History.* Prereq.: Consent of instructor. 3 s.h.

Music History 5878. *Selected Topics in Music History.* May be repeated once with different topic. Prereq.: MUTC 2632 and MUHL 3774. 3 s.h.

4820. *Seminar in Philosophy.* Prereq.: One 2600-level PHIL course. 3 s.h.

Psychology 4850. *Seminar in Psychology.* Prereq.: Senior standing in psychology. 2 s.h.

Religious Studies 4850. *Seminar in Religious Studies.* Prereq.: One 3700-level REL course. 3 s.h.

Sociology 4851. *Social Research.* Prereq.: SOCIO 4850. Listed also as ANTH 4851. 3 s.h.

# The College of Science, Technology, Engineering, and Mathematics (STEM)

*Martin A. Abraham, Dean*



The College of Science, Technology, Engineering and Mathematics (STEM) is the academic unit of the University comprising the following departments: Biological Sciences, Chemistry, Civil/Environmental and Chemical Engineering, Computer Science and Information Systems, Electrical and Computer Engineering, Engineering Technology, Geological and Environmental Sciences, Mechanical and Industrial Engineering, Mathematics and Statistics, and Physics and Astronomy.

Formed in 2007 through an administrative reorganization, the STEM College is committed to strengthening core areas of its departments as well as facilitating collaborations between its faculties and students at all levels in their disciplines. Its formation is a bold initiative in coupling higher education to economic development by enhancing research activities and collaboration with industry.

## **College of STEM Mission**

The College of STEM is committed to furthering the mission of Youngstown State University by delivering integrated programs of excellence to an engaged learning community. The College uses

state-of-the-art technology in teaching and research to meet the educational objectives of students, both undergraduate and graduate, enrolled in all its programs. The College fosters intellectual growth through integration of teaching, scholarship, and service that expands the talents of its constituencies—including students, faculty, business, industry, and government—with synergistic activities in and beyond the classroom; prepares our graduates for a multidisciplinary world through a flexible and diverse curriculum; and meets the need for a well-educated, skilled workforce for economic growth with industrial partnerships, research, and scholarship.

## Core Values

The College of STEM fully subscribes to the core values of the University—the centrality of students; excellence and innovation; integrity/human dignity; and collegiality and public engagement.

- We are a learning-centered College committed to the intellectual, ethical, and career growth of all learners, both inside and outside the classroom.
- We foster intellectual inquiry, exploration, and discovery that transcends traditional boundaries and facilitates interdisciplinary scholarship. We expand and apply knowledge and encourage creativity through research and scholarship.
- We are committed to the social development of students, by promoting ethical behavior and collegiality in all endeavors, and to enrichment of the University through diversity of the faculty and student body.
- We enhance the quality of life and economic health of the region, the state, and beyond by providing students with the knowledge and skills to meet the challenges of modern society, and by providing business, industry, government, K–12 schools, and the public with technical expertise and leadership to support innovation and growth.

## Degrees/Programs

The College offers four bachelor's degrees: Bachelor of Arts (B.A.), Bachelor of Engineering (B.E.), Bachelor of Science (B.S.), and the Bachelor of Science in Applied Science (B.S.A.S.). It offers two associate degrees: Associate in Applied Science (A.A.S.) and the Associate in Technical Studies (A.T.S.). Also, in conjunction with FirstEnergy Corporation, two options are available for lineworker and power plant technology.

Please visit our website at [www.ysu.edu/power-systems](http://www.ysu.edu/power-systems) for more information regarding the lineworker and power plant technology programs, or see p. 239 of this *Bulletin*.

A certificate program is offered in construction management technology.

Students whose needs are not met by existing conventional programs may wish to investigate and apply for the Individualized Curriculum Program (see Academic Policies and Procedures).

## Admissions

Students who are calculus-ready will be directly admitted into the academic department in their major. Those who are not will remain under the guidance of the professional advising staff until they are department-ready. For more details on the preparation and criteria of the STEM standards, please check with the Advising Center in the College of STEM.

## Degree Requirements

Requirements for completion of a baccalaureate degree and an associate degree within the College of STEM include all University requirements detailed in the Academic Policies and Procedures section of the Bulletin (i.e., graduation and general education requirements, course levels requirements including majors [and minors, where applicable,] grade point average, residency, and degree applications). Specific requirements for each major in the College of STEM are listed by department or school. Consult the Rayen School of Engineering and Engineering Technology section in the *Bulletin* for additional graduation requirements for the B.E. degree (see p. 217).

**Minors** are not required for every program/major in the STEM College. Consult the curricula listed in the department sections of the bulletin for specific requirements for each major. For programs/majors requiring minors, at least eighteen (18) semester hours are required for the minor, and one-third of the hours must be upper-division. Minors must be from the approved list on p. 242.

**Prospective Teachers.** Prospective elementary or secondary teachers may work toward a B.A., B.S., or B.S.Ed. degree. Prospective high school teachers with major concentration areas offered in the College of STEM are advised by those departments, except for the requirements for teacher certification, for which academic advisement is provided in the Beeghly College of Education.

## Foreign Language Requirement for the Bachelor's Degree

All candidates for the B.A. and B.S. degree for math in the College are required to complete the elementary (1550) and the intermediate level (2600) of any foreign language offered. Students with a foreign language background may desire to take the foreign language placement test in order to place into the intermediate level (2600) to satisfy the requirement. It may be possible to satisfy the foreign language requirement through appropriate college transfer coursework and credit by exam.

Candidates for the B.S. (except Math majors), B.E. degree and candidates for the B.S.A.S. degree do not have a foreign language requirement.

## DEPARTMENT OF BIOLOGICAL SCIENCES

330-941-3601

*Professors Chuey, Cooper, Fagan, Leipheimer, Krontiris-Litowitz, Toepfer, Usis, Walker (chair); Associate Professors Asch, Diggins, Fagan, Johnston, Lorimer, Womble; Assistant Professors Butcher, Caguiat, Min, Renne, Tall.*

Courses in the Department of Biological Sciences may be applied toward a Bachelor of Science or a Bachelor of Arts degree. The department offers specialized courses in three major divisions: molecular biology and microbiology, physiology and anatomy, and evolution, ecology and environmental biology. The department offers courses to prepare a student for a wide variety of fields and future careers including dentistry, botany, health-related careers, physical therapy, nursing, medicine, veterinary medicine, medical technology, microbiology, molecular biology, biomedical research and biotechnology. Advisement is available concerning course selection appropriate for a specific field in biology and in the choice of a minor or minors. These degrees may be earned in eight semesters if students average 16 hours per semester.

## BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCES

The Bachelor of Science degree is recommended for those who wish to pursue careers in the biological sciences, medicine, dentistry or other related biotech fields.

### Learning Outcomes

The student learning outcomes for the major in biological sciences are as follows:

#### B.S. degree option

- Students will be prepared for entry into professional health or research related schools, post-graduate (M.S.) programs, or the work place.
- Students will master the subjects found on standardized tests (molecular biology, physiology, immunology) required for entrance into professional schools (MCAT, GRE, etc.).
- Students will demonstrate an understanding of fundamental biological principles and their application.
- Students should be able to reason critically, both individually and in collaboration with other students.

## Curriculum

The B.S. degree in biological sciences requires a minimum of 37 semester hours from within the Department of Biological Sciences. (Courses at the 1000 level are not applicable to a Bachelor of Science degree.) The program satisfies the GER requirement.

All biological sciences majors must take the following courses for the B.S. degree:

- 1) BIOL 2601 General Biology: Molecules and Cells, 4 s.h.; and BIOL 2602 General Biology: Organisms and Ecology, 4 s.h. The general biology courses are prerequisites for genetics and all core and upper-division courses.
- 2) BIOL 3721 Genetics 3 s.h.
- 3) Core Courses: One course must be taken from two of the following groups for a total of two courses: (7-9 s.h.)
  - Group A: Cell Biology: Fine Structure (BIOL 3711, 3 s.h.), Microbiology (BIOL 3702, 4 s.h.)
  - Group B: Human Physiology (BIOL 3730, 5 s.h.)
  - Group C: Plant Diversity (BIOL 3740, 4 s.h.) or Animal Diversity (BIOL 3741, 4 s.h.)
- 4) 15-17 semester hours of courses in the Department of Biological Sciences at the 3000-5000 level. A minimum of two of these courses must have a laboratory component, with at least one lab course at the 4000-5000 level.
- 5) Capstone course (BIOL 4861) 2 s.h.

Additional required course work in the sciences.

**Chemistry**—Chem. 1515 & 1515L and 1516 & 1516L, General Chemistry I and II; 3719 & 3719L and 3720 & 3720L, Organic Chemistry I and II. (Chem. 3785, Biochemistry, strongly recommended)

**Physics**—Physics 1501, 1501L, 1502, and 1502L (Fundamentals of Physics I and II and Fundamentals of Physics I and II Labs)

**Math**—Math 1570, Applied Calculus I, or Math 1571 (Calculus I) and Math 3717 (Statistics)

## BACHELOR OF ARTS IN BIOLOGICAL SCIENCES

The Bachelor of Arts is recommended only for those who plan careers in business or secondary education careers related to the Biological Sciences.

### Learning Outcomes

The department's learning outcomes for the B.A. in biology are as follows:

- Students will be fluent in the terminology of the biological sciences.
- Students will be competitive for entry into the workplace.

- Students will be familiar with the scientific process and the process of hypothesis testing.
- Students should be able to reason critically, both individually and in collaboration with other students. All biological sciences majors must take the following courses for the B.A. degree:

### Curriculum

The B.A. degree in biological sciences requires a minimum of 32 semester hours from within the Department of Biological Sciences. (Courses at the 1000 level are not applicable to a Bachelor of Arts degree.)

All biological sciences majors must take the following courses for the B.A. degree:

- 1) BIOL 2601 *General Biology: Molecules and Cells*, 4 s.h. and BIOL 2602 *General Biology: Organisms and Ecology* 4 s.h. The General Biology courses are prerequisites for all core and upper division Biology courses.
- 2) Core courses: One course must be taken from two of the following groups: (7-9 s.h.)
 

Group A—either *Cell Biology: Fine Structure* (BIOL 3711) or *Genetics* (BIOL 3721)

Group B—*Human Physiology* (BIOL 3730)

Group C—either *Plant Diversity* (BIOL 3740) or *Animal Diversity* (BIOL 3741)
- 3) 13-15 semester hours of courses in the Department of Biological Sciences at the 3000-5000 level. At least two of these courses must have a laboratory component.
- 4) Capstone course (BIOL 4861) 2 s.h.
- 5) Additional required course work: CHEM 1515/1515L and CHEM 1516/1516L; elementary and intermediate foreign language.

Organic Chemistry (CHEM 3719, 3719L, 3720, and 3720L) and Fundamentals of Physics (PHYS 1501, 1501L, 1502, and 1502L) are strongly recommended.

Students seeking admission to medically related professional schools should complete the B.S. program. Elective courses under either degree may be in any discipline; however, advanced chemistry, mathematics and psychology are particularly recommended.

The mathematics, physics and chemistry courses may not be taken under the credit/no credit option. (For general University requirements, see the Academic Policies and Procedures section of this *Bulletin*).

**Recommended core curriculum meeting science requirements of medically related and other professional schools.**

### Biology

2601 General Biology: Molecules and Cells  
2602 General Biology: Organisms and Ecology

#### Core courses

3711 Cell Biology: Fine Structure  
3721 Genetics  
3730 Human Physiology

#### Additional courses

3702 Microbiology  
3703 Clinical Immunology  
3705 Introduction to Human Gross Anatomy  
4813 Vertebrate Histology  
4890 Molecular Genetics  
5832 Principles of Neurobiology  
5834 Advanced Systems Physiology  
5836 Cell Biology: Molecular Mechanisms

### Chemistry

1515 General Chemistry I  
1516 General Chemistry II  
3719 Organic Chemistry I  
3720 Organic Chemistry II  
(Biochemistry Chem 3785, is strongly recommended)

### Physics

1501 Fundamentals of Physics I  
1502 Fundamentals of Physics II

### Mathematics

1570 Applied Calculus I or 1571 Calculus I  
3717 Statistical Methods

## BOTANY

*See Biological Sciences.*

## DEPARTMENT OF CHEMISTRY

330-941-3663

[web.yzu.edu/stem/chemistry](http://web.yzu.edu/stem/chemistry)

*Professors Hunter, Linkous, Mettee, Mincey (Chair), Norris, Wagner; Associate Professors Balendiran, Curtin, Jackson, Leskiw, Lovelace-Cameron, Serra, Simeonsson; Assistant Professors Stourman, Wang.*

The Bachelor of Science degree is recommended for those who plan to make a career in chemistry; a recommended program which meets the standards of the American Chemical Society is provided below. The Bachelor of Arts degree is recommended for those who plan to go into a medical, pre-pharmacy, or dental field and for those who plan to enter business or secondary education careers related to chemistry. The required courses for a B.S. degree with a major in chemistry are listed in the B.S. curriculum. The courses required for a B.A. degree are those listed in the B.A. curriculum below. Chemistry majors may not count Chemistry 1500 toward the major. These



degrees may be earned in eight semesters if students average 16 hours per semester.

**Learning Outcomes**

The undergraduate student learning outcomes for the major in chemistry are as follows:

- Students will demonstrate independent and critical thinking.
- Students will understand the fundamentals of modern chemical instrumentation.
- Students will understand the basic principles of the chemical disciplines included in their curriculum.
- Students will effectively communicate their ideas both orally and in writing.

Students in pre-professional programs such as pre-optometry may obtain appropriate curricula and advisement in the Department of Chemistry.

The segments of chemistry courses extending through two semesters must be taken in sequence unless otherwise indicated.

Eye protection and lab coats must be worn in chemistry laboratories at all times.

Each student majoring in chemistry will be assigned a faculty advisor by the department. The advisor will discuss the overall curriculum necessary for a degree in chemistry and will assist the student in the preparation of a suitable course sequence and choice of a minor or minors.

All chemistry majors are urged to consult their advisors regularly to avoid curricular problems.

In both of the following curricula, the electives must satisfy the general requirements for the degree sought (see Degree Requirements). German is strongly recommended for meeting the foreign language requirement in the B.S. curriculum.

**Recommended Curriculum Leading to a B.S. Degree with a Major in Chemistry**

**Core Courses**

**YEAR ONE  
FALL I**

<b>Courses</b>	<b>s.h.</b>
CHEM 1515 + 1515R.....	5
MATH 1571 .....	4

**SPRING I**

<b>Courses</b>	<b>s.h.</b>
CHEM 1516 + 1516R.....	5
MATH 1572 .....	4

**YEAR TWO  
FALL II**

<b>Courses</b>	<b>s.h.</b>
CHEM 3719 + 3719R.....	5
CHEM 2604 .....	5

PHYS 2610 + 2610L.....	5
MATH 2673 .....	4

**SPRING II**

<b>Courses</b>	<b>s.h.</b>
CHEM 3720 + 3720R.....	5
PHYS 2611 + 2611L.....	5

**YEAR THREE  
FALL III**

<b>Courses</b>	<b>s.h.</b>
CHEM 3739 .....	4
CHEM 3785 .....	3

**SPRING III**

<b>Courses</b>	<b>s.h.</b>
CHEM 3740 .....	4
CHEM 3729 .....	3

In addition to BS core, BS majors must complete twelve (12) hours of upper-division chemistry electives (from the list below), four (4) hours of which must be in upper-division laboratory. Majors must also complete the capstone sequence CHEM 4850 + 4850L.

**Credit Hour Summary**

Chemistry Hours in BS-Core:.....	39
Chemistry Elective Hours:.....	12
Capstone Course Hours:.....	<u>+3</u>
<b>Total Hours in Chemistry: .....</b>	<b>54</b>

Other major-required hours: .....	<u>+22</u>
(Math/Physics)	
Total Hours in Major:.....	76

**B.S. CHEM Electives**

3764	Chemical Toxicology.....	3
3786	Biochemistry 2 .....	3
3790	Undergraduate Seminar.....	1
4860	Regulatory Aspects of Industrial Chemistry .....	1
5804	Chemical Instrumentation .....	4
5821	Intermediate Organic Chemistry .....	3
5822	Advanced Organic Lab.....	4
5830	Intermediate Inorganic Chemistry .....	2
5831	Inorganic Lab .....	2
5832	Solid State Structural Methods.....	3
5836	Chemical Bonding and Structure.....	3
5861, 5862	Polymer Science 1, 2.....	3 + 3
5876	Enzyme Analysis.....	2

**Recommended Curriculum Leading to a B.A. Degree with a Major in Chemistry**

**Core Courses**

**YEAR ONE  
FALL I**

<b>Courses</b>	<b>s.h.</b>
CHEM 1515 + 1515R.....	5
MATH 1571 .....	4

## SPRING I

Courses	s.h.
CHEM 1516 + 1516R.....	5
MATH 1572 .....	4

YEAR TWO  
FALL II

Courses	s.h.
CHEM 3719 + 3719R.....	5
CHEM 2604 .....	5
PHYS 2610 + 2610L.....	5

## SPRING II

Courses	s.h.
CHEM 3720 + 3720R.....	5
PHYS 2611 + 2611L.....	5

YEAR THREE  
FALL III

Courses	s.h.
CHEM 3739 .....	4

In addition to B.A. core, B.A. majors must complete nine (9) hours of upper-division chemistry electives (from the list below). Majors must also complete the capstone CHEM 4850.

## Credit Hour Summary

Chemistry Hours in BA-Core:.....	29
Chemistry Elective Hours:.....	9
Capstone Course Hours:.....	+1
<b>Total Hours in Chemistry:</b>	<b>39</b>
Other major-required hours: .....	+18
(Math/Physics)	
Total Hours in Major:.....	57

## B.A. CHEM Electives

Courses	s.h.
3729 Inorganic Chemistry .....	3
3740 Physical Chemistry 2 .....	4
3764 Chemical Toxicology.....	3
3785, 3786 Biochemistry 1, 2 .....	3, 3
3790 Undergraduate Seminar.....	1
4850L Research Lab .....	2 - 3
4860 Regulatory Aspects of Industrial Chemistry .....	1
5804 Chemical Instrumentation .....	4
5821 Intermediate Organic Chemistry .....	3
5822 Advanced Organic Lab.....	4
5830 Intermediate Inorganic Chemistry .....	2
5831 Inorganic Lab .....	2
5832 Solid State Structural Methods.....	3
5836 Chemical Bonding and Structure.....	3
5861, 5862 Polymer Science 1, 2.....	3, 3
5876 Enzyme Analysis.....	2

COMBINED B.S./M.S. PROGRAM  
IN CHEMISTRY

This is a five-year program. Prospective students seeking admission to the program may submit an application to the Department of Chemistry during their senior year in high school. Students in the program start graduate studies after three years. They

will normally receive the B.S. degree in chemistry after 3 years and the M.S. degree after 5 years.

COMBINED B.S./M.D.  
PROGRAM

This is a six- or seven-year program open to graduating high school seniors; however, if a student has already graduated from high school and has taken no coursework for college-level credit, she or he is still eligible to apply to the program. After two to three years of college-level credit, students in the program are then eligible for admission to the second, or medical school, phase. Each student successfully completing the program will be awarded the B.S. degree in combined science from Youngstown State University and the M.D. degree from the Northeast Ohio Medical University (NEOMED). (See *Northeast Ohio Medical University*, on p. 73.)

DEPARTMENT OF  
COMPUTER SCIENCE AND  
INFORMATION SYSTEMS

330-941-3134

[www.csis.yosu.edu](http://www.csis.yosu.edu)

*Professor Schueller; Associate Professors Bodnovich (Chair), Hogue, Kramer, Lazar, Sullins; Assistant Professors Arslanyilmaz, Gaydos, Harper, Perera, Zhang; Instructor Ickert.*

The Department of Computer Science and Information Systems offers a wide range of education programs. The Computer Science program is offered as the Bachelor of Science degree and is a traditional, analytical program which involves extensive computer programming and support courses in mathematics. The Computer Information Systems program is offered as the Associate in Applied Science and the Bachelor of Science in Applied Science. Coursework involves extensive programming with an emphasis on applied business programming. The Information Technology program is also offered as the Associate in Applied Science and the Bachelor of Science in Applied Science. Coursework emphasizes applying high-end computer applications and system management.

Curriculum sheets and suggested schedules for each program may be obtained from the department office in Meshel Hall or on the Department's web site, at <http://www.csis.yosu.edu>.

## COMPUTER SCIENCE

The Computer Science program leads to the degree of Bachelor of Science. The flexibility of the program allows the student many choices upon graduation. Three major possibilities are: first, graduates will be qualified to pursue graduate work in computer science; second, all graduates will be qualified to work as systems analysts, systems programmers, or

software engineers. The student may study another discipline as a minor field to become an application programmer in that discipline. This degree may be earned in eight semesters if students average 16 hours per semester.

### Learning Outcomes

Computer science students in the BS degree program will:

- experience at least one large computer-based system.
- communicate effectively with written reports.
- be able to analyze, design, implement and test computer programs by using the appropriate data structures and algorithms.
- obtain full-time employment as programmers, systems analysts, computer specialists and in other closely related fields or/and acceptance to graduate programs.

In addition to completing all general University requirements, students wishing to receive the Bachelor of Science in computer science must complete the following:

1. CSIS 2610, 3700, 3701, and 3740.
2. CSCI 3710, 5806, 5814, 5870, and at least 2 s.h. of 4890.
3. At least 12 additional semester hours of upper-division CSCI or CSIS courses not including CSCI 4885 or 4886. CIS or IT courses numbered 4800 and above may also be used as electives with advisor approval.
4. A minor in mathematics comprising at least 18 semester hours to include MATH 1571, 1572, 3720, and either STAT 3743 or MATH 3760.
5. ENGL 3743, PHIL 2619, and PHIL 2625.
6. University general education requirements in essential skills, knowledge domains, and skill-intensive courses.
7. College requirements of study in a foreign language equivalent to 2600.

## COMPUTER INFORMATION SYSTEMS

The computer information systems program offers students the flexibility of earning either a two-year AAS degree or continuing for an additional two years to obtain a four-year BSAS degree through the two-plus-two program.

This discipline covers both the technical and end-user aspects of computing, using PCs through mainframe computers with hands-on experience. Student skills are developed in computation that includes application programming, networking and telecommunications, database design, cyber security, and analysis of complex business and technical environments.

### Learning Outcomes

Computer information systems students in the AAS and BSAS degree programs will:

- write computer programs in two or more programming languages.
- solve computer networking problems.
- communicate effectively with written reports.

CIS graduates of the AAS degree program will continue their studies towards a bachelor's degree in a computer or information technology area or obtain employment as programmers, computer specialists and in other closely related fields.

CIS graduates of the BSAS degree program will obtain full-time employment as programmers, network administrators, systems analysts, computer specialists and in other closely related fields.

### Associate Degree Program

The computer information systems associate degree program emphasizes the use of computers to solve business or science problems. The graduate may be employed in positions involving direct use of microcomputers and mainframe computers for business or science administration and decision support applications. This degree may be earned in four semesters if students average 16 hours per semester.

Students wishing to receive the Associate in Applied Science in computer information systems must complete the following:

1. CSIS 1590, 2610, 3722, 3723, 3726, and 3760.
2. At least 9 additional semester hours of upper-division CIS elective courses.
3. ACCT 2602 and 2603.
4. ENGL 3743.
5. PHIL 2619.
6. MATH 1570.
7. University general education requirements in basic skills and one general education course in each of the areas of artistic and literary perspectives, societies and institutions, and speech.

### Bachelor's Degree Program

The computer information systems professional will develop his or her ability to conceptualize, design, and implement high quality information systems based upon computer systems ranging from a single-user system to complex, interactive, and multi-user distributed systems. This degree may be earned in eight semesters if students average 16 hours per semester.

Students wishing to receive the Bachelor of Applied Science in computer information systems must complete the following:

1. CSIS 1590, 2610, 3722, 3723, 3726 and 3760.
2. CIS 4840.
3. At least 21 additional semester hours of upper-division CIS or CSIS courses. CSCI or IT courses numbered 4800 and above may also be used as electives with advisor approval.
4. A minor of at least 18 semester hours.
5. ACCT 2602 and 2603.
6. MATH 1570.
7. ENGL 3743, PHIL 2619, and PHIL 2625.
8. University general education requirements in basic skills, knowledge domains, and skill intensive courses.

## INFORMATION TECHNOLOGY

Information technology provides systematic foundations that include methodologies and models for conceptualizing the complex dynamics of the Information Technology environment as it applies to information systems design and implementation.

The program supports work processes and employee performance enhancements; is designed to improve overall workgroup and individual productivity; and addresses the creation, distribution, storage, and use of information in all its states. Business process are incorporated as an integral part of all course content. Information Technology encompasses end-user computing, information centers, computer-supported work, performance support, project management, multimedia, networks, database systems, system analysis, and information security.

### Learning Outcomes

Information technology students in the AAS and BSAS degree programs will:

- write and produce interactive programs.
- be able to design a 3NF database and extract information using QBE and SQL.
- communicate effectively with written reports.

IT graduates of the AAS degree program will continue their studies towards a bachelor's degree in a computer or information technology area or will obtain full-time employment as web technicians, help desk support, network technicians and in other closely related fields.

IT graduates of the BSAS degree program will obtain full-time employment as web designers, network administrators, multimedia specialists and in other closely related fields.

## Associate Degree Program

Graduates of the associate degree program can pursue careers in service and support of information systems, as well as continuing on to a bachelor's degree in information technology. This degree may be earned in four semesters if students average 16 hours per semesters.

Students wishing to receive the Associate in Applied Science in information technology must complete the following:

1. CSIS 1525, 1590, and either 1560 or 2610.
2. INFO 1575, 2663, 3774, 3704, 3714 and 3775.
3. CSIS 2699 or 4893, 3720 or 3782, 3722, and 3723 or 3783.
4. MATH 1552 or 1571.
5. An advisor-approved specialization area of at least 8 or 9 semester hours.
6. University general education requirements in basic skills and one general education course in each of the areas of artistic and literary perspectives, societies and institutions, and speech.

## Bachelor's Degree Program

The information technology professional will develop his or her ability to conceptualize, design, and implement high-quality information systems based upon computer systems ranging from single-user systems to complex, interactive, and multi-user distributed systems. (Students who wish to teach in public schools follow the content and add the professional education coursework to earn a teaching license.) This degree may be earned in eight semesters if students average 16 hours per semester.

IT majors may follow the generic curriculum or may choose to follow one of several options: database, e-commerce programming, multimedia/web design, networking, security, or technical support. See the CSIS department secretary for curriculum sheets for the options.

Students wishing to receive the Bachelor of Applied Science in information technology must complete the following:

1. CSIS 1525, 1590 and either 1560 or 2610, and either 2699 or 4893.
2. INFO 1575, 2663, 3704, 3774, 3714 and 3775.
3. CSIS 3720 or 3782, 3722, 3723 or 3783, and 3726.
4. At least 15 additional semester hours of upper-division Information Technology or CSIS courses. CSCI or CIS courses numbered 3000 and above may also be used as electives with advisor approval.
5. An unspecified minor of 18 or more semester hours.
6. University general education requirements in essential skills, knowledge domains, and skill-intensive courses.

**DEPARTMENT OF  
GEOLOGICAL AND  
ENVIRONMENTAL  
SCIENCES**

330-941-3612

*Professors Beiersdorfer, Dick (Chair), Jacobs; Associate Professors Amin, Armstrong; Assistant Professor McLean.*

**GEOLOGY PROGRAMS**

Geology may be the major for the degree of Bachelor of Science or Bachelor of Arts.

The major in geology provides the student with a background for professional work, teaching, and graduate study in geology, environmental science, and related fields. This degree may be earned in eight semesters if students average 16 hours per semester.

**Learning Outcomes**

The student learning outcomes for the B.S. in geology are as follows:

- Communicate effectively using the language, concepts, and models of geology in written, visual, and numerical formats.
- Properly apply the scientific method to research a geologic problem and formulate conclusions.
- Demonstrate ability to apply appropriate field- and laboratory-based methods (of acquiring, quantitatively and qualitatively analyzing and interpreting geologic data and information).
- Demonstrate understanding of plate tectonics regarding the petrologic, stratigraphic, and structural evolution of continents and oceans.

**Curriculum for the Bachelor of Science—Geology**

For the Bachelor of Science degree, the student majoring in geology must complete a minimum of 37 s.h. in geology (28 Specified, 9 Elective), including a course in field geology, an additional 24-26 s.h. in science support courses.

**I. Required Courses (28 s.h.)**

<b>Courses</b>	<b>s.h.</b>
GEOL 1505/ 1505L Physical Geology/ Physical Geology Lab .....	4
GEOL 2605 Historical Geology .....	4
GEOL 3700 Mineralogy .....	4
GEOL 3701 Geomorphology .....	3
GEOL 3704 Structural Geology .....	2
GEOL 3704L Structural Geology Lab .....	1

GEOL 3718	Igneous & Metamorphic Petrology.....	4
GEOL 5802	Sedimentology & Stratigraphy .....	3
GEOL 48XX	Field Camp (Minimum) .....	3
	<b>Total</b>	<b>28</b>

**II. Geology Electives (Minimum 9 s.h.)**

<b>Courses</b>	<b>s.h.</b>	
GEOL 2602	Introduction to Oceanography .....	3
GEOL 2615	Geology & the Environment 1 .....	3
GEOL 3702	Glacial Geology .....	3
GEOL 3706	Geology of Economic Mineral Deposits .....	3
GEOL 3709	Subsurface Investigations .....	3
GEOL 3714	Principles of Paleontology .....	3
GEOL 3716	Environmental Impact of Abandoned Mines .....	3
GEOL 3720	Field Investigations in Geology ..	1-4
GEOL 4804	Ground Water .....	3
GEOL 5805	Special Problems in Geology .....	1-2
GEOL 5815	Geology & the Environment 2 .....	3
GEOL 5817	Environmental Geochemistry .....	3
ENST 5810	Environmental Safety .....	1

**III. Required Science Courses (24-26 s.h.)**

<b>Courses</b>	<b>s.h.</b>	
CHEM 1515	General Chemistry I .....	4
CHEM 1516	General Chemistry II .....	4
MATH 1571	Calculus I .....	4
	<i>(and)</i>	
MATH 1572	Calculus II .....	4
	<i>(or)</i>	
STAT 3717	Statistical Methods .....	3
PHYS 1501,	Fundamentals of	
1501L	Physics I + Lab .....	4+1
PHYS 1502,	Fundamentals of	
1502L	Physics II + Lab .....	3+1
	<i>(or)</i>	
PHYS 2610,	General Physics I + Lab .....	4+1
2610L		
PHYS 2611,	General Physics II + Lab .....	1+1
2611L		

**Curriculum for the Bachelor of Arts—Geology**

**GEOSCIENCE OPTION**

**Learning Outcomes**

The student learning outcomes for the B.A. in geology are as follows:

- Communicate effectively using the language, concepts, and models of geology in written, visual, and numerical formats.
- Properly apply the scientific method to research a geologic problem and formulate conclusions.
- Demonstrate ability to apply appropriate field- and laboratory-based methods (of acquiring, quantitatively and qualitatively analyzing and interpreting geologic data and information).

- Demonstrate understanding of human impacts from geologic hazards (e.g., earthquakes, geologic global warming, landslides, and subsidence) and human impact on the environment (e.g., global warming from industry emissions, mining, and water and air pollution).

For the Bachelor of Arts degree, the student majoring in geology must complete a minimum 40 s.h. of required courses and a minimum of 8 s.h. in geoscience electives for a total of 48 s.h. A minor is not required.

### I. Required

Courses	s.h.
GEOL 1505/ 1505L Physical Geology/ Physical Geology Lab.....	4
GEOL 2605 Historical Geology.....	4
GEOL 3700 Mineralogy.....	4
GEOL 3701 Geomorphology.....	3
GEOL 3704 Structural Geology.....	2
GEOL 3704L Structural Geology Lab.....	1
GEOL 3718 Igneous & Metamorphic Petrology.....	4
GEOL 5802 Sedimentology & Stratigraphy.....	3
*Science Electives II (See list below)	12
<i>One of the following:</i>	
(or)	
MATH 1570 Applied Calculus.....	4
(or)	
MATH 1571 Calculus I.....	4
STAT 3717 Statistical Methods.....	3

### II. \*12 s.h. from the following science electives

	s.h.
GEOL 2602 Introduction to Oceanography.....	3
GEOL 2615 Geology & the Environment I.....	3
CHEM 1515 General Chemistry I.....	4
CHEM 1516 General Chemistry II.....	4
PHYS 1501 Fundamentals of Physics I.....	4
PHYS 1502 Fundamentals of Physics II.....	3
BIOL 2601 Principles of Biology I.....	4
BIOL 2602 Principles of Biology II.....	4
ASTRO 2609 Moon & Planets.....	3
GEOG 2630 Weather.....	3
GEOG 3737 Soils and Land Use.....	3
ENST 2600 Foundations of Environmental Studies.....	3
ENST 5810 Environmental Safety.....	1

### III. Geoscience Electives

\*\*Upper-division Geology Courses..... 8

\*\*GEOL 48XX Field Camp may count up to 3 s.h.

(The field camp is chosen in consultation with the advisor and the department's Curriculum Committee.)

## Curriculum for the Bachelor of Arts – Geology

### ENVIRONMENTAL OPTION

For the Bachelor of Arts degree, the student majoring in geology must complete a minimum 42 s.h. of required courses and a minimum of 6 s.h. in environmental electives for a total of 48 s.h. A minor is not required.

### I. Required

Courses	s.h.
GEOL 1505/ 1505L Physical Geology/ Physical Geology Lab.....	4
GEOL 2605 Historical Geology.....	4
GEOL 3700 Mineralogy.....	4
GEOL 3701 Geomorphology.....	3
GEOL 3706 Geology of Economic Mineral Deposits.....	3
GEOL 3709 Subsurface Investigations.....	3
GEOL 4804 Ground Water.....	3
Capstone Course ( <i>one of the following</i> )	
GEOL 5802 Sedimentology and Stratigraphy... (or)	3
GEOL 48xx Field Camp (minimum)..... (or)	3
ENST 5830 Risk Assessment.....	3
*Science Electives II ( <i>see list below</i> ).....	12
<i>One of the following:</i>	
MATH 1570 Applied Calculus.....	4
(or)	
MATH 1571 Calculus I.....	4
(or)	
STAT 3717 Statistical Methods.....	3

### II. \*12 SH from the following science electives

	s.h.
GEOL 2602 Introduction to Oceanography.....	3
GEOL 2615 Geology & the Environment I.....	3
CHEM 1515 General Chemistry I.....	4
CHEM 1516 General Chemistry II.....	4
PHYS 1501 Fundamentals of Physics I.....	4
PHYS 1502 Fundamentals of Physics II.....	3
BIOL 2601 Principles of Biology I.....	4
BIOL 2602 Principles of Biology II.....	4
ASTRO 2602 Moon & Planets.....	3
GEOG 2630 Weather.....	3
GEOG 3737 Soils and Land Use.....	3
ENST 2600 Foundations of Environmental Studies.....	3
ENST 5810 Environmental Safety.....	1

### III. Environmental Electives

Upper-division geology or environmental studies courses..... 6

## ENVIRONMENTAL STUDIES PROGRAM

The environmental studies program leading to a Bachelor of Science (B.S.) degree will prepare students to enter the job market as environmental specialists or to continue in their education in a graduate program. Students in environmental studies will complete 34 s.h. of environmental studies courses, 26-27 s.h. of support courses in science and mathematics, and a prescribed minor of 18 s.h.

The minor may be in chemistry, biological sciences, environmental geology, environmental geography, economics, or political science, and must include 9 s.h. of upper division courses (3000 level and above). Credits may include those required for support science and mathematics, as applicable. The courses for the minor must be offered in one department. The

student is welcome to take additional courses in other departments as electives. Students are encouraged to develop teamwork, communication, computer and problem-solving skills. This degree may be earned in eight semesters if students average 15.5 hours per semester.

**Learning Outcomes**

The student learning outcomes for the B.S. in environmental studies are as follows:

- Communicate effectively using the language, concepts, and models of environmental science in written, visual, and numerical formats.
- Properly apply the scientific method to research an environmental problem and formulate conclusions.
- Demonstrate ability to apply appropriate field- and laboratory-based methods (of acquiring, quantitatively and qualitatively analyzing and interpreting environmental data and information).
- Demonstrate understanding of pollution sources, pollution prevention strategies, and waste management.

**REQUIRED ENVIRONMENTAL STUDIES COURSES**

<b>ENST Courses (all, 34 s.h.)</b>		<b>s.h.</b>
ENST 2600	Foundations of ENST	3
ENST 2600L	Foundations Lab	1
ENST 3700	Environmental Chem.	4
ENST 3730	Air Quality	3
ENST 3750	Seminar	1
ENST 3751	Water Quality	3
ENST 3780	Research	2
ENST 3781	Environmental Sampling <sup>b</sup>	3
ENST 3790	Internship	4
ENST 5800	Environ. Impact Assessment <sup>c</sup>	3
ENST 5810	Environmental Safety	1
ENST 5830	Risk Assessment <sup>d</sup>	3
ENST 5860	Environmental Regulations	3

- a- Critical Thinking Intensive
- b- Writing Intensive
- c- Oral Intensive
- d- Capstone

**Support Courses in Science and Mathematics (all, 21 s.h. +2 s.h. optional)**

<b>Courses</b>		<b>s.h.</b>
BIOL 2601/L	Principles 1 <sup>1</sup>	4
CHEM 1515/L	Principles 1 <sup>1</sup>	4
CHEM 1516/L	Principles 2 <sup>1</sup>	4
CHEM 1515R/1516R	Recitation (optional)	1+1
GEOL 1505/L	Physical <sup>1</sup>	4
MATH 1570	Applied Calculus <sup>2</sup>	4
	or MATH 1571 Calculus <sup>2</sup> (Recommended for Technology minors)	4

**Plus two of the following support courses (6-7 s.h.)**

PHYS 1501	Principles 1 <sup>3</sup> (Recommended for Technology minors)	4
GEOG 2630	Weather (Recommended for Geography minors)	3
STAT 2601	Statistics	3
	or STAT 3717 Statistics (Recommended for upper-division credit)	3 or 4

<sup>1</sup> Satisfies General Education Science or Science Lab Domain

<sup>2</sup> Satisfies General Education Mathematics Domain

<sup>3</sup> Satisfies General Education Science Domain

**Recommended Curriculum Leading to a B.S. Degree with a Major in Environmental Studies\***

**FIRST YEAR**

<b>Courses</b>	<b>s.h.</b>
CHEM 1515/L, 1516/L	8
WRITING I, II	6
MATH 1570 or 1571	4
ENST 2600/L	4
Gen. Ed.	12
	<b>34</b>

**SECOND YEAR**

<b>Courses</b>	<b>s.h.</b>
BIOL 2601/L	5
GEOL 1505/L	4
ENST 3700, 3781, 3751/L, 5800	13
PHYS 1501 or STAT 2601/3717	3-4
or GEOG 2630	3-4
Gen. Ed.	9
	<b>34-35</b>

**THIRD YEAR**

<b>Courses</b>	<b>s.h.</b>
ENST 3730, 5810, 5830	9
PHYS 1501 or STAT 2601/3717	3-4
or GEOG 2630	3-4
Gen. Ed.	9
Minor	9-12
	<b>30-34</b>

**FOURTH YEAR**

<b>Courses</b>	<b>s.h.</b>
ENST 5860, 3750, 3780, 3790	10
Gen. Ed./electives	3-9
Electives	5-12
Minor	0-9
	<b>28-31</b>

\* Majors transferring in from other programs at YSU or from other universities may use up free electives and/or require additional semesters or summers of study. College and university requirements apply (total hours, upper division hours, general education goals, etc.). One writing intensive, oral intensive, critical thinking intensive, and capstone course can be satisfied within this program.

## DEPARTMENT OF MATHEMATICS AND STATISTICS

330-941-3302

[web.yosu.edu/stem/math](http://web.yosu.edu/stem/math)

*Professors Chang, Fabrykowski, Kent, O'Mellan, Piotrowski, Ritchey (Chair), Rodabaugh, Smotzer, Stanek, Wingler; Associate Professors Burden, Kerns, Pollack, Spalsbury, Tartir, Yates; Assistant Professors Flowers, Goldthwait, Jalics, Taylor, Wakefield; Instructor Carlson.*

Mathematics may be the major subject for the following degree programs: Bachelor of Science (B.S.), Bachelor of Arts (B.A.), and Bachelor of Science in Education (B.S.Ed.). The B.A. and B.S. degrees may be earned in eight semesters if students average 16 hours per semester.

In addition to satisfying general University requirements, all students majoring in mathematics must complete the following core courses: MATH 1571, 1572, 2673, 3715, 3720, 3721, 3751, and 4896 or 4897H or 4893; also STAT 3743 and CSIS 2610.

### B.S. DEGREE

#### Learning Outcomes

The student learning outcomes for a B.S. in mathematics are as follows:

- Students will develop and demonstrate the ability to reason mathematically by constructing mathematical proofs and recognizing and analyzing accurate numerical data in all core courses. Students will learn that truth in mathematics is verified by careful argument, and will demonstrate the ability to make conjectures and form hypotheses, test the accuracy of their work, and effectively solve problems.
- Students will learn to identify fundamental concepts of mathematics as applied to science and other areas of mathematics, and to interconnect the roles of pure and applied mathematics.
- Students will demonstrate that they can communicate mathematical ideas effectively by completing a senior capstone project involving an investigative mathematical project and presenting their findings and results in both a written format and as an oral presentation to faculty and other students.

### Tracks

Students may select one of the following four tracks:

**Traditional Mathematics Track.** In addition to the core, MATH 5852, 5822, and 5880, together with at least one of 3760, 3705, or 5845 and one additional 5800-level course in mathematics. The minor

course of study may be any discipline. Suggested minors include biology, chemistry, computer science, economics, geology, physics, psychology, one engineering specialty (from chemical, civil, electrical, industrial, mechanical), or statistics. The total number of required semester hours of credit in mathematics (excluding statistics courses) for this track is 41.

**Statistics Track.** In addition to the core, MATH 3760, 5845, and a minor in statistics that would consist of STAT courses 3743, 5817, 5843, 5844, and two elective courses which can be chosen from the STAT courses 5840, 5846, 5847, 5849 and 5895. One of the elective courses may be chosen from outside the Department of Mathematics and Statistics with the permission of the chairperson. Such a course can be ECON 5824 or ISEN 3720 or another statistics-related course. The total number of required semester hours of credit in mathematics for this track is 32.

**Applied Mathematics Track.** In addition to the core, MATH 3705, 3760, and two electives from 5825, 5835, 5845, 5855, 5861, and 6942, and a recognized minor in any discipline. Suggested minors include statistics, computer science, engineering, physics, geology, chemistry, biology, logistics, economics, or geoscience. The total number of required semester hours of credit in mathematics for this track is 38.

**Quantitative Business Track.** In addition to the core, MATH 5845, STAT 5817 and at least one of STAT 4888, STAT 5802, or MATH 3760 as well as a minor course of study in business or finance. The total number of required semester hours of credit in mathematics for this track is 32.

**Actuarial Mathematics Track.** In addition to the core, students choose at least two courses among MATH 3760, STAT 4800, 4888, 5802, and 5844 and complete a minor in actuarial science that would consist of STAT courses 5843 and 5817, ECON courses 2610 and 2630, FIN 3720, and either STAT 5848 or ECON 5824. The total number of required semester hours of credit in mathematics for this track is 32.

### B.A. DEGREE

#### Learning Outcomes

The student learning outcomes for a B.A. in mathematics are as follows:

- Students will develop and demonstrate the ability to reason mathematically by constructing mathematical proofs and recognizing and analyzing accurate numerical data in all core courses. Students will learn that truth in mathematics is verified by careful argument, and will demonstrate the ability to make conjectures and form hypotheses, test the accuracy of their work, and effectively solve problems.
- Students will learn to identify fundamental concepts of mathematics as applied to science and other areas of mathematics, and to interconnect the roles of pure and applied mathematics.



- Students will demonstrate that they can communicate mathematical ideas effectively by completing a senior capstone project involving an investigative mathematical project and presenting their findings and results in both a written format and as an oral presentation to faculty and other students.

## Requirements

In addition to the core, B.A. candidates must take 12 additional semester hours of mathematics at the upper-division level, with at least two at the 4800 level. The minor field of study may be any discipline. The total number of required semester hours of credit in mathematics for this program is 38.

## Tracks

In selecting the appropriate track, the student should consult a department advisor, since certain tracks are to be preferred according to whether the student contemplates graduate study in mathematics or statistics, secondary school teaching, or a career in business, industry or government.

The **Traditional Mathematics Track** enrolls students seeking classical training in mathematics. Students will study the nature of mathematics in fields such as algebra, real analysis, complex analysis, and topology. Connections to, and generalizations of, earlier formulations of mathematical concepts will frequently be made. Generally, new results in mathematics are developed and proven by those with a Ph.D. in mathematics. Students planning to pursue a Ph.D. will be well prepared for graduate school with this track and should also study at least one of the languages French, Russian, or German.

The **Applied Mathematics Track** emphasizes areas of mathematics used in government and industry. Students learn mathematical models for the study of physical and computational processes. Mathematical techniques are also used to study uncertainty, scheduling, and decision theory. Many graduates find employment in consulting firms and large corporations where computing and mathematical problem solving skills are valued. Students are also prepared to pursue a master's degree in applied mathematics.

The **Statistics Track** is for students interested in the analysis of data. Statistical techniques are utilized in many fields of research such as medicine, biology, business, and sociology. Statisticians learn proper methodology for collecting, summarizing, and interpreting data subject to sampling variability. The increase in affordable computing and the use of statistical software have placed statistical expertise in demand. Generally, students interested in statistics pursue further study at the graduate level, but positions are available for students upon completion of a bachelors degree.

Students enrolled in the **Quantitative Business Track** will be well prepared to bring quantitative

problem solving skills to various fields of business. Students interested in using mathematics to study logistics or financial and business situations should enroll in this track. By enrolling in this track and carefully planning electives, students will be well prepared to pursue an MBA degree from many programs across the country. Students interested in pursuing graduate study in financial mathematics or financial engineering should also consider this track. Students from this program can find employment in banks, insurance firms, public accounting firms, investment firms, labor unions, government, and large corporations.

The **Actuarial Mathematics Track** is designed for students interested in pursuing employment as an actuary or further study in actuarial science upon graduation. Students interested in using mathematics and statistics to quantify risk and develop models to better predict and study risk should enroll in this track. Actuaries work for insurance companies, investment and consulting firms, as well as the government and seek to find ways to manage risk and avoid potential exposure to excessive risk. Actuaries assess pension plans, mortality rates, and accident rates. Students in this track will study the mathematical and statistical foundations of actuarial models as they prepare for the examination sequence to become a licensed actuary.

The **Bachelor of Arts Track** is available for students interested in a liberal arts education. This degree is also recommended for students who wish to pursue another discipline, possibly a double major.

## Transfer Credit

Students receiving transfer credit from another institution for courses in mathematics should consult the department chair to determine how this credit will apply toward the major requirements.

## Mathematics Minors

Interested students should consult the Department of Mathematics and Statistics for more information.

## DEPARTMENT OF PHYSICS AND ASTRONOMY

330-941-3616

[web.yzu.edu/stem/physics](http://web.yzu.edu/stem/physics)

*Professors Andrews, Crescimanno, Sturris (Chair), Tabak; Associate Professors Durrell, Oder; Assistant Professor Feldmeier.*

Courses are organized with the following aims: (1) To provide well-rounded training in physics and astronomy for those needing it for graduate study, industry, or for secondary school teaching; (2) To provide basic training for engineering and pre-professional students; (3) To acquaint the non-specializing student with scientific methods and with the place of physics and astronomy in the modern world.

Following the course descriptions below are the curricula and minimum requirements for the degrees of Bachelor of Arts and Bachelor of Science with a major in physics and a Bachelor of Science degree with a combined major in physics and astronomy. These degrees may be earned in eight semesters if students average 15.5 hours per semester.

### Learning Outcomes

The Department of Physics and Astronomy helps students in the departmental programs develop skills to acquire and demonstrate their knowledge in several topical areas. These topical areas are classical mechanics, modern physics, electricity and magnetism, thermodynamics, quantum mechanics, and astrophysics. The learning outcomes for the B.A. Program in Physics are:

- Students will learn to model physical systems and interpret experimental and theoretical results.
- Students will learn how to measure the physical properties of systems using a variety of test equipment and defend the results of their measurements using the associated accuracy and precision of these measurements.
- Students will learn to apply the concepts of classical physics, modern physics, thermodynamics, and electrostatics to solve problems and predict numerical results.
- In addition to the learning outcomes for the B.A. program in physics, students of the B.S. program in physics will further learn to apply the concepts of electrodynamics and quantum mechanics to solve problems and predict numerical results.
- In addition to the learning outcomes for the B.A. program in physics, students of the B.S. program in physics and astronomy will learn to apply the concepts of astrophysics to solve problems and predict numeric results.

### Degree Options

The B.A. degree program in physics is designed for students who are interested in fields that benefit from a strong background in physics or for students planning to terminate their education at the bachelor's degree level. The B.S. degree program in physics is designed for students who plan to pursue graduate studies in physics. The B.S. degree program with a combined physics-astronomy major is designed for students who plan to pursue graduate studies in astronomy or space science.

A student desiring to teach physics or astronomy in secondary schools should consult the dean of the College of Education.

Shown below are suggested curricula for complete four-year programs. Students are urged to come to the department office early in their first year to select, and consult with, an advisor from the teaching staff.

### Suggested Curriculum for a B.S. in Physics with a Minor in Mathematics

#### FIRST YEAR

Courses	s.h.
PHYS- 2610, 2610L, 2611, 2611L.....	10
MATH- 1571, 1572.....	8
CHEM- 1515, 1516.....	8
ENGL- 1550, 1551.....	6
	<u>32</u>

#### SECOND YEAR

Courses	s.h.
PHYS- 3704, 3704L, 3705, 3705L.....	8
MATH- 2673, 3705.....	7
Electives (See note).....	15
	<u>30</u>

#### THIRD YEAR

Courses	s.h.
PHYS- 3701, 3702.....	6
PHYS- 3741, 3742.....	6
PHYS- 3750.....	3
Electives (See note).....	16
	<u>31</u>

#### FOURTH YEAR

Courses	s.h.
PHYS- 5810, 5811.....	6
PHYS- 4805.....	3
Electives (See Note).....	22
	<u>31</u>

Note: The electives must satisfy the general University and/or STEM College requirements.

Minimum requirements for the B.A. degree in physics with a minor in mathematics—physics courses, 30 s.h.: 2610, 2610L, 2611, 2611L, 3701, 3702, 3704, 3704L, 3705, 3705L, 3741, 4805; mathematics courses, 18 s.h.: 1571, 1572, 2673, 3705, plus upper-division math elective.

Minimum requirements for the B.S. degree in physics with a minor in mathematics—physics courses, 42 s.h.: same as the B.A. above plus 3742, 3750, 5810, 5811; mathematics courses, 18 s.h.: same as B.A. degree.

Minimum requirements for the B.S. with a combined major in physics and astronomy and a minor in mathematics—physics courses, 37 s.h.: 2610, 2610L, 2611, 2611L, 3701, 3702, 3704, 3704L, 3705, 3705L, 3741; 10 s.h. of upper-division physics courses and 21 s.h. of astronomy courses: 1504, 2609, 3711, 3712, 4805, 4811, 4812; mathematics courses, 18 s.h., same as for B.A. degree above.

# RAYEN SCHOOL OF ENGINEERING AND ENGINEERING TECHNOLOGY

## Accreditation

The baccalaureate degree programs in the Rayen School of Engineering and Engineering Technology accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET) are chemical engineering (jointly accredited by the American Institute of Chemical Engineers), civil engineering, electrical engineering, industrial and systems engineering, and mechanical engineering; those accredited by the Technology Accreditation Commission of ABET are civil and construction engineering technology, electrical engineering technology, and mechanical engineering technology.

## Associate in Applied Science Degree

Associate in Applied Science majors include: civil and construction engineering technology, computer information systems and information technology, electrical engineering technology, and mechanical engineering technology. These majors offer a 2+2 degree program design leading to the Bachelor of Science in Applied Science degree. Consult the department sections of the bulletin for specific course information.

## School of Engineering Disqualification

A student who earns two grades of D, F, or NC in the same course(s) listed below will be disqualified from transferring into a degree-granting engineering major. These courses are: MATH 1513, MATH 1571, ENGL 1540, ENGL 1550, CHEM 1515/1515L, and PHYS 2610.

## Enrollment in Restricted Engineering Courses

Enrollment in most engineering and engineering technology courses is restricted to those admitted to a degree-granting engineering major. A few engineering courses are not restricted. They are: ENGR 1550, 1555, 1560; CEEN 2610 and 2610L; ECEN 1521, 1521L and 1555. All others require admission to a professional engineering major unless approved by the chair of the engineering department and coordinator of the engineering program offering the course and by the STEM College dean. Students will be administratively withdrawn from restricted courses in which they are improperly enrolled.

## Bachelor of Engineering degree (B.E.) Graduation Policies

All engineering programs have pre-college course requirements listed in the chart at the end of this section that should be completed in high school or in equivalent course work at the college level. YSU offers the equivalent high school courses for those not meeting these pre-college requirements. These high school deficiencies do not count toward graduation requirements and should be completed during the first two years of enrollment.

Each engineering program has minimum graduation requirements. These requirements can affect a student's enrollment in senior-level classes. If a senior-level student reaches a point where it is not possible to achieve graduation requirements, further enrollment in engineering classes will be denied. In addition to the overall recalculated C average required by the University, an unrecalculated C average in the major is required. Also, an unrecalculated C average in all engineering courses is required in all majors. **These minimum graduation requirements are referred to as a triple C requirement.**

### Chemical Engineering

A student who is failing to meet the triple C requirement prior to the senior year will be denied enrollment in CHEN 4887.

### Civil and Environmental Engineering

A student who is failing to meet the triple C requirement prior to the senior year will be denied enrollment in CEEN 4863, 5837, 5855, & 4881.

### Electrical and Computer Engineering

Students who have not earned a C or better grade in ECEN 3741 and 3742 and students who are failing to meet the triple C requirement will be denied enrollment in senior level courses.

### Industrial and Systems Engineering

A student who is failing to meet the triple C requirement will be denied enrollment in 4000- and 5000-level ISEN courses.

### Mechanical Engineering

A student who is failing to meet the triple C requirement will be denied permission to register in any junior level mechanical engineering course until remedial measures, as required by the department chair, are agreed to by the student. Also, at the end of the junior year, the student will be denied permission to register in MECH 4808, MECH 4808L, and MECH 4809, until the triple C requirement is met.

## Cooperative Education/ Professional Practice

Several programs leading to a baccalaureate degree offer students an optional cooperative education program. Co-op students are required to complete the same academic program for graduation as those not participating in the cooperative education experience. Credit hours awarded for the cooperative education experience are considered "add-on" hours to the degree. Professional practice opportunities include working with faculty on grants and research projects as well as internship opportunities with local industry. A professional practice coordinator is available to assist in student placement.

The table below shows the minimum pre-college requirements:

PRE-COLLEGE Subject High School Units	
English .....	3
Algebra 1 and 2.....	2
Geometry .....	1
Trigonometry .....	½
Chemistry .....	1
Mechanical Drawing.....	1
Physics .....	1
Other .....	6½

## DEPARTMENT OF CIVIL/ ENVIRONMENTAL AND CHEMICAL ENGINEERING

330-941-3027

[web.yasu.edu/stem/civilenveng](http://web.yasu.edu/stem/civilenveng)

*Professors Alam, Garr, Husain, Lim, Martin (Chair); Associate Professors Islam, Price; Assistant Professors Cortes, Tritico.*

## CHEMICAL ENGINEERING PROGRAM

*Associate Professor Douglas M. Price, Program Coordinator.*

The chemical engineering program—supplemented with courses in chemistry, physics, mathematics, and general engineering—provides a broad preparation for design, operation, and management in the chemical, biomedical, biological, nuclear, pharmaceutical, and energy-conversion industries, as well as graduate study leading to research positions in industry and government and to academic careers.

### Educational Objectives

Graduates of the chemical engineering program at YSU

- Pursue careers as practicing chemical engineers in chemical and energy-related industries as well as in areas of materials, environmental, and biomedical engineering and biotechnology.

- Demonstrate strong, functional command of chemical engineering fundamentals and communication skills.
- Are aware of the scope of the chemical engineering profession and its global opportunities and requirements.
- Exhibit professional responsibility and a sensitivity to a broad range of societal concerns including ethical, environmental, political, regulatory, and global issues in making decisions.

### Learning Outcomes

The curriculum is structured to achieve the following outcomes as prescribed by ABET:

- Ability to apply mathematics, science and engineering principles
- Ability to design and conduct experiments, analyze and interpret data
- Ability to design a system, component, or process to meet desired needs
- Ability to function on multidisciplinary teams
- Ability to identify, formulate and solve engineering problems
- Understanding of professional and ethical responsibility
- Ability to communicate effectively
- The broad education necessary to understand the impact of engineering solutions in a global and societal context
- Recognition of the need for and an ability to engage in life-long learning
- Knowledge of contemporary issues
- Ability to use the techniques, skills and modern engineering tools necessary for engineering practice

### Facilities

The chemical engineering laboratories are well equipped for undergraduate instruction and student and faculty research. The equipment includes fluid flow apparatus, concentric tube and plate and frame heat exchangers, thermal conductivity apparatus, boiling heat transfer apparatus, tray dryer, double effect evaporator, computer-controlled distillation tower, gas absorption and liquid-liquid extraction columns, chemical reactors, electrostatic particle separator, centrifuges, filter presses, and other miscellaneous equipment.

**Curriculum for the Bachelor of Engineering Degree with a Major in Chemical Engineering**

**FIRST YEAR**

<b>Courses</b>		<b>s.h.</b>
ENGR 1500	Engineering Orientation .....	1
ENGR 1550	Engineering Concepts .....	2
CHEM 1515	General Chemistry 1 .....	4
CHEM 1515L	Chemistry Lab 1 .....	0
CHEM 1516	General Chemistry 2 .....	4
CHEM 1516L	Chemistry Lab 2 .....	0
MATH 1571	Calculus 1 .....	4
MATH 1572	Calculus 2 .....	4
ENGL 1550	Writing 1 .....	3
ENGL 1551	Writing 2 .....	3
CMST 1545	Communication Foundations .....	3
GER Elective.....		<u>3</u>
		31

**SECOND YEAR**

<b>Courses</b>		<b>s.h.</b>
PHYS 2610	General Physics 1 .....	4
PHYS 2611	General Physics 2 .....	4
CHEM 3719	Organic Chemistry 1 .....	4
CHEM 3719L	Organic Chemistry Lab 1 .....	0
CHEM 3720	Organic Chemistry 2 .....	4
CHEM 3720L	Organic Chemistry Lab 2 .....	0
CHEN 2650	Comp. Meth. in Chem. Eng. ....	2
CHEN 2683	Chemical Engr Principles 1 .....	3
CHEN 2684	Chemical Engr Principles 2 .....	3
MATH 2673	Calculus 3 .....	4
MATH 3705	Differential Equations .....	<u>3</u>
		31

**THIRD YEAR**

<b>Courses</b>		<b>s.h.</b>
CHEN 3771	Chem Engr Thermo 1 .....	3
CHEN 3772	Chem Engr Thermo 2 .....	3
CHEN 3785L	Transport Lab 1 .....	1
CHEN 3786	Transport Phenomena .....	4
CHEN 3787	Trans 2/Unit Ops 1 .....	3
CHEN	Chemical Engr Elective .....	3
CHEM 3739	Physical Chemistry 1 .....	4
CHEM 3739L	Physical Chemistry Lab 1 .....	0
CHEM	Advanced Chemistry Elective See Note <sup>2</sup> .....	3
F.E. Elective	See Note <sup>3</sup> .....	3
GER Elective.....		3
GER Ethics Elective	See Note <sup>1</sup> .....	<u>3</u>
		33

**FOURTH YEAR**

<b>Courses</b>		<b>s.h.</b>
CHEN 3787L	Unit Ops Lab 1 .....	1
CHEN 4815	Unit Operations 2 .....	3
CHEN 4815L	Unit Ops Lab 2 .....	1
CHEN 4880	Chem Reactor Design 1 .....	3
CHEN 5880	Chem Reactor Design 2 .....	3
CHEN 4882	Process Dynamics .....	3
CHEN 4887	Process & Plant Design 1 .....	3
CHEN 4888	Process & Plant Design 2 .....	3
CHEN	Chem Engr Elective .....	3

CHEN	Chem Engr Elective .....	3
GER Elective.....		3
GER Elective.....		3
GER Elective.....		<u>3</u>
		35

**Total ..... 130**

Note: Transfer students from any two- or four-year academic program at other institutions or at this University who wish to pursue studies in chemical engineering should consult with the program coordinator for individual counseling to develop a program of study that fully uses their educational background and requires a minimum of time to satisfy the requirements for the degree of Bachelor of Engineering in chemical engineering.

1 – Ethics Elective – Choose One:

PHIL 2609 Technology and Human Values; or PHIL 2625 Introduction To Professional Ethics; or PHIL 2626 Engineering Ethics

2 – Advanced Chemistry Elective – Choose One: CHEM 3740 and 3740L Physical Chemistry 2; or CHEM 3785 and 3785L Biochemistry 1

3 – Fundamentals of Engineering Elective – Choose One:

MECH 2606 Engineering Materials; or CHEN 2688; ECEN 2632 Basic Circuit Theory 1; or CEEN 2601 Statics; or ENGR 3798 (1 s.h.) and ENGR 4898 (2 s.h.) Engineering Co-op; or MTEN 5868 Failure Analysis Using the SEM; or ISEN 3710 Engineering Statistics

**CIVIL ENGINEERING PROGRAM**

*Professor Scott C. Martin (Program Coordinator).*

Civil engineers are responsible for planning, designing, and supervising construction of the nation’s infrastructure, including buildings, bridges, highways, dams, drinking water and wastewater treatment facilities, airports, etc. The civil engineering program provides an academic environment rich in opportunities for students to develop the knowledge and skills necessary for productive and rewarding careers and lives. The educational objectives of the program are to prepare graduates to:

- excel in any sector(s) of civil engineering practice, including consulting, government, construction, and industry;
- complete graduate study in civil engineering or a related field;
- communicate effectively with a variety of audiences through writing and speaking;
- apply creativity and a strong understanding of math, science, computers, and engineering to develop innovative solutions to engineering problems;
- understand and effectively incorporate the role of social, ethical, political, economic, and environmental considerations in their professional careers;

- work effectively as a member of a team or organization, and excel in a leadership role where appropriate;
- serve their profession and society through involvement in professional and service organizations;
- achieve registration as a Professional Engineer; and
- continue their intellectual and professional growth through lifelong learning.

**Learning Outcomes**

The undergraduate curriculum is structured to achieve the following specific program outcomes:

- Students will obtain a broad education necessary to understand the impact of civil engineering solutions in a global, societal, and environmental context.
- Students will be able to solve civil engineering problems in practice by applying fundamental knowledge of mathematics, science, and engineering, and using modern engineering techniques, tools, equipment, and computer applications.
- Students will be able to design systems, components, or processes to meet specific needs within the following realistic constraints: economic; social; political; environmental; sustainability; ethical; health and safety; and constructability.
- Students will be able to design and conduct experiments, and to analyze and interpret data within the various civil engineering specialty disciplines.
- Students will understand the fundamentals of business, management, and leadership, including organization, planning, bidding, report preparation, construction, and functioning effectively as a member of a multi-disciplinary team.
- Students will be able to communicate effectively, via speaking and writing, with both technical and non-technical audiences.
- Students will have a solid understanding of professional and ethical responsibility, the importance of professional licensure, and the need for continued professional development.

**Program Description**

In the first two years of the program, students take coursework in the fundamentals of engineering, mathematics, and basic science in order to strengthen their technical background and develop intellectual maturity. The student then continues in a broad-based civil engineering program that develops competence in a variety of areas within the discipline. Engineering topics include environ-

mental, geotechnical, structural, transportation, and hydraulic engineering, as well as surveying. In the last two years, students choose elective courses in the various areas of civil engineering based on their academic and career interests.

Instruction on the design process is fully integrated throughout the curriculum to foster the depth of understanding and self-confidence that students will need to think creatively and become productive engineers. The curriculum is based on the belief that students can best develop their creative skills through a series of progressively more demanding design experiences leading up to a major, comprehensive senior-level project.

Students majoring in civil engineering earn the Bachelor of Engineering (B.E.) degree. Graduates are prepared for advanced study at the master's and doctoral level in engineering or for employment in the engineering profession.

The program offers the atmosphere of a small school in maintaining close contact between students and faculty. Senior professors serve as academic advisors and are used in all phases of instruction from freshman to graduate courses. All of the program's facilities are located within the modern Moser Hall. The program maintains laboratories for environmental engineering, fluid mechanics, soil mechanics, strength of materials, surveying, and concrete testing. A wide variety of equipment is available to support both teaching and research activities.

**Curriculum for the Bachelor of Engineering Degree with a Major in Civil Engineering**

		FIRST YEAR	
Courses			s.h.
ENGL	1550	Writing 1.....	3
ENGL	1551	Writing 2.....	3
CHEM	1515	General Chemistry 1 .....	4
CHEM	1515L	General Chemistry 1 Lab .....	0
ENGR	1500	Engineering Orientation .....	1
ENGR	1550	Engineering Concepts .....	2
CEEN	1560	Intro to CAD for CE .....	2
MATH	1571	Calculus 1.....	4
MATH	1572	Calculus 2 .....	4
CMST	1545	Communication Fdns. ....	3
GER		SS Elective .....	3
GER		AH Elective .....	3
			32

		SECOND YEAR	
Courses			s.h.
MATH	2673	Calculus 3.....	4
MATH	3705	Differential Equations .....	3
CEEN	2601	Statics .....	3
CEEN	2602	Strength of Materials .....	3
CEEN	2602L	Strength of Materials Lab .....	1
CEEN	2610	Surveying .....	3
CEEN	2610L	Surveying Lab .....	1
GEOL	2611	Geology for Engineers .....	3

PHYS	2610	General Physics 1 .....	4
CHEM	1516/1516L	General Chemistry 2 or PHYS 2611 General Physics 2 .....	4
GER	SPA Elective .....		3
			32

**THIRD YEAR**

<b>Courses</b>			<b>s.h.</b>
CEEN	3716	Fluid Mechanics .....	3
CEEN	3716L	Fluid Mechanics Lab .....	1
CEEN	3717	Hydraulic Design.....	4
CEEN	3720	Transportation Engineering .....	3
CEEN	3736	Fundamentals of Environmental Engineering .....	3
CEEN	3749	Structural Analysis 1 .....	3
CEEN	3749L	Str. Anal. Lab .....	1
CEEN	4881	Geotechnical Engineering .....	3
CEEN	4881L	Geotechnical Engineering Lab ...	1
CEEN		Design Elective .....	3
ISEN	3724	Engineering Economy .....	3
GER		SPA Elective .....	3
GER		SS Elective .....	3
			34

**FOURTH YEAR**

<b>Courses</b>			<b>s.h.</b>
CEEN	5855	Reinforced Concrete Design .....	3
CEEN	5856	Steel Design .....	3
CEEN	4812	Construction Management .....	3
CEEN		Elective .....	3
CEEN		Elective.....	3
CEEN	4863	Integrated Design Project .....	3
ISEN	3710	Engineering Statistics .....	3
MECH	2641	Dynamics .....	3
F.E. Elective		See Note Below <sup>3</sup> .....	3
GER	AH Elective.....		3
			30

- 1 – May substitute CHEM 1516/1516L or PHYS 2611
- 2 – May substitute out of Dept. course with approval of CE Program Coordinator
- 3 – Fundamentals of Engineering Elective – Choose One:  
MECH 2606 Engineering Materials; or  
MECH 2603 Thermodynamics 1; or  
ECEN 2632 Basic Circuit Theory 1

**SUMMARY**

<b>Courses</b>			<b>s.h.</b>
Mathematics .....			18
Natural Science .....			15
Writing and Speech .....			9
General Education Electives .....			18
Civil Engineering .....			56
Other Engineering .....			12
<b>Total .....</b>			<b>128</b>

**Cooperative Education Option in Civil Engineering**

Students who have successfully completed the sophomore year and meet the additional requirements of the program may select the cooperative education option. Students selecting this option must

register for, and successfully complete at least two co-op work periods beginning after the end of the sophomore year. These work periods may be either concurrent or alternating with academic semesters. Selecting the co-op option typically adds one or two semesters to the degree program. Further information on the cooperative education option is available in the department office.

**DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING**  
**330-941-3012**

[web.yzu.edu/stem/eleccompeng](http://web.yzu.edu/stem/eleccompeng)

*Professors Jalali (Chair), Munro, Pansino; Associate Professors Li, Mossayebi.*

The department offers coursework leading to the Bachelor of Engineering with a major in electrical engineering. Traditional, computer/digital, and biomedical options are available. The first courses in the department major are electrical and computer engineering (ECEN) 1521, 1521L, and 1560 and are available to all University students without prerequisites. Visit the department office or web site for details.

**Mission**

The Department of Electrical and Computer Engineering is committed to academic excellence, and it provides educational opportunities in electrical and computer engineering. We provide students at baccalaureate and master levels with diverse and comprehensive educational experiences to meet the highly demanding standards required by industry and for further education.

We utilize the resources of the university and interact with industry to evaluate, optimize, maintain, and upgrade our teaching, research, scholarship, service and facilities to continue maintaining a high-standard educational environment. We promote students' intellectual growth to become fully developed, informed, and productive in order to serve themselves and their local and global communities effectively.

**Program Educational Objectives**

The Department of Electrical and Computer Engineering at Youngstown State is committed to offering its student a high standard of engineering education. In fulfillment of its mission, as well as the missions of the College of Science, Technology, Engineering, and Mathematics and the University, the following program educational objectives are established. Within a few years of graduation, our graduates should be able to:

- Apply the latest technology, using engineering hardware and software, and scientific and mathematical knowledge to solve technical problems individually or in teams.

- Function professionally, socially, and ethically in the practice of electrical engineering or in post-graduate education.
- Understand global issues and the impact of engineering and technology on society and the environment.
- Engage in life-long learning to broaden themselves and their profession.
- Communicate effectively both individually and in teams.

### Student Outcomes

To achieve the program educational objectives after graduation, our students must attain the following student outcomes by the time of their graduation:

- an ability to apply knowledge of mathematics, science, and engineering;
- 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 within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
- an ability to function on multi-disciplinary teams;
- an ability to identify, formulate, and solve engineering problems;
- an understanding of professional and ethical responsibility;
- an ability to communicate effectively;
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- a recognition of the need for, and an ability to engage in life-long learning;
- a knowledge of contemporary issues; and
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

### Laboratory Facilities

The Department of Electrical and Computer Engineering maintains modern, well-equipped laboratory facilities for circuits, electronics, communications, electromagnetics, energy conversion, control systems, and digital systems. PC computing and wireless networking are available, as well as various licensed software packages.

### Cooperative Education

The Electrical and Computer Engineering Department participates in the College's Cooperative Education Program. Students who have completed the

sophomore year and meet requirements approved by the department may enroll in an optional co-op program. Co-op students are required to complete the same program requirements for graduation as non co-op students.

Students who enroll in two co-op courses and complete the co-op requirements may receive up to two semester credits as co-op credit to be applied toward ECEN elective courses. Students interested in receiving co-op credit must enroll in ENGR 3798 or 4898 and follow the policies written in the course syllabus. The course requirements include the submission of a work report pertaining to their co-op experience as well as a presentation. The department faculty reviews the student report to ensure the student's co-op experience qualifies him or her for credit, and then a grade is assigned. Interested students may contact the department for details.

### Options

Traditional, computer/digital, and biomedical options, the co-op program, design projects, computer simulation, and hands-on laboratory sessions are the pillars of the Bachelor of Engineering with a major in electrical engineering. These features provide students with the opportunity to prepare for a vast array of entry-level positions or advanced studies.

With faculty assistance, students tailor their programs to meet their educational objectives. This includes choices of options and elective courses, and participation in co-op, as well as semester-by-semester scheduling of courses.

The **traditional option** has 55 hours of electrical engineering, 9 hours of other engineering, 18 hours math, 15 hours science, 9 hours of writing and speech, and 18 hours general education courses for a total of 124 semester hours.

The **computer/digital option** has 43 hours of core electrical engineering courses, 9 hours of other engineering, 19 hours computer engineering/science courses, 18 hours math, 15 hours science, 9 hours of writing and speech, and 18 hours general education courses for a total of 131 semester hours.

The **biomedical option** has 43 hours of core electrical engineering courses, 9 hours of other engineering, 18 hours mathematics, 32 hours science including biology and organic chemistry, 9 hours of writing and speech, and 18 hours general education courses for a total of 129 semester hours.

Students in any of these options can participate in the co-op program. Scheduling is reasonably flexible, but there are some restrictions.

### Course Scheduling

Scheduling of courses will depend upon your particular situation. Are you working part time? Will you pursue a co-op, either alternate or parallel? Do you wish a full- or part-time academic pursuit of



the degree? Answers to these questions will affect your scheduling of courses. The Department of Electrical and Computer Engineering attempts to schedule junior and senior courses to accommodate these situations.

Advising is mandatory, and students are required to meet with their department advisors to choose their semester-by-semester courses. Also, up-to-date recommended schedule and curriculum lists are available on-line and at the department.

## Curricula Traditional Option

<b>Elect &amp; Comp Engin (ECEN)</b>		<b>s.h.</b>
1521	Basic Comp & Dig Circuits .....	3
1521L	Basic Comp & Dig Circuits Lab .....	1
1560	Electrical Engineering Computing .....	2
2611	Instr & Comp Lab 1 .....	1
2612	Instr & Comp Lab 2 .....	1
2632	Basic Circuit Theory 1 .....	3
2633	Basic Circuit Theory 2 .....	3
3710	Signals and Systems.....	3
3711	Intermediate Lab 1 .....	1
3712	Intermediate Lab 2 .....	1
3733	Digital Circuit Design .....	3
3741	Electromagnetic Fields 1 .....	3
3742	Electromagnetic Fields 2 .....	3
3771	Digital & Analog Circs 1 .....	3
3772	Digital & Analog Circs 2 .....	3
4803	Linear Control Systems .....	4
4811	Senior Laboratory .....	1
4844	Electromag Energy Conversion 3 .....	
4899	Senior Design Project .....	4
	Science ECEN Electives .....	9
		<hr/> 55

<b>Science Courses</b>		<b>s.h.</b>
CHEM	1515 Gen Chem 1 .....	4
PHYS	2610 Gen Physics 1.....	4
PHYS	2610L Gen Physics Lab 1 .....	1
PHYS	3705 Thermo & Classical Statistics .....	3
GEOL	2611 Geology for Engineers .....	3
		<hr/> 15

### Summary for Traditional Option

Elec & Comp Engin .....	55
Science .....	15
Engineering * .....	9
Math * .....	18
Writing & Speech * .....	9
General Education * .....	18
<b>Total Hours .....</b>	<b>124</b>

\*See end of this curriculum section for courses in these areas that are common to the three options.

## Suggested Schedule—Traditional Option

### FIRST YEAR FALL

<b>Courses</b>		<b>s.h.</b>
MATH	1571 Calculus 1.....	4
ENGR	1500 Engineering Orientation .....	1
ENGR	1550 Engineering Concepts .....	2
CHEM	1515 General Chemistry 1 .....	4
ENGL	1550 Writing 1.....	3
Gen Ed	Elective .....	3
		<hr/> 14

### SPRING

<b>Courses</b>		<b>s.h.</b>
MATH	1572 Calculus 2 .....	4
ECEN	1560 Electrical Engineering Computing ..	2
ECEN	1521 Basic Comp & Dig Circs .....	3
ECEN	1521L Basic Comp & Dig Circs Lab .....	1
ENGL	1551 Writing 2 .....	3
CMST	1545 Comm Thyry & Prac.....	3
		<hr/> 16

### SECOND YEAR FALL

<b>Courses</b>		<b>s.h.</b>
MATH	2673 Calculus 3.....	4
ECEN	2632 Basic Circuit Theory 1 .....	3
ECEN	2611 Instru and Comput Lab 1 .....	1
PHYS	2610 General Physics 1 .....	4
PHYS	2610L General Physics Lab 1 .....	1
Gen Ed	Elective .....	3
		<hr/> 16

### SPRING

<b>Courses</b>		<b>s.h.</b>
MATH	3705 Differential Equs .....	3
MATH	3715 Discrete Math .....	3
ECEN	2633 Basic Circuit Theory 2 .....	3
ECEN	2612 Instru and Comput Lab 2 .....	1
CEEN	2620 Statics & Dynamics .....	3
Gen Ed	Elective .....	3
		<hr/> 16

### THIRD YEAR FALL

<b>Courses</b>		<b>s.h.</b>
ECEN	3711 Intermediate Laboratory 1.....	1
ECEN	3733 Digital Circuit Design .....	3
ECEN	3741 Electromagnetic Theory 1.....	3
ECEN	3771 Digital & Analog Circuits 1 .....	3
ISEN	3710 Engineering Statistics.....	3
PHIL	2626 Engineering Ethics.....	3
Gen Ed	Elective .....	3
		<hr/> 19

### SPRING

<b>Courses</b>		<b>s.h.</b>
ECEN	3712 Intermediate Laboratory 2 .....	1
ECEN	3710 Signals and Systems .....	3
ECEN	3742 Electromagnetic Theory 2 .....	3

ECEN	3772	Digital & Analog Circuits 2	.....3
ECEN	4844	Electromag Energy Conversion	.....3
ECON	2610	Principles 1	.....3
			<u>16</u>

**FOURTH YEAR  
FALL**

<b>Courses</b>			<b>s.h.</b>
ECEN	4811	Senior Laboratory	..... 1
ECEN	4803	Linear Control Systems	..... 4
ECEN		Elective	..... 3
ECEN		Elective	..... 3
MATH	3715	Discrete Math	..... 3
PHYS	3705	Thermo & Classical Statistics	..... 3
			<u>17</u>

**SPRING**

<b>Courses</b>			<b>s.h.</b>
ECEN	4899	Senior Design Project	.....4
ECEN		Elective	..... 3
GEOL	2611	Geology for Engineers	.....3
Gen Ed		Elective	.....3
			<u>13</u>

**Computer/Digital Option**

**Elect & Comp Engin (ECEN)**

<b>Courses</b>			<b>s.h.</b>
1521		Basic Comp & Dig Circuits	.....3
1521L		Basic Comp & Dig Cir Lab	.....1
1560		Electrical Engineering Computing	.....2
2611		Instr & Comp Lab 1	.....1
2612		Instr & Comp Lab 2	..... 1
2632		Basic Circuit Theory 1	..... 3
2633		Basic Circuit Theory 2	..... 3
3710		Signals and Systems	..... 3
3711		Intermediate Lab 1	..... 1
3712		Intermediate Lab 2	..... 1
3733		Digital Circuit Design	..... 3
3741		Electromagnetic Fields 1	..... 3
3742		Electromagnetic Fields 2	..... 3
3771		Digital & Analog Circs 1	..... 3
4803		Linear Control Systems	..... 4
4811		Senior Laboratory	..... 1
4844		Electromag Energy Conversion	..... 3
4899		Senior Design Project	.....4
			<u>43</u>

**Computer Engineering/ Science**

<b>Courses</b>			<b>s.h.</b>
CSIS	2610	Prog & Prob-Solving	..... 4
CSIS	3700	Data Structures & Objects	..... 4
ECEN	3734	Computer Design	..... 3
CSCI/ECEN		from approved electives	..... 8
			<u>19</u>

**Science**

<b>Courses</b>			<b>s.h.</b>
CHEM	1515	Gen Chem 1	..... 4
PHYS	2610	Gen Physics 1	..... 4
PHYS	3705	Thermo & Classical Statistics	..... 3
GEOL	2611	Geology for Engineers	..... 3
			<u>15</u>

**Summary for Computer/Digital Option**

<b>Courses</b>			<b>s.h.</b>
		Elect & Comp Engineering	.....43
		Computer Engineering/Science	.....19
		Science	.....15
		Engineering *	.....9
		Math *	.....18
		Writing & Speech *	.....9
		General Education *	.....18

**Total Hours** .....131

*\*See end of this curriculum section for courses in these areas that are common to the three options.*

**Suggested Schedule—Computer/Digital Option**

**FIRST YEAR**

**FALL**

<b>Courses</b>			<b>s.h.</b>
MATH	1571	Calculus 1	.....4
ENGR	1500	Engineering Orientation	.....1
ENGR	1550	Engineering Concepts	.....2
CHEM	1515	General Chemistry 1	.....4
ENGL	1550	Writing 1	.....3
			<u>14</u>

**SPRING**

<b>Courses</b>			<b>s.h.</b>
MATH	1572	Calculus 2	..... 4
ECEN	1560	Electrical Engineering Computing	.....2
ECEN	1521	Basic Comp & Digital Circs	.....3
ECEN	1521L	Basic Comp & Dig Circs Lab	.....1
ENGL	1551	Writing 2	.....3
CMST	1545	Comm Theory & Practice	.....3
			<u>16</u>

**SECOND YEAR**

**FALL**

<b>Courses</b>			<b>s.h.</b>
MATH	2673	Calculus 3	..... 4
ECEN	2632	Basic Circuit Theory 1	..... 3
ECEN	2611	Instru and Comput Lab 1	..... 1
PHYS	2610	General Physics 1	..... 4
PHYS	2610L	General Physics Lab 1	..... 1
Gen Ed		Elective	.....3
			<u>16</u>

**SPRING**

<b>Courses</b>			<b>s.h.</b>
MATH	3705	Differential Equations	..... 3
MATH	3715	Discrete Math	..... 3
ECEN	2633	Basic Circuit Theory 2	..... 3
ECEN	2612	Instru and Comput Lab 2	..... 1
CEEN	2620	Statics & Dynamics	..... 3
PHYS	2611	General Physics 2	..... 4
MECH	2641	Dynamics	..... 3
Gen Ed		Elective	.....3
			<u>16</u>

**THIRD YEAR  
FALL**

<b>Courses</b>		<b>s.h.</b>
ECEN 3711	Intermediate Laboratory 1 .....	1
ECEN 3733	Digital Circuit Design .....	3
ECEN 3741	Electromagnetic Theory 1 .....	3
ECEN 3771	Digital & Analog Circuits 1 .....	3
CSIS 2610	Prog & Prob-Solving .....	4
PHIL 2626	Engineering Ethics.....	3
		<u>17</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
ECEN 3712	Intermediate Laboratory 2 .....	1
ECEN 3710	Signals and Systems .....	3
ECEN 3734	Computer Design .....	3
ECEN 3742	Electromagnetic Theory 2 .....	3
ECE 4844	Electromag Energy Conversion..	3
CSIS 3700	Data Structures and Objects.....	4
		<u>17</u>

**FOURTH YEAR  
FALL**

<b>Courses</b>		<b>s.h.</b>
ECEN 4811	Senior Laboratory .....	1
ECEN 4803	Linear Control Systems .....	4
ISEN 3710	Engineering Statistics .....	3
PHYS 3705	Thermo & Classical Statistics ...	3
CSCI/ECEN	Elective .....	4
ECON 2610	Principles 1.....	3
		<u>18</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
ECEN 4899	Senior Design Project .....	4
CSCI/ECEN	Elective .....	4
GEOL 2611	Geology for Engineers .....	3
Gen Ed	Elective .....	3
		<u>14</u>

**Biomedical Option**

**Elect & Comp Engin (ECEN)**

<b>Courses</b>		<b>s.h.</b>
1521	Basic Comp & Dig Circuits .....	3
1521L	Basic Comp & Dig Cir Lab .....	1
1560	Electrical Engineering Computing.....	2
2611	Instr & Comp Lab 1 .....	1
2612	Instr & Comp Lab 2 .....	1
2632	Basic Circuit Theory 1 .....	3
2633	Basic Circuit Theory 2 .....	3
3711	Intermediate Lab 1 .....	1
3712	Intermediate Lab 2 .....	1
3710	Signals and Systems, or	
	3734 Computer Design, or	
	3772 Digital & Analog Circs 2 .....	3
3733	Digital Circuit Design .....	3
3741	Electromagnetic Fields 1 .....	3
3742	Electromagnetic Fields 2 .....	3
3771	Digital & Analog Circs 1 .....	3
4803	Linear Control Systems .....	4
4811	Senior Laboratory .....	1
4844	Electromag Energy Conversion .....	3
4899	Senior Design Project .....	4
		<u>43</u>

**Science**

<b>Courses</b>		<b>s.h.</b>
CHEM 1515	Gen Chem 1 .....	4
CHEM 1516	Gen Chem 2 .....	4
CHEM 3719	Organic Chem 1 .....	4
CHEM 3720	Organic Chem 2 .....	4
BIOL 2601	Gen Biol: Molec/Cells .....	4
BIOL 2602	Gen Biol: Org & Ecol .....	4
PHYS 2610	Gen Physics 1 .....	4
PHYS 2610L	Gen Physics Lab 1 .....	1
PHYS 3705	Thermo & Classical Statistics ....	3
		<u>32</u>

*The following two science courses are recommended for the biomedical option but do not count toward degree requirements:*

<b>Courses</b>		<b>s.h.</b>
CHEM 3785	Biochemistry 1 .....	3
BIOL 3702	Microbiology .....	4

**Summary for Biomedical Option**

<b>Courses</b>	<b>s.h.</b>
Elect & Comp Engin .....	43
Science.....	32
Math *.....	18
Engineering * .....	9
Writing & Speech * .....	9
General Education * .....	18

**Total Hours ..... 129**

*\*See end of this curriculum section for courses in these areas that are common to the three options.*

**Suggested Schedule—Biomedical Option**

**FIRST YEAR**

**FALL**

<b>Courses</b>		<b>s.h.</b>
MATH 1571	Calculus 1 .....	4
ENGR 1500	Engineering Orientation .....	1
ENGR 1550	Engineering Concepts .....	2
CHEM 1515	General Chemistry 1.....	4
ENGL 1550	Writing 1 .....	3
Gen Ed Elective .....		3
		<u>17</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
MATH 1572	Calculus 2 .....	4
ECEN 1560	Electrical Engin Computing .....	2
ENGR 1560	Engineering Computing .....	3
CHEM 1516	General Chemistry 2 .....	4
ENGL 1551	Writing 2 .....	3
ECEN 1521	Basic Comp & Digital Circs .....	3
ECEN 1521L	Basic Comp & Dig Circs Lab.....	1
		<u>17</u>

**SECOND YEAR**

**FALL**

<b>Courses</b>		<b>s.h.</b>
MATH 2673	Calculus 3 .....	4
ECEN 2632	Basic Circuit Theory 1 .....	3
ECEN 2611	Instru and Comput Lab 1 .....	1

PHYS	2610	General Physics 1/L.....	4
CMST	1545	Comm Theory & Practice .....	3
			<u>16</u>

**SPRING**

<b>Courses</b>			<b>s.h.</b>
MATH	3705	Differential Equations .....	3
MATH	3715	Discrete Math .....	3
ECEN	2633	Basic Circuit Theory 2 .....	3
ECEN	2612	Instru and Comput Lab 2 .....	1
CEEN	2620	Statics & Dynamics .....	3
Gen Ed	Elective .....		3
			<u>16</u>

**THIRD YEAR**

**FALL**

<b>Courses</b>			<b>s.h.</b>
ECEN	3711	Intermediate Laboratory 1 .....	1
ECEN	3733	Digital Circuit Design .....	3
ECEN	3741	Electromagnetic Theory 1 .....	3
ECEN	3771	Digital & Analog Circuits 1 .....	3
BIOL	2601	Gen Biology: Molec/Cells .....	4
PHIL	2626	Engineering Ethics .....	3
			<u>17</u>

**SPRING**

<b>Courses</b>			<b>s.h.</b>
ECEN	3712	Intermediate Laboratory 2 .....	1
ECEN	3734 / 3772 / 3710 .....		3
ECEN	3742	Electromagnetic Theory 2 .....	3
ECEN	4844	Electromag Energy Conversion .....	3
BIOL	2602	Gen Biology: Orgs/Ecology .....	4
ECON	2610	Principles 1.....	3
			<u>17</u>

**FOURTH YEAR**

**FALL**

<b>Courses</b>			<b>s.h.</b>
ECEN	4811	Senior Laboratory .....	1
ECEN	4803	Linear Control Systems .....	4
PHYS	3705	Thermo & Classical Statistics .....	3
ISEN	3710	Engineering Statistics .....	3
CHEM	3719	Organic Chemistry 1 .....	4
			<u>15</u>

**SPRING**

<b>Courses</b>			<b>s.h.</b>
ECEN	4899	Senior Design Project .....	4
CHEM	3720	Organic Chemistry 2 .....	4
Gen Ed	Elective .....		3
Gen Ed	Elective.....		3
			<u>14</u>

**\*Courses Common to All Options**

**Engineering**

<b>Courses</b>			<b>s.h.</b>
ENGR	1500	Engineering Orientation .....	1
ENGR	1550	Engineering Concepts .....	2
CEEN	2620	Statics & Dynamics .....	3
ISEN	3710	Engineering Statistics .....	3
			<u>9</u>

**Mathematics**

<b>Courses</b>			<b>s.h.</b>
MATH	1571	Calculus 1 .....	4
MATH	1572	Calculus 2 .....	4
MATH	2673	Calculus 3 .....	4
MATH	3705	Differential Equations .....	3
MATH	3715	Discrete Math .....	3
			<u>18</u>

**Writing & Speech**

<b>Courses</b>			<b>s.h.</b>
CMST	1545	Comm Thry & Prac .....	3
ENGL	1550	Writing 1 .....	3
ENGL	1551	Writing 2.....	3
			<u>9</u>

**General Education (codes)**

			<b>s.h.</b>
ECON	2610	Principles 1 (SS).....	3
PHIL	2626	Engineering Ethics (AH).....	3
		Elective (AH).....	3
		Elective (SS).....	3
		Elective (SPA).....	6
			<u>18</u>

**DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING 330-941-3016**

*Professors Cala, Kim, Kudav, Mehri, Shields; Associate Professors Marie (Chair), Wallace; Assistant Professors Meyers, Panta, Solomon; Professors Emeritus Driscoll, McCoy, Suchora.*

The Department of Mechanical and Industrial Engineering is dedicated to further the missions and objectives of the University and the College of Science, Technology, Engineering, and Mathematics. We focus on providing an opportunity for quality education in mechanical engineering and industrial and systems engineering, while offering professional service to local and regional industry and to the public. The department is committed to providing its students with a broad, general education and an up-to-date technological curriculum in a four-year undergraduate program. It also offers an application-oriented evening Master of Science in Engineering program to practicing engineers and recent engineering graduates.

**INDUSTRIAL AND SYSTEMS ENGINEERING PROGRAM**

*Professors Cala (Coordinator), Mehri; Associate Professor Wallace; Professor Emeritus Driscoll.*

The industrial and systems engineer functions as a problem-solver, innovator, coordinator, and agent of change in a wide variety of positions in manufacturing industries, service industries, and government. The industrial and systems engineer's unique background combines a study of science,

mathematics, and management principles with the principles of engineering analysis and design to provide access to a wide variety of flexible technical and managerial careers.

The aim of the industrial and systems engineering program is to produce graduates who secure professional engineering positions, who practice the profession ethically and effectively, who maintain their professional competency through lifelong learning, and who advance in one of the many technical and managerial career paths available to industrial and systems engineers. The program prepares its students for these accomplishments by providing them with a broad scientific and engineering base via courses in mathematics, physics, chemistry, and the engineering sciences. In addition, courses in the social sciences and the humanities develop sensitivity to the social context within which the profession must be ethically practiced. Finally, industrial and systems engineering courses in the areas of manufacturing systems, human-machine systems, management systems, and management science develop the technical expertise required by professional practice.

### Program Educational Objectives

The industrial and systems engineering program at Youngstown State University is committed to offering its students a high standard of educational training. In fulfillment of its mission, as well as the missions of the College of STEM and the University, the program has established educational objectives that ensure graduating engineers have the educational knowledge and skills to practice industrial engineering effectively. The objectives of the Industrial and Systems Engineering Program are for our graduates to be:

- Professionals who are technically competent in modern industrial engineering based careers, as well as other emerging disciplines.
- World citizens who exhibit leadership qualities in their chosen disciplines, and who pursue continuing education through advanced degrees, certifications, licensure, etc.
- Active contributors to their professions, industries and/or communities.

### Program Outcomes

To achieve the program educational objectives, our students are expected to have attained the required professional, technical, and social experience in the program with the ability to:

- 1-1. Apply knowledge of mathematics, science, and engineering science to solve engineering problems.
- 1-2. Utilize their design knowledge, skills, and technical experience to practice engineering.
- 1-3. Incorporate design of experiments with engineering analysis and design.

- 1-4. Use design techniques to design systems, components, and processes that satisfy pre-determined economic, environmental, manufacturability, ethical, social, health, and safety constraints.

- 1-5. Recognize technical problems, develop ideas and formulate methods to determine acceptable solutions.

- 2-1. Work as a member of an engineering team in industrial engineering practice.

- 2-2. Accept project responsibilities and use problem solving skills.

- 2-3. Understand their professional roles and ethical responsibilities in the engineering profession and society.

- 3-1. Communicate their ideas and the application of engineering skills orally and/or in writing.

- 3-2. Understand the global impact of engineering solutions on societies needs.

- 3-3. Understand that the technology is constantly changing and industrial engineers must upgrade their knowledge in conjunction with the technological changes.

- 4-1. Recognize the importance of professional development through involvement and leadership in technical societies such as the IIE.

- 4-2. Have the broad knowledge to understand contemporary issues pertaining to the interaction between technology and society.

## Industrial and Systems Engineering Laboratories

The industrial and systems engineering laboratory spaces are located in Moser Hall and are equipped with hardware, software and networks to serve experiences within the curriculum that are hands on, team based, and communications or computational intensive. Laboratory experiences develop capabilities to design detailed components and to integrate solutions into large scale systems. Successively more challenging assignments are taken on throughout the curriculum and culminate in comprehensive experiences in the capstone facilities design sequence.

The industrial and systems engineering program makes optimum use of the Engineering Computing Complex, which is equipped with state-of-the-art computation, design, and communication hardware and software of a multi-disciplinary nature.

The ISE Project Laboratory is focused on team-based activities throughout the curriculum and particularly serves the methods engineering, human factors engineering and facilities design areas. At its core is a network of computing stations equipped with modern industrial & systems engineering software. Data collection and processing software supports video analysis of human performance,

workspace and manufacturing cell design, facility layout, flow analysis and line balancing. The goal of this laboratory is to be able to cover any topic from the planning of initial resources for a start-up enterprise to the distribution of goods and services in global networks.

The Automation Laboratory Suite is a collection of spaces where students at all levels can learn and achieve together with an opportunity to make sustainable contributions to an initial or on-going project experience. It encompasses programmable robots, programmable logic controllers, vibratory bowl feeders, reciprocating feeders, power conveyors and numerous actuator and sensing devices.

The Manufacturing Laboratory Suite consists of several spaces containing equipment for rapid prototyping, casting processes, plastic injection molding and blow molding processes, CNC machining processes, sheet metal processing and instrumentation for inspection, measurement, and testing.

**Curriculum for the Bachelor of Engineering Degree with a Major in Industrial and Systems Engineering**

**FIRST YEAR  
FALL**

<b>Courses</b>		<b>s.h.</b>
ENGL 1550	Writing 1.....	3
CHEM 1515	Chemistry 1 Lec & Lab.....	4
STEM Course 1a	(Orientation).....	1
STEM Course 1b	(Design).....	2
MATH 1571	Calculus 1.....	4
General Education Elective 1 (SS)	.....	3
		<u>17</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
ENGL 1551	Writing 2.....	3
PHYS 2610	Physics 1.....	4
STEM Course 2a	.....	2
MATH 1572	Calculus 2.....	4
General Education Elective 2 (SS)	.....	3
		<u>16</u>

**SECOND YEAR  
FALL**

<b>Courses</b>		<b>s.h.</b>
MATH 2673	Calculus 3.....	4
ISEN 3724	Engineering Economy.....	3
ISEN 3710	Engineering Statistics.....	3
STEM Course 2b	(Computing).....	4
CMST 1545	Speech.....	3
		<u>17</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
ISEN 3716	Systems Analysis & Design.....	3
ISEN 3736	Methods Engr.....	2
ISEN 3736L	Methods Engr. Lab.....	1
PHYS 2611	Physics 2.....	4

STEM Course 3 (Statics).....	3
General Education Elective 3 (AH).....	3
	<u>16</u>

**THIRD YEAR  
FALL**

<b>Courses</b>		<b>s.h.</b>
ISEN 3727	Simulation.....	3
ISEN 3745	Accounting for Engineers.....	3
ISEN 3723	Manufacturing Processes.....	3
STEM Course 4 (Circuits).....	.....	3
		<u>12</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
ISEN 3720	Statistical Quality Control.....	3
ISEN 5823	CAM & Automation.....	3
ISEN 5830	Human Factors.....	3
STEM Course 6 (Math).....	.....	3
General Education Elective 4 (AH).....	.....	3
		<u>15</u>

**FOURTH YEAR  
FALL**

<b>Courses</b>		<b>s.h.</b>
ISEN 4821	Capstone Design 1: Manufacturing and Service Systems.....	3
ISEN 5801	Opns Rsch 1.....	3
ISEN 5811L	Mfg Practices 1 Lab.....	1
STEM Course 7 (CAD).....	.....	2
STEM Course 8 (Science).....	.....	3
General Education Elective 5 (SPA).....	.....	3
		<u>15</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
ISEN 4822	Capstone Design 2: Logistics Systems.....	3
ISEN 5812L	Mfg Practices 2 Lab.....	1
ISEN 5881	Comp. Mfg Mgmt.....	3
University Elective.....	.....	3
General Education Elective 6 (SPA).....	.....	3
		<u>13</u>

**Total ..... 124 s.h.**

All electives must be selected with the consent of the student's program faculty advisor.

**Cooperative Education**

The industrial and systems engineering program strongly encourages its students to actively participate in the optional cooperative education program. The parallel co-op arrangement which combines work and study each semester is recommended. However, full time employment in the summer can also be included. Students must register for a co-op course and submit a documented work report and the co-op evaluations completed by the students and their supervisors for a final grade of credit/no credit. Currently a substitution of one elective course with three co-op experiences is allowed.

## Advisement

The industrial and systems engineering program specifies mandatory advisement. Every student in the program is advised every semester before his or her registration. Students cannot finalize their registration without approval of the faculty advisor or program coordinator.

## MECHANICAL ENGINEERING PROGRAM

*Professors Kim, Kudav, Marie (Coordinator and Department Chair), Shields; Associate Professor Wallace; Assistant Professors Meyers, Panta, Solomon; Professors Emeritus McCoy, Suchora.*

Mechanical engineering is the branch of the engineering profession that deals with the conversion and use of energy; the design of machines and engines; and the instrumentation and control of physical processes, systems and environments. The challenge of mechanical engineering is to use the principles of mathematics, along with the physical and thermal sciences, to develop and construct well designed machines and machine systems. Mechanical engineers are concerned with the practical purpose and function of a machine or system, as well as its design for strength, reliability, safety, economy, and appearance.

### Program Mission

The mission of the mechanical engineering program is to further the missions and objectives of the University and the College of Science, Technology, Engineering and Mathematics by providing an opportunity for a quality education in Mechanical Engineering to the people it serves, particularly those in northeast Ohio and western Pennsylvania. The program also strives to provide professional service to the local and regional industry and to the public. The program is committed to meeting regional and state-wide priorities in higher education by providing its students with a broad, general education and an up-to-date technological curriculum in a four-year undergraduate program, and an application-oriented evening graduate program, offering a Master of Science in Engineering degree to practicing engineers and recent engineering graduates. The program also strives to enhance quality research and scholarly activities to be integrated with teaching and meet the needs of the region by providing area schools, businesses, industries, and government agencies with technical expertise.

### Program Educational Objectives

- The program will provide an educational environment rich in opportunities for students to obtain the knowledge and skills that will prepare its graduates for successful careers as a mechanical engineer or for advanced studies.

- The program will provide a comprehensive education for students to be able to identify, formulate, and solve engineering problems by applying fundamental knowledge of mathematics, basic and engineering sciences, and by utilizing modern techniques, methods, skills, and tools.
- The program will provide a strong technical education for students to be able to design a system, components, or process to meet the desired needs, as well as to design and conduct experiments, and to analyze the acquired data and interpret the results.
- Through the University's General Education Program, the program will provide a general education, complementary to its technical education, for students to be able to function on multidisciplinary teams, communicate effectively, understand the impact of engineering in a global and societal context, professional ethics, contemporary issues in engineering practice, and the necessity of life-long learning.

### Program Outcomes

- Our students will be able to perform well as mechanical engineers and understand the impact of engineering in a global, societal, and environmental context.
- Our students will be able to identify, formulate, and solve engineering problems by applying fundamental knowledge of mathematics, basic sciences, and engineering sciences.
- Our students will be able to utilize modern engineering techniques, skills, and tools with an emphasis on the role that computers play in the process of solving engineering problems.
- Our students will be able to design and conduct experiments and to analyze and interpret data.
- Our students will be able to design mechanical engineering systems, components, or processes to meet the desired needs.
- Our students will be able to function and communicate effectively both individually and within multidisciplinary teams.
- Our students will be able to understand contemporary issues, professional and ethical responsibility, and the necessity of engaging in life-long learning.

### Vision Statement

Mechanical engineering and mechanical engineering education, in particular, face dramatic challenges in the future due to rapidly changing technologies and a new pattern of societal and industrial demands.

The vision of the program is to meet these challenges and exceed the expectations of its constituents by focusing on the following primary strategies of the program:

- Continuous improvement of an educational environment for outstanding teaching and learning
- Development of a productive research program through a strategic focus on technology development in emerging areas such as green energy, computer simulation, and nanotechnology
- Successful co-op and internship programs that provides students with on-the-job training opportunities
- An assessment program and procedures in order to insure a high quality program focusing on the needs of the program's constituents; the students, alumni, employers, faculty, administrations, community and the general public
- Healthy enrollment that facilitates diversification of curriculum and faculty research and professional development

In order to achieve its educational objectives and to further the missions and objectives of the University and the College, the program provides an educational environment, teeming with opportunities for students to learn and acquire essential knowledge and skills that are defined in the ABET Criteria 2000, through its curriculum and extra-curricular activities. The program maintains undergraduate and graduate curricula that are well balanced in engineering fundamentals, state-of-the-art technology, and real-world engineering applications, in the primary specialty areas of fluid thermal sciences, and mechanics of deformable bodies. The undergraduate curriculum also contains courses that foster critical and independent thinking; decision making; development of interpersonal communication and a life-long learning attitude; working within a team; and integration of knowledge, skills, ethics, and personal responsibility.

While the program intends to cultivate the capabilities of its students' problem solving, fundamental and advanced engineering analyses, design, research, and development, it also intends to provide the students with maximum exposure to hands-on, experimental skills to insure the high quality of its graduates. Through courses like stress analysis, thermal fluid applications, and finite element analysis, students will acquire strong tools for design and pertinent knowledge to solve real-world engineering problems. Our emphasis on engineering applications, computer simulation, and hands-on experience are complementary to each other and encourage students to apply analytical methods to engineering problems.

This approach enhances the effectiveness of teaching and also facilitates the students' understanding of abstract and difficult subjects. The ultimate goal of the program is to provide the society and industry with "whole person" mechanical engineers with superior technical capability.

### Mechanical Engineering Laboratories

The mechanical engineering program maintains six physical experimental laboratories in Moser Hall. A wide array of modern equipment, instrumentation devices, and department-owned computers are housed in spacious rooms that support academic instruction and research activities in applied thermodynamics, heating and air conditioning, fluid mechanics, heat transfer, stress analysis, vibrations, and acoustics. Other mechanical engineering laboratories are simulation and computing-related laboratories that include computer-aided design, machine design, kinematic and dynamic systems, and finite-element analysis. The College and the mechanical engineering program maintain modern computing facilities in Moser Hall and constantly upgrade hardware and software. The students and faculty also use the university computing facilities in Meshel Hall and Kilcawley Center.

### Curriculum for the Bachelor of Engineering Degree with a Major in Mechanical Engineering

		FIRST YEAR	s.h.
<b>Courses</b>			
ENGL	1550, 1551	Writing 1,2	6
MATH	1571, 1572	Calculus 1,2	8
CHEM	1515	Chemistry 1	4
PHYS	2610	Physics 1	4
ENGR	1500	Engr Orientation	1
ENGR	1550,	Engr Concepts	2
MECH	1560	Engr Comm w/CAD	2
CMST	1545	Comm Thry & Prtce	3
GER Electives			3
			33

		SECOND YEAR	s.h.
<b>Courses</b>			
MATH	2673	Calculus 3	4
MATH	3705	Differential Equations	3
PHYS	2611	Physics 2	4
CEEN	2601	Statics	3
CEEN	2602	Strength of Materials	3
CEEN	2602L	Strength of Materials Lab	1
MECH	2603	Thermodynamics 1	3
MECH	2606	Materials	3
MECH	2641	Dynamics	3
ECON	2610	Principles 1	3
ECEN	2614	Elec Engr Basics 3	3
			33

		THIRD YEAR	s.h.
<b>Courses</b>			
MECH	2604	Thermodynamics 2	3
MECH	3708	Dyn Sys Analysis	3
MECH	3720	Fluid Dynamic	3
MECH	3720L	Fluid Lab	1
MECH	3725	Heat Transfer	3
MECH	3742	Kinematics	3
MECH	3751	Stress 1	3
MECH	3751L	Stress 1 Lab	1



MECH 3762	Machine Design.....	3
MECH 3762L	Machine Design Lab .....	1
STAT 3743 or	ISEN 3710 Engr Statistics.....	3
PHIL 2625	Prof Ethics .....	3
GER Electives	.....	<u>3</u>
		33

**FOURTH YEAR**

<b>Courses</b>		<b>s.h.</b>
MECH 4808	Mechanical System Design.....	2
MECH 4808L	Mechanical System Design Lab ..	1
MECH 4809	Mech Sys Design 2 .....	3
MECH 4809L	Mech Sys Design 2 Lab .....	1
MECH 4825L	Heat & Thermo Lab .....	1
MECH 5881	Mech Vibrations .....	3
MECH 5881L	Mech Vibrations Lab .....	1
MECH Electives	(Must take at least one from each group) .....	12
GER Electives	.....	<u>9</u>
		33

**MECHANICAL ENGINEERING ELECTIVES**

<b>Courses</b>		<b>s.h.</b>
<b>Heat &amp; Fluid Flow</b>		
MECH 4800	Special Topics Thermal .....	3
MECH 4823	HVAC.....	3
MECH 4835	Thermal Fluid Applications .....	3
MECH 5811	Solar Engineering.....	3
MECH 5825	Heat Transfer 2 .....	3
MECH 5836	Fluid Power and Control .....	3
MECH 5885	Computational Fluid Dynamics .....	3
<b>Solid Mechanics</b>		
MECH 4800	Special Topics Mechanics.....	3
MECH 5842	Kinetics of Machines.....	3
MECH 5852	Stress 2 .....	3
MECH 5872	Acoustics .....	3
MECH 5884	Finite Element Analysis .....	3
MECH 5892	Control Mech Systems .....	3

**Summary**

<b>Courses</b>		<b>s.h.</b>
Writing and Speech (3 courses).....		9
Arts & Humanities (2 courses) .....		6
Social Studies (2 courses) .....		6
Social/Personal Awareness (2 courses).....		6
Nat Science (3 courses) .....		12
Mathematics (5 courses).....		18
ENGR & Other Engr Programs (6 courses) .....		13
Mechanical Engineering (25 courses).....		<u>60</u>

**Total .....** 130 s.h.

**Cooperative Education**

The mechanical engineering program strongly encourages its students to actively participate in the optional cooperative education program. The parallel co-op arrangement which combines work and study each semester is recommended. However, full time employment in the summer can also be included. Students must register for a co-op course

and submit a documented work report, along with the co-op evaluations, completed by the students and their supervisors, for a final grade of credit/no credit.

**Advisement**

The mechanical engineering program specifies mandatory advisement. Every student in the program is advised every semester before his or her registration. Students cannot finalize their registration without approval of the faculty advisor or chair.

**DEPARTMENT OF ENGINEERING TECHNOLOGY**

330-941-3287

[web.yzu.edu/stem/engtech](http://web.yzu.edu/stem/engtech)

*Professors Bosela, Messuri; Associate Professors, Kurtanich (Director), Lamb, Moy; Assistant Professors Costarell, George, Korenic, Vuksanovich; Instructors Coyne, Gross, Sanson; Professors Emeritus Krygowski, Slanina, Zupanic.*

The Department of Engineering Technology offers “two-plus-two” programs in engineering technology. Students in these programs may work toward a two-year associate degree and then continue to earn a four-year bachelor’s degree. The programs include both classroom and laboratory experiences which stress the application of established engineering and computer knowledge and methods to the solution of problems. They include study of the sciences and mathematics necessary to support a technology, as well as study of the methods, processes, skills, and materials used in that technology. The programs are designed to prepare graduates for job opportunities in industry and the public sector. Demands developed by an expanding technology place graduates of these programs in one of the fastest-growing occupational groups in the country.

**Associate of Technical Study Degree**

The Department of Engineering Technology offers Associate of Technical Study (A.T.S.) degrees in:

Power Plant Technology

Students in these programs are awarded academic credit for skills-related experience and training to compliment the academic coursework at YSU.

**Associate in Applied Science Degree**

The department offers two-year programs in:

- Civil and Construction Engineering Technology
- Drafting and Design Technology
- Electrical Engineering Technology
- Mechanical Engineering Technology

Graduates of these programs are awarded the Associate in Applied Science degree and may serve as engineering technicians.

Graduates of the associate degree programs are prepared to support scientists and engineers. Their work is in the design, drafting (CAD), development, testing, and production phases of engineering projects. Their tasks include laboratory testing, data gathering, evaluation, and instrument calibration. They may perform quality-control tests, serve as technical sales representatives, or serve as technical writers in the formulation of specifications or trade manuals.

Drafting and design graduates work with engineers, architects, and technicians in converting ideas, designs, and sketches into workable plans and specifications using 2D and 3D solid modeling CAD techniques.

Degrees in these programs may be earned in four semesters if students average 17-18 hours per semester.

### **Bachelor of Science in Applied Science Degree**

The civil and construction engineering technology, electrical engineering technology, and mechanical engineering technology programs are based on the "two-plus-two" educational system which provides the student with the flexibility of earning an associate degree and a bachelor's degree according to his or her needs. After completing the requirements of the associate degree, the student may elect to either enter industry or, through an added two years of full-time study (averaging 17 hours per semester) or equivalent part-time study, earn the Bachelor of Science in Applied Science (B.S.A.S.).

Graduates of the B.S.A.S. degree program obtain employment as engineering technologists or engineering designers for government agencies, consulting engineers and architects, industry and manufacturing, and contractors. Because their education is more extensive, they are prepared for more responsibility and more-rapid advancement. B.S.A.S. engineering technologists and designers plan, design, inspect, and direct construction, production, and maintenance activities.

Based on an evaluation of their work, transfer students who have a related associate degree from a regionally accredited institution may be admitted to the bachelor's degree program at the junior level.

### **Accreditation and Registration**

The civil and construction, electrical, and mechanical engineering technology associate and bachelor programs are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC-ABET). Graduates are qualified to apply to the National Institute for Certification in Engineering Technologies (NICET) for certification procedures in various specialty areas, depending on academic major and employment area. In many states, including Ohio, West Virginia and Pennsylvania, bachelor's degree graduates are

qualified to take the Fundamentals of Engineering (FE) exam, and, with sufficient work experience, the Professional Engineers (PE) exam.

### **Cooperative Education**

The School of Engineering Technology offers an optional cooperative education program for qualified students enrolled in the civil & construction engineering technology, electrical engineering technology, and mechanical engineering technology bachelor's degree programs. Engineering technology students typically participate in a parallel co-op which includes full-time employment and part-time academic study. Details about the Engineering Technology co-op program may be obtained from the director of the School of Engineering Technology.

### **Admission Requirements**

Admission to all School of Engineering Technology programs requires at least one year of high school algebra and one year of high school geometry with grades of C or better. Transfer students must be in good standing at their previous institution. All freshmen must take the Mathematics Placement Test prior to admission into the School of Engineering Technology.

Students not meeting the admission requirements are enrolled as pre-majors in the College of Science, Technology, Engineering, and Mathematics. While advising is provided by professional advisors within the college, these students are also encouraged to see the coordinator of the program in which they are interested for further orientation.

Qualified engineering technology students must enroll in the ENTC 1505/L courses. It is designed to acquaint students with the nature of this career area, and therefore assist prospective students in determining the level of their interest. ENTC 1505/L is required of all engineering technology majors.

## **CIVIL AND CONSTRUCTION ENGINEERING TECHNOLOGY**

[web.ysu.edu/stem/engtech](http://web.ysu.edu/stem/engtech)

*Associate Professor Lamb, Program Coordinator.*

Students in the civil and construction engineering technology (CCET) program may choose to complete two years of study and earn an Associate in Applied Science (A.A.S.) degree. The A.A.S. degree provides early access to employment in engineering support positions. Upon completion of the A.A.S. degree, the student may continue on for the Bachelor of Science in Applied Science (B.S.A.S.) degree. This program provides additional coursework, continuing the student's growth to that of an engineering technologist or designer. Exceptional students may be eligible for enrollment in a Master of Engineering or Master of Business Administration program. Students interested in construction may choose a certificate program in construction management.

## Program Educational Objectives

Educational objectives for the civil and construction engineering technology programs have been developed by faculty and the program industrial advisory committee to support the university, college, and School of Engineering Technology missions. Graduates of the CCET associate degree program are prepared to support civil engineers in structural design, public works, construction, inspection, transportation, and environmental engineering. Bachelor's degree graduates are prepared to assist with planning, design, inspection, and direction of the construction of projects involving buildings, roads, dams, bridges, airports, and wastewater treatment facilities.

During their first few years after earning of the civil and construction engineering technology degree at YSU, graduates will have demonstrated the ability to:

- Secure employment in a technical career related to their civil and construction engineering technology degree.
- Communicate effectively in a professional environment.
- Continue growth in professional knowledge and skills.
- Achieve recognition consistent with their educational achievements.

## Program Outcomes

Graduates in civil and construction engineering technology will achieve the following learning outcomes by the time they graduate:

### Associate in Applied Science Degree Program

Graduates of the associate degree in civil and construction engineering technology will possess the following competencies upon graduation.

**Learning Outcome 1:** ability to use graphic techniques to produce engineering documents and use modern instruments, methods, and techniques to implement construction contracts, documents, and codes

**Learning Outcome 2:** conduct standardized field/laboratory testing on civil engineering materials and evaluate materials/methods for construction projects

**Learning Outcome 3:** utilize modern surveying methods for land measurement and/or construction layout

**Learning Outcome 4:** determine forces and stresses in elementary structural systems

**Learning Outcome 5:** estimate material quantities and costs for technical projects

**Learning Outcome 6:** employ productivity software to solve technical problems

## Bachelor of Science in Applied Science Degree Program

Graduates of the bachelor degree in civil and construction engineering technology will possess the following competencies upon graduation.

**Learning Outcome 1:** ability to plan, prepare, and utilize design, construction, and operations documents, such as specifications, contacts, change orders, engineering drawings, and construction schedules

**Learning Outcome 2:** perform economic analyses and cost estimates related to design, construction, operations, and maintenance of systems related to civil and construction engineering

**Learning Outcome 3:** ability to select appropriate construction and engineering materials/practices

**Learning Outcome 4:** (Construction Engineering Technology) ability to apply principles of construction law and ethics

**Learning Outcome 5:** apply basic technical concepts related to the civil and construction engineering technology field; such as hydraulics, hydrology, geotechnics, structures, material behavior, transportation systems, and water and wastewater systems

**Learning Outcome 6:** perform standard analysis/design in at least one technical specialty within civil and construction engineering technology

## Associate Degree Program

The associate degree program prepares technicians to support civil engineers in structural design, public works, construction, transportation, and environmental engineering. Most graduates are hired by government agencies, consulting engineers, architects, and contractors.

## Bachelor's Degree Program

The bachelor's program in civil and construction engineering technology prepares students for employment as engineering technologists or engineering designers. The student can concentrate in structures, construction, or transportation as interests dictate. A co-op program with the Ohio Department of Transportation or with other technical firms enables CCET students to gain experience and income during their junior and senior years. Many students work full or part time while completing the B.S.A.S. degree by taking evening classes. Students are encouraged to take the Fundamentals of Engineering (FE) exam as the first step toward professional registration.

## Certificate Program – Construction Management Technology

The certificate program in construction management technology provides an in-depth, focused study of the fundamental concepts of construction materials, specifications, and construction management. It also provides technical fundamentals for more advanced study in the field. The certificate program consists of the equivalent of one year of full time study. Contact the CCET program coordinator for more information.

**Individualized Curriculum Program (ICP)**

Drawing heavily from the civil and construction engineering technology program, students may develop an ICP in construction management that includes coursework from the Williamson College of Business Administration.

**Associate Degree Program**

The associate degree program prepares technicians to support civil engineers in structural design, public works, construction, transportation, and environmental engineering. Most graduates are hired by government agencies, consulting engineers, architects, and contractors.

**Associate of Science in Applied Science**

**FIRST YEAR  
FALL**

		<b>s.h.</b>
ENTC 1505	Engr. Tech. Concepts .....	4
MATH 1513	Algebraic & Transc. Fcns. ....	5
DDT 1503	AutoCAD 1 .....	2
DDT 1504	Draft & Plan Reading .....	2
ENGL 1550	Writing I .....	3
		16

**SPRING**

MET 1515	Mechanics 1 .....	3
CCET 2604	Prop/Strength of Mat'ls .....	3
CCET 2614	Materials Lab 1 .....	1
DDT 2607	CAD Microstation .....	2
ENGL 1551	Writing 2 .....	3
PHYS 1501	Physics 1 .....	4
*GER SI <sup>1</sup>	.....	3
		19

**SECOND YEAR  
FALL**

CEEN 2610	Surveying 1 .....	3
CEEN 2610L	Surveying 1 Lab .....	1
MET 2616	Mechanics 2 .....	3
CCET 3709	Structural Analysis .....	3
CCET 2617	Constr. Methods & Mat'ls .....	3
*PHIL 2626	GER PS <sup>2</sup> .....	3
		16

**SPRING**

MATH 1570	Applied Calculus 1 .....	4
CCET 3724	Hydr. & Land Dev .....	3
CCET 3706	Structural Design 1 .....	4
CCET 3711	Specs. & Estimating .....	3
CMST 1545	Communication Theory/Pract. ....	3
		17

**Semester Hours for AAS ..... 68**

Notes:

\*Students must meet YSU's General Education Requirements (GER). Students are responsible for ensuring that all course pre-requisites are satisfied. See the "Schedule of Classes" for a listing of the requirements and approved courses.

<sup>1</sup>SI, Societies and Institutions, ECON 2610—Principles of Microeconomics, is recommended but not required.

<sup>2</sup>PS, Personal and Social Responsibility, PHIL 2626—Engineering Ethics

**Bachelor of Science in Applied Science**

**THIRD YEAR  
FALL**

DESIGN ELECTIVE 1 .....	3
CCET 3705 Computing for Tech.....	3
MATH 2670 Applied Calculus 2 .....	5
CHEM 1505/L Allied Health Chem 1.....	3
GER AL.....	3
	17

**SPRING**

DESIGN ELECTIVE 2 .....	3
CCET 3730 Transportation Tech.....	3
CCET 3740 Construction Mgmt (4817).....	3
NATRL SCI Elective.....	3
EET 3725 Electro Mechanical Systems .....	3
CCET ELECTIVE 1.....	3
	18

**FOURTH YEAR  
FALL**

DESIGN ELECTIVE 3 .....	3
CCET 3714 Soil Mechanics.....	2
CCET 3714L Soil Mechanics Lab .....	1
CCET ELECTIVE 2.....	3
TECH ELECTIVE 1 .....	3
GER AL.....	3
	15

**SPRING**

CCET 4884 Civil/Struct. Facilities Design.....	3
EET 4880 Elect./Mech. Facilities Design.....	3
GER PS.....	3
GER SI.....	3
GER AL or SI.....	3
	15

**Semester Hours for B.S.A.S..... 133**

**TECHNICAL ELECT. (1 Req'd)**

Any CCET Elect./Dsgn Elect .....	3
MET 4870 Appl. Fnt Elemnt.....	3
*CEEN 4835 Highway Design .....	3
*CEEN 5820 Pymnt Mat'l/Dsgn .....	3

**DESIGN ELECT. (3 Req'd)**

CCET 4812 Concrete Dsgn.....	3
CCET 4813 Steel Dsgn .....	3
CCET 4814 Foundation Dsgn .....	3
CCET 4815 Masonry Dsgn.....	3
CCET 4816 Timber Dsgn.....	3

**CCET ELECT. (2 Req'd)**

CCET 4807 Proj Plng/Sch .....	3
CCET 4809 Struct. Anal 2 .....	3
CCET 4810 Const. Srvyng .....	3
CCET 4824 Envrion Tech.....	3
*CCET 4890 Splc Tpcs CCET.....	3
*ENTC 4895 Indept. Proj. ....	1-3

\*Approval of the CCET Program Coordinator is required before taking the course.

NOTE: 48 upper division (37XX or 48XX) hours are required for BSAS including courses from AAS.

**DRAFTING AND DESIGN TECHNOLOGY**

[web.yosu.edu/stem/engtech](http://web.yosu.edu/stem/engtech)

*Associate Professor Lamb, Program Coordinator.*

YSU’s drafting and design technology (DDT) program prepares students to function as design drafters in either the mechanical or civil field. They study various design aspects, such as determination of size, form, and clearance and CAD drafting where they convert ideas, sketches, and specifications into working drawings and plans. Graduates earn the associate degree and are employable in industries relating to manufacturing, quality control, materials, and the fabrication and production of building structures and metal products. Graduates interested in further technical education should consider the “two-plus-two” bachelor’s degree program in civil and construction engineering technology or mechanical engineering technology.

During their first few years after earning of the drafting and design technology degree at YSU, graduates will have demonstrated the ability to:

- Secure employment in a technical career related to their drafting and design technology degree.
- Communicate effectively in a professional environment.
- Continue growth in professional knowledge and skills.
- Achieve recognition consistent with their educational achievements.

**Program Outcomes**

Drafting and design technology students will demonstrate by the time of graduation:

- mastery of knowledge, skills, and tools of the discipline
- ability to apply knowledge to solve problems
- ability to conduct, analyze and interpret experiments
- ability to be creative in design
- ability to work effectively in teams
- ability to identify, analyze, and solve technical problems
- ability to communicate effectively
- recognition of the need to engage in lifelong learning
- ability to understand professional, ethical, and social responsibilities
- respect for diversity, professional, societal, and global issues
- commitment to quality, timeliness, and continuous improvement

**Associate in Applied Science Degree**

**FIRST YEAR**

**FALL**

<b>Courses</b>		<b>s.h.</b>
ENTC 1505	Engr. Tech Concepts .....	3
ENCT 1505L	Engr. Tech Concepts Lab.....	1
MATH 1513	Algebraic and Trans Functions .....	5
DDT 1503	Autocad 1 .....	2
DDT 1504	Drafting and Plan Reading.....	2
ENGL 1550	Writing 1.....	3
		<u>16</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
MET 1515	Mechanics 1.....	3
CCET 2604	Properties & Strength of Mat’ls ..	3
CCET 2614	Materials Lab 1 .....	1
DDT 2606	CAD—Solid Modeling.....	4
MET 2630	Manuf. Techniques.....	2
MET 2630L	Manuf. Techniques Lab.....	1
GER Elective (SI) .....		3
		<u>17</u>

**SECOND YEAR**

**FALL**

<b>Courses</b>		<b>s.h.</b>
DDT 2607	CAD Microstation.....	2
DDT 2609	Industrial Tech.....	3
ENGL 1551	Writing 2.....	3
Technical Elective 1** .....		3
PHYS 1501	Fund’s. of Physics 1.....	4
PHYS 1501/L	Fund’s. Physics 1 Lab.....	1
		<u>16</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
GER Elective (PS) .....		3
DDT 2608	Machine Elements.....	3
Science Elective .....		3
Technical Elective 2** .....		3
CMST 1545	Communication Thry/Prac.....	3
		<u>15</u>

**Semester Hours for Associate Degree.....64**

\*\*Technical Electives: CCET 2617, CCET 3705, CCET 3709, CCET 3711, EET 1501/L, EET 2650, MET 3706, MET 3707, MET 3710, CEEGR 2610/L, CSIS 1500, CSIS 1514, alternate course approved by DDT Coordinator.

**ELECTRICAL ENGINEERING TECHNOLOGY**

[web.yosu.edu/stem/engtech](http://web.yosu.edu/stem/engtech)

*Professor Messuri, Program Coordinator*

Students in the electrical engineering technology (EET) program may choose to complete two years of study and earn an Associate in Applied Science (A.A.S.) degree. The A.A.S. provides early access to employment in engineering support positions. Upon

completion of the A.A.S. degree, the student may continue on for the Bachelor of Science in Applied Science (B.S.A.S.) degree. This program provides additional coursework, continuing the student's growth to that of an engineering technologist or designer. Exceptional students may be eligible for enrollment in a Master of Engineering or Master of Business Administration program.

### Educational Objectives

Educational objectives for the electrical engineering technology programs have been developed by faculty and the program industrial advisory committee to support the University, College, and Rayen School of Engineering and Engineering Technology missions. Graduates of the EET associate degree program generally function as assistants to electrical engineers in the design, analysis, and laboratory testing of electrical and electronic systems and of rotating machinery. Bachelor degree graduates are prepared to assist in the design and testing of electrical systems and may function independently in some areas.

During their first few years after earning of the electrical engineering technology degree at YSU, graduates will have demonstrated the ability to:

- Secure employment in a technical career related to their Electrical Engineering Technology degree.
- Communicate effectively in a professional environment.
- Continue growth in professional knowledge and skills.
- Achieve recognition consistent with their educational achievements.

### Program Outcomes:

Graduates in electrical engineering technology will achieve the following learning outcomes by the time they graduate:

#### Associate in Applied Science

Graduates of the Associate Degree EET program will possess the following competencies upon graduation.

**Student Outcome 1:** be able to apply principles of mathematics and applied science, to perform technical calculations and solve technical problems of the types commonly encountered in electrical engineering technology careers

**Student Outcome 2:** demonstrate the ability to identify, formulate, and present creative solutions to technical problems in a variety of specialty areas within the broad fields of electrical engineering technology

**Student Outcome 3:** be able to function competently in a laboratory setting, making measurements, operating technical equipment, critically examining experimental results, and properly reporting on experimental results, including their potential for improvement.

**Student Outcome 4:** be able to use modern computational tools for technical problem solving, including scientific calculators, computers, and appropriate software.

**Student Outcome 5:** demonstrate a broad education and knowledge of contemporary issues in a global and societal context, as necessary to develop professional and ethical responsibility, including responsibility to employers and to society at large

**Student Outcome 6:** recognize the need for life-long learning and possess the skills to maintain and improve technical and non-technical abilities

**Student Outcome 7:** demonstrate an ability to communicate and function effectively with members of multi-disciplinary teams from a variety of backgrounds.

**Student Outcome 8:** demonstrate an ability to utilize computer software applications used in electrical engineering technology such as CAD, spreadsheets, word processing, and basic programming

#### Bachelor of Science in Applied Science

Graduates of the bachelor's degree EET program will possess the following competencies upon graduation.

**Student Outcome 1:** be able to apply principles of mathematics and applied science, to perform technical calculations and solve technical problems of the types commonly encountered in electrical engineering technology careers

**Student Outcome 2:** demonstrate the ability to identify, formulate, and present creative solutions to technical problems in a variety of specialty areas within the broad fields of electrical engineering technology.

**Student Outcome 3:** be able to function competently in a laboratory setting, making measurements, operating technical equipment, critically examining experimental results, and properly reporting on experimental results, including their potential for improvement

**Student Outcome 4:** be able to use modern computational tools for technical problem solving, including scientific calculators, computers, and appropriate software.

**Student Outcome 5:** demonstrate a broad education and knowledge of contemporary issues in a global and societal context, as necessary to develop professional and ethical responsibility, including responsibility to employers and to society at large.

**Student Outcome 6:** recognize the need for life-long learning and possess the skills to maintain and improve technical and non-technical abilities

**Student Outcome 7:** demonstrate an ability to communicate and function effectively with members of multi-disciplinary teams from a variety of backgrounds

**Student Outcome 8:** the ability to identify, formulate, and solve engineering problems in the following major electrical engineering technology disciplines: analog and digital electronics, communication systems, power, aerospace and computer systems.

**Student Outcome 9:** the knowledge of professional practice issues, with an understanding of social responsibilities and a respect for diversity

**Associate Degree Program**

Graduates of the two-year electrical engineering technology program generally function as assistants to electrical engineers in the design, analysis, and laboratory testing of electrical and electronic systems and of rotating machinery. Most graduates are employed by electrical and electronic equipment manufacturers, utility companies, the aerospace industry, and manufacturing companies in general.

Several options are available for the associate degree in EET. Most students opt for the **traditional** or the **computer** option.

**Bachelor's Degree Program**

The bachelor's degree program in electrical engineering technology prepares students for employment as engineering technologists or engineering designers. The students focus on analog and digital electronics communication systems, and computer networking systems. Co-op programs with various local companies enable EET students to gain experience and income during their junior and senior years. Many students work full or part-time while completing the B.S.A.S. degree taking evening classes. Students are encouraged to take the Fundamentals of Engineering (FE) exam as the first step toward professional registration.

**Associate Degree Program**

**TRADITIONAL OPTION  
FIRST YEAR  
FALL**

<b>Courses</b>		<b>s.h.</b>
MATH 1513	Algebra/Trans functions .....	5
ENTC 1505	Engr. Tech Concepts .....	3
ENTC 1505L	Engr. Tech Concepts Lab.....	1
EET 1501L	Circuit Theory 1 + Lab.....	3+1
DDT 1503	AUTOCAD 1 .....	2
DDT 1504	DRFT'G and Plan .....	2
		<u>17</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
MATH 1570	Applied Calculus 1.....	4
PHYS 1501/L	Physics 1 + Lab .....	4+1
EET 1502/L	Circuit Theory 2 + Lab.....	3+1
ENGL 1550	Writing 1 .....	3
EET 2620/L	Digital Electronics + Lab .....	2+1
		<u>19</u>

**SECOND YEAR**

**FALL**

<b>Courses</b>		<b>s.h.</b>
EET 2605/L	.....Electronics 1 + Lab	3+1
EET 3710/L	.....Electrical Machines + Lab	3+1
ENGL	.....1551	3
	Writing 2 .....	3
GER Elective	.....	3
GER Elective	.....	3
		<u>17</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
EET 3735/L	Microprocessor Arch. + Lab .....	3
EET 3706/L	Electronics 2 + Lab .....	3+1
EET 3712/L	PLC's + Lab.....	3+1
CMST 1545	Comm Theory & Practice .....	3
CHEM 1515/L	Chemistry 1 & Lab.....	4
		<u>18</u>

**Semester Hours for AAS - Traditional Opt. ....71**

**COMPUTER OPTION**

**FIRST YEAR**

**FALL**

<b>Courses</b>		<b>s.h.</b>
MATH 1513	Algebra/Transc. Functions.....	5
ENTC 1505	Engr. Tech Concepts .....	3
ENTC 1505L	Engr. Tech Concepts Lab.....	1
EET 150/L	Circuit Theory 1 + Lab.....	3+1
EET 2650	PC Hardware.....	3
GER Elective.....		3
		<u>19</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
MATH 1570	Applied Calculus 1 .....	4
EET 1502/L	Circuit Theory 2 + Lab.....	3+1
EET 2620/L	Digital Electronics + Lab .....	2+1
ENGL 1550	Writing 1.....	3
CSIS 2610	Prog. & Prob. Solving.....	4
		<u>18</u>

**SECOND YEAR**

**FALL**

<b>Courses</b>		<b>s.h.</b>
EET 2605/L	Electronics 1 + Lab .....	3+1
ENGL 1551	Writing 2.....	3
EET 2651	Digital Comm. Systems 1.....	3
CSIS 3782	Cisco Networking Academy 2 ...	4
GER Elective.....		3
		<u>17</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
EET 3735/L	Microproc Arch. + Lab.....	3
EET 2653	Fiber Optics.....	3
CSIS 3783	Cisco Networking Academy 2 ...	4
CMST 1545	Comm. Theory & Practice .....	3
PHYS 1501/L	Physics 1 & Lab .....	4+1
		<u>18</u>

**Semester Hours for AAS - Computer Opt. .... 72**

**Bachelor's Degree Program**

**THIRD YEAR  
FALL**

<b>Courses</b>		<b>s.h.</b>
MATH 2670	Applied Calculus 2 .....	5
EET 3730/L	Logic Systems + Lab .....	3
EET 3780/L	Communication Systems + Lab.....	3
ENGL 3743	Prof. & Tech. Comm. ....	3
GER Elective.....		3
		<u>17</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
EET Elective	.....	3
MET 3700	Physical Measurements .....	3
MET 2630/L	Mfg. Techniques + Lab .....	2+1
CCET 3705	Computing for Technologists.....	3
GER Elective.....		3
		<u>15</u>

**FOURTH YEAR  
FALL**

<b>Courses</b>		<b>s.h.</b>
EET 3745/L	Microprocessor 2 + Lab .....	3
EET Elective	.....	3
Natural Science	GER Elective .....	3
GER Elective.....		3
GER Elective.....		3
		<u>15</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
EET 3760/L	Variable Speed Drives + Lab.....	3
EET 4870	Process Control Technology .....	4
EET 4880	Elec./Mech. Facilities Design.....	3
CCET 4884	Civil/Struct. Facilities Design.....	3
GER Elective.....		3
		<u>16</u>

**Semester Hours for B.S.A.S..... 134**

**MECHANICAL  
ENGINEERING  
TECHNOLOGY**

*Assistant Professor Costarell, Program Coordinator*

The mechanical engineering technology (MET) program is designed as a "two-plus-two" program. Students may earn an Associate in Applied Science degree after two years of full-time study. With this degree, they may begin a career in industry. The associate degree graduate can continue for two more years of full-time study to earn the bachelor's degree.

**Educational Objectives**

Educational objectives for the MET programs have been developed by faculty and the program industrial advisory committee to support the University,

the College, and the Rayen School of Engineering and Engineering Technology missions. Graduates of the MET associate degree program function as assistants in the design, drafting and testing of mechanical products, equipment and processes. Bachelor's degree graduates assume greater responsibility in the design and testing of mechanical products, processes, and equipment.

During their first few years after completion of the mechanical engineering technology program at YSU, graduates will have demonstrated the ability to:

- Work competently in technical and professional careers related to the field of mechanical engineering technology.
- Communicate effectively in a professional environment.
- Continue growth in professional knowledge and skills.
- Achieve recognition and/or compensation consistent with their educational achievements.

**Program Outcomes**

MET students will demonstrate by the time of graduation:

- mastery of knowledge, skills, and tools of the discipline
- ability to apply knowledge to solve problems
- ability to conduct, analyze, and interpret experiments
- ability to be creative in design
- ability to work effectively in teams
- ability to identify, analyze, and solve technical problems
- ability to communicate effectively
- recognition of the need to engage in lifelong learning
- ability to understand professional, ethical, and social responsibilities
- respect for diversity, professional, societal, and global issues
- commitment to quality, timeliness, and continuous improvement

**Associate Degree Program**

The associate degree program introduces the student to the principles and practices of machine design, manufacturing processes, testing, and energy conversion. Students are also given a firm foundation in communications, mathematics and science. Upon completion of the associate degree, graduates may find employment as engineering technicians in a wide variety of industries. They assist engineers in the design, drafting, testing, and support of me-



chanical products, or of the industrial equipment and processes used to manufacture consumer products.

**Bachelor's Degree Program**

Students who have earned the associate degree may elect to complete the bachelor's degree on either a full- or part-time basis. Courses in the bachelor's degree program further develop technical, communication, and managerial skills. Upon successful completion of the coursework, graduates are awarded the Bachelor of Science in Applied Science degree, and are prepared for greater levels of responsibility and greater career advancement.

**Curriculum**

**FIRST YEAR  
FALL**

<b>Courses</b>		<b>s.h.</b>
MATH 1513	Algebra/Trans Functions.....	5
ENTC 1505	Engr. Tech Concepts .....	3
ENTC 1505L	Engr. Tech Concepts Lab.....	1
DDT 1503	AUTOCAD 1 .....	2
DDT 1504	DRFT'G and Plan .....	2
ENGL 1550	Writing 1.....	3
GER Elective	.....	3
		<u>19</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
PHYS 1501/L	Physics 1 + Lab .....	4+1
MET 1515	Mechanics 1.....	3
CCET 2604	Properties & Str of Mat'ls.....	3
CCET 2614	Materials Lab 1 .....	1
ENGL 1551	Writing 2.....	3
		<u>15</u>

**SECOND YEAR  
FALL**

<b>Courses</b>		<b>s.h.</b>
MATH 1570	Applied Calculus 1 .....	4
PHYS 1502/L	Physics 2 + Lab .....	3+1
MET 3714/L	Fluid Mechanics + Lab .....	2+1
MET 2616	Mechanics 2.....	3
MET 3706	Machine Design 1.....	3
		<u>17</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
MET 3705	Thermodynamics .....	3
MET 2630/L	Mfg Techniques + Lab .....	2+1
MET 3707	Machine Design 2.....	3
CMST 1545	Comm Theory & Practice .....	3
DDT 2606	CAD Solid Modeling.....	4
GER Elective	.....	3
		<u>19</u>

**Semester hours for Associate Degree.....70**

**Bachelor's Degree Program**

**THIRD YEAR  
FALL**

<b>Courses</b>		<b>s.h.</b>
MATH 2670	Applied Calculus 2 .....	5
MET 3711	Heat & Power Cycles.....	3
EET 3725	Electromechanical Systems .....	4
MET Elective*	.....	3
ISEN/MGT Elective	.....	3
		<u>18</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
MET 3720	Mechanisms .....	3
MET 3715	Fluid Power Systems .....	3
MET 3700	Physical Measurements .....	3
CCET 3705	Computing for Technologists.....	3
GER Elective.....	.....	3
		<u>15</u>

**FOURTH YEAR  
FALL**

<b>Courses</b>		<b>s.h.</b>
MET Elective*	.....	3
MET 4820	Machine Systems.....	3
MET 4810	Mfg Systems Analysis .....	3
CHEM 1505/L or 1515/L	.....	3 or 4
GER Elective.....	.....	3
		<u>16</u>

**SPRING**

<b>Courses</b>		<b>s.h.</b>
MET 4870	Applied Finite Elmnt.....	3
MET 4860/L	Robotics Technology + Lab .....	2+1
GER Elective.....	.....	3
GER Elective.....	.....	3
GER Elective.....	.....	3
		<u>15</u>

**Semester hours for B.S.A.S. .... 134**

**\* MET Electives**

MET 3710	Tool Design
MET 4812	Numerical Control
MET 4890	Special Topics in MET
EET 4880	Elec & Mech Facilities Design
ENTC 4895	Independent ET Project

**POWER PLANT TECHNOLOGY**

*Mr. Daniel Coyne, Program Coordinator*

This program prepares graduates to perform basic operating functions required in electric utility power plants and other related industries. Students gain knowledge in electrical theory, electrical machinery and controls, power plant operations, boiler, turbine, and generator operations, power plant instrumentation, and pollution control equipment. In addition, college writing, oral communications, and general education form an integral part of the program.

Upon successful completion of the program, students are prepared for entry-level employment in the utility industry.

**Associate of Technical Study Degree Program**

**FIRST YEAR FALL**

<b>Courses</b>	<b>s.h.</b>
GER - PS Personal & Social Awareness .....	3
ENGL 1550 College Writing 1 .....	3
ENTC 1500 Technical Skills Development .....	4
EUT 1502/L Power Plant Fundamentals + Lab* .....	4+1
	<u>15</u>

**SPRING**

<b>Courses</b>	<b>s.h.</b>
EUT 1500/L Electrical Fundamentals + Lab	3+1
EUT 1503/L Power Plant Mechanical Equipment + Lab .....	3+1
MATH 2623 Survey of Math .....	3
ENGL 1551 College Writing 2 .....	3
CSIS 1514 Business Computer Systems .....	3
	<u>17</u>

**SUMMER**

<b>Course</b>	<b>s.h.</b>
EUT 2699 Electric Utility Co-op (Optional)	2

**SECOND YEAR FALL**

<b>Courses</b>	<b>s.h.</b>
EUT 2604/L Power Plant Elec. Equip. + Lab .....	3+1
EUT 2605/L Intermediate Power Plant Systems + Lab .....	3+1
EUT 2606 Power Plant Operator Practice .....	3
CMST 1545 Communication Theory and Practice .....	3
GER—SI GER, Social Sciences .....	3
	<u>17</u>

**SPRING**

<b>Courses</b>	<b>s.h.</b>
EUT 2607/L Power Plant Inst and Control + Lab .....	3+1
EUT 2608/L Advanced Power Plant Systems .....	3+1
MGT 3725 Fundamentals of Management (recommended) <i>or</i>	
MGT 3750 Human Behavior in Organizations .....	3
GER—NS GER. Nat. Sci. Elect and Lab .....	3+1
	<u>15</u>

**Semester Hours for degree..... 64-66**

\*Note: MATH 1501 or level 20 on the MPT and eligibility to take ENGL 1550 (i.e., completion of R&SK and ENGL 1540 or test out) are prerequisites. ENTC 1500 is a pre- or co-requisite.

# MINORS



## MINOR AREAS OF STUDY

s.h.

The University is in the process of approving defined minors. The following minors had been approved at the date of catalog publication. For complete information about minor programs, please consult the department in which the minor resides. **Students cannot double count courses between the major and the minor.** Students are asked to seek advisement from faculty in this area.

**It is the student's responsibility to find out what prerequisites are required for courses in the minor. Prerequisites are listed with the full course descriptions that begin on p. 261.**

### Accounting

All of the following courses: s.h.

ACCT 2602	Financial Accounting	3
ACCT 2603	Managerial Accounting	3
ACCT 3701	Intermediate Accounting 1	4
ACCT 3702	Intermediate Accounting 2	4
ACCT 3711	Cost Accounting	3

Plus 1-3 s.h. accounting electives.

**Total Number of Semester Hours** ..... 18-20

### Actuarial Science

ECON 2610	Principles 1: Microeconomics	3
ECON 2630	Principles 2: Macroeconomics	3
FIN 3720	Business Finance	3
STAT 5817	Applied Statistics	3
STAT 5843	Theory of Probability	3

One statistics course from the following two courses:

ECON 5824	Appl. Time Series Anal. of Econ. & Bus. Data	3
STAT 5848	Applied Regression and Time Series Analysis	3

**Total Semester Hours** ..... 18

### Advertising/Public Relations

Required courses:

ADV 3711	Marketing Communications	3
ADV 3712	Creative Strategies in IMC	3
PREL 3710	Basic Public Relations	3
ADV 4855	IMC Campaigns	3

Electives — Choose 2 of the following:

ADV 3717	Media Planning and Buying	3
ADV 4811	Direct Marketing	3
MKTG 3740	Professional Selling	3

**Total Number of Semester Hours** ..... 18

### Aerospace Studies

AERO 1501	Fdns. of US Air Force I	1
AERO 1502	Fdns. of US Air Force II	1
AERO 1503	Leadership Laboratory	1
AERO 1504	Leadership Laboratory	1
AERO 2601	Evol. of Air & Space Power I	1
AERO 2602	Evol. of Air & Space Power II	1
AERO 2603	Leadership Laboratory	1
AERO 2604	Leadership Laboratory	1

AERO 3701	Leadership Studies I	3
AERO 3702	Leadership Studies II	3
AERO 3703	Leadership Laboratory	1
AERO 3704	Leadership Laboratory	1
AERO 4801	Defense Studies/Prep for Active Duty I	3
AERO 4802	Defense Studies/Prep for Active Duty II	3
AERO 4803	Leadership Laboratory	1
AERO 4804	Leadership Laboratory	1
<b>Total Number of Semester Hours</b>		<b>24</b>

### American Studies

AMER 2601	American Identity	3
AMER 3701	Approaches to American Studies	3

4 additional upper-division courses, selected from the American Studies list of approved courses, from at least two departments *other* than the department of the student's major and subject to consultation with an American Studies advisor. 12 hours minimum

**Total Number of Semester Hours** ..... 18

### ANTHROPOLOGY

#### Anthropology, General

ANTH 2602	Intro to Anthropology	3
ANTH 3702	Archaeology	3
ANTH 3703	Biological Anthropology	3
ANTH 3705	Cultural Anthropology	3

Plus 6 s.h. of anthropology electives.

**Total Number of Semester Hours** ..... 18

#### Anthropology, Biological

ANTH 1500	Introduction to Anthropology	3
ANTH 2600	Human Osteology	3
ANTH 3703	Biological Anthropology	3
ANTH 3704	Primate Evolution, Ecology and Behavior	3
ANTH 4882	Paleoanthropology	3
ANTH 4891	Advanced Topics in Biological Anthropology	3

**Total Number of Semester Hours** ..... 18

#### Anthropology, Cultural

ANTH 2602	Introduction to Anthropology	3
ANTH 3705	Cultural Anthropology	3
ANTH 3760	Cultures of the Old World	3 or 6
ANTH 3761	Cultures of the New World	3
ANTH 4801	Anthropological Thought	3
<i>and/or</i>		
ANTH 4815	Anthropology of Religion	3

**Total Number of Semester Hours** ..... 18

#### Anthropology, Forensic

ANTH 1500	Introduction to Anthropology	3
ANTH 2600	Human Osteology	3
ANTH 3703	Biological Anthropology	3
ANTH 3702	Archaeology	3

	<b>s.h.</b>
ANTH 3780 Forensic Anthropology 1 .....	3
ANTH 4881 Forensic Anthropology 2 .....	3
ANTH 4883 Case studies in Forensic Anthropology .....	3
<b>Total Number of Semester Hours .....</b>	<b>21</b>

**Archaeology**

ANTH 1500 Introduction to Anthropology .....	3
ANTH 1503 Rise and Fall of Civilizations .....	3
ANTH 3702 Archaeology .....	3
ANTH 3778 Archaeological Techniques.....*	3
or	
ANTH 3779 Fieldwork in Historical and Industrial Sites.....	3

*Two elective from the following courses:*

ANTH 3775 Native North Americans .....	3
ANTH 4824 Old World Prehistory .....	3
ANTH 4825 New World Archaeology .....	3
ANTH 4877 Methods and Theory in Archaeology .....	3
ANTH 4890 Advanced Topics in Archaeology .....	3

*Students may substitute 1 of the following for and elective course:*

GEOG 2611 Geospatial Foundations .....	3
GEOG 5805 Remote Sensing .....	3

\*ANTH 3778 is a variable credit course. Students may register for 1-9 credits, depending on the duration of the fieldwork. For the minor, students must complete 3 SH of fieldwork.

<b>Total Number of Semester Hours .....</b>	<b>18</b>
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**ART**

**Art History for Non-Art Majors**

ART 1541 Survey of Art History 1 .....	3
ART 1542 Survey of Art History 2 .....	3

*Four of the following courses:*

ART 3740 Topics in Ancient Art .....	3
ART 3741 Topics in Medieval Art .....	3
ART 3742 Topics in Renaissance Art .....	3
ART 3743 Baroque Art .....	3
ART 3744 17 <sup>th</sup> & 18 <sup>th</sup> C American Art .....	3
ART 3745 19 <sup>th</sup> C European Art .....	3
ART 3746 19 <sup>th</sup> C American Art .....	3
ART 3781 Native N. American Art .....	3
ART 3782 Topics in Precolumbian Art .....	3
ART 3785 History of Still Photography .....	3
ART 4880 Special Topics in Art History .....	3
ART 4889 Seminar in Art History .....	3
ART 5881 20 <sup>th</sup> Century Art to 1960 .....	3
ART 5882 20 <sup>th</sup> Century Art from 1960 .....	3

<b>Total Number of Semester Hours .....</b>	<b>18</b>
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**Art History for Studio Art Majors**

*Six of the following courses:*

ART 3740 Topics in Ancient Art .....	3
ART 3741 Topics in Medieval Art .....	3

	<b>s.h.</b>
ART 3742 Topics in Renaissance Art .....	3
ART 3743 Baroque Art .....	3
ART 3744 17 <sup>th</sup> & 18 <sup>th</sup> C American Art .....	3
ART 3745 19 <sup>th</sup> C European Art .....	3
ART 3746 19 <sup>th</sup> C American Art .....	3
ART 3781 Native N. American Art .....	3
ART 3782 Topics in Precolumbian Art .....	3
ART 3785 History of Still Photography .....	3
ART 4880 Special Topics in Art History .....	3
ART 4889 Seminar in Art History .....	3
ART 5881 20 <sup>th</sup> C. Art to 1960 .....	3
ART 5882 20 <sup>th</sup> C. Art from 1960 .....	3

<b>Total Number of Semester Hours .....</b>	<b>18</b>
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**Interdisciplinary Art for Non-Art Majors**

ART 1501 Fundamentals of 2-D Design.....	3
ART 1521 Foundation Drawing .....	3
ART 1502 Fundamentals of 3-D Design.....	3

Select three (3) courses from any fine-art discipline (drawing, painting, printmaking, ceramics, sculpture) 26xx or higher; 2 must be upper-division

<b>Total Semester Hours .....</b>	<b>18</b>
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**Graphic Design for Non-Art Majors**

ART 1501 Fundamentals of 2-D Design .....	3
ART 2691 Introduction to Digital Imaging .....	3
ART 2661 Intro to Graphic Design .....	3
ART 2662 Intro to Typography .....	3
ART 3761 Intermediate Graphic Design.....	3
ART 3762 Advanced Typography .....	3

*One of the following courses:*

ART 2669 Intro to Interactive .....	3
ART 4861 Publication Design .....	3
ART 3768 Pre-Press Production .....	3

<b>Total Number of Semester Hours .....</b>	<b>21</b>
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**Graphic Design for Studio Art Majors**

ART 2661 Intro to Graphic Design .....	3
ART 2662 Intro to Typography .....	3
ART 3761 Intermediate Graphic Design.....	3
ART 2669 Introduction to Interactive Design.....	3

*Two of the following courses:*

ART 3762 Advanced Typography .....	3
ART 4861 Publication Design .....	3
ART 3768 Pre-Press Production .....	3
ART 4863 Identity Systems .....	3
ART 4864 3-D Graphics .....	3

<b>Total Number of Semester Hours .....</b>	<b>18</b>
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**Interactive Design for Art Majors**

ART 2691 Intro. to Digital Imaging .....	3
ART 2661 Intro. to Graphic Design .....	3
ART 2669 Intro to Interactive Design.....	3
ART 2662 Intro. to Typography .....	3
ART 3769 Intermediate Interactive Design .....	3
ART 4869 Advanced Interactive Design.....	3

or

	s.h.
ART 3765 Motion for Interactive Design .....	3
or	
ART 4863 Identity Systems .....	3
or	
ART 4867 Graphic Design Internship .....	3
or	
ART 4800 Studio Problems .....	3

**Total Semester Hours:** .....18

### Interactive Design for Non-Art Majors

ART 1501 Fund. 2-D Design .....	3
ART 2661 Intro. to Graphic Design .....	3
ART 2662 Intro. to Typography .....	3
ART 2669 Intro to Interactive Design.....	3
ART 2691 Intro. to Digital Imaging .....	3
ART 3769 Intermediate Interactive Design .....	3

*Select one of the following courses:*

ART 4869 Advanced Interactive Design.....	3
or	
ART 4800 Studio Problems .....	3
or	
ART 3765 Motion for Interactive Design .....	3
or	
ART 4863 Identity Systems .....	3

**Total Semester Hours:** .....21

### Painting for Studio Art Majors

ART 3751 Intermediate Painting I .....	3
ART 3752 Intermediate Painting II .....	3
ART 4851 Advanced Painting I .....	3
ART 4852 Advanced Painting II.....	3

*Select two from the following:*

ART 2653 Watercolor .....	3
ART 4853 Advanced Painting III .....	3
ART 4800 Studio Problems: Painting .....	3

**Total Semester Hours:** .....18

### Painting for Non-Art Majors

ART 1501 Fundamentals of 2D Design .....	3
ART 1521 Foundation Drawing .....	3
ART 2650 Intro to Painting .....	3
ART 3751 Intermediate Painting I .....	3
ART 3752 Intermediate Painting II .....	3

*Select two from the following:*

ART 2653 Watercolor .....	3
ART 4851 Advanced Painting I.....	3
ART 4852 Advanced Painting II.....	3
ART 4800 Studio Problems: Painting .....	3

**Total Semester Hours:** .....21

### Photography for Non-Art Majors

ART 1501 Fundamentals of 2-D Design .....	3
ART 2671 Intro to B & W Photo .....	3
ART 2672 Intro to Color Photography .....	3
ART 2673 Intro to Digital Photography.....	3

*Select two of the following courses:*

ART 3774 Intermediate Digital.....	3
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	s.h.
ART 3776 Intermediate Darkroom .....	3
ART 3748 Special Topics in Studio Art/Photo...	3
ART 4873 Topics in Advanced Photography .....	3
ART 4800 Studio Problems .....	3

**Total Number of Semester Hours** .....18

### Photography for Studio Art Majors

ART 2672 Intro to Color Photography .....	3
ART 2673 Intro to Digital Photography.....	3

*Select four of the following courses:*

ART 3774 Intermediate Digital.....	3
ART 3776 Intermediate Darkroom .....	3
ART 3748 Special Topics in Studio Art/Photo...	3
ART 4800 Studio Problems .....	3
ART 4873 Topics in Advanced Photography .....	3

**Total Number of Semester Hours** .....18

### Printmaking for Non-Art Majors

*Select one or both from the following courses:*

ART 1501 Fundamentals of 2-D Design .....	3
ART 1521 Foundation Drawing .....	3

*Select one or both from the following courses:*

ART 2625 Introduction to Print Intaglio Relief ...	3
ART 2626 Introduction to Print Litho Screenprint ..	3

*Select one or both that coincide with Intro to Print Selection (s):*

ART 3725 Intermediate Print Intaglio Relief .....	3
ART 3726 Intermediate Print Litho Screen Print .....	3

May be taken up to 3 times:

ART 4824 Advanced Printmaking.....	3
ART 4800F Studio Problems in Printmaking .....	3

**Total Number of Semester Hours** .....18

### Printmaking for Studio Art Majors

*Select one or both from the following courses:*

ART 2625 Introduction to Print Intaglio Relief ...	3
ART 2626 Introduction to Print Litho Screenprint ..	3

*Select one or both that coincide with Intro to Print Selection (s):*

ART 3725 Intermediate Print Intaglio Relief .....	3
ART 3726 Intermediate Print Litho Screenprint .....	3

May be taken up to 3 times:

ART 4824 Advanced Printmaking.....	3
ART 4800F Studio Problems in Printmaking .....	3

**Total Number of Semester Hours** .....18

### 3 Dimensional Studies for Art Majors

*Select six from the following courses:*

ART 3712 Intermediate Sculpture .....	3
ART 3713 Advanced Sculpture .....	3
ART 3732 Intermediate Ceramics .....	3
ART 2615 Intro to Metals .....	3
ART 3715 Advanced Metals .....	3

	<b>s.h.</b>
ART 4834 Advanced Spatial Arts Studio.....	3
ART 4800 Studio Problems .....	3
<b>Total Number of Semester Hours .....</b>	<b>18</b>

**3 Dimensional Studies for Non-Art Majors**

ART 1501 Fundamentals of 2-D Design .....	3
ART 1502 Fundamentals of 3-D Design .....	3
ART 2611 Intro to Sculpture .....	3
ART 2631 Intro to Ceramics .....	3

Select three of the following courses:

ART 3712 Intermediate Sculpture .....	3
ART 3713 Advanced Sculpture .....	3
ART 3732 Intermediate Ceramics .....	3
ART 3733 Advanced Ceramics .....	3
ART 4834 Advanced Spatial Arts Studio.....	3

<b>Total Number of Semester Hours .....</b>	<b>21</b>
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**Astronomy**

ASTR 2609 Moon & Planets .....	3
ASTR 3711 Astrophysics I .....	3
ASTR 3712 Astrophysics II .....	3
ASTR 4811 Observational Astronomy I .....	3
ASTR 4812 Observational Astronomy II .....	3
ASTR 4815 Undergrad. Astronomy Research ...	3

<b>Total Number of Semester Hours .....</b>	<b>18</b>
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**Biological Sciences**

Both of the following courses:

BIOL 2601 General Biology: Molecules and Cells.....	4
BIOL 2602 General Biology: Organisms and Ecology .....	4

One of the following core courses:

BIOL 3711 Cell Biology: Fine Structure.....	3
BIOL 3721 Genetics .....	3
BIOL 3730/L Human Physiology and Lab.....	5
BIOL 3740/L Plant Diversity and Lab .....	4
BIOL 3741/L Animal Diversity and Lab .....	4

One 4800-5800-level course with lab

One 3700-5800-level course

<b>Total Number of Semester Hours .....</b>	<b>18-21</b>
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**Biomathematics**

One of the following:

BIOL 2601/2601L General Biology: Molecules and Cells .....	4
BIOL 2602/2602L General Biology: Organisms and Ecology.....	4

One of the following:

BIOL 3711 Cell Biology: Fine Structure.....	3
BIOL 3780/ 3780L Evolutionary Ecology .....	5

At least 3 s.h. of upper-division biology courses

Both of the following courses:

MATH 1571 Calculus 1 .....	4
MATH 1572 Calculus 2.....	4

	<b>s.h.</b>
<i>One of the following:</i>	
STAT 3717 Statistical Methods.....	4
STAT 3743 Probability and Statistics .....	4

One of the following:

MATH 2673 Calculus 3.....	4
MATH 3705 Differential Equations .....	3
MATH 3715 Discrete Mathematics .....	3
MATH 3720 Linear Algebra and Matrix Theory...	3
MATH 3760 Numerical Analysis I.....	3
MATH 3785 Numerical Methods.....	4
STAT 5817 Applied Statistics .....	3
STAT 5848 Regression Analysis and Time Series .....	3

Both of the following:

MATH/BIOL 3701 Biomathematics Seminar ...	1-2
MATH/BIOL 4882 Biomathematics Research ...	1-4

<b>Total Semester Hours .....</b>	<b>18-28</b>
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**Business**

All of the following courses\*:

ACCT 2602 Financial Accounting.....	3
ACCT 2603 Managerial Accounting.....	3
MKTG 3703 Marketing Concepts and Practice....	4
FIN 3720 Business Finance .....	3
MGT 3725 Fundamentals of Management .....	3
MGT 3761 Information Systems for Management .....	3
MGT 3771 Electronic Commerce .....	3
or	
MGT 3789 Operations Management .....	3

\*If any of the above courses are part of the student's major, the student must substitute an alternate from the following list:

ACCT 3711 Cost Accounting.....	3
MGT 3750 Human Behavior in Organization....	3
MKTG 3740 Professional Selling.....	3

<b>Total Number of Semester Hours .....</b>	<b>22</b>
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**Chemistry**

CHEM 1515 General Chemistry 1.....	4
CHEM 1516 General Chemistry 2.....	4
CHEM 3719 Organic Chemistry 1.....	4
CHEM3719R Organic Chemistry 1 Recitation.....	1
CHEM 3720 Organic Chemistry 2.....	4
CHEM3720R Organic Chemistry 2 Recitation.....	1

<b>Total Number of Semester Hours .....</b>	<b>18</b>
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**COMMUNICATIONS**

**Communication Studies**

Both of the following courses:

CMST 1530 Communication Theory .....	3
CMST 3756 Interviewing.....	3

Three 2600-level courses:

CMST 2645 Presentational Speaking.....	3
CMST 2653 Group Communication .....	3

	<b>s.h.</b>
CMST 2656 Interpersonal Communication.....	3
CMST 2657 Organizational Communication.....	3
<i>One Communication Theory &amp; Practice Series course:</i>	
CMST 4855 Interpersonal Communication Relationships .....	3
CMST 4859 Organizational Cultures .....	3
CMST 5852 Conflict Management and Negotiation .....	3
<b>Total Number of Semester Hours .....</b>	<b>18</b>

### Communicating in Diverse Organizations

CMST 2600 Communication Theory .....	3
CMST 2657 Organizational Communication.....	3

*and one of the following:*

CMST 2610 Intercultural Communication .....	3
CMST 2653 Group Communication.....	3
CMST 2656 Interpersonal Communication.....	3

*then*

CMST 4859 Organizational Cultures .....	3
CMST 5852 Conflict Management .....	3

*and one of the following:*

CMST 3750 Gender Communication .....	3
CMST 3756 Interviewing.....	3
CMST 4855 Interpersonal Communication Relationships .....	3

<b>Total Number of Semester Hours .....</b>	<b>18</b>
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### Social Media Campaigns

CMST 2600 Communication Theory .....	3
CMST 3700 Designing Communication Research.....	3
CMST 3717 Introduction to Media Relations Campaigns .....	3
CMST 3757 Media Relations Writing .....	3
CMST 4850 Computer Mediated Communication.....	3
CMST 4851 New Communication Media.....	3

<b>Total Number of Semester Hours .....</b>	<b>18</b>
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### Community Health Planning and Evaluation

PHLT 1568 Healthy Lifestyles .....	3
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*or*

PHLT 1531 Fundamentals of Public Health .....	3
PHLT 3701L Pre-Professional Field Experience ....	1
PHLT 3702 Foundations of Health Education Theory and Practice .....	3
PHLT 3791 Community Health.....	3
PHLT 4801 Field Experience.....	1
PHLT 4826 Community Health Planning and Promotion.....	4
PHLT 4827 Program Evaluation.....	3
PHLT 4828 Grant Writing.....	3

<b>Total Number of Semester Hours .....</b>	<b>21</b>
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## COMPUTING

### Computer Databases

CSIS 1590 Survey of Computer Science and Information Systems.....	3
CSIS 2610 Programming and Problem Solving .....	4
CSIS 3722 Development of Databases .....	3
CSIS 3726 Visual/Object-oriented Programming.....	4
CSIS 3732 Intranet Database Implementation...	3
CSIS 4822 Database Applications .....	3

<b>Total Number of Semester Hours .....</b>	<b>20</b>
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### Computer Networking

CSIS 1590 Survey of Computing and Information Systems .....	3
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*At least 15 s.h. from the following courses:*

CSIS 3723 Networking Concepts and Administration .....	3
CSIS 3782 Cisco Networking Academy I.....	4
CSIS 3783 Cisco Networking Academy II .....	4
CSIS 4823 Data Communications Networking.....	4
CSIS 5883 Remote Access and Multilayer Switched Networks.....	4
CSIS 5884 Building Scalable Networks and Advanced Internetwork Troubleshooting .....	4
CSCI 5823 Communication Networks.....	3

<b>Total Semester Hours .....</b>	<b>18-19</b>
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### Computer Science

CSIS 2610 Programming & Problem Solving ....	4
CSIS 3700 Data Structures & Objects.....	4
CSIS 3701 Advanced Object-Oriented Programming.....	3

*Plus three of the following:*

CSIS 3730 Computer Graphics .....	3
CSIS 3740 Computer Organization.....	4
CSIS 3760 E-commerce Programming.....	3
CSIS 4819 Parallel and Distributed Computing.....	3
CSIS 5824 Applied Artificial Intelligence.....	3
CSCI 5806 Operating Systems.....	3
CSCI 5814 Computer Architecture .....	3
CSCI 5870 Data Structures & Algorithms.....	3

<b>Total Semester Hours .....</b>	<b>20-21</b>
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### Electronic Commerce Technologies

CSIS 1590 Survey of Computer Science and Information Systems.....	3
CSIS 2610 Programming and Problem Solving .....	4
CSIS 2660 Foundations of Electronic Commerce .....	3
CSIS 3732 Intranet Database Implementation .....	3
CSIS 3760 Electronic Commerce Programming.....	4



	s.h.
CSIS 3761 Electronic Commerce Strategies .....	3
<b>Total Number of Semester Hours .....</b>	<b>20</b>

**Information Systems Programming**

CSIS 2610 Programming and Problem Solving .....	4
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*At least 14 s.h. from the following courses:*

CSIS 3700 Data Structures .....	4
CSIS 3701 Advanced Object-oriented Programming .....	3
CSIS 3714 Assembly Language and Architecture .....	3
CSIS 3726 Visual/Object-oriented Programming .....	4
CSIS 3735 Unix Environment .....	3
CSIS 3760 Electronic Commerce Programming .....	3

<b>Total Number of Semester Hours .....</b>	<b>18</b>
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**Integrated Technologies**

CSIS 1590 Survey of Computing and Information Systems .....	3
INFO 1575 Document Preparation .....	4
INFO 3714 Advanced Spreadsheets .....	3
INFO 3774 Multimedia Technologies .....	4

*Two courses from the following:*

INFO 3787 Training and Employee Development .....	3
CSIS 3723 Data Concepts and Administration .....	3
CSIS 3722 Development of Databases .....	3

<b>Total Semester Hours .....</b>	<b>20</b>
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**Multimedia and Web Design**

CSIS 1590 Concepts of Computer Science and Information Systems .....	3
INFO 3774 Multimedia Technologies .....	4
INFO 3775 Multimedia Authoring .....	4
INFO 3776 Web Development .....	4
INFO 3777 Computer Technology for Digital Image Processing .....	4

<b>Total Number of Semester Hours .....</b>	<b>19</b>
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**Object-Oriented Programming**

CSIS 1590 Survey of Computer Science and Information Systems .....	3
CSIS 2610 Programming and Problem Solving .....	4
CSIS 3700 Data Structures and Objects .....	4
CSIS 3701 Advanced Object-oriented Programming .....	3
CSIS 3726 Visual/Object-oriented Programming .....	3
CSIS 3760 E-Commerce Programming .....	3

<b>Total Number of Semester Hours .....</b>	<b>20</b>
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**Criminal Justice & Forensic Science** s.h.

**Corrections**

CJFS 1500 Introduction to Criminal Justice .....	3
CJFS 2603 Corrections .....	3
CJFS 3702 Correctional Strategies .....	4
CJFS 3702L Correctional Strategies Lab .....	2
CJFS 4803 Correctional Case Management and Treatment .....	3
CJFS 5802 Corrections Law and Liability .....	3

<b>Total Number of Semester Hours .....</b>	<b>18</b>
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**Criminal Behavior**

CJFS 1500 Introduction to Criminal Justice .....	3
CJFS 3735 Crime and Delinquency .....	3
CJFS 3736 Criminal Victimization .....	3
CJFS 3752 Race, Ethnicity, and Crime in America .....	3
CJFS 5831 Violence in America .....	3
CJFS 4851 Women and Justice .....	3
or	
CJFS 5875 Juvenile Justice System .....	3
or	
SOC 3744 Social Deviance .....	3
or	
PSYCH 3702 Abnormal Psychology .....	3

<b>Total Number of Semester Hours .....</b>	<b>18</b>
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\*Same as SOC 2630 and 3735.

**Criminal Justice Ethics**

CJFS 1500 Introduction to Criminal Justice .....	3
PHIL 2627 Criminal Justice Ethics .....	3
PHIL 3708 Social and Political Philosophy .....	3
PHIL 3711 General Ethics .....	3
PHIL 3723 Philosophy of Law .....	3

*Select three from the following:*

PHIL 2609 Technology and Human Values .....	3
PHIL 2630 Critical Thinking .....	3
PHIL 3760 Ethics of War and Peace .....	3
PHIL 4820 Seminar in Philosophy (relevant topic and instructor consent only) .....	3
PHIL 4870 Internship in Ethical Practice (1 s.h., must repeat 3 times) .....	3

<b>Total Number of Semester Hours .....</b>	<b>18</b>
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**Criminal Justice System**

CJFS 1500 Introduction to Criminal Justice .....	3
CJFS 2601 Policing .....	3
CJFS 2602 Courts .....	3
CJFS 2603 Corrections .....	3

Plus 6 s.h. of upper-division Criminal Justice courses.

<b>Total Number of Semester Hours .....</b>	<b>18</b>
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**Criminal/Legal Processes**

CJFS 1500 Introduction to Criminal Justice .....	3
CJFS 2602 Courts .....	3

	s.h.
CJFS 3719 Criminal Law.....	3
CJFS 3720 Legal Research.....	3
CJFS 3721 Evidence.....	3
CJFS 5825 Criminal Procedures and Constitutional Issues.....	3

**Total Number of Semester Hours .....18**

#### Forensic Science

CJFS 1500 Introduction to Criminal Justice.....	3
CJFS 1510 Survey of Forensic Science.....	3
CJFS 2602 Courts.....	3
CJFS 3714 Forensic Science Investigation.....	2
CJFS 3714L Forensic Science Investigation Laboratory.....	1
CJFS 3721 Evidence.....	3
CJFS 5814 Forensic Science and the Criminal Justice System.....	3

**Total Number of Semester Hours .....18**

#### Juvenile Justice System

CJFS 1500 Intro to Criminal Justice.....	3
CJFS 2603 Corrections.....	3
CJFS 3702 Correctional Strategies.....	4
CJFS 3702L Correctional Strategies Laboratory.....	2
CJFS 3735 Crime and Delinquency*.....	3
CJFS 3736 Criminal Victimization.....	3
CJFS 5875 Juvenile Justice System.....	3

\*Same as SOC 2630 and 3735.

**Total Number of Semester Hours .....21**

#### Law Enforcement

CJFS 1500 Intro to Criminal Justice.....	3
CJFS 1510 Survey of Forensic Science.....	3
CJFS 2601 Policing.....	3
CJFS 3714 Forensic Science Crime Scene Investigation.....	2
CJFS 3714L Forensic Science Crime Scene Investigation Laboratory.....	1
CJFS 3715 Criminal Justice Management Concepts.....	3
CJFS 3765 Human Relations.....	3
CJFS 5825 Criminal Procedures and Constitutional Issues.....	3

**Total Number of Semester Hours .....21**

#### Loss Prevention and Assets Protection

CJFS 1500 Intro to Criminal Justice.....	3
CJFS 1510 Survey of Forensic Science.....	3
CJFS 2601 Policing.....	3
CJFS 3700 Forensic Fire Investigation.....	3
CJFS 3715 Criminal Justice Management Concepts.....	3
CJFS 3740 Criminal Justice Information Systems.....	3
CJFS 3751 Prevention Strategies.....	3
CJFS 4848 Loss Prevention and Assets Protection Administration.....	3

**Total Number of Semester Hours .....24**

	s.h.
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#### Economics

ECON 2610 Principles I: Microeconomics.....	3
ECON 2630 Principles 2: Macroeconomics.....	3

12 semester hours of upper-division economics  
electives other than ECON 3790.....12

**Total Semester Hours .....18**

#### Economics and Statistics

ECON 2610 Principles 1.....	3
ECON 2630 Principles 2.....	3
ECON 3790 Business Statistics.....	5

9 additional semester hours of electives\* in econom-  
ics, at the 3700 level or higher. Courses at the 1500  
level do not count toward the minor.

**Total Number of Semester Hours .....20**

\* *Recommended Economics electives for different  
majors:*

Political Science: ECON 3702, 4843, and 4855	
Accounting and Finance: ECON 3701, 3710, 3712, 5809, 5811, and 5812	
Marketing: ECON 3710, 3712, and 5801	
Management: ECON 3710, 3712, 4810, 5801, and 5831	
Pre-Law: ECON 3702, 3710, and 3712	
Environmental Studies: ECON 3710, 3712, and 4813	

#### Electrical and Computer Engineering

*For students with little or no background:*

ECEN 1521 Basic Digital & Computer Circuits.....	3
ECEN 1521L Basic Digital & Comp. Circuits Lab.....	1
ECEN 2632 Basic Circuit Theory 1.....	3
ECEN 2611 Instrumentation & Computation Lab 1.....	1
ECEN 2633 Basic Circuit Theory 2.....	3
ECEN 2612 Instrumentation & Computation Lab 2.....	1
ECEN 3733 Digital Circuit Design.....	3
ECEN 3771 Digital and Analog Circuits 1.....	3
ECEN 3711 Intermediate Laboratory 1.....	1

**Total Number of Semester Hours .....19**

*For students with background in math or computer  
science:*

ECEN 1521L Basic Digital & Computer Circuits Lab.....	1
ECEN 2632 Basic Circuit Theory.....	3
ECEN 2611 Instrumentation & Computation Lab 1.....	1
ECEN 2633 Basic Circuit Theory 2.....	3
ECEN 2612 Instrumentation & Computation Lab 2.....	1
ECEN 3733 Digital Circuit Design.....	3
ECEN 3734 Computer Design.....	3
ECEN 3771 Digital and Analog Circuits 1.....	3
ECEN 3711 Intermediate Laboratory 1.....	1

**Total Number of Semester Hours .....19**

**s.h.**

*For students with background in physics:*

ECEN 1521 Basic Digital & Computer Circuits .....3

ECEN 1521L Basic Digital & Comp. Circuits Lab .....1

ECEN 3710 Signals and Systems .....3

ECEN 3733 Digital Circuit Design .....3

ECEN 3771 Digital and Analog Circuits 1 .....3

ECEN 3772 Digital and Analog Circuits 2 .....3

ECEN 4803 Linear Control Systems .....3

**Total Number of Semester Hours .....19**

**Electrical Engineering Technology**

EET 1501/L Circuit Theory 1 + Lab.....3 + 1

EET 1502/L Circuit Theory 2 + Lab.....3 + 1

EET 2620/L Digital Electronics + Lab .....2 + 1

EET 3712/L Programmable Logic Controllers + Lab.....3 + 1

EET 3735/L Microprocessor Architecture + Lab.....3 + 0

EET 3745/L Microprocessor Systems 2 + Lab..3 + 0

**Total Semester Hours .....21**

**Engineering Geology**

GEOL 1505 Physical Geology..... 3

GEOL 1505L Physical Geology Lab ..... 1

GEOL 1513 Physical Evolution of North America ..... 4

GEOL 3704 Structural Geology .....2

GEOL 3704L Structural Geology Lab ..... 1

GEOL 3706 Geology of Economics Mineral Deposits..... 3

GEOL 3709 Structural Geology..... 3

GEOL 4804 Ground Water..... 3

**Total Number of Semester Hours .....20**

**ENGLISH**

**British and American Literature**

ENGL 3700 Introduction to Literary Studies ..... 3

*One British Literature survey:* ..... 3

ENGL 3710 Survey of British Literature I OR ENGL 3711 Survey of British Literature II

*One American Literature survey:*..... 3

ENGL 3712 Survey of American Literature I OR ENGL 3713 Survey of American Literature II

*One upper division American Literature course:* ..... 3

ENGL 3770, 3780, 4862, 4864, or 4871

*One upper division British Literature course:*..... 3

ENGL 4830, 4831, 4860, 4881, 4882, 4886, 4887, 4892, 4895, or 4896

ENGL 4890 Senior Seminar..... 3

**Total Number of Semester Hours .....18**

**Creative Writing**

ENGL 2646 Introduction to Fiction Writing .....3

ENGL 2647 Introduction to Poetry Writing.....3

**s.h.**

ENGL 3748 Screenwriting.....3

ENGL 3740 Advanced Writing.....3

ENGL 3746 Fiction Writing Workshop .....3

ENGL 3747 Poetry Writing Workshop .....3

**Total Number of Semester Hours .....18**

**English Studies**

ENGL 3700 Introduction to Literary Studies ..... 3

*One of the following literature survey courses:*..... 3

ENGL 3710 Survey of British Literature I OR ENGL 3711 Survey of British Literature II OR ENGL 3712 Survey of American Literature I OR ENGL 3713 Survey of American Literature II

*One upper division Am. Lit. OR upper division British Lit from the following:* ..... 3

(Am Lit courses) ENGL 3770, 3780, 4862, 4864, 4871

(Brit Lit courses) ENGL 4830, 4831, 4860, 4881, 4882, 4886, 4887, 4892, 4895, 4896

*One other literature course from the following:*..... 3

ENGL 2610, 2617, 2618, 2620, 2631, 2665, 3703, 3704, 3705, 3738, 3765, 4865

*Two additional English Studies courses—one course from any two of the following groups:*..... 6

**GROUP 1: Language, Writing and Culture**

ENGL 2651 Introduction to Language ..... 3

ENGL 3755 Principles of Linguistics Study ..... 3

ENGL 3740 Advanced writing ..... 3

ENGL 3790 Selected Topics in Multicultural Studies ..... 3

**GROUP 2: Journalism**

JOURN 2622 Basic Journalism ..... 3

JOURN 2626 American Journalism..... 3

JOURN 3716 Feature Writing..... 3

JOURN 3717 Editorial and Opinion Writing..... 3

JOURN 3723 Editing and Design for Newspapers ..... 3

JOURN 4824 Press Law and Ethics

**GROUP 3: Creating Writing**

ENGL 2646 Introduction to Fiction Writing . 3 s.h.

ENGL 2647 Introduction to Poetry Writing..... 3

ENGL 3748 Introduction to Screenwriting..... 3

ENGL 3746 Fiction Writing Workshop ..... 3

ENGL 3747 Poetry Writing Workshop ..... 3

**GROUP 4: Technical and Professional Communication**

ENGL 3743 Professional and Technical Communication..... 3

ENGL 3744 Proposal and Report Writing ..... 3

ENGL 4849 Professional and Technical Editing . 3

**Total Number of Semester Hours .....18**

**Journalism**

*All of the following courses:*

ENGL 2622 News Reporting .....3

ENGL 2626 American Journalism .....3

ENGL 3721L Journalism Workshop.....3

	s.h.
ENGL 3723 Editing and Design for Newspapers .....	3
ENGL 4824 Press Law and Ethics .....	3

*Plus one of the following courses:*

JOURN 3716 Feature Writing .....	3
JOURN 3717 Editorial and Opinion Writing .....	3

**Total Number of Semester Hours .....18**

### Linguistics

*Required Course:*

ENGL 3755 Prin. of Linguistic Study .....	3
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*At least two courses from Group I:*

ENGL 3750 Language and Culture .....	3
ENGL 3757 Dev. of the English Language .....	3
ENGL/ FNLG 4850 Sociolinguistics .....	3
ENGL 4855 Advanced Linguistics .....	3
ENGL 4858 English Grammar .....	3
FRNC 3710 Applied Phonetics .....	3
FRNC 3715 Conversation & Composition .....	3
FRNC 4885 Special Topics .....	3
ITAL 3720 Adv. Grammar & Composition .....	3
ITAL 3725 Phonetics .....	3
SPAN 3724 Spanish Pronunciation .....	3
SPAN 3735 Adv. Spanish Grammar & Comp .....	3
SPAN 3736 Intro. to Spanish Linguistics .....	3
SPAN 5855 Topics in Spanish Lang. & Ling .....	3

*Additional coursework from Groups I and II (following):*

ENGL/FNLG 4851 Language Acquisition .....	3
ENGL 4856 TESOL Methods .....	3
ENGL 4857 TESOL Practicum .....	3
ENGL 4858 English Grammar .....	3
ENGL 4859 Sel. Topics in Discourse .....	3
PHIL 2619 Intro. to Logic .....	3
PHIL 3714 Language and Mind .....	3
PHIL 3719 Symbolic Logic .....	3
CSCI 5835 Artificial Intelligence .....	3
PSYC 3761/3761L Cognition/Lab .....	4
PSYC 3764/3764L Psycholinguistics/Lab .....	4

**Total Number of Semester Hours .....18**

### Professional Writing and Editing

*The following four courses are required:*

ENGL 3743 Professional and Technical Communication.....	3
ENGL 3744 Proposal and Report Writing .....	3
ENGL 4843 Adv. Professional and Technical Communication.....	3
ENGL 4849 Professional and Technical Editing .....	3

*Select two of the following courses:*

ENGL 3740 Advanced Writing.....	3
ENGL 3745 Writing For Online Environments....	3
ENGL 3751 Readings in Professional Writing and Editing.....	3
ENGL 3755 Principles of Linguistic Study .....	3

**Total Semester Hours .....18**

s.h.

s.h.

### Web Communications

CSIS 1590 Survey of Computer Science & Information Systems.....	3
INFO 3774 Multimedia Technology .....	4
INFO 3776 Website Development.....	4
ENGL 3743 Professional/Technical Communication.....	3
ENGL 3744 Proposal/Report Writing .....	3
ENGL 4843 Advanced Professional/Technical Communication.....	3
<i>or</i>	
ENGL 4849 Professional/Technical Editing.....	3

**Total Semester Hours .....20**

### Entrepreneurship

BUS 1500 Exploring Business .....	3
ENT 3700 Entrepreneurship-New Venture Creation .....	3
ENT 3750 Entrepreneurship-Small Business Financial Management.....	3
ENT 4800 Entrepreneurship-Business Plan Development .....	3

*Plus select two or more of the following:*

ENT 4850 Entrepreneurship Internship.....	3
ENT 4851 Field Studies in Entrepreneurship....	3
ACCT 1503 Elementary Accounting.....	3
ACCT 2602 Financial Accounting.....	3
MGT 2604 Legal Environment of Business I.....	3
MKTG 3703 Marketing Concepts and Practice....	3
MGT 3725 Fundamentals of Management .....	3

**Total Semester Hours .....18**

### Environmental Geology

*All of the following courses:*

GEOL 1505 Physical Geology	
<i>and</i>	
GEOL 1505L Physical Geology lab .....	4
GEOL 2605 Historical Geology .....	4
GEOL 2615 Geology and the Environment 1 .....	3

*A minimum of 9 s.h. from the following courses:*

GEOL 3701 Geomorphology .....	4
GEOL 3702 Glacial Geology .....	3
GEOL 3709 Subsurface Investigations .....	3
GEOL 3720 Field Investigations in Geology .....	1-4
GEOL 4804 Ground Water.....	3
GEOL 5815 Geology and the Environment 2 .....	2
GEOL 5817 Environmental Geochemistry .....	3

**Total Number of Semester Hours .....20**

### Environmental Studies

*All of the following courses:*

ENST 2600 Foundations of Environmental Studies .....	3
ENST 2600L Foundations of Environmental Studies Lab .....	1

s.h.

s.h.

One of the following core courses:

ENST 5800	Environmental Impact Assessment	.3
ENST 5830	Risk Assessment	.....3
ENST 5860	Environmental Regulations	.....3
Plus 12 s.h. of upper-division Environmental Studies courses		
		.....12
<b>Total Number of Semester Hours</b>		<b>.....19-21</b>

**Fashion**

MRCH 1506	Clothing and Image Development	...3
MRCH 2625	The World of Fashion	.....3
<i>Then choose four</i>		
MRCH 3705	Textiles (P)	.....3
MRCH 3730	Soc/Psych. Clothing (P)	.....3
MRCH 3740L	Computer Application in Textiles and Apparel (P)	.....3
MRCH 3742	Applied Textiles (P)	.....3
MRCH 3760	Visual Merchandising	.....3
MRCH 4877	History of Fashion	.....3
<b>Total Number of Semester Hours</b>		<b>.....18</b>

**Finance**

All of the following courses:

FIN 3720	Business Finance	.....3
FIN 3721	Personal Financial Management	.....4
FIN 3730	Investment Analysis	.....4
FIN 4835	Advanced Business Finance	.....4

Plus 4 s.h. from the following courses:

FIN 4836	Financial Markets	.....4
FIN 4853	Financial Analysis	.....4
<b>Total Number of Semester Hours</b>		<b>.....19</b>

**Food and Nutrition**

FNUT 1551	Normal Nutrition	.....3
FNUT 1552L	Nutrition Assessment Lab	.....1
FNUT 1553	Food Science & Mgmt.	.....3
FNUT 1553L	Food Science & Mgmt. Lab	.....1
FNUT 2603	Medical Nutrition Therapy 1	.....3
FNUT 2603L	Medical Nutrition Therapy 1 Lab	....1
FNUT 3761	Science of Nutrition in Exercise	.....3
HMEC 4875	Directed Individual Study	.....3
<b>Total Semester Hours</b>		<b>.....18</b>

**FOREIGN LANGUAGES**

**French**

FRNC 2605	Advanced Intermediate	.....3
FRNC 2606	Intensive French Review	.....3
FRNC 3715	Conversation and Composition	.....3
<i>3 of the following:</i>		
FRNC 3740	French for Business and Communication	.....3
FRNC 3750	Civilization and Culture	.....3
FRNC 3771	French Fiction	.....3
FRNC 3772	French Drama	.....3
FRNC 3773	French Poetry	.....3
<b>Total Semester Hours</b>		<b>.....18</b>

**French Languages Studies, Interdisciplinary**

FRNC 2605	Advanced Intermediate	.....3
FRNC 2610	Translation	.....3
FNLG 2615	Introduction to French Literature	.....3
FRNC 2608	Directed Reading	.....1
HIST 3761	The French Revolution and Napoleon	.....3
HIST 3763	Modern France, 1815 to Present	.....3
MUHL / ART 3887	History and Appreciation of Art and Music	.....3
<b>Total Semester Hours</b>		<b>.....19</b>

**Greek Studies**

GRK 2600	Intermediate	.....4
GRK 2603	Directed Reading 1	.....3-6
GRK 3753	Directed Reading 2	.....3-6
GRK 4883	Directed Reading 3	.....3-6

One of the following courses:

FNLG 2660	Women in the Ancient World	.....3
HIST 3752	Ancient History I (Greece)	.....3
LATN 1550	Elementary	.....4
<b>Total Number of Semester Hours</b>		<b>.....19</b>

**Italian**

ITAL 2600	Intermediate	.....4
ITAL 2605	Advanced Intermediate	.....3
ITAL 3720	Advanced Grammar and Composition	.....3
ITAL 3725	Phonetics	.....3
ITAL 3730	Conversation	.....3
ITAL 3735	Civilization	.....3
<b>Total Number of Semester Hours</b>		<b>.....19</b>

**Italian Cultural Studies, Interdisciplinary**

ITAL 2600	Intermediate	.....4
ITAL 2605	Advanced Intermediate	.....3
ITAL 3720	Advanced Grammar and Composition	.....3
ITAL 3730	Conversation	.....3

At least two of the following:

ART 3742	Topics in Renaissance Art	.....3
ART 3743	Baroque and Rococo Art	.....3
MUHL 3772	Music History and Literature 2	.....3
HIST 3758	Renaissance Europe	.....3
HIST 3785	The Mediterranean World: Modern Italy, 1815 to present	.....3
<b>Total Number of Semester Hours</b>		<b>.....19</b>

**Spanish**

All of the following courses:

SPAN 2605	Advanced Intermediate	.....3
SPAN 2655	Conversation for Proficiency 1	.....3
SPAN 3735	Advanced Grammar and Composition	.....3
SPAN 3755	Conversation for Proficiency 2	.....3
SPAN 3737	Translation and Composition	.....3

	s.h.
<i>Plus 3 s.h. from the following courses:</i>	
SPAN 3724 Spanish Pronunciation .....	3
SPAN 3736 Introduction to Spanish Linguistics .....	3

**Total Number of Semester Hours .....18**

### Spanish Language and Cultures

*All of the following courses:*

SPAN 2605 Advanced Intermediate .....	3
SPAN 2655 Conversation for Proficiency 1 .....	3
SPAN 3735 Advanced Grammar and Composition .....	3
SPAN 3755 Conversation for Proficiency 2.....	3

*Plus 3 s.h. from the following courses:*

SPAN 3752 Spanish Culture and Lit. 1 .....	3
SPAN 3753 Spanish Culture and Lit. 2 .....	3

*Plus 3 s.h. from the following courses:*

SPAN 3756 Spanish-American Culture and Literature 1 .....	3
SPAN 3757 Spanish-American Culture and Literature 2 .....	3

**Total Number of Semester Hours .....18**

## GEOGRAPHY

### Geographic Information Systems

*Select 3 s.h. from the following:*

GEOG 2610 Map Use and Interpretation .....	3
GEOG 2611 Geospatial Foundations .....	3
GEOG 3712 Thematic Map Design and Symbolization .....	3

*Select 9 s.h. from the following:*

GEOG 5805 Remote Sensing 1 .....	3
GEOG 5810 Geographic Information Science 1... 3	3
GEOG 5811 Geographic Information Science 2... 3	3

*Select 6 s.h. from the following:*

GEOG 3775 Field Methods in Geography .....	3
GEOG 5806 Remote Sensing II .....	3
GEOG 5812 Global Positioning Systems and GIScience .....	3
GEOG 5814 3D Modeling and GIS.....	3

*The following may be used to fulfill the required 6 s.h. if the course theme is GIScience related:*

GEOG 4825 Geography Internship .....	1-3
GEOG 4840 Seminar in Geography .....	3

*The following 3 s.h. course is suggested but not required:*

CSIS 1590 Survey of Computer Science and Information Systems.....	3
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*6 s.h. of the minor must be upper-division.*

**Total Number of Semester Hours ..... 18**

### Geography, Environmental

*Select 3 s.h. from the following:*

GEOG 1503 Introduction to Physical Geography .....	3
GEOG 2630 Weather.....	3

*Select 3 s.h. from the following:*

GEOG 2610 Map Use and Interpretation .....	3
GEOG 2611 Geospatial Foundations .....	3
GEOG 3712 Thematic Map Design and Symbolization.....	3

*Select 3 s.h. from the following:*

GEOG 5805 Remote Sensing 1 .....	3
GEOG 5810 Geographic Information Science 1... 3	3

*Select 9 s.h. from the following:*

GEOG 1503 Introduction to Physical Geography .....	3
GEOG 2630 Weather.....	3
GEOG 3703 Human Impacts on the Environment .....	3
GEOG 3705 Mountain Geography .....	3
GEOG 3730 Global Climates .....	3
GEOG 3733 Severe and Hazardous Weather.....	3
GEOG 3735 Water in the Earth System .....	3
GEOG 3737 Soils and Land Use .....	3
GEOG 4813 Field Methods in Geography .....	3
GEOG 5802 Biogeography.....	3

*The following may be used to fulfill the required 9 s.h. if the course theme is environmentally related:*

GEOG 4840 Seminar in Geography .....	3
GEOG 5850 International Area Study	3

*6 s.h. of the minor must be upper-division.*

**Total Number of Semester Hours .....18**

### Geography, General

*The following course is required:*

GEOG 1503 Physical Geography .....	3
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*Select 3 s.h. from the following cultural geography courses:*

GEOG 2626 World Geography .....	3
GEOG 2640 Human Geography .....	3

*Select 3 s.h. from the following physical/environmental geography courses:*

GEOG 2630 Weather.....	3
GEOG 3703 Human Impacts on the Environment.....	3
GEOG 3705 Mountain Geography .....	3
GEOG 3730 Global Climates .....	3
GEOG 3733 Severe and Hazardous Weather.....	3
GEOG 3735 Water in the Earth System .....	3
GEOG 3737 Soils and Land Use .....	3
GEOG 5802 Biogeography.....	3

*Select 3 s.h. from the following geospatial techniques courses:*

GEOG 2610 Map Use and Interpretation.....	3
GEOG 2611 Geospatial Foundations .....	3
GEOG 3712 Thematic Map Design and Symbolization.....	3

*Select 3 s.h. from the following human and regional geography courses:*

GEOG 3713 Geography of South America.....	3
GEOG 3715 Geography of Middle America .....	3
GEOG 3717 Geography of Europe .....	3
GEOG 3719 Geography of the United States.....	3
GEOG 3721 Geography of Ohio .....	3

	s.h.
GEOG 3722 Historical Geography of the United States.....	3
GEOG 3724 Themes in Cultural Geography .....	3
GEOG 3726 Urban Geography .....	3
GEOG 3740 Business Geographics.....	3
GEOG 3741 Transportation Geography .....	3
GEOG 3745 The Automobile in American Culture.....	3
GEOG 3750 Topics in Regional Geography.....	3
GEOG 3755 Tourism Geography.....	3
GEOG 3775 Field Methods in Geography .....	3
GEOG 3780 Medical Geography .....	3
GEOG 4825 Geography Internship .....	1-3
GEOG 4840 Seminar in Geography .....	3
GEOG 5850 International Area Study.....	3

Select 3 s.h. from any upper-division course listed above or any course listed below:

GEOG 5805 Remote Sensing 1 .....	3
GEOG 5810 Geographic Information Science 1... 3	3
GEOG 5812 Global Positioning and GIScience ... 3	3

6 s.h. of the minor must be upper-division.

**Total Number of Semester Hours ..... 18**

### Geography, Human

The following course is required:

GEOG 2640 Human Geography .....	3
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Select 3 s.h. from the following:

GEOG 2610 Map Use and Interpretation .....	3
GEOG 2611 Geospatial Foundations .....	3
GEOG 3712 Thematic Map Design and Symbolization.....	3

Select 12 s.h. from the following:

GEOG 2626 World Geography .....	3
GEOG 2650 Global Economic Landscapes.....	3
GEOG 3722 Historical Geography of the U.S.....	3
GEOG 3724 Themes in Cultural Geography .....	3
GEOG 3726 Urban Geography .....	3
GEOG 3740 Business Geographics.....	3
GEOG 3741 Transportation Geography .....	3
GEOG 3745 Automobile in American Culture.....	3
GEOG 3755 Tourism Geography.....	3
GEOG 3780 Medical Geography .....	3
GEOG 5810 Geographic Information Science 1... 3	3
GEOG 5850 International Area Study.....	3

The following may be used to fulfill the required 12 s.h. if the course theme is human geography related:

GEOG 4825 Geography Internship .....	1-3
GEOG 4840 Seminar in Geography .....	3

6 s.h. of the minor must be upper-division.

**Total Number of Semester Hours .....18**

### Geography, Regional

Select 3 s.h. from the following:

GEOG 2626 World Geography .....	3
GEOG 2640 Human Geography .....	3

s.h.

Select 15 s.h. from the following:

GEOG 3713 Geography of South America.....	3
GEOG 3715 Geography of Middle America.....	3
GEOG 3717 Geography of Europe.....	3
GEOG 3719 Geography of the United States.....	3
GEOG 3721 Geography of Ohio .....	3
GEOG 3722 Historical Geography of the United States.....	3
GEOG 3724 Themes in Cultural Geography .....	3
GEOG 3750 Topics in Regional Geography.....	3

The following may be used to fulfill the required 15 s.h. if the course theme is regionally related:

GEOG 4840 Seminar in Geography .....	3
GEOG 5850 International Area Study.....	3

6 s.h. of the minor must be upper-division.

**Total Semester Hours .....18**

### Geoscience

Both of the following courses:

GEOG 1505L Physical Geology.....	4
GEOG 2605 Historical Geology .....	4

Plus a minimum of 10 s.h. of upper-division geology courses.

**Total Number of Semester Hours ..... 18**

### Gerontology

3 s.h. from the following courses:

GERO 1501 Introduction to Gerontology .....	3
SOC 1500 Introduction to Sociology .....	3

15 s.h. from the following courses:

GERO 3703 Aging and Society .....	3
GERO 3755 Theories of Gerontology .....	3
GERO 3756 Aging and Ethnicity.....	3
GERO 3757 Aging and Social Policy .....	3
GERO 4801 Later Life Issues.....	3
GERO 4804 Family, Health, and Aging.....	3
GERO 4821 Internship.....	3
SOC 3759 Sociology of Dementia .....	3
FNUT 3720 Nutrition, Health, and Aging.....	3

**Total Number of Semester Hours .....18**

### History

One of the following courses:

HIST 1511 World Civilization to 1500 .....	3
HIST 1512 Civilization from 1500 .....	3

One of the following courses:

HIST 2605 Turning Points in U.S. History I.....	3
HIST 2606 Turning Points in U.S. History II.....	3

Four courses chosen from Groups B, C, & D, below. One course must be selected from each group. The fourth course may be from Group B, C, or D. Three courses must be at the 3700 level or higher.

s.h.

Group B (American): 2601, 2630, 3700, 3702, 3704, 3706, 3710, 3712, 3713, 3715, 3717, 3723, 3726, 3732, 3733, 3734, 3736, 3740, 3741, 3742, 3743, 3744, 3748, 3762, 4801, 4811, 4812, 4815, 5808, 5809, 5810.

Group C (European): 3752, 3753, 3755, 3757, 3758, 3759, 3760, 3761, 3762, 3763, 3765, 3766, 3767, 3769, 3778, 3779, 3780, 3782, 3785, 3787, 3788, 3790, 3791, 3792, 3794, 4850, 4851.

Group D (Non-Western): 2611, 2661, 2662, 2663, 3700, 3727, 3728, 3740, 3749, 3750, 3751, 3770, 3772, 3776, 3779, 3781, 3789, 3795, 3797, 3798, 4850, 4860.

**Total Number of Semester Hours .....18**

## History, Applied

HIST 5806	American Architectural History I.....	3
HIST 5807	American Architectural History II.....	3
HIST 4812	Applied History Internship.....	3
HIST 5810	Conservation of the Built Environment.....	3
HIST 3715	Introduction to Applied History.....	3
HIST 4811	Practicum in Applied History.....	3
HIST 2605	Turning Points in U.S. History I.....	3
HIST 2606	Turning Points in U.S. History II.....	3

**Total Number of Semester Hours .....24**

## Human Resources

*All of the following courses\*:*

MGT 3725	Fundamentals of Management.....	3
MGT 3734	Human Resources Management.....	3
MGT 3750	Human Behavior in Organization.....	3

*Plus 9-12 s.h. from the following courses\*:*

MGT 3705	Fundamentals of Occupational Safety.....	3
MGT 3715	Labor Law and Negotiations.....	4
MGT 3735	Communication for Management and Business.....	3
MGT 3755	Managing Diversity.....	3
MGT 3761	Information Systems for Management.....	3
MGT 4810	Compensation and Performance Appraisal.....	4
MGT 4819	Selection, Training, and Development.....	4

\*If any of the above courses are part of the student's major, an alternate course needs to be substituted. Consult the Department of Management.

**Total Number of Semester Hours .....18-21**

## Industrial and Systems Engineering

ISEN 3710	Engineering Statistics.....	3
ISEN 3716	Systems Analysis and Design.....	3
ISEN 3720	Statistical Quality Control.....	3

s.h.

ISEN 3723	Manufacturing Processes.....	2
ISEN 3723L	Manufacturing Processes Laboratory.....	1
ISEN 3724	Engineering Economy.....	3
ISEN 3736	Methods Engineering.....	2
ISEN 3736L	Methods Engineering Laboratory.....	1

**Total Number of Semester Hours .....18**

## Islamic Studies

REL 2601	Introduction to World Religions.....	3
REL 3720	Islam.....	3
REL 3740	Muslim Thinkers.....	3

*Select 9 s.h. from the following:*

REL 3742	Islamic Intellectual History.....	3
REL 3744	Islamic Culture and Literature.....	3
REL 3746	Sufism.....	3
REL 3748	Islam and the West.....	3
REL 4850	Seminar (on appropriate topic, requiring approval by the Director of the Center for Islamic Studies).....	3

**Total Semester Hours .....18**

## Judaic Studies

HIST 1512	Introduction to World Civilization...3
REL 2601	Introduction to World Religions.....3
HIST 3789	Jewish History.....3
REL 3724	Judaism.....3

*Two of the following:*

HIST 3798	Middle East II: The Modern Period..3
HIST 3788	The Holocaust.....3
REL 3731	Hebrew Scriptures.....3
HBRW 2605	Advanced Intermediate Hebrew.....3
HBRW 2606	Readings in Old Testament.....3

**Total Semester Hours .....18**

## Logistics

MGT 3725	Fund. of Management.....	3
MGT 3789	Operations Mgmt.....	3
<i>or</i>		
ISEN 4815	Production Planning & Control.....	3
GEOG 3741	Geog. of Transportation.....	3
<i>or</i>		
GEOG 2640	Human Geography.....	3
MGT 4882	Seminar in Logistics.....	3
MGT 4896	Logistics Internship.....	3
	Elective.....	3

**Total Number of Semester Hours .....18-21**

## Management Information Systems

*All of the following courses\*:*

MGT 3725	Fundamentals of Management.....	3
MGT 3761	Information Systems for Management.....	3
MGT 5835	Systems Analysis and Design.....	3

*Plus 9 s.h. from the following courses\*:*

MGT 4820	Supply Chain Management.....	3
MGT 4880	Business Process Integration.....	3



	s.h.
MGT 4881 Project Management.....	3
MGT 5865 Database Management Systems.....	3
MGT 3771 Electronic Commerce .....	3
MGT 3789 Operations Management .....	3

\*If any of the above courses are part of the student's major, an alternate course from the list needs to be substituted.

**Total Number of Semester Hours .....18**

### Marketing

BUS 1500 Exploring Business .....	3
MKTG 2604 Legal Environment of Business .....	3
MKTG 3703 Mktg. Concepts and Practice .....	3
MKTG 3702 Business Professionalism .....	1
MKTG 3740 Professional Selling.....	3
MKTG 3709 Retail Marketing.....	3
MKTG 4845 International Marketing .....	3

**Total Number of Semester Hours .....19**

### Mathematics

Option 1:	
MATH 1571 Calculus 1.....	4
MATH 1572 Calculus 2.....	4

Plus at least 10 s.h. of course work with MATH 1572 as a prerequisite, including at least 6 s.h. of courses numbered above 3700.

OR

Option 2:	
MATH 1570 Applied Calculus 1.....	4
MATH 2670 Applied Calculus 2.....	5

Plus at least 9 s.h. of course work with MATH 2670 or MATH 1572 as a prerequisite, including at least 6 s.h. of courses numbered above 3700.

**Total Number of Semester Hours .....18**

### Mechanical Engineering

MECH 2603 Thermodynamics 1 .....	3
MECH 2604 Thermodynamics 2 .....	3
MECH 2641 Dynamics .....	3
MECH 3720 Fluid Dynamics .....	3
MECH 3742 Kinematics of Machines .....	3
MECH 3751 Stress & Strain Analysis 1 .....	3

**Total Number of Semester Hours .....18**

### Military Science

MSCI 1510 Intro. to ROTC .....	1
MSCI 1530L Leadership Lab .....	0
MSCI 1520 Intro. to Leadership .....	1
MSCI 1530L Leadership Lab .....	0
MSCI 2610 Self/Team Development .....	2
MSCI 2630 Leadership Lab .....	0
MSCI 2620 Indiv./Team Military Tactics .....	2
MSCI 2630L Leadership Lab .....	0
MSCI 3710 Leading Small Organizations 1 .....	3

	s.h.
MSCI 3730L Leadership Lab .....	0
MSCI 3720 Leading Small Organizations 2 .....	3
MSCI 3730L Leadership Lab .....	0
MSCI 4810 Leadership Challenges & Goal Setting .....	3
MSCI 4830L Leadership Lab .....	0
MSCI 4820 Transition to Lieutenant .....	3
MSCI 4830L Leadership Lab .....	0
MSCI 3740 ROTC Nat'l Adv. Leadership Camp.....	4

**Total Number of Semester Hours .....22**

### Music

*Lower-division: 12 s.h., including:*

MUTC 1531/L Theory 1/1L .....	4
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*Plus an additional 8 s.h. from the following lower-division courses:*

Any Dana School of Music Ensemble .....	1
may be repeated	
MUAC 1500A Minor Appl. Study .....	1
MUAC 1500B Minor Appl. Study .....	1
MUAC 1525 Jazz Fundamentals .....	2
MUAC 2600A Minor Appl. Study .....	1
MUAC 2600B Minor Appl. Study .....	1
MUED 2611 Computer Applications in Music Education .....	2
MUHL 2616 Survey of Jazz .....	3
MUHL 2617 Film Music .....	3
MUHL 2618 Rock n' Roll to Rock .....	3
MUHL 2619 Music in Non-Western Societies .....	3
MUHL 2621 Music Lit. and Appreciation .....	3
MUHL 2622 Popular Music in America .....	3
MUTC 1532/L Theory. 2/2L.....	4
MUTC 2631/L Music.Theory.3/BL	4
MUTC 2632/L Music.Theory.4/4L	4

*Upper-division: 6 s.h. from the following courses:*

MUTC 3771 Music History and Lit. 1 .....	3
MUTC 3772 Music History and Lit. 2.....	3
MUTC 3773 Music History and Lit. 3.....	3
MUTC 3774 Music History and Lit. 4.....	3
MUTC 3700A Minor Appl. Study .....	1
MUTC 3700B Minor Appl. Study.....	1
MUTC 5800A Minor Appl. Study .....	1
MUTC 3722 Music in Early Childhood .....	3

**Total Number of Semester Hours .....18**

### Natural Gas and Water Resources

*Required core courses:*

GEOL 2620 Introduction to Natural Gas and Water Resources .....	3
ENST 2600 Foundations of Environmental Studies .....	3
ENST 2600L Foundations of Environmental Studies Lab.....	1
STEM 2625 Natural Gas and Water Resources Seminar.....	1

	s.h.
<b>A. Water Resources and Environmental Management</b>	
<i>At least 3 s.h. from group A</i>	
BIOL 4801/L Environmental Microbiology .....	4
BIOL 5888 Environmental Biotechnology .....	4
CCET 3724 Hydraulics and Land Development .....	3
CCET 4824 Environmental Technology .....	3
CEEN 3736 Fundamentals of Environmental Engineering.....	3
CHEM 2604/L Quantitative Analysis with Lab .....	5
CHEM 3719/L Organic Chemistry I with Lab .....	4
CHEM 4860 Regulatory Aspects of Industrial Chemistry.....	1
CHEM 5804/L Chemical Instrumentation.....	4
ENST 3700/L Environmental Chemistry with Lab..4	4
ENST/CEEN 3751/L Water Quality Analysis with Lab .....	3
ENST 3781 Environmental Sampling Methods ..3	3
ENST 5860 Environmental Regulations.....	3
or	
ALTH 5816 Environmental Regulations (web based).....	3
GEOG 3735 Water in the Earth System .....	3
GEOL 4804 Groundwater .....	3
GEOL 5817 Environmental Geochemistry .....	3

**B. Natural Gas Production***At least 3 s.h. from group B*

ACCT 3730 Oil and Gas Accounting.....	3
ALTH 4808 Environmental Health Concerns .....	3
CEEN 3716/L Fluid Mechanics with Lab.....	4
or	
MECH 3720/L Fluid Dynamics with Lab.....	4
or	
MET 3714/L Fluid Mechanics with Lab .....	3
CHEN 2688 Energy Assessment.....	3
GEOG 5810 Geographic Information Science 1.....	3
GEOL 3709 Subsurface Investigations .....	3
GEOL 4825 Geophysical Well Log Interpretation.....	3
ISEN 3736/L Methods Engineering.....	3

**C. Natural Gas and Water Resources Applications**

STEM 4890 STEM Internship .....	1-4
*STEM 4895 Senior Thesis .....	3

**Total Number of Semester Hours .....**20

\* Equivalent course may be taken within CSTEM department degree programs.

**Nonprofit Leadership**

BUS 3720 Nonprofit Leadership .....	3
ACCT 3722 Fin. Mgmt. for Nonprofit Orgs. ....	2
PREL 3710 Basic Public Relations .....	3
BUS 3780 Financial Management and Fundraising for Nonprofit Organizations .....	3
MGT 3755 Managing Diversity .....	3
MGT 3725 Fundamentals of Management .....	3
BUS 3740 Nonprofit Community Service .....	1

	s.h.
MKT 4848 Marketing & Social Responsibility ...	3
BUS 4840 Nonprofit Leadership Internship ....	3
BUS 4841 Nonprofit Leadership Seminar .....	1

**Total Number of Semester Hours .....**19-23**Philosophy**

PHIL 2600 Introduction to Philosophy .....	3
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*At least 6 s.h. from the following courses:*

PHIL 2609 Technology and Human Values .....	3
PHIL 2619 Introduction to Logic.....	3
PHIL 2625 Introduction to Professional Ethics.....	3
PHIL 2630 Critical Thinking .....	3

*At least 3 s.h. from the following courses:*

PHIL 3700 Ancient and Medieval Philosophy .....	3
PHIL 3702 History of Modern Philosophy .....	3
PHIL 3705 20th Century Philosophy .....	3

*At least 3 s.h. from the following courses:*

PHIL 3711 General Ethics.....	3
PHIL 3719 Symbolic Logic.....	3
PHIL 3780 Theories of Knowledge .....	3

Any 3700- or 4800-level course in philosophy:.....1

**Total Number of Semester Hours .....**18**Physics***All of the following courses:*

PHYS 2610 General Physics 1 .....	4
PHYS 2610L General Physics Lab 1 .....	1
PHYS 2611 General Physics 2 .....	4
PHYS 2611L General Physics Lab 2 .....	1
Plus upper-division electives .....	8

**Total Number of Semester Hours .....**18**POLITICAL SCIENCE****Political Science***Both of the following courses:*

POL 1560 American Government.....	3
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*One of the following courses:*

POL 2640 Contemporary World Government .....	3
POL 2660 International Relations .....	3

Plus four upper-division political science courses.

**Total Number of Semester Hours .....**18**American Politics***Required courses:*

POL 1560 American Government.....	3
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*Any five of the following courses:*

POL 3700 American Presidency .....	3
POL 3701 American Legislative Process.....	3
POL 3702 Law and Society .....	3
POL 3703 American Constitutional Law .....	3
POL 3704 American Political Parties and Elections .....	3

	<b>s.h.</b>
POL 3714 American Public Opinion .....	3
POL 3718 American Public Policy and Policy Analysis .....	3
POL 3722 State and Local Government .....	3
<b>Total Number of Semester Hours .....</b>	<b>18</b>

**Foreign Affairs**

*One course is required:*

POL 1550 Intro to Political Science .....	3
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*One of the following two courses is required:*

POL 2640 Contemporary World Governments .....	3
POL 2660 International Relations .....	3

*One to three courses from field of international relations:*

POL 3760 International Polit Economy .....	3
POL 3761 U.S. Foreign Policy .....	3
POL 3764 International Organization .....	3
POL 3763 International Law .....	3

*One to three courses from field of comparative politics:*

POL 3741 Russia and China Revolution Reform .....	3
POL 3742 Political Development & Political Regimes .....	3
POL 3744 European Politics .....	3
POL 3751 Latin American Politics .....	3

<b>Total Number of Semester Hours .....</b>	<b>18</b>
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**Professional Ethics**

*All of the following courses:*

PHIL 2600 Introduction to Philosophy .....	3
PHIL 2625 Introduction to Professional Ethics .....	3
PHIL 3711 General Ethics .....	3

*Plus at least 9 s.h. from the following courses, of which two must be upper level:*

PHIL 2609 Technology and Human Values .....	3
PHIL 2626 Environmental Ethics .....	3
PHIL 3723 Law and Criminal Justice Ethics .....	3
PHIL 3725 Biomedical Ethics .....	3
PHIL 3728 Engineering Ethics .....	3
PHIL 3735 Ethics and Scientific Research .....	3
PHIL 3760 Ethics of War and Peace .....	3

<b>Total Number of Semester Hours .....</b>	<b>18</b>
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**PSYCHOLOGY**

**Applied Behavior Analysis**

PSYC 1560 General Psychology .....	3
PSYC 3734 ABA Principles I: Applied Behavior Analysis .....	3
PSYC 4834 ABA Principles II: Behavioral Assessment and Methodology .....	3
PSYC 4835 ABA Principles III: Behavior Change Procedures .....	3

**s.h.**

*One of the following elective courses:*

PSYC 3702 Abnormal Psychology .....	3
PSYC 3709 Psychology of Education .....	3
PSYC 3712 Survey of Industrial/Organizational Psychology .....	3

*One of the following elective courses:*

PSYC 3755 Child Development .....	3
PSYC 3756 Adolescent Development .....	3
PSYC 3757 Adult Development .....	3
PSYC 3758 Lifespan Development .....	3

**Psychology, General**

PSYC 1560 General Psychology .....	3
PSYC 2617 Research Methods & Statistics I* .....	4
PSYC 3700 Social Psychology .....	3
PSYC 3734 Applied Behavior Analysis .....	3

*One of the following courses:*

PSYC 3702 Abnormal Psychology .....	3
PSYC 3775 Personality .....	3

*One of the following courses:*

PSYC 3755 Child Development .....	3
PSYC 3756 Adolescent Development .....	3
PSYC 3757 Adult Development .....	3
PSYC 3758 Lifespan Development .....	3

<b>Total Semester Hours .....</b>	<b>19</b>
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\*A research methods course from another department may be substituted for PSYC 2617 if approved by the Psychology Department. A student who does not take PSYC 2617 must take an additional 3 s.h. in psychology to meet requirements for the minor.

**Psychology, Developmental**

PSYC 1560 General Psychology .....	3
PSYC 2617 Research Meth & Stat 1* .....	4
PSYC 3755 Child Development .....	3
PSYC 3756 Adolescent Development .....	3
PSYC 3757 Adult Developmental .....	3

Plus PSYC 2618 or any upper-division course ...3

<b>Total Semester Hours .....</b>	<b>19</b>
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**Psychology of Mental Health**

PSYC 1506 General Psychology .....	3
PSYC 2617 Research Methods and Statistics 1 .....	4
PSYC 3702 Abnormal Psychology .....	3
PSYC 3702L Abnormal Psychology Lab .....	1
PSYC 3775 Personality .....	3
PSYC 4800 Introduction to Psychotherapy .....	3

*Electives (Choose 1):*

PSYC 3707 Psychology of Intimate Relationships .....	3
PSYC 3730 Psychology of Women .....	3
PSYC 3734 ABA Principles I: Applied Behavior Analysis .....	3
PSYC 3755 Child Development .....	3
PSYC 3790 Field Work in Psychology .....	1-2

<b>Total Number of Semester Hours .....</b>	<b>18-20</b>
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s.h.

**Public Health**

PHLT 3791 Community Health.....3  
 PHLT 3709 Elements of Urban Environmental  
 Health Practices.....3  
 AHLT 5807 Epidemiology .....3  
 PHLT 4826 Community Health Planning and  
 Promotion.....4  
 PHLT 3702 Foundations of Health Education  
 Theory and Practice .....3  
 PHLT 1568 Healthy Lifestyles .....3  
 or  
 PHLT 1531 Fundamentals of Public Health .....3  
**Total Semester Hours .....19**

**Religious Studies**

REL 2601 Introduction to World  
 Religions.....3

*Plus 3 s.h. from the following courses:*

REL 2605 Myth, Symbol and Ritual.....3  
 REL 2617 Introduction to Eastern Religions.....3  
 REL 2621 Religion and Moral Issues .....3  
 REL 2631 Religion and the Earth.....3

*Plus 6 s.h. from the following courses:*

REL 3708 African-American Religion.....3  
 REL 3710 African and Neo-African  
 Religion.....3  
 REL 3720 Islam.....3  
 REL 3722 Christianity .....3  
 REL 3724 Judaism.....3  
 REL 3726 Buddhism.....3  
 REL 3731 Hebrew Scriptures .....3  
 REL 3732 Jesus and the Gospels.....3  
 REL 3741 Islamic Mysticism and  
 Philosophy .....3  
 REL 3743 Ethics and Politics in Islam.....3

Plus at least 6 s.h. of additional 3700- or  
 4800-level courses in Religious Studies.

**Total Semester Hours .....18**

**Social Work**

*All of the following courses:*

SCWK 1510 Intro. to Social Work.....3  
 SCWK 2622 Social Work Processes .....3  
 SCWK 2641 American Social Welfare .....3  
 SCWK 2642 Human Behavior and the  
 Social Environment for  
 Social Workers 1 .....3  
 SCWK 5823 Cultural Diversity in Social Work  
 Practice .....3

*Plus 3 s.h. from the following courses:*

SCWK 2600 Health Issues For Social Work  
 Practice .....3  
 SCWK 3728 Social Services for Children.....3  
 SCWK 3730 Social Services and the Aged.....3  
 SCWK 3731 Social Services and the Disabled.....3

**Total Number of Semester Hours .....18**

s.h.

**Sociology**

SOC 1500 Introduction to Sociology .....3

*3 s.h. from the following courses:*

SOC 3705 The Family .....3  
 SOC 3740 Complex Organizations .....3  
 SOC 3741 Social Movements .....3  
 SOC 3745 Sociology of Health, Illness, and  
 Health Care .....3

*3 s.h. from the following courses:*

SOC 2640 Women in Society.....3  
 SOC 3700 Minority Groups .....3  
 SOC 3743 Social Stratification and Inequality...3

*3 s.h. from the following courses:*

SOC 2601 Social Problems .....3  
 SOC 2630 Criminology.....3  
 SOC 3707 Urban Sociology .....3  
 SOC 3735 Juvenile Delinquency .....3  
 SOC 3744 Social Deviance.....3

*3 s.h. from the following courses:*

SOC 3703 Aging and Society .....3  
 SOC 3755 Theories of Gerontology .....3  
 SOC 3756 Aging and Ethnicity.....3  
 SOC 3757 Aging and Social Policy .....3  
 SOC 3759 Sociology of Dementia .....3

*3 s.h. from the following courses:*

SOC 3720 Applied Sociology.....3  
 SOC 4821 Internship in Sociology .....3

**Total Number of Semester Hours .....18**

**Statistics**

*One introductory statistics course:*

STAT 2601 Introductory Statistics .....3  
 STAT 3717 Statistical Methods.....3  
 STAT 3743 Probability and Statistics .....4  
 STAT 3781H Biostatistics.....3  
 ECON 3790 Statistics for Business and  
 Economics .....5  
 PSYC 2618 Research Methods and  
 Statistics 2 .....3  
 SOC 3701 Social Statistics 1.....3  
 or equivalent\*

*One intermediate statistics course:*

STAT 5817 Applied Statistics .....3  
 PSYC 3724 Advanced Statistical Methods  
 Psychology .....3  
 or equivalent\*

*Plus at least 12 s.h. from the following courses,  
 with a maximum of one course from category II:*

**Category I—Statistics courses:**

STAT 5840 Statistical Computing .....3  
 STAT 4820 Modern Decision Making .....3  
 STAT 5843 Theory of Probability .....3  
 STAT 5844 Theory of Statistics .....3  
 STAT 5846 Categorical Data Analysis.....3  
 STAT 5847 Nonparametric Statistics .....3

		<b>s.h.</b>
STAT 5848	Applied Regression and Time Series .....	3
STAT 5895	Special Topics in Statistics.....	2-3
ECON 5824	Applied Time Series Analysis of Economic and Business Data.....	3
ISEN 3720	Statistical Quality Control.....	3

Category II—Calculus courses:

MATH 1552	Applied Mathematics for Management .....	4
MATH 1570	Applied Calculus 1.....	4
MATH 1571	Calculus 1 .....	4
MATH 1580H	Biomathematics 1 .....	2
MATH 1585H	Calculus 1 .....	5

\*For equivalent courses, consult the Department of Mathematics and Statistics.

**Total Number of Semester Hours ..... 18-21**

### Theater and Dance

#### Dance

THTR 1540	Modern Dance 1.....	1
THTR 1541	Modern Dance 2.....	2
THTR 1542	Dance Composition .....	1
THTR 1550	Wellness for Actors and Dancers.....	1
THTR 1570	Tap and Jazz 1.....	1
THTR 1571	Tap and Jazz 2.....	2
THTR 1572	Ballet 1 .....	1
THTR 1573	Ballet 2 .....	2
THTR 2698	Survey of Dance .....	3
THTR 3791	Rehearsal and Performance.....	3
THTR 4892	Pedagogy of Dance Technique.....	3
<i>or</i>		
THTR 3767	Choreography for Musical Theater..	2

Plus a minimum of 4 additional hours of coursework selected from the following:

THTR 2606	Creative Dance for Children .....	1
THTR 2680	Tap Dance 3.....	1
THTR 3751	Modern Dance 3.....	2
THTR 3770	Jazz Dance 3.....	2
THTR 3781	Ballet 3 .....	2
THTR 4871	Jazz 4.....	2
THTR 4881	Ballet 4 .....	2

**Total Semester Hours ..... 23 minimum**

#### Theater

All of the following:

THTR 1559	Play Production .....	3
THTR 1561	Stagecraft .....	3
THTR 2668	Acting I: Fundamentals .....	3

2 from the following:

THTR 3761	Makeup .....	3
THTR 3762	Directing I .....	3
THTR 3769	Costume Design .....	3
THTR 3763	Scene Design .....	3
THTR 3765	Lighting Design .....	3

		<b>s.h.</b>
<i>1 of the following:</i>		
THTR 4891	Theater History and Texts to 1700 ...	3
THTR 4860	Theater History and Texts from 1700 .....	3

**Total Number of Semester Hours .....18**

### Telecommunication Studies

TCOM 1580	Intro to Telecom. Studies .....	3
TCOM 1581	Telecom. Technologies .....	2
TCOM 2682	Scriptwriting for Elec. Media .....	3
TCOM 2683	Media Operations & Performance ...	3

3 of the following:

TCOM 3783	Telecom. Regulations .....	3
TCOM 3784	Telecom. Programming .....	3
TCOM 3791	Elec. Media Sales & Promo. ....	3
TCOM 4881	Telecom. Management .....	3
TCOM 4885	New Dev. in Telecom. ....	3
TCOM 4886	Audience & Mkt. Measurement .....	3
TCOM 4887	Theories and Criticism of Telecom. .	3

**Total Number of Semester Hours .....20**

### Women’s Studies

WMST 2601	Introduction to Women’s Studies ....	3
ENGL 2617	Women in Literature.....	3
<i>or</i>		
REL 3754	Feminism, Ecology, and Religion ....	3
HIST 3726	History of Women in the United States.....	3
<i>or</i>		
HIST 3787	History of Women in Europe.....	3
PSYC 3730	Psychology of Women.....	3
<i>or</i>		
SOC 2640	Women in Society.....	3

Any two of the following courses:

SOC 2690	Identities and Differences .....	3
ENGL 3732	Images of Women .....	3
HIST 3726	History of Women in the United States* .....	3
HIST 3787	History of Women in Europe*.....	3
BIOL 3718	Women, Science, and Technology ....	3
PSYC 3730	Psychology of Women* .....	3
SOC 2640	Women in Society*.....	3
MGT 3755	Managing Diversity .....	3
WMST 3750	Special Topics in Women’s Studies...	3
CHFM 3731	Individual & Family Development ..	3
HMEC 5893	Work and Family.....	3
REL 3754	Feminism, Ecology, and Religion* ....	3

**Total Semester Hours ..... 18**

\*If not taken above



## COURSES OF INSTRUCTION



## Course Numbering System and Abbreviations

Students should be familiar with the University's course numbering system and its significance, and with the abbreviations used to indicate the amount of credit.

### Upper- and Lower-Division Courses

Courses numbered from 1500 to 1599 are designed for freshman level; from 2600 to 2699, the sophomore level; from 3700 to 3799, the junior level; and from 4800 to 4899, the senior level. Courses numbered from 5800 to 5899 are swing courses, i.e. senior-level courses that have also been approved for graduate credit. The freshman and sophomore levels constitute the lower division, and the junior and senior levels the upper division.

### Sequences

Ordinarily, a comma between numbers (e.g., 1501, 1502) indicates that the course sequence extends throughout the year, but that credit is given for each course individually.

### Abbreviations

The abbreviation "s.h." at the end of a course description stands for "semester hours of credit." Thus, credit for a three-hour, two-semester course is indicated by the notation "3+3 s.h.," meaning "three semester hours of credit each semester."

The abbreviation "NC" means "No Credit."

"Prereq." stands for "Prerequisite." The prerequisite for a course is usually listed in the course description.

Honors courses are designated by the suffix "H." Laboratory courses are designated by the suffix "L."

The key for course area abbreviations can be found on page 414.

Courses are listed in alphabetical order by subject area and followed by the course abbreviation. Exceptions to this are Foreign Languages, where each language is included alphabetically under the heading FNLG; and Applied Music classes, which are listed under MUAC—Music, Applied Classes.

The department or college offering the courses is noted in smaller type in the heading. Courses in interdisciplinary programs are indicated as such.

NEOMED stands for Northeast Ohio Medical University.

**Technology/Laboratory Materials Fees will be applied to some courses. Check the Banner Self-Service Class Schedule to determine the fee for any particular course.**

## ACCOUNTING—ACCT Lariccia School of Accounting and Finance

### Lower-Division Courses

1503. *Elementary Accounting*. Principles, concepts, and terminology related to the accounting cycle. Examination of procedures related to control of cash and payroll activities. Does not fulfill WCBA requirements. 3 s.h.

2600. *Accounting Field Experience*. Internship and/or cooperative education experiences in accounting. Students may be assigned to corporate, non-profit, or government entities on a semester basis. Can repeat this course once for a different field experience. Prereq.: 2.5 GPA, department approval and sophomore standing. 1 s.h.

2602. *Financial Accounting*. Study of the accounting cycle and generally accepted accounting principles including preparation of financial statements. Prereq.: Sophomore standing or C or better in BUS 1500 and C or better in MATH 1507 or level 40 on math placement test. 3 s.h.

2603. *Managerial Accounting*. Study of the accounting informational needs of management. Emphasis on techniques of planning and control. Prereq.: C or better in ACCT 2602. 3 s.h.

2603L. *Managerial Accounting Spreadsheet Lab*. The purpose of this course is to provide spreadsheet skills to business majors. The course will be taught using current software and will cover areas like spreadsheet design, formula development, pivot tables, charting basics and importing and exporting of data. This course is required for accounting and finance majors and may be taken concurrently with Accounting 2603. Prereq.: C or better in ACCT 2602 and concurrently with ACCT 2603 or permission of the director. 1 s.h.

### Upper-Division Courses

3701, 3702. *Intermediate Accounting 1, 2*. Comprehensive study of the theories and concepts underlying financial accounting. Emphasis on income determination, asset valuation, measurement of liabilities and changes in financial position. Prereq.: C or better in ACCT 2603 and ACCT 2603L and 2.5 overall GPA for ACCT 3701; C or better in ACCT 3701 and 2.5 overall GPA for 3702. 4+4 s.h.

3709. *Accounting Information Systems*. Study of systems analysis, design, and implementation within the context of an accounting information system. Topics include a treatment of the business computing environment, security and control of information, the accounting information system as a component of the management information system, and decision support and expert systems. Prereq.: C or better in ACCT 3701. 2.5 overall GPA. 3 s.h.



3710. *Analysis and Design of Accounting Databases.* An introduction to the analysis of accounting databases. Specific emphasis is placed on the structure and use of accounting databases, particularly XBRL. Prereq.: ACCT 3709. 2.5 overall GPA 3 s.h.

3711. *Cost Accounting.* Study of cost accumulation for products manufactured under job order or continuous manufacturing processes; cost behavior and profit-volume relationships; cost structures for control and motivation; relevant costs for non-routine decision making. Prereq.: C or better in ACCT 2603 and ACCT 2603L and 2.5 overall GPA. 3 s.h.

3712. *Advanced Cost.* In-depth study of standard and differential costing. Compilation and preparation of budget data for managerial and administrative purpose. Prereq.: C or better in ACCT 3711. 2.5 overall GPA. 3 s.h.

3721. *State and Local Taxes.* Theory applicable to state and local taxation. Primary emphasis on taxation principles in current use by state and local government units located throughout the United States. Case law is studied, some representative tax returns prepared. Prereq.: C or better in ACCT 2603. 2.5 overall GPA. 3 s.h.

3730. *Oil and Gas Accounting.* Accounting and taxation principles and procedures for the petroleum industry. Topics include exploration, leasing, drilling and production problems. Prereq.: C or better in ACCT 2603. 2.5 overall GPA. 3 s.h.

3750. *Fraud Examination.* Study of occupational fraud and abuse. Topics include asset misappropriation schemes, corruption, and fraudulent statements, including fraudulent financial statements. Coverage of these topics includes implications for the fraud examiner and corporate management. Prereq.: C or better in ACCT 2602. 2.5 overall GPA. 3 s.h.

4801. *Advanced Accounting.* Financial accounting and reporting related to complex and highly sophisticated business transactions. Topics include the equity method, business combinations, variable interest entities, segment and interim reporting, worldwide diversity of accounting standards, foreign currency transactions and translation, SEC reporting, legal reorganizations and liquidations, partnership accounting, and estates and trusts. Prereq.: C or better in ACCT 3702 and FIN 3720. 2.5 overall GPA. 4 s.h.

4808. *Auditing and Fraud Investigation.* The theory and practice of financial auditing with emphasis on fraud investigation. Topics include professional standards, audit reports, evidence, occupational fraud, data interrogation, and computer-assisted audit techniques. Students analyze actual business fraud cases. Prereq.: C or better in ACCT 3702, 3709, and 3711. C or better in FIN 3720. 2.5 overall GPA. 4 s.h.

4809. *Security and Privacy in Electronic Commerce.* This course focuses on the technology and communication infrastructure supporting electronic commerce and its impact on auditing. Encryption, public key

infrastructure, digital signatures, payment schemes, and web commerce are discussed. Prereq.: ACCT 4808. 2.5 overall GPA. 3 s.h.

4813. *Federal Taxation 1.* Introduction to Federal taxation theory and concepts relating to individuals and business entities, including tax research and tax form preparation. Prereq.: C or better in ACCT 3701, or FIN 3720. 2.5 overall GPA. 4 s.h.

4815. *Estate Planning.* A study of estate and gift tax law including tax return preparation. Emphasis on the importance of estate planning and the devices available for use in such planning, and effective uses of lifetime gifts, trusts, life insurance, pension plans, profit sharing, and other fringe benefit plans. The effects of state inheritance tax and property laws upon estate planning will be included. Prereq.: C or better in ACCT 4813. 2.5 overall GPA. 3 s.h.

4817. *Income Tax Preparation 1.* Preparation of actual federal, state and local income tax returns of people from the community. Completion of an IRS training program in federal income taxation of individuals, including international students and scholars and military personnel. Training using professional income tax preparation software is also provided. Prereq.: ACCT 3701 or permission of instructor. 2.5 overall GPA. 3 s.h.

4818. *Income Tax Preparation 2.* A continuation of ACCT 4817, Income Tax Preparation 1. Completion of an updated/current IRS training program in federal income taxation of individuals, including international student and scholar and military income tax preparation. Students also receive updated training in current income tax preparation software. Students prepare federal, state and local income tax returns for individuals using current law. Because of previous experience in ACCT 4817, students prepare more-complex tax returns and provide guidance and leadership to first-year students. May be repeated once. Prereq.: ACCT 4817. 2.5 overall GPA. 2 s.h.

4835. *Research in Accounting and Taxation.* This course provides useful guidance and information in conducting practical professional tax and accounting research. A broad range of case analyses allows the instructor to focus on appropriate current topics in the accounting profession. Three hours lecture and hands-on research per week. Prereq.: C or better in ACCT 3702 and ACCT 4813. 2.5 overall GPA. 3 s.h.

4840. *Accounting Internship.* The student is given the opportunity to relate theory to practice in a career related on-site field experience with a participating organization. Prerequisites: Accounting major, junior standing, 2.5 overall GPA, and approval of director. 3 s.h.

4851. *Professional Practice in Accounting.* Provides students with cooperative education experiences in accounting. Students may be assigned to public, corporate, or government entities on a semester to semester basis. May be repeated. Prereq.: Accounting major, junior standing. 2.5 overall GPA. 1 s.h.

4855. *Careers and Professionalism in Acct.* Professionals from public, private, nonprofit and governmental accounting areas are invited to speak during class. The focus is how to plan for, and what to expect when starting an accounting career, and how to conduct oneself as a professional. Ethical considerations are emphasized. The class offers a unique opportunity to interact and network with accounting professionals. Prereq.: Junior standing or permission of instructor, and 2.5 overall GPA. 1 s.h.

4860. *Special Topics in Accounting.* Subject matter, credit hours, and prerequisites will be announced in advance of each topic. Prereq.: Permission of department chairperson. 2.5 overall GPA. 1-4 s.h.

5814. *Federal Taxation 2.* Study of current Federal income tax law applying to proprietorships, corporations, S corporations, and partnerships. Includes fundamentals of researching tax law and preparing business tax returns. Prereq.: C or better in ACCT 4813. 2.5 overall GPA. 3 s.h.

5820. *Government and Funds Accounting.* Generally accepted accounting principles for not-for-profit and governmental organizations as established by the appropriately recognized, standard-setting bodies. Includes state and local governments, school districts, colleges and universities, hospitals, voluntary health and welfare organizations, and others. Prereq.: C or better in ACCT 3701 and 2.5 overall GPA. 3 s.h.

## ADVERTISING — ADV Department of Marketing

### Upper-Division Courses

3711. *Marketing Communications.* Examines the integration of promotional activities within a marketing context. Presents the marketing communication role of the four elements in the promotional mix then takes a holistic perspective that focuses on the inter-relationships among advertising, public relations, sales promotion, and personal selling. Prereq.: BUS 1500 and sophomore standing. 3 s.h.

3712. *Creative Strategies in IMC.* The creative process is related to the different message and graphic needs required in advertising, public relations, and sales promotion. Examines the synergistic possibilities of the separate efforts focused on the same creative strategy within an integrated marketing communications (IMC) campaign. Prereq.: ADV 3711 and GPA of 2.5. 3 s.h.

3717. *Media Planning and Buying.* Planning, executing, and controlling of media buys. Techniques of allocation of budget among print and electronic media explored on national, regional, and local levels familiarizing the student with syndicated media resources. Prereq.: ADV 3711 and GPA of 2.5. 3 s.h.

4811. *Direct Marketing.* In-depth investigation of direct marketing including mail order and direct response advertising. Measurability, accountability,

lists, and the integration of direct marketing into the total marketing efforts. Prereq.: ADV 3711 and GPA of 2.5. 3 s.h.

4855. *IMC Campaigns.* Capstone course in the integrated marketing communications curriculum. By employing the fundamental theories and practices garnered from previous integrated marketing communications courses for a specific IMC problem, the focus is the development of an integrated marketing communications campaign. Prereq.: ADV 3711, 3712, 3717 and GPA of 2.5. 3 s.h.

## AEROSPACE STUDIES— AERO College of Health and Human Services

1501. *Foundation of U.S. Air Force I.* Survey course providing an introduction to the U.S. Air Force and ROTC. Officership and military customs and courtesies are discussed. Foundations of Air Force communications are covered. Prereq.: None. 1 s.h.

1502. *Foundation of U.S. Air Force II.* Survey course looking at the origin and organization of the Air Force. Selected topics contributing to an understanding of the Air Force. Prereq.: None. 1 s.h.

1503. *Leadership Laboratory.* An instruction program that prepares an individual to undertake the broad range of technical tasks associated with military leadership and defense management. Grading is Credit/No Credit. 1 s.h.

1504. *Leadership Laboratory.* An instruction program that prepares an individual to undertake the broad range of technical tasks associated with military leadership and defense management. Grading is Credit/No Credit. 1 s.h.

2601. *Evolution of U.S. Air Force and Space Power I.* Survey course to examine air and space power from a historical perspective. Course covers early flight World War I to the Korean War and ICBM's. Prereq.: None. 1 s.h.

2602. *Evolution of U.S. Air Force Air and Space Power II.* Survey course to examine air and space power from a historical perspective. Course covers the period from the Vietnam War to the Gulf War plus a look at the Air Force of the future. Prereq.: None. 1 s.h.

2603. *Leadership Laboratory.* An instruction program that prepares an individual to undertake the broad range of technical tasks associated with military leadership and defense management. Grading is Credit/No Credit. 1 s.h.

2604. *Leadership Laboratory.* An instruction program that prepares an individual to undertake the broad range of technical tasks associated with military leadership and defense management. Grading is Credit/No Credit. 1 s.h.

3701. *Leadership Studies I*. Study of leadership, professional knowledge, and communication skills required for an Air Force officer. The role of a leader as supervisor and counselor is discussed along with military ethics. Prereq.: Permission. 3 s.h.

3702. *Leadership Studies II*. Study of quality management fundamentals and communication skills for the Air Force officer. The Air Force personnel evaluation system is discussed along with military ethics. Prereq.: Permission. 3 s.h.

3703. *Leadership Laboratory*. An instruction program that prepares an individual to undertake the broad range of technical tasks associated with military leadership and defense management. Grading is Credit/No Credit. 1 s.h.

3704. *Leadership Laboratory*. An instruction program that prepares an individual to undertake the broad range of technical tasks associated with military leadership and defense management. Grading is Credit/No Credit. 1 s.h.

4801. *Defense Studies/Preparation for Active Duty 1*. A look at political, economic, and social constraints upon national security and defense structure. The role of the military including joint operations is discussed. Prereq.: Permission. 3 s.h.

4802. *Defense Studies/Preparation for Active Duty 2*. The role of the military and regional defense issues are studied. Current Air Force issues and other topics relevant to preparing an Air Force officer for active duty are covered. Prereq.: Permission. 3 s.h.

4803. *Leadership Laboratory*. An instruction program that prepares an individual to undertake the broad range of technical tasks associated with military leadership and defense management. Grading is Credit/No Credit. 1 s.h.

4804. *Leadership Laboratory*. An instruction program that prepares an individual to undertake the broad range of technical tasks associated with military leadership and defense management. Grading is Credit/No Credit. 1 s.h.

## AFRICANA STUDIES—AFST Interdisciplinary

2600. *Introduction to Africana Studies 1*. The social-historical and intellectual heritage of black people in Africa and the Americas. 3 s.h.

2601. *Introduction to Africana Studies 2*. The cultural and intellectual heritage of black people in Africa and the Americas as reflected in literature, philosophy, and art. 3 s.h.

3700. *Africana Studies Colloquium 1*. A social studies seminar focusing on the historic, economic, political, or social aspects of the experiences of people of African descent. May be repeated once with different content. Prereq.: AFST 2600. 3 s.h.

3701. *Africana Studies Colloquium 2*. A humanities seminar focusing on the art, music, literature and/or philosophy of people of African descent. May be repeated once with different content. Prereq.: AFST 2601. 3 s.h.

## ALLIED HEALTH—AHLT Department of Health Professions

1502. *Applied Pathophysiology*. Introduction to clinical anatomy, physiology, and pathophysiology with application to acute and chronic illness. 4 s.h.

3705. *Pharmacotherapeutics*. Advanced concepts and integration of various drug interactions as applied to modern drug therapy. Analysis of drug regimens related to a broad spectrum of pathologic conditions. Prereq.: BIOL 1545 or 1551 and 1552, MATC 2605, or permission of instructor. 3 s.h.

3706. *Practice Management for Dental Hygiene*. Management of dental hygiene care including appointment control, developing and maintaining recall systems, and insurance management. Dental marketing problem solving and the business relationship between dental patients and dental hygiene professionals. Prereq.: DHYG 2628. 3 s.h.

3708. *Preventive Public Health Care*. Application of current health care philosophies in disease prevention. In-depth case study of a specific public health problem and its prevention. Prereq.: BIOL 1545 or 1551 and 1552, or permission of instructor. 3 s.h.

3709. *Elements of Urban Environmental Health Practices*. Focus on development and implementation issues of environmental and public health programs necessary for urban and rural communities to meet acceptable public health standards at the local health department level with emphasis on resources and staffing. AHLT 3708, or permission of instructor. Also listed as PHLT 3709. 3 s.h.

3710. *Gerodontology*. In-depth study of geriatrics as it relates to dental hygiene care and specific concerns of the elderly. An extramural experience with a geriatric patient. Prereq.: DHYG 1513. 3 s.h.

3720. *EMS Management*. A review of EMS system design, staffing, chain of command, medical education, policies and procedures, record keeping, inter-agency relationships, community resources and involvement, and legal aspects relevant to private and public emergency medical services. Prereq.: EMS 2614. 3 s.h.

3721. *Pediatric Emergency Care*. A study of the pathophysiology, symptomatology, advanced diagnostic and therapeutic techniques of medical and traumatic emergencies unique to the pediatric patient. Prereq.: EMTC 2640. 3 s.h.

3740. *Pathology of Infectious Diseases*. Pathology, prevention, transmission, and treatment of infectious disease; emphasis on nosocomial, opportunistic, and emerging bacterial, fungal, parasitic, and viral organisms. Prereq.: BIOL 1545 or 1551 and 1552, or permission of instructor. 3 s.h.

3755. *Principles of Occupational Health and Safety.* Contemporary concepts of occupational health and safety as they apply to health-related environments. Includes development of elements needed to implement comprehensive health and safety plans. Prereq.: AHLT 3708. 3 s.h.

4801. *Special Topics.* The directed study and research of a special problem or issue related to the health field. The topic of interest allows the student to participate in the investigation of aspects of administration, education, business, or research as these pertain to the particular health specialty. May be repeated for a total of 6 s.h. Prereq.: AHLT 5840 or permission of instructor. 1-3 s.h.

4804. *Stress and the Health Care Professional.* Personal reactions of those involved in health education or the delivery of health care to patients, families, and their health environment. Indicators of stress and coping strategies, organizational systems, communication theory, conflict resolution, problem solving, and burnout. Prereq.: AHLT 5840 or permission of instructor. 3 s.h.

4805. *Health Education for Allied Health.* University as well as hospital-based programs reviewed in regard to accreditation, clinical vs didactic instruction, use of simulations, and evaluation techniques. Public health education and the role of the Allied Health professional. A major learning unit and/or research project required. Prereq.: AHLT 5840 or PHLT 3701 or permission of instructor. 3 s.h.

4806. *Research Methods.* Measurement and interpretation of health data and their application in the research process. Research design considerations, data collection methods, and data analysis of health care research projects. Prereq.: AHLT 5840, or permission of instructor. 3 s.h.

4808. *Environmental Health Concerns.* Industrial hygiene, hazardous and infectious waste, air and quality, and sanitation policies in health care facilities. Pertinent federal, state, and local legislation. Prereq.: AHLT 3708 or permission of instructor. 3 s.h.

4810. *Management Skills for Health Professionals.* A study of the conceptual framework of supervision in Health Care Organizations with emphasis on managerial skills, formulation of policies, principles of budgeting, performance appraisals, and community relations. Prereq.: AHLT 5840, 4805, or permission of instructor. 3 s.h.

4812. *Advanced Cardiac Life Support.* ECG interpretation, cardiovascular drug pharmacology, airway management and resuscitation techniques used in the management of cardiac emergencies. The course exceeds the objectives of the American Heart Association's Advanced Cardiac Life Support program for initial certification or recertification. Two hours lecture, three hours laboratory. Prereq.: AHLT 3705 or permission of instructor. 3 s.h.

4820. *Directed Research.* Individual study of an issue related to the health care field. Students must present research at a faculty and student forum. Prereq.: Senior standing and AHLT 4806 or a research methods course approved by the course instructor. 2 s.h.

4831. *Industrial Hygiene.* Basic concepts of industrial hygiene including anticipation, recognition, and evaluation of environmental and safety hazards as they pertain to the workplace. Prereq.: AHLT 3708, 4808, or permission of instructor. 3 s.h.

4831L. *Industrial Hygiene Laboratory.* Application of basic concepts of industrial hygiene including anticipation, recognition, and evaluation of environmental and safety hazards as they pertain to the workplace. 1 s.h.

4835. *Health Care Diversity.* Strategies of communication that enable the student to understand socioeconomic, political, ethnic, and religious diversity in health care. Prereq.: AHLT 5840 or permission of instructor. 1 s.h.

5807. *Epidemiology.* A study of the interrelationships of the host, agent, and environment in determining the causation, frequency, and distribution of disease. Prereq.: AHLT 3708, 5840, 4806, or permission of instructor. 3 s.h.

5816. *Environmental Regulations.* Structure and function of federal, state, and local agencies responsible for implementing environmental legislation. Emphasis on the duties and authority of different health and environmental agencies and specific legislation dealing with environmental impacts. Prereq.: AHLT 3708, 5807 or permission of instructor. 3 s.h.

5840. *Comparative Health Systems.* Problems and issues facing global health care systems including access to care, financing and rationing of services. A major project is included. Prereq.: AHLT 3708 or permission of instructor. 4 s.h.

## AMERICAN STUDIES— AMER Interdisciplinary

2601. *American Identity.* Study of American Identity through historical, literary, artistic, material, media and other sources. Emphasis on American pluralism and cultural debates over the meaning of American identity. 3 s.h.

2605. *Turning Points in U.S. History 1.* Key episodes in the social, economic, political, and cultural developments of the United States to 1877, exploring how diverse peoples shaped the growing nation. Cross-listed with HIST 2605. 3 s.h.

2606. *Turning Points in U.S. History 2.* Key episodes in the social, economic, political, and cultural developments of the United States since 1877, exploring how diverse peoples shaped the growing nation. Cross-listed with HIST 2606. 3 s.h.

2610. *Work and Class in American Culture*. Interdisciplinary thematic exploration of work and class in American culture with emphasis on the Mahoning Valley. Includes the impact of social movements, technological developments, and new ideas and knowledge. Examines the relationship of class to such social categories as race, gender, sexuality, ethnicity, and place. Prereq.: Placement in ENGL 1550. 3 s.h.

3700. *Minority Groups*. Survey of the origins and characteristics of ethnic and racial minority groups, with emphasis on the significance of membership in such a group for in-group, out-group, and community solidarity. Cross-listed with SOC 3700. Prereq.: SOC 1500. 3 s.h.

3701. *Approaches to American Studies*. Survey of central issues and themes in American cultural studies, with emphasis on interdisciplinary approaches and cultural diversity. May focus on a theme chosen by the instructor, such as nature and culture, work, or class in America. May be repeated once with a different topic. 3 s.h.

3705. *Cultural Anthropology*. A cross-cultural comparison of the cultural norms that regulate society, emphasizing the functional prerequisites for the existence of society and individual demands on society. Cross-listed with ANTH 3705. Prereq.: ANTH 2602. 3 s.h.

3720. *Applied Sociology*. Uses of sociology in practical affairs, providing theory and data for public policy, institutional reform, social action programs, and social inventions. Contributions to architectural design, industrial engineering, community planning, and innovative legislation. Cross-listed with SOC 3720. Prereq.: SOC 1500. 3 s.h.

3770. *American Literature in Historical Perspective*. Poetry, prose, drama, and other forms of literary expression examined within the context of a specific aspect of American social, intellectual, and cultural history. May be repeated once with different topic. Cross-listed with ENGL 3770. Prereq.: ENGL 3701 or 3702. 3 s.h.

4801. *American Studies Research Seminar*. Capstone seminar. Focuses on development and implementation of research proposal and current American studies research related to topics chosen by students for their senior projects. Prereq.: AMER 3701 and approval of Program Coordinator. 3 s.h.

4810. *Independent Project in American Culture*. Work with faculty advisor on senior projects. A total of 3 s.h. is required for completion of the major. May be repeated with permission of coordinator. Prereq.: AMER 4801 and approval of Program Coordinator. 1-3 s.h.

4815. *American Material Culture*. A discussion and analysis of the use and importance of material artifacts as texts for the recovery of the American past. Emphasis on sources not traditionally utilized by historians. Examples include the contextual analysis

of children's books, foodways, and sacred spaces. Prereq.: HIST 2605 and 2606, or AMER 2601 and AMER 3701. Cross-listed with HIST 4815. 3 s.h.

5845. *Work in America*. Examines the changing characteristics, expectations, and representations of work in America. Includes the exploration of demographic, historic, economic, technological, sociological, religious, ethical, popular, and poetic perspectives on work. Prereq.: junior standing. Cross-listed with MGT 5845. 3 s.h.

5850. *Class and Culture*. Theories of social class structure and formation, relationships between class and culture, representations of class and work, intersections of class with other aspects of cultural identity (race, gender, sexuality, place), and theories and methods of working-class studies. Prereq.: graduate standing or AMER 3701. 3 s.h.

## ANTHROPOLOGY—ANTH

### Department of Sociology, Anthropology, and Gerontology

#### Lower-Division Course

1500. *Introduction to Anthropology*. An exploration of what it means to be human from a biological and cultural perspective using archaeology, bioanthropology, and ethnography to trace over four million years of human development. 3 s.h.

1503. *The Rise and Fall of Civilizations*. Comparative survey of the archaeological evidence on the origins, development, and collapse of the great early civilizations of the world. The transformation of societies from settled villages to urban states in Mesopotamia, Egypt, China, Mexico, and Peru. Analysis of the archaeological discoveries, alternative interpretations, and general theories of cultural evolution. 3 s.h.

2600. *Human Osteology*. An examination of the anatomy of the skeleton in a defleshed state to gain an understanding of the characteristics and personal biology of individuals and to explore the range of human variation within and between populations. 3 s.h.

#### Upper-Division Courses

3701. *Social Statistics*. Measurement and interpretation of social data by the use of descriptive techniques. Examines methods of probability theory as a basis for statistical inference, hypothesis testing, correlation, chi-square, and variance analysis. Prereq.: SOC 1500 or ANTH 1500, successful completion of ENGL 1551 and MATH 1501 or a level 3 or higher on the math placement exam. Listed also as SOC 3701. 4 s.h.

3702. *Archaeology*. An introduction to the methods and subject matter of archaeology in its reconstruction of Paleolithic and prehistoric cultures as inferred from artifacts. Prereq.: ANTH 1500 or ANTH 1503. 3 s.h.

3703. *Biological Anthropology*. The physical origins and development of the human species as a member of the primate order and the biological bases of human differences disclosed by human paleontology and archaeology. Prereq.: ANTH 1500. 3 s.h.

3704. *Primates*. Primate evolution throughout the Cenozoic Era, from primate origins to the advent of hominids. Examines research into the natural behavior of a wide range of primates, focusing on the social organization of terrestrial monkeys and apes. Prereq.: ANTH 3703. 3 s.h.

3705. *Cultural Anthropology*. A cross-cultural comparison of the cultural norms that regulate society, emphasizing the functional prerequisites for the existence of society and individual demands on society. Cross-listed with AMER 3705. Prereq.: ANTH 1500. 3 s.h.

3760. *Cultures of the Old World*. An examination of the ethnography, cultural contributions, and achievements of Old World peoples, which may include the cultures of Europe, Africa, the Middle East, Asia or Australia and Oceania. May be taken up to three times for credit if the topic is different. Prereq.: ANTH 3705 or 6 s.h. in AFST, including AFST 2601. 3 s.h.

3761. *Cultures of the New World*. An examination of various topics in New World cultures. Topics vary by semester and may include native South Americans, native North Americans, Native Americans' civil rights, the reservation system, and others. May be taken up to three times for credit if the topic is different. Prereq.: ANTH 1500. 3 s.h.

3762. *The Power and Meaning of Food*. Explores the relationship between culture and food in its material and symbolic forms. Examines the patterns of production, distribution, exchange, and consumption of food across time and within particular cultural and global contexts. Topics include the place of food in ritual, gift-giving, maintaining identities, and culture change. Prereq.: ANTH 3705. 3 s.h.

3775. *Native North Americans*. Detailed discussion of the culture and achievements of the tribal peoples native to North America. Prereq.: ANTH 1500. 3 s.h.

3778. *Archaeological Techniques*. Practice in archaeological field methods, including surveying, mapping, excavation, and artifact analysis. Amount of field work and lab analysis can vary from four weeks to one semester. Credit hours may vary accordingly from 1 to 9 hours with approval of the instructor and department chair. Prereq.: ANTH 3702 or permission of the chair. 1-9 s.h.

3779. *Fieldwork in Historical and Industrial Sites Archaeology*. Excavation of New World sites after 1492, culminating in the physical examination of the remains of historical, industrial, and post-industrial sites. Techniques for literature search and fieldwork. May be repeated once with different site or theoretical focus. Prereq.: ANTH 3702 or permission of chair. 3 s.h.

3780. *Forensic Anthropology 1*. Forensics from the perspective of anthropology, especially through hands-on study of human remains. Detailed study of methods of determining the sex, age, ancestry, and stature of an individual, field methods for forensic anthropology and trauma analysis. Prereq.: ANTH 2600 or BIOL 3705. 3 s.h.

3790. *Aging in Cross-Cultural Perspective*. Examines the phenomenon of aging from cross-cultural perspectives with an emphasis on cultural evolution and its impact upon the status, roles and cultural values associated with aging and the aged. Listed also as SOC 3790 and GERO 3790. Prereq.: ANTH 1500 or SOC 1500, or GERO 1501. 3 s.h.

4800. *Undergraduate Research*. Research participation under the direction and guidance of a full-time faculty member. Designed to acquaint the advanced student with special research problems associated with various aspects of the discipline. May be repeated to a maximum of 4 s.h. Prereq.: Permission of chairperson and junior standing. 1-2 s.h.

4801. *Anthropological Thought*. Analysis of the theories and methodology of the major contributors to contemporary anthropological thought, such as the evolutionist, diffusionist, functional, and multilineal schools. Prereq.: ANTH 3705. 3 s.h.

4815. *Anthropology of Religion*. A survey of anthropological approaches to the study of religion, illustrated by a critical consideration of past and present contributions to the field. Study of selected religious systems, areally and topically. Prereq.: ANTH 3705 or 6 s.h. in REL including REL 2601. 3 s.h.

4824. *Old World Prehistory: Topics*. Examination of the prehistoric development of Old World (Africa, Europe, Far East, Middle East, and Oceanic cultures). May be taken twice for credit if topic is different. Prereq.: ANTH 3702. 3 s.h.

4825. *New World Archaeology: Topics*. Examination of the archaeological evidence of the development of New World cultures from early prehistoric to late post-industrial times. Topics vary by semester and may include historical archaeology, North American prehistory, Ohio prehistory, Maya, Aztec and Inca, South American prehistory, and others. May be taken up to three times for credit if the topic is different. Some topics may include field work. Prereq.: ANTH 3702. 3 s.h.

4850. *Research Methods*. An introduction to methods employed in social research. Attention is given to (1) the logic of sociological inquiry and the relationship between theory and methods; (2) the various qualitative and quantitative methods; (3) research design, data collection, organization, analysis, interpretation and application; (4) the social, cultural, political, and ethical context of social research; and (5) computer skills employed in data analysis. Prereq.: SOC 3701 or ANTH 3701 or GERO 3701. Listed also as SOC 4850 or GERO 4850. 3 s.h.

4851. *Social Research*. A seminar in social research wherein participants apply research methods in the theoretical and/or empirical investigation of a social issue and/or problem. Participants are involved in all phases of the research process. Prereq.: ANTH 4850 or SOC 4850. Listed also as SOC 4851. 3 s.h.

4877. *Method and Theory in Archaeology*. Past and contemporary theory and methodology in archaeology, with emphasis on recent innovations in the U.S. and Europe. Prereq.: ANTH 3702. 3 s.h.

4881. *Forensic Anthropology 2*. A continuation of Forensic Anthropology I. An in-depth examination of the human skeletal system and its differentiation from other commonly found animal remains and the ways in which skeletal remains help determine the cause of death, trauma to skeleton, antemortem skeletal conditions, postmortem interval, postmortem changes to bone, additional aspects of individualization, etc. Prereq. ANTH 4880 with "C" or better. 3705. 3 s.h.

4882. *Paleoanthropology*. The origin and evolution of the human species in biological terms from studies of human evolution and emergence of certain critical biocultural essentials. Emphasis on fundamentals of paleoanthropological research, evidence of human evolution, important fossil finds and sites, and phylogenetic relationships. Prereq.: ANTH 3703 with "C" or better. 3 s.h.

4883. *Case Studies in Forensic Anthropology*. Introduction to advanced methods of forensic anthropology. The course consists of discussions and analysis of articles and case studies pertaining to forensic anthropology and the role of the forensic anthropologist. Prereq.: ANTH 4881. 3 s.h.

4890. *Advanced Topics in Archaeology*. Study of select subjects dealing with various aspects of advanced archaeological issues, methodologies, techniques, and applications. Topics vary by semester and include archaeological laboratory techniques and cultural resource management. May be taken twice with different topics. Prereq.: ANTH 3702. 3 s.h.

4891. *Advanced Topics in Biological Anthropology*. Study of select subjects dealing with various aspects of advanced archaeological issues, methodologies, techniques, and applications. Topics vary by semester and include primate ethology and human paleontology. Prereq.: ANTH 3703 and 9 s.h. in ANTH. 3 s.h.

## ART-ART Department of Art

### Lower-Division Courses

1501. *Fundamentals of 2D Design*. The fundamental ideas and principles of 2-dimensional form. Emphasis on basic design concepts, pictorial composition, color theory, vocabulary, media and processes. Slide lectures, directed readings and studio problems. 3 s.h.

1502. *Fundamentals of 3D Design*. Investigation of the interactions between line, plane, mass, and space. Emphasis on basic 3D concepts, color theory, vocabulary, media and techniques. Slide lectures, directed readings, writings and studio problems. Prereq.: ART 1501. 3 s.h.

1503. *Foundation Portfolio Review*. A mandatory review of work completed in the Freshman Foundation Studio courses for students seeking the BFA in Studio Art degree. Students must pass the review to continue in the program and prior to selecting a concentration. Prereq.: Art 1501, 1521 and enrollment in Art 1522 and 1502. 1 s.h.

1505. *Creative Art Appreciation*. This course will introduce to the non-art major creative techniques including drawing, painting, monoprinting, xerography, paper casting, and the artist books. Students will acquire the vocabulary necessary to talk, write and communicate intelligently about their own creative art as well as the creative art of others and gain technical visual skills as well as aesthetic training and appreciation of art through exposure to the diversity of the world's creative development of the pictorial narrative record and books. 3 s.h.

1521. *Foundation Drawing*. An introduction to basic drawing concepts, materials and methods. Emphasis on observational drawing. Concepts including the effective use of line, mass, volume, composition, space, and the formal principles of design. 3 s.h.

1522. *Intermediate Drawing*. A continuation of ART 1521 with greater emphasis on process, technique, spatial organization, and the development of pictorial content. Various topics are explored including figure drawing and the use of color. Prereq.: ART 1501 and 1521. 3 s.h.

1540. *Masterpieces of World Art*. An introduction to the ways that art communicates and how art interacts with our environment, our society, and our lives. Rather than a chronological study of the development of art, the course emphasizes the in-depth study of a number of works and issues, drawn from art from throughout the world, both past and present. Intended for non-art majors. 3 s.h.

1541. *Survey of Art History 1*. A study of world art, focusing on the western European tradition. Covers the period from prehistoric times through 1500. Introduces key concepts, methods, and vocabulary for the study of art. 3 s.h.

1542. *Survey of Art History 2*. A study of world art, focusing on the western European tradition. Covers the period from 1500 to the present. Introduces key concepts, methods, and vocabulary for the study of art. 3 s.h.

2611. *Introduction to Sculpture*. An introductory course for those who have little or no experience with sculpture. Students explore basic sculptural concepts and theories using a variety of materials and methods. Directed readings, writings, technical workshops, and participation in course work exhibitions required. Prereq.: ART 1503 and 1522. 3 s.h.

2615. *Introduction to Metals*. Basic metals fabrication in the creation of jewelry and small metal objects. Design as applied to hand processes. Prereq.: ART 1502, 1522. 3 s.h.

2621. *Life Drawing*. Students develop sound composition based upon accuracy of observation of the human figure. Understanding of proportion and the detailed study of skeletal and muscular systems will be addressed. Prereq.: ART 1502, 1522. 3 s.h.

2625. *Introduction to Printmaking: Intaglio and Relief*. An introduction to basic intaglio and relief printmaking processes, including etching, collagraph, lino-cut, woodcut, and multiple-block printing. Emphasis on technical, formal, and conceptual issues related to each technique. Prereq.: ART 1503. 3 s.h.

2626. *Introduction to Printmaking: Lithography and Screen-printing*. An introduction to basic lithography and screen-printing processes, including stone and plate lithography and photo-mechanical screen-printing. Emphasis on technical, formal, and conceptual issues related to each technique. Prereq.: ART 1503. 3 s.h.

2631. *Introduction to Ceramics*. Introduction to handbuilding methods, low-fire glaze application, pit firing, and firing procedures. Prereq.: ART 1503 and passing the foundation portfolio review, or permission of instructor. 3 s.h.

2650. *Introduction to Painting*. Exploration of new and traditional painting techniques and media. The student is encouraged to see significantly rather than imitatively in the process of developing form and content. Prereq.: ART 1502, 1522, and passing the foundation portfolio review. 3 s.h.

2653. *Watercolor Painting*. Opaque, transparent, and inventive procedures with watercolor. Emphasis is on expressive use of the medium and development of personal style. Prereq.: ART 1502, 1522, and passing the foundation portfolio review. 3 s.h.

2661. *Introduction to Graphic Design*. The basic concepts of graphic design theory including layout and organization of space, the elements of visual communication and the process of presentation from thumbnails through comprehensives. Prereq.: ART 1503 and passing the foundation portfolio review. 3 s.h.

2662. *Introduction to Typography*. Introduction to the basic technical understanding of type, including classification, anatomy, legibility, readability, and specification as well as an understanding of typography as an art form with an emphasis on typographic space in the page layout. Prereq.: ART 2661. 3 s.h.

2669. *Introduction to Interactive Design*. An Investigation of the aesthetic and practical processes, philosophies, and history behind the field of interactive design for on screen applications. Students employ various hardware/software tools available to designers for visual interactive design. Prereq.: ART 2691 and 2661 or permission of instructor. 3 s.h.

2670. *Photography for Non-majors*. An introduction to fine art photography emphasizing visual literacy and technical skills for non-art majors. Course content focuses on digital camera operation, composition and design, lighting, ethics, basic computer editing, and outsourced printing. Student must provide camera. 3 s.h.

2671. *Introduction to B & W Photography*. Photographic fundamentals of the camera, B & W film, developing, enlarging, printing. Basic technical and visual skills - photography as expressive art form. Students provide camera and supplies. Prereq.: ART 1503 and passing the foundation portfolio review, or permission of instructor. 3 s.h.

2672. *Introduction to Color Photography*. An introduction to the study of color photography emphasizing creative possibilities and critical awareness of the medium as an art form. Course content focuses on color printing utilizing traditional darkroom procedures as well as digital printing methods. Prereq.: ART 2671. 3 s.h.

2673. *Introduction to Digital Photography*. An introduction to digital still photography utilizing the computer as a fine art tool concentrating on photographic image capture, retouching, manipulation, color management and fine art image output using industry-standard computer hardware and software. Prereq.: ART 2671. 3 s.h.

2691. *Introduction to Digital Imaging*. An introduction to the theory of computer-based imaging and explores a variety of "hands-on" techniques pertaining to image creation, manipulation, and construction. Prereq.: ART 1503 and passing the foundation portfolio review. 3 s.h.

### Upper-Division Courses

3703. *Junior Portfolio Review*. A mandatory review of work within each studio concentration. Students must pass to continue in the program. Prereq.: Junior standing. 1 s.h.

3712. *Intermediate Sculpture*. Examination of sculptural concepts through individual projects. Emphasis is on contemporary sculptural issues, techniques, and media. Directed readings, technical workshops and critiques required. Prereq.: ART 2611. 3 s.h.

3713. *Advanced Sculpture Studio*. This course continues the examination of contemporary sculptural issues, techniques and media. Students explore alternative sculptural approaches. Individual student projects determined by faculty consultation and critiques. Directed readings, writings, group discussions. Prereq.: ART 3712 or permission of instructor. 3 s.h.

3715. *Intermediate Metals*. This course examines the casting process used in creating jewelry and small metal objects. Emphasis will be on sound craftsmanship and successfully meeting the design challenges of the metals medium. Slide lecture, demonstrations, assigned readings and studio problems. Prereq.: ART 2615. 3 s.h.



3721. *Expressive Drawing*. Course work intended to provide a wider and more unusual format in the drawing process within the context of drawing philosophy and concepts. Use of color dynamics and different experimental materials, as well as increased scale and gestural action. Prereq.: ART 1522. 3 s.h.

3725. *Intermediate Printmaking: Intaglio and Relief*. Further exploration of intaglio and relief printmaking processes, including digital and photo-mechanical processes, and color inking techniques. Emphasis on refining technique, experimentation, and further development of concept through the study of historical and contemporary printmaking artists. Prereq.: ART 2625. 3 s.h.

3726. *Intermediate Printmaking: Lithography and Screen-printing*. Further exploration of lithography and screen-printing processes, including digital and photo-mechanical processes, multiple-plate color printing, and alternative screen-printing methods. Emphasis on refining technique, experimentation, and further development of concept through the study of historical and contemporary printmaking artists. Prereq.: ART 2626. 3 s.h.

3727. *Topics in Advanced Printmaking*. Variable topics including silkscreen, intaglio, monoprinting, woodblock, bookmaking, and lithography. Students will develop their individual aesthetic through one of the processes. May be repeated up to four times with different topics. Prereq.: Art 2624 3 s.h.

3732. *Intermediate Ceramics*. Continuation of hand-building methods; introduction to wheel-thrown ceramics. Prereq.: ART 2631. 3 s.h.

3733. *Advanced Ceramics*. Emphasis on clay as a means of personal expression through handbuilt and wheel-thrown ceramics. Prereq.: ART 3732. 3 s.h.

3737. *Pre-K – 4, Visual Arts Education*. Cognitive and interdisciplinary arts activities for multiple age levels to meet the developmental needs of learners at diverse ages. Curriculum development, long- and short-range planning, motivational procedures, assessment processes, field-based activities. Prereq.: Junior standing (63 s.h.). 3 s.h.

3741. *Topics in Medieval Art*. Topics in European Art from the beginnings of Christianity through the Gothic period (500 and 1500 A.D.). Specific content varies by semester and may include a general survey of Medieval art, or in-depth topics such as Early Christian and Byzantine art or Medieval sculpture. May be taken twice for credit if content differs. Prereq.: ART 1541 or consent of instructor. 3 s.h.

3742. *Topics in Renaissance Art*. The art and architecture of Europe during the 15<sup>th</sup> and 16<sup>th</sup> centuries. Examines the work of Michelangelo, Leonardo da Vinci, Durer, and others. Topics vary by semester and include the Renaissance in Italy and the Renaissance in Northern Europe. May be repeated if the content is different. Prereq.: ART 1542 or consent of instructor. 3 s.h.

3743. *Baroque and Rococo Art*. Art and architecture of the 17<sup>th</sup> and early 18<sup>th</sup> centuries, an era of world exploration and scientific investigation. The works of such artists as Bernini, Velazquez, and Rembrandt are included. Prereq.: ART 1542 or consent of instructor. 3 s.h.

3744. *Seventeenth and Eighteenth Century American Art*. Covering all aspects and media of painting, sculpture, architecture, and the decorative arts of 17<sup>th</sup> and 18<sup>th</sup> centuries. Prereq.: ART 1542 or consent of instructor. 3 s.h.

3745. *Nineteenth Century European Art*. European painting and sculpture of Neo-classicism, Romanticism, and Realism. Include Impressionism and related movements. Art as part of social and political developments, and the foundations of modern formalism. Prereq.: ART 1542 or consent of instructor. 3 s.h.

3746. *Nineteenth Century American Art*. Covering all aspects and media of painting, sculpture, architecture and the decorative arts of the 19<sup>th</sup> century. Prereq.: ART 1542 or consent of instructor. 3 s.h.

3747. *African-American Art*. A survey of Black American art history from the 17<sup>th</sup> century through the 20<sup>th</sup> century. Prereq.: AFST 2601 or ART 1541 or 1542, or consent of instructor. 3 s.h.

3748. *Special Topics in Studio Art*. Study in one of the many areas of the visual process that focuses on specific content or technical methods. Prereq.: ART 1503 or consent of instructor. 3 s.h.

3751. *Intermediate Painting 1*. Coursework is extended to expand the format for the painting process. Students will be introduced to concepts that will provide avenues for diverse investigation and a foundation for personal expression. Prereq: ART 2650. 3 s.h.

3752. *Intermediate Painting 2*. An understanding of painting processes in relation to both historical and contemporary painting practices. Concentration on individual content, direction, style, and technique. Prereq: ART 3751. 3 s.h.

3761. *Intermediate Graphic Design*. The interaction of type and images in visual communication. Students will be introduced to typographic grid as an organizing principle as well as the relationship of form to content. Prereq.: ART 2662. 3 s.h.

3762. *Advanced Typography*. The development of sensitivity for specific typefaces and their effective use in communications. Emphasis will be directed toward the expressive use of type in interpretive, symbolic, and metaphoric solutions. Prereq.: ART 3761. 3 s.h.

3763. *Illustration*. Visual expression through various media, both electronic and traditional. Emphasis is on problem-solving through the exploration of technique, creative process and the development of personal styles. Prereq.: ART 1503. 3 s.h.

3764. *Typeface Design*. An investigation of typeface design. Students will engage in developing one or more unique typefaces, and the promotional materials used to market them. Students will engage in research related to the history of type design, and current type trends and cultural inspirations. Prereq.: ART 2661. 3 s.h.

3765. *Motion for Interactive Design*. An Investigation of motion for interface/web design. Students will engage current technologies to create dynamic motion for screen-based design. Prereq: ART 2669 and 2662 or permission of instructor. 3 s.h.

3768. *Pre-Press Production*. Introduction to the technical requirements of preparing a design for production including the importance of understanding pre-press software, printing technology and printing specifications. Prereq.: ART 2661. 3 s.h.

3769. *Intermediate Interactive Design*. A further investigation of interactivity/screen design. Students will encounter projects ranging from web design to interactive screen-based publications. Prereq: ART 2669 and ART 2662 or permission of instructor. 3 s.h.

3774. *Intermediate Digital*. An exploration of concepts and techniques in photography and related media using industry standard computer hardware and software. Course content focuses on using the computer as the primary means of production, emphasizing creative possibilities and critical awareness of the medium as a fine art. Prereq.: ART 2672 and 2673. 3 s.h.

3775. *Photography: Issues and Practice*. An examination of the critical theories of contemporary photographic practice. Trends within photography and related art forms are examined, from aesthetic, cultural, social and political points of view. Lectures are supplemented by directed readings, essays, and hands-on studio projects. Prereq.: ART 3703. 3 s.h.

3776. *Intermediate Darkroom*. An exploration of concepts and techniques in traditional analog photography and alternative processes. Selected topics include medium and large format films, advanced black and white printing, and non-silver processes. Course explores the creative possibilities of photography as a fine art form. Prereq.: ART 2672 and 2673. 3 s.h.

3777. *Alternative Intermediate Photography*. Selected technical and conceptual topics developing alternative image making strategies that may include mural printing, mixed media, transfer imagery, digital negatives, non-silver processes, image toning and liquid emulsions. Readings and discussions. Prereq.: ART 2671. 3 s.h.

3780. *African Art*. Study of African tribal art forms and their relationship to the historical period in which they were created. The impact and influence of African art on the development of contemporary Western art trends. Prereq.: AFST 2601 or ART 1541 or 1542, or consent of instructor. 3 s.h.

3781. *Native North American Art*. The art and architecture of the native peoples of North America. Includes archeological sites and living artistic traditions, stressing the relationship between art and society. Prereq: ART 1542, a course in cultural anthropology, or consent of instructor. 3 s.h.

3782. *Topics in Pre-Columbian Art*. The art and architecture of the ancient peoples of Mexico, Central and south America. Topics vary by semester, and include Mesoamerica (Mexico and northern Central America) and the Andes (Peru and Bolivia). May be taken twice if the content is different. Prereq.: ART 1541, a course in cultural anthropology, or consent of instructor. 3 s.h.

3783. *History and Theory of Graphic Design*. A chronological survey of graphic design from ancient to modern times. An emphasis on critical visual theory, specific designers who influenced the field as well as the relationship between visual communication and historical/cultural events. Prereq.: ART 1542. 3 s.h.

3785. *The History of Still Photography*. The history of still photography as a fine art from its beginnings to the present. Prereq.: ART 1542 or consent of instructor. 3 s.h.

3786. *History of Art and Technology*. The historical overview of the role of technology in the art-making process as well as the identification of current and future uses of technology in the art world. Prereq.: ART 1542. 3 s.h.

3787. *History and Appreciation of Art and Music*. Illustrated lectures on art and music to develop the cultural growth of the non-art and non-music student. Art and music forms, comparisons of compositional styles, and discussion of the developments, influences, and experiments of the important periods to date. No prior training in art or music required. (Not intended for art majors). Listed also as MUSIC 3787. Prereq.: Junior standing. 3 s.h.

3788. *Theory of Art*. The theories and philosophical implications of form in the visual arts, with emphasis on contemporary thought. Prereq.: ART 1541, 1542, and junior standing. 3 s.h.

3792. *Digital Audio Video Production*. This course provides an overview of methods, procedures, and results attainable with digital audio/video editing tools. Topics include digital recording, editing and compositing for 2D and 3D effects, lighting, transition, and rendering optimization. Prereq.: ART 2691. 3 s.h.

3794. *Introduction to Motion Studies*. An introductory study of time-based motion graphics including traditional and two-dimension (2D) computer animation. Principles and techniques of motion graphics from storyboarding to digital composition. Discussion of exemplary works, historical background, and technological trends in motion graphics. Prereq.: ART 2691. 3 s.h.

3795. *Advanced Digital Audio/Video Production*. A project-oriented advanced study in digital audio/video production. A forum for further study of methods, procedures, and results attainable with video editing software, advanced editing techniques, digital compositing, and tilting software. Prereq.: ART 3792 or permission of instructor. 3 s.h.

3796. *Ideation*. This course focuses on learning about and practicing creative strategies that improve communication of content and ideas. While emphasis will be on strategies related to digital culture, outcomes can be in digital or non-digital mediums. This course is studio based with additional emphasis on reading, writing and discussion of related topics. Prereq.: ART 2691. 3 s.h.

3797. *Web as Art*. An introduction to web authoring within art context emphasizing the development of a creative and critical artistic practice while covering practical technical skills in web authoring. Prereq.: ART 2691. 3 s.h.

4800. *Studio Problems*. Advanced, independent study in any two- or three-dimensional studio discipline. Prereq.: Senior standing and/or permission of instructor. May be repeated for a maximum of 9 s.h. 1-3 s.h.

4801. *Interdisciplinary Studies in the Visual Arts*. Interdisciplinary courses developing areas of self-interest using the most suitable range of visual strategies, media and methods of artistic production. Students select faculty from different visual disciplines to form team of two mentors. Directed readings, structured research initiatives and individual projects. Experience in selected disciplines required. Prereq.: ART 3703. 1-4 s.h.

4802. *Senior Project*. A studio concentration intended as preparation and production of work for the Senior Show graduation requirement. Prereq.: Senior status and permission of instructor. 3 s.h.

4803. *Senior Seminar*. Capstone course for studio majors integrating writing, oral, and critical reasoning skills specific to the student's discipline within the larger framework of the visual arts. Prereq.: Senior standing in Art. 3 s.h.

4805. *Urban Internship in Art*. This internship opportunity is open to any qualified studio art, art history or art education students. Interns work in galleries, art centers or an approved community art entity. Competitive and based on GPA, interview and portfolio. May be repeated in different locations up to three times. Prereq.: Senior standing. 3 s.h.

4814. *Senior Project: Spatial Arts*. Students prepare for their senior exhibition. Development, selection and installation of work determined through critiques by faculty. Career options for the professional artist explored. Portfolio and resume preparation, artist statements, gallery representation graduate study and other professional issues are considered. Prereq.: ART 4834. 3 s.h.

4824. *Advanced Printmaking*. Advanced study to include individual technical and conceptual research, refinement of technique utilizing a variety of printmaking processes, development of personal imagery through a portfolio of work. Emphasis on invention and concept development. Prereq.: ART 3725 or ART 3726. Repeatable to 9 credit hours. 3 s.h.

4829. *Senior Project: Printmaking*. The preparation, selection and development of a body of work in the printmaking discipline. Career options for the professional artist explored. Portfolio and resume preparation, artist's statement, gallery representation, graduate study and other professional issues are considered. Prereq.: ART 4834. 3 s.h.

4834. *Advanced Spatial Arts Studio*. Advanced students work on individual projects determined through discussions with and critiques by faculty. Emphasis is on personal aesthetic development, mainstream art issues, interdisciplinary approaches, and refinement of technical skills. Directed readings, writings, group discussions. Prereq.: ART 3713, 3733, or permission of instructor. 3 s.h.

4837. *Professional Practices in Middle School*. An exploration of middle school multiarts teaching strategies including observation, presentation, assessment and lesson planning. Direct observation included. Prereq.: ART 3737. 3 s.h.

4838. *Professional Practices in Secondary School*. An exploration of secondary school multiarts teaching strategies including observation, presentation, assessment and lesson planning. Direct observation included. Prereq.: ART 3737. 3 s.h.

4839. *Seminar in Art Education*. Discussions of problems of the prospective teacher which involve plant facilities, tools, and supplies. Planning individual exhibits on site and on campus. Assembly of comprehensive portfolio and portfolio review. Required of all art education students and must be taken concurrently with student teaching. Prereq.: ART 4838. 1 s.h.

4851. *Advanced Painting 1*. Concentration on individualized content, direction, style, and technique. Prereq.: ART 3751. 3 s.h.

4852. *Advanced Painting 2*. An extension of individualized content, direction, style, and technique. Prereq.: ART 4851. 3 s.h.

4853. *Advanced Painting 3*. A further extension of individualized content, direction, style, and technique. Prereq.: ART 4852. 3 s.h.

4854. *Senior Project: Painting*. Advanced self-directed study in painting leading to the creation of a specific body of work supported by written documentation. Work from this project must relate to the Senior Show. Prereq.: ART 4853. 3 s.h.

4861. *Publication Design*. The use of type and visual elements in publication formats including newspaper design, newsletters, magazines, annual reports, book design and specialty publications. Prereq.: ART 3761. 3 s.h.

4863. *Corporate Identity Systems*. The development of logos and their applications within an identity system. How corporate signatures are the fulcrum of an identity program and how its systemic usage impacts on the corporate image. Prereq.: ART 3761. 3 s.h.

4864. *Package Design*. The application of graphic design concepts to three-dimensional problems in the creation of packaging design. Students will consider form, visual impact, and environmental concerns related to the creation of packaging. Prereq.: 3761. 3 s.h.

4865. *Advertising Graphics*. The use of graphic elements in conjunction with type to produce advertisements for many different venues. Prereq.: ART 3761 or permission of instructor. 3 s.h.

4867. *Graphic Design Internship*. An application of graphic design theory and practices within a professional work experience. Students are selected on the basis of preparation, portfolio, GPA, and competitive interview. Enrollment is contingent upon the availability of internship positions. Prereq.: ART 3768. 3 s.h.

4868. *Graphic Design Practicum*. Students will work with faculty members, and a real world client to produce promotional materials from concept to print. This course will offer a full service design firm-to-client experience that will allow the student to engage in all levels of the creative/production process. Permission of instructor. 3 s.h.

4869. *Advanced Interactive Design*. Continued investigation of interactivity/screen design. Students will engage in developing a more specific and individualized body of work in the area of web design or interactive screen-based publications. Prereq.: ART 3765 and ART 3769 or permission of instructor. 3 s.h.

4874. *Photography Internship*. Application of photographic knowledge and skills in the professional work environment. Admission based on preparation, portfolio, GPA, competitive interview, and the availability of internship locations. Prereq.: ART 3776. 3 s.h.

4880. *Special Topics in Art History*. Study in one of the many areas of art history. May be taken for up to three times for credit if the topic is not repeated. Prereq.: ART 1541, 1542, or consent of instructor. 3 s.h.

4883. *Introduction to Museum Practices*. An introduction to the field of museology. Lecture topics include museum history, architecture, the building and care of art collections, exhibitions, security and current trends. The facilities, collection and staff of The Butler Institute of American Art are a resource for the class as are other area museums. Prereq.: 9 s.h. of art history and junior standing. 3 s.h.

4884. *Museum Internship*. Practical experience in the museum working with the professional staff of The Butler Institute of American Art and/or other museums of the region. Students observe and assist in virtually every phase of museum operations from care of the collections through exhibition design and implementation. May be repeated up to three times. Prereq.: ART 4883. 3 s.h.

4885. *Museum Registration Methods/Collections Management*. This course will provide a practical basis for understanding registration procedure as it applies to all phases of a museum's collection-management policy. Course topics include documentation, collections management, processes, administration, risk management, ethical and legal issues. Prereq.: ART 4883. 3 s.h.

4889. *Seminar in Art History*. A seminar on problems in art history. Topics will be drawn from all periods and media. Prereq.: Senior standing, 6 s.h. of art history, or consent of instructor. May be repeated with different topics up to 9 s.h. 3 s.h.

4891. *Multimedia Design*. Exploration of non-linear digital presentation involving compilation of still and moving images, live video, text, and sound. An overview of multimedia in the fields of web design, interactive programming and onscreen visual communication. Prereq.: ART 2691. 3 s.h.

4893. *Advanced Study in New Media*. A project-based advanced study in the field of new and emerging technology focusing on the digital contents creation and delivery with the choice of selected new media. (May be repeated up to 6 s.h.) Prereq.: ART 2691. 3 s.h.

4894. *Topics in Digital Imaging*. This advanced level course provides an opportunity for the student to focus on one of the following areas of digital imaging: 2D imaging, 3D modeling, animation, video, or multimedia design. The student completes an independent project, meeting with the instructor on a weekly basis. Prereq.: ART 2691. 3 s.h.

4896. *Art and Technology Internship*. An application of theories and practices in the field of art and technology within a professional work environment. Admission is based on preparation, portfolio, GPA, competitive interview, and the availability of internship location. Prereq.: ART 2691. 3 s.h.

5840. *Topics in Ancient Art*. The art and architecture of the ancient cultures of the Mediterranean region and the Near East. Topics vary by semester, and include Egypt, the Ancient Near East, Greece, and Rome. May be taken twice if content is different. Prereq.: Junior standing. 3 s.h.

5850. *Topics in Painting and Drawing*. Selected topics in advanced painting and drawing. Specific content varies by semester and includes Landscape and Interiors; Portraiture; and Personal Narrative. May be repeated with a different topic for a total of three times. Prereq.: Art 2650 or portfolio presentation and permission of instructor. 3 s.h.

5860. *Topics in Design*. Selected topics in graphic design including typography, layout and computer applications. May be repeated for a total of three times with different topics. Prereq.: Permission of instructor and portfolio. 3 s.h.

5873. *Topics in Advanced Photography*. Selected technical and aesthetic photographic topics using a variety of approaches for advanced fine-art applications. May be repeated with a different topic for a total of three times. Prereq.: ART 3703-Jr. 3 s.h.

5881. *Twentieth Century Art to 1960*. A survey of the visual arts history of the 20<sup>th</sup> century beginning with its 19<sup>th</sup> century roots. The influential artists, movements, and motivating theories will be covered against a backdrop of world events. Primary emphasis is placed upon French Impressionism, German Expressionism, Fauvism, Surrealism, and American Abstract Expressionism. Prereq.: ART 1542 or permission of instructor. 3 s.h.

5882. *Twentieth Century Art from 1960*. A survey of the visual arts history of the late 20<sup>th</sup> century beginning with those ideas and trends which followed Abstract Expressionism. Beginning with the late 1950s every principle artistic movement from Pop through post-Modernism will be explored against a backdrop of Post-War world events. Prereq.: ART 1542 or permission of instructor. 3 s.h.

## ASTRONOMY—ASTR

### Department of Physics and Astronomy

#### Lower-Division Courses

1504. *Descriptive Astronomy*. Scientific method, introduction to modern understanding of the universe, astronomy and society, humanity's place in the universe. Astronomical observing methods, the solar system, stars and star systems, galaxies, cosmology. Recent astronomical discoveries. 3 s.h.

1504L. *Astronomy Laboratory*. Telescope and Planetarium laboratory work designed to supplement ASTR 1504. Measurement techniques and deductive methods to determine distance and size of astronomical objects. Three hours per week. Prereq. or concurrent: ASTR 1504. 1 s.h.

2609. *Moon and Planets*. A detailed discussion of the moon and planets, with particular emphasis on the geology of the moon. Prereq.: ASTR 1504 or GEOL 1505. 3 s.h.

#### Upper-Division Courses

3711, 3712. *Astrophysics 1, 2*. The application of physical principles to the study of the stars and planets; stellar distances and dimensions; stellar spectra and chemical composition; nuclear reactions and evolution of stars; the Milky Way and other galaxies; cosmology. Prereq.: PHYS 2611 and MATH 2673. Must be taken in sequence. 3+3 s.h.

4811, 4812. *Observational Astronomy 1, 2*. Photoelectric photometry, photographic and CCD imaging techniques, spectroscopy, methods of data reduction. Some night observatory work included. Prereq.: PHYS 2611 and MATH 2673. Must be taken in sequence. 3+3 s.h.

4815. *Undergraduate Astronomy Research*. Research conducted under the direction of a faculty member. The grading is Traditional/PR. Prereq.: PHYS 3702 and 3704. 3 s.h.

## BIOLOGICAL SCIENCES—BIOL

### Department of Biological Sciences

#### Lower-Division Courses

1504. *Human Evolution and Genetics*. Mendelian genetics as it applies to humans and evolutionary history, including the genetic problems and evolutionary relationships of humankind. Not applicable to the biology major. 3 s.h.

1505. *Biology and the Modern World*. Biology applied to critical issues of today's society. Focus on the scientific method as relevant to modern biology issues. Not applicable to the Biology major. 3 s.h.

1505L. *Biology and the Modern World Laboratory*. Student investigations in biological phenomena using a variety of laboratory approaches focused on a single theme or concept using the scientific method. Satisfies the Natural Science Laboratory requirement. Not applicable to the Biology major. 1 s.h.

1545/1545L. *Allied Health Anatomy and Physiology*. Explores the structure and function of the human body and its organ systems. Diseases and their relationship to various physiological systems. Four hours lecture, two hours lab. Not applicable to the Biology major. Prereq.: High school biology and chemistry, or equivalent. 5 s.h.+0 s.h.

1551. *Anatomy and Physiology 1*. Structure, function, and clinical applications of the integument, musculature, skeletal, and nervous systems. Targeted for students in nursing and associated health professions. Three hours of lecture. Not applicable to the Biology major. Prereq.: High school biology, CHEM 1501 or equivalent, and MATH 1501 or equivalent. 3 s.h.

1551L. *Anatomy 1 Laboratory for Health Professions*. Anatomical study of skeletal, muscular, and nervous systems. For students in nursing and associated health professions. Two hours of laboratory per week. Not applicable to the Biology major. BIOL 1551 must be taken either previous or concurrent. 1 s.h.

1552/1552L. *Anatomy and Physiology 2*. Structure, function, and clinical applications of the endocrine, cardiovascular, respiratory, renal, digestive, and reproductive systems. Targeted for students in nursing and associated health professions. Three hours lecture, two hours lab. Not applicable to the Biology major. Prereq.: BIOL 1551. 4 s.h.+0 s.h.

1560. *Microbiology for the Health Professions*. Characteristics, epidemiology, and pathology of viruses, bacteria, and protozoa of medical significance. Other topics dealing with the control of microorganisms and food microbiology will be covered. Not applicable to a biology major. Two hours of lecture. Must be taken concurrent with BIOL 1560L or substitute.

2 s.h.

1560L. *Microbiology Laboratory for Health Professions*. Microscopy, cultivation, and identification of bacteria. Microbiology of foods. Disinfection techniques. Not applicable to a biology major. Three hours of laboratory per week. Must be taken concurrent with BIOL 1560.

1 s.h.

2601/2601L. *General Biology: Molecules and Cells*. The chemical and physical foundations of life, structure and function of cells and organelles, metabolism, basic molecular biology and inheritance, and principles of evolution. Three hours of lecture, three hours of lab per week. Prereq.: CHEM 1515 or concurrent enrollment in CHEM 1515.

4 s.h.+0 s.h.

2602/2602L. *General Biology: Organisms and Ecology*. The structure and function of plants and animals. Examination of the structure and functioning of organismic communities and ecosystems. Required of all biological sciences majors. Three hours of lecture, three hours of lab per week. Prereq.: BIOL 2601 and CHEM 1515.

4 s.h.+0 s.h.

2699. *Medical Applications Case Studies*. Applications of biological and chemical concepts in the practice of medicine. May be repeated to a total of 3 s.h. Prereq.: Admission to the NEOMED-YSU program or consent of the department chairperson.

1 s.h.

### Upper-Division Courses

3701. *Biomathematics Seminar*. Introduction to interdisciplinary research in Biology and Mathematics. Topics include current research by faculty and students, cross disciplinary communication, report writing, technical presentations, literature reading, laboratory techniques and safety. May be repeated once. Listed also as MATH 3701. Prereq.: MATH 1571 or BIOL 2601 or BIOL 2602.

1 s.h.

3702/3702L. *Microbiology*. Fundamentals of the biology of microbes. The principles of microbial structure, function, reproduction, metabolism, genetics, phylogeny, host-parasite relationships, and immunity. Fundamental technical skills acquired through laboratory experiences. Three hours lecture, three hours laboratory. Prereq.: BIOL 2601 and concurrent enrollment in BIOL 3702L.

4 s.h.+0 s.h.

3703. *Clinical Immunology*. Fundamentals of immunology, including both humoral and cellular immunological responses. Applications of immunological methods in medical research and patient treatment. Prereq.: BIOL 2601. Recommended: BIOL 3702.

3 s.h.

3703L. *Clinical Immunology Laboratory*. Laboratory work includes VDRL, ASO, febrile, latex, pregnancy, and viral tests. Techniques include flocculation, precipitation, complement fixation, and titration procedures used in a clinical laboratory. Three hours per week. Concurrent with BIOL 3703. Also listed as CLTC 3703L.

1 s.h.

3705/3705L. *Introduction to Human Gross Anatomy*. Overview of human structure, using a regional approach to examine the functional anatomy of the musculoskeletal, nervous, and visceral systems. Three hours lecture, two hours lab. Prereq.: BIOL 2602.

4 s.h.+0 s.h.

3710/3710L. *Mammalian Anatomy*. Composite study of the anatomical systems of mammals, based on the cat. One hour lecture, four hours lab. Prereq.: BIOL 2602.

3 s.h.+0 s.h.

3711. *Cell Biology: Fine Structure*. Theoretical and conceptual background necessary for understanding cellular structure-function relationships. Basic architecture of the cell, various organelles. The basic behavior of cells analyzed illustrating the integrative interaction of organelle systems. Prereq.: BIOL 2601.

3 s.h.

3716. *Molecular Microbiology 1: Nucleic Acids*. Isolation and characterization of DNA and RNA from microbes with an emphasis on cloning, sequencing, structural characterization, expression, and phylogenetic analysis. Two hours lecture, six hours laboratory. Prereq.: BIOL 3702 and permission of the instructor.

4 s.h.

3717. *Molecular Microbiology II. Protein Biology*. Develops the analytical skills necessary to conduct molecular biology research in the area of protein analysis and proteomics. Two hours lecture and four hours laboratory per week. Prereq.: BIOL 3702.

4 s.h.

3718. *Women, Science, and Technology*. An overview of the role women have played in scientific and technological advances. Problems unique to women entering scientific professions will be addressed, information about scientific and technical careers and job opportunities and contacts with professionals in the community will be provided. This course does not count toward the Biology major. Cross-listed with CHEN 3718. Prereq.: ENGL 1550; one Societies and Institutions General Education course, one Natural Sciences General Education course, or substitutes.

3 s.h.

3721. *Genetics*. Genetic material, reproductive cycles, sex determination, mitosis, meiosis, mendelism, probability linkage, genes in populations, mutation, evolution. Prereq.: BIOL 2601.

3 s.h.

3730. *Human Physiology*. Concepts of human physiology that focus on the regulation of homeostatic mechanisms by the neural, endocrine, cardiovascular, respiratory, and renal systems. Four hours lecture. Prereq.: BIOL 2602.

4 s.h.

3730L. *Human Physiology Laboratory*. Experimental approach to the study of human physiology that explores regulation of homeostasis by the neural, endocrine, cardiovascular, respiratory, and renal systems. Three hours laboratory. Prereq. or concurrent with: BIOL 3730. 1 s.h.

3740/3740L. *Plant Diversity*. Examination of the diversity of plant species and their interaction with the environment; the morphology, reproduction and ecology of a wide variety of vascular and nonvascular plants. Three hours lecture, two hours lab. Prereq.: BIOL 2602. 4 s.h.+0 s.h.

3741/3741L. *Animal Diversity*. Examination of the diversity of animal species and their interaction with the environment; the morphology, reproduction and ecology of a wide variety of invertebrate and vertebrate phylon. Three hours lecture, two hours lab. Prereq.: BIOL 2602. 4 s.h.+0 s.h.

3745. *Plant Physiology*. Examination of the physiology of higher plants with emphasis on the whole plant aspects as well as on biochemical, cellular and molecular aspects of how plants function including transport and translocation of water and solutes, photosynthesis and respiration, growth and development. Prereq: BIOL 2602. 3 s.h.

3759. *Evolution*. Examination of fundamental evolutionary mechanisms integral to such covered topics as natural selection, drift, genetic variance maintenance, gene flow consequences, phylogenetic resolution, modes of speciation, coevolution, cooperation and mating system structure. Ecological concepts will be integrated throughout. Prereqs.: BIOL 2601 and BIOL 2602 or instructor consent. 3 s.h.

3762/3762L. *Field Botany*. Identification, ecology, and significance of local plants. Two hours lecture, four hours lab. Prereq.: BIOL 2602. 4 s.h.+0 s.h.

3775/3775L. *Comparative Vertebrate Anatomy*. Comparison of morphology of vertebrates, emphasizing evolutionary development of organ systems. Two hours lecture, three hours lab. Prereq.: BIOL 2602. 3 s.h.+0 s.h.

3780/3780L. *General Ecology*. Examination of ecological principles and underlying biodiversity, dynamics of populations and ecosystems, the origin, maintenance, and loss of genetic variation, and the causes of extinction and speciation. Three hours lecture, four hours lab. Prereq.: BIOL 2602. 5 s.h.+0 s.h.

3789. *Technology and Society*. A critical exploration of how societal needs affect the creation of technologies and how technology affects society. An interdisciplinary approach in examining the complex interactions between humans and their tools. Prereq.: BIOL 2601 or ENGR 1550 or SOC 1500, and junior standing. Listed also as SOC 3789 and CEEN 3711. 3 s.h.

4800/4800L. *Bioinformatics*. Fundamentals of the theories and applications of bioinformatics. Topics include the tools and databases used to analyze DNA and protein sequences and the evolutionary relationships between sequences from different organisms. Three hours of lecture, two hours of lab per week. Prereq.: BIOL 3721. 4 s.h.+0 s.h.

4801/4801L. *Environmental Microbiology*. The occurrence, detection, and control of microbes, including bacteria and viruses, in food, water, and the environment. Two hours lecture, four hours lab. Prereq.: BIOL 3702. 4 s.h.+0 s.h.

4805/4805L. *Ichthyology*. Ecology, evolution, and taxonomy of fishes, especially those of Midwestern United States. Two hours lecture, two hours lab. Prereq.: BIOL 3741. 3 s.h.+0 s.h.

4811/4811L. *Comparative Biomechanics*. Overview of biomechanical principles involved with the structure and function of animals. Topics include mechanical properties of biomaterials, comparative muscle architecture and physiology, and locomotor mechanisms of human walking and running. Three hours lecture, two hours lab. Prereq.: Biol 2602 or BIOL 3705, and PHYS 1501 or 2610. 4 s.h. + 0 s.h.

4819/4819L. *Taxonomy of Flowering Plants*. Phylogenetics, systematics, geographical distribution, and evolutionary development of herbaceous plants; taxonomic systems based on morphology and biochemistry. Laboratory exercises include the writing of a genus revision. Two hours lecture, four hours lab. Prereq.: BIOL 3740 or consent of instructor. 4 s.h.+0 s.h.

4822. *Principles of Pharmacology*. Overview of drugs used for the diagnosis, prevention, and treatment of disease. Topics include mechanisms of action, therapeutic and adverse drug effects, and clinical uses for each drug category. Prereq.: BIOL 2630. 3 s.h.

4823. *Cancer Biology*. This course will present the student with the comprehensive body of knowledge concerning cancer biology. It will draw upon all areas of biological sciences; from environmental causal factors to the molecular mechanisms underlying tumor cell formation and development of malignant tumors. The scientific basis of therapies will be explored. Prereq.: Junior standing. 2 s.h.

4829. *Microbial Physiology*. This course synthesizes material covered in introductory microbiology and cell and molecular biology. Topics include biomolecule synthesis, molecular biology, bacterial genetics, gene expression, energy production photosynthesis, bacteriophages and microbial stress response. Prereq.: BIOL 3702 or 3711. 3 s.h.

4830/4830L. *Functional Neuroanatomy*. An examination of the structure, function, integration, and cellular control of the brain and spinal cord. Three hours lecture, two hours lab. Prereq.: BIOL 3730. 4 s.h. + 0 s.h.

4834/4834L. *Advanced Systems Physiology 1*. Examination of advanced human physiology through a detailed study of selected body systems. Systems examined may include the neuromuscular, cardiovascular, and renal systems, exchange dynamics among body fluid compartments, and acid-base balance. Three hours lecture, three hours lab. Prereq.: BIOL 3730. 4 s.h.+0 s.h.

4835/4835L. *Advanced Systems Physiology 2*. Examination of advanced human physiology through a detailed study of selected body systems. Systems examined may include the respiratory and gastrointestinal systems, metabolism and temperature regulation. Three hours lecture, three hours lab. Prereq.: BIOL 3730. 4 s.h.+0 s.h.

4836/4836L. *Cell Biology: Molecular Mechanisms*. The relationship of molecular structure to cellular function. Concepts will be presented integrating the biochemical dynamics of bio-membrane systems including receptors, bioenergetics, and the physiochemical environment. Three hours of lecture. Prereq.: BIOL 3711 or consent of instructor. 3 s.h.+0 s.h.

4837. *Cell Biology: Protein Biology Laboratory*. The relationship of nucleic acid structure and protein structure will be studied in hands on series of laboratory experiments. Concepts presented will integrate the use of modern molecular biology techniques with contemporary approaches to current problems in biology. Three hours of laboratory. Prereq.: BIOL 3711 or consent of instructor. 1 s.h.

4839. *Selected Topics in Physiology*. Advanced study of topics in physiology not covered in depth in other physiology courses. May be repeated twice up to 2 s.h. Prereq.: BIOL 3730. 1 s.h.

4841/4841L. *Animal Parasitology*. Biological implications of parasitism. Diagnosis, morphology, and life histories of the parasites of humans and domestic animals. One hour lecture, four hours lab. Prereq.: BIOL 3702. 3 s.h.+0 s.h.

4848. *Biology of Fungi*. Examination of fungal and fungal-like organisms with emphasis placed upon their taxonomy, phylogenetic relationships, structure, function, physiology, genetics, and ecology. Exploration of their role in agriculture, medicine, and scientific research. Prereq.: BIOL 2602 or graduate standing. 3 s.h.

4849. *Medical Mycology*. Survey of infectious diseases caused by fungi including their etiology, epidemiology, histopathology, diagnosis, and treatment. Host-parasite interactions and the environmental and molecular factors that contribute to establishment of fungal disease in humans and animals. Prereq.: BIOL 2602. 3 s.h.

4850. *Problems in Biology*. Special biological problems for which materials and equipment are available and for which the student is qualified. Prereq.: Senior standing or consent of the chairperson. 1-3 s.h.

4861. *Senior Biology Capstone Experience*. A capstone experience for the major in Biological Sciences (B.A. or B.S. degree). Prereq.: Senior status in Biological Sciences, completion of at least one 3700 and 4800 level laboratory course. 2 s.h.

4866/4866L. *Dendrology*. Identification, ecology, and significance of local plants. Two hours lecture, four hours lab. Prereq.: BIOL 3740 or 3762. 4 s.h.+0 s.h.

4871/4871L. *Entomology*. Introduction to the morphology, physiology, development, and control of insects. Survey of insect orders and families. Two hours lecture, four hours lab. Prereq.: BIOL 3741. 4 s.h.+0 s.h.

4882. *Biomathematics Research*. Interdisciplinary and individualized study of a topic in biology and mathematics. Student project mentored jointly by faculty in biology and mathematics. May be repeated once. Grading is Traditional/PR. Listed also as MATH 4882. Prereq.: MATH/BIOL 3701, senior status and permission of the department chairperson. 1-2 s.h.

4890. *Molecular Genetics*. Examination of DNA structure, DNA replication, transcription, translation, RNA processing, and gene control in both prokaryotes and eukaryotes. Prereq.: BIOL 3711 or 3721. 3 s.h.

4890L. *Molecular Genetics Laboratory*. Introduction to basic molecular techniques such as transformation, use of restriction enzymes, agarose gel electrophoresis, and polymerase chain reaction (PCR). Three hours lab. Prereq.: BIOL 4890 or concurrent. 1 s.h.

4898. *Research in Physiology*. A comprehensive laboratory experience under the supervision of a faculty mentor. Course may be repeated once for a total of 6 s.h. Prereq.: BIOL 3730, CHEM 3720, and acceptance into the Certificate in Anatomy and Physiology program. 3 s.h.

4899. *Internships in the Biological Sciences*. Internships integrate theory and practice through supervised learning experiences. Internships are available in any area of the biological/biomedical sciences, including field research and analytical, clinical, or research laboratories. Students submit a proposal of the internship, maintain a journal of experiences, and submit a final project paper. Prereq.: Junior or senior standing in Biological Sciences and permission of the chairperson. 2 s.h.

5804. *Aquatic Biology*. Ecological, physical, and chemical aspects of aquatic ecosystems. Study of the interaction between organisms and their environment. Prereq.: BIOL 3780. 3 s.h.

5806. *Field Ecology*. Field study involving quantitative methods for the collection, analysis, and interpretation of ecological data in populations and communities. Pre-field trip lectures, specified experiments, independent study, a written report, and an oral presentation of the independent study project. Required off-campus travel. Field conditions may be rigorous and/or primitive. Prereq.: BIOL 3780. 4 s.h.



5809. *Concepts of Developmental Biology*. The underlying cellular and molecular mechanisms of embryonic development. Cellular interactions as they relate to developmental processes. Prereq.: BIOL 3711. 3 s.h.

5811/5811L. *Ornithology*. Structure, physiology, behavior, ecology, and evolution of birds. Natural history of common bird species and important bird groups, especially those in Ohio. Basic methods and skills for field study of birds. Three hours lecture, three hours lab. Prereq.: BIOL 3741. 4 s.h.+0 s.h.

5813/5813L. *Vertebrate Histology*. The microscopic study of mammalian tissues and organs. Three hours lecture, two hours lab. Prereq.: BIOL 3711 or 3730. 4 s.h.+0 s.h.

5823. *Advanced Eukaryotic Genetics*. Mechanisms and control of eukaryotic DNA replication, current advances in understanding the genetics basis of cancer and other genetic diseases, problems and benefits of the various eukaryotic genome projects (human and others), gene therapy and genetic engineering in animals and plants. Prereq.: BIOL 3721 and 4890. 3 s.h.

5824/5824L. *Behavioral Neuroscience*. Explores the biological basis of human experience and behavior. Topics include basic neuroanatomy and neuropharmacology, emotions, learning and memory, sleep and biological rhythms, reproductive behavior, and communication. Three hours lecture, three hours lab. Prereq.: BIOL 3730. 4 s.h. + 0 s.h.

5827. *Gene Manipulation*. Techniques of modern molecular biology including the use of restriction enzymes, plasmid and phage vectors, Southern blots and the polymerase chain reaction (PCR). Introduction and manipulation of foreign DNA in bacterial and eukaryotic systems. Six hours lab. Prereq.: BIOL 4890. 2 s.h.

5832. *Principles of Neurobiology*. Topics include cell and molecular biology of the neuron, properties of excitable membranes, functional neuroanatomy, integrated motor control, sensory signal transduction, developmental neurobiology, mechanisms of disease processes, and higher cortical function. Prereq.: BIOL 3730. 4 s.h.

5833. *Mammalian Endocrinology*. Detailed examination of the hormones of the hypothalamus, pituitary, thyroid, adrenal pancreas, gonads, and other organs with putative endocrine function. Focus on the physiological functions of hormones and their mechanisms of action with emphasis on the human. Prereq.: BIOL 3730. 3 s.h.

5840. *Advanced Microbiology*. Molecular mechanisms for virulence of pathogenic organisms. Prereq.: BIOL 3702 or equivalent. 3 s.h.

5844. *Physiology of Reproduction*. Current concepts of reproductive processes and their physiological control in mammalian systems. Prereq.: BIOL 3730. 3 s.h.

5853. *Biometry*. Application of fundamental theory and procedures to the statistical analysis of biological data. Prereq.: 20 s.h. of Biological Sciences. 3 s.h.

5861. *Animal Behavior*. Detailed examination of a variety of topics necessary for understanding animal behavior. Historical approaches to animal behavior, evolution and behavior genetics, physiology of behavior, behavioral ecology, and social organization and mating systems. Prereq.: BIOL 3741 or permission of instructor. 3 s.h.

5868/5868L. *Gross Anatomy 1*. Regional study of the human body with emphasis on functional and topographic anatomy and clinical correlations. Two hours lecture-demonstration, four hours lab. Prereq.: Admission to the YSU Physical Therapy program or permission of instructor. 4 s.h.+0 s.h.

5869/5869L. *Gross Anatomy 2*. Regional study of the human body with emphasis on functional and topographic anatomy and clinical correlations. Two hours lecture-demonstration, four hours lab. Prereq.: BIOL 5868. 4 s.h.+0 s.h.

5888/5888L. *Environmental Biotechnology*. Lectures will cover the use of microbes for solving environmental problems. In the laboratory, teams of students will design and implement experiments in bioremediation. This course is intended for students in biology, environmental studies, chemistry, and engineering. Two hours lecture and four hours lab. Prereq.: CHEM 3719 or CEEN 3736. 4 s.h.+0 s.h.

## BUSINESS ADMINISTRATION—BUS College of Business Administration

1500. *Exploring Business*. Introduction to the world of business with a focus on various functional areas and career opportunities. Development of the requirements of the business professional including team work, information gathering and communication skills. Prereq.: MATH 1501 or level 20 on math placement or better **and** eligible to enroll in English 1550. 3 s.h.

3715. *Principles of International Business*. Study of international business environment and the factors affecting the international operations of firms. Students will develop an understanding of global business opportunities, responsive strategies, and operations; apply course concepts/theories to current issues in international business, and develop an understanding of the complexities of managing cross-national cultural differences. Prerequisites: BUS 1500; 63 semester hours of course work including WCBA tool courses (ENGL 1551, MATH 1552, ECON 2610, 2630, 3790, ACCT 2602, 2603 with grades of "C" or better); overall GPA of 2.5 or higher; WCBA approved upper-division standing. 3 s.h.

3720. *Nonprofit Leadership*. The roles of nonprofit organizations in meeting human needs through philanthropy and focus on mission. Understanding of board development, fundraising, management, programming, and careers in nonprofit organizations. Prereq.: ENGL 1551 and junior standing.

3 s.h.

3740. *Nonprofit Leadership Community Service*. Collaborative community service project with nonprofit professionals to meet specific goals. Taken in each semester of junior/senior years for certificate requirements of American Humanics. Different course theme and project each semester for service-learning experiences. Prereq.: Junior standing.

1 s.h.

3780. *Financial Management and Fundraising for Nonprofit Organizations*. Fiscal, budgetary, development and fundraising aspects of nonprofit organizations. Discussion, analysis, implementation of financing, budgeting, development, and fundraising theories and techniques applicable to planning, operating, and developing nonprofit organizations. Prereq.: ENGL 1551 and junior standing.

3 s.h.

4840. *Nonprofit Leadership Internship*. Students work at a nonprofit organization to achieve specific goals agreed upon by the student, the nonprofit organization, and the campus director of the Center for Nonprofit Leadership. The student must work at least 300 hours during the semester. The course must be taken concurrently with BUS 4841. Prereq.: Permission of campus director of the Center for Nonprofit Leadership.

3 s.h.

4841. *Nonprofit Leadership Seminar*. Review of the competencies associated with the American Humanics certificate to ensure that the students seeking the certificate have fulfilled all of the competencies required. The course must be taken in conjunction with the nonprofit internship required of the certificate. The seminar will meet for two hours each week. Prereq.: Permission of campus director of the Center for Nonprofit Leadership.

1 s.h.

4860. *Business Internship*. The student is given the opportunity to relate theory to practice in a career related on-site field experience with a participating organization. Prerequisites: 9 hours of upper division business courses.

3 s.h.

4875. *International Business Field Study Tour*. The student will gain an understanding of the distinctive nature of the business environment in a foreign country. The student will gain insight into the strategic and operating issues that are unique to that country and geographic region. Prerequisite: MKTG 3703, FIN 3720, and MGT 3725.

1-3 s.h.

4881. *Special Topics in Business*. Subject matter, credit hours and specific prerequisites to be announced in advance of each offering. Prerequisite: Junior standing or permission of instructor.

1-4 s.h.

4888. *The International Business Consulting Practicum* course will provide hands-on consulting experience to undergraduate business majors. Students will work with businesses in the region to carry-out projects related to international expansion plans.

3 s.h.

## CHEMICAL ENGINEERING— CHEN

### Department of Civil/ Environmental and Chemical Engineering

#### Lower-Division Courses

2630. *Applied Engineering 1*. Physics, chemistry, and calculus applications to problems in general engineering with focus on EIT/FE exam questions, strength and properties of materials. Topics include: mechanics, dynamics, kinematics, conservation equations. Three-hour computational lab. Prereq.: PHYS 2610 or permission of instructor.

1 s.h.

2631. *Applied Engineering 2*. Physics, chemistry, and calculus applications to problems in general engineering with focus on EIT/FE exam questions, strength and properties of materials. Topics include: wave phenomena (light, sound), electricity (circuits), magnetism, materials, strength of materials. Three-hour computational lab. Prereq.: CHEN 2630 or permission of instructor.

1 s.h.

2650. *Computer Methods in Chemical Engineering*. Application of computational software packages and spreadsheets to solve chemical engineering problems. Utilization of process simulation packages. Real-time computing applications in laboratory automation. Prereq.: ENGR 1560 or consent of instructor.

2 s.h.

2681. *Industrial Stoichiometry*. To aid the non-chemical engineer to organize, analyze, and effectively utilize the information inherent in chemically stoichiometric relationships, as they apply to actual plant situations. Prereq.: MATH 1571, CHEM 1516.

3 s.h.

2683. *Chemical Engineering Principles 1*. Engineering units and dimensions. Methods of analysis and measurement. Perfect gas and real gas relationships. Material and energy balances for both non-flow and flow systems. Prereq.: MATH 1571, CHEM 1515.

3 s.h.

2684. *Chemical Engineering Principles 2*. Cascade theory and design of staged separation processes. Concepts of reflux, algebraic solutions for linear systems and graphical methods of analysis. Design of distillation columns and stagewise separations. Continuation of topics discussed in CHEN 2683. Prereq.: CHEN 2683.

3 s.h.

2688. *Energy Assessment*. Concept of energy assessment. Technology of energy production that includes coal gasification, liquefaction, magnetohydrodynamics, utilization of shale oil, solar, geothermal, and chemical energy. Nuclear energy utilization. Fuel from wastes. Energy resource distribution and future supply and demand. Simple calculations relating to fuel saving, production, and consumption. Primarily for non-engineering students.

3 s.h.

## Upper-Division Courses

3700. *Measurement Laboratory*. Computer application in real-time data acquisition and laboratory data processing. Measurements of physical and chemical properties. Oral presentations and preparation of technical reports. Prereq.: Acceptance in any engineering program. 1 s.h.

3718. *Women, Science, and Technology*. An overview of the role women have played in scientific and technological advances. Problems unique to women entering scientific professions will be addressed, information about scientific and technical careers and job opportunities and contacts with professionals in the community will be provided. Cross-listed with BIOL 3718. Prereq.: ENGL 1550. 3 s.h.

3721. *Engineering Plastics*. Preparation, characterization, manufacture, properties and applications of commercial polymers. Prereq.: CHEN 2684 and 3719; or consent of instructor. 3 s.h.

3726. *Elementary Nuclear Reactor Engineering*. Basic engineering science to serve as background material for nuclear reactor design. Nuclear fission as an energy source. Reactor use and classification. Comprehensive discussion of reactor design problems such as neutron distribution in the core, type of moderator, heat removal, and radiation protection. Prereq.: MATH 2673, PHYS 2610. 3 s.h.

3745. *Corrosion Control Engineering*. Introduction to electrochemical mechanism and theory of corrosion, engineering practice, and criteria for both anodic and cathodic control. Theory and engineering practice in the use of inhibitors. Prereq.: CHEN 2683. 3 s.h.

3771, 3772. *Chemical Engineering Thermodynamics 1, 2*. Development of the concepts and formalisms of thermodynamics and their applications to chemical engineering systems. Real and ideal behavior of single and multicomponent systems. Introduction to the thermodynamics of phase equilibria. Analysis and design of thermal systems. Additional topics include applications in transport phenomena and plant design. Prereq.: MATH 2673, CHEN 2684 for 3771. CHEN 3771 for CHEN 3772 3+3 s.h.

3785L. *Transport Phenomena Laboratory*. Experimental studies of transport properties and momentum, energy and mass transfer using industrial type equipment. Correlation of data and comparison with theory. Oral presentations and preparation of technical reports. Three hours laboratory. Prereq.: CHEN 3786 or concurrent. 1 s.h.

3786. *Transport Phenomena 1*. Mathematical formulation of conversion laws. Dimensional analysis. Mechanism and fundamentals of momentum and energy transfer with selected applications to analysis and design of chemical engineering equipment. Three hours lecture and three hours computational lab per week. Prereq.: MATH 2673 and CHEN 2684. 4 s.h.

3787. *Transport Phenomena 2/Unit Operations 1*. Mass transfer processes. Diffusional operations and separation processes with emphasis on evaporation, humidification and drying. Derivation of design equations from mass and energy balances, and application to equipment design. Solution of simultaneous differential equations of mass, momentum, and energy. Prereq.: CHEN 3786. 3 s.h.

3787L. *Unit Operations Laboratory 1*. Experiments in absorption, cascade operations, reaction kinetics, mixing and other chemical engineering operations employing industrial and pilot plant size equipment and instrumentation. Treatment of experimental data, correlations and comparison with theory. Oral presentations and preparation of technical reports. Three hour laboratory. Prereq.: CHEN 3787. 1 s.h.

4801, 4802, 4803. *Chemical Engineering Projects*. Chemical engineering projects under the guidance of a faculty member. Literature search, design and construction of apparatus, experimentation and preparation of a comprehensive report. Prereq.: Consent of instructor. 3+3+3 s.h.

4815. *Unit Operations 2*. Gas absorption and desorption, interphase mass transfer processes, liquid extraction and leaching. Physical separation processes including filtration, settling, and size reduction. Derivation of the design equations for the above processes, and applications of the design equations to equipment design. Prereq.: CHEN 3787. 3 s.h.

4815L. *Unit Operations Laboratory 2*. Experiments in absorption, cascade operations, reaction kinetics, mixing and other chemical engineering operations employing industrial and pilot plant size equipment and instrumentation. Treatment of experimental data, correlations and comparison with theory. Oral presentations and preparation of technical reports. Three hour laboratory. Prereq.: CHEN 4815. 1 s.h.

4822. *Reinforced Polymer Structures*. Survey of raw materials, manufacturing methods, and design of products utilizing reinforcing materials combined with an elastomer or polymer binder. Prereq.: CHEN 2684 or consent of instructor. 3 s.h.

4840. *Biochemical Engineering Fundamentals*. Design of biological reactors, bioremediation schemes, methods for the purification and mass production of chemical species from living organisms or cultures, extraction, and fermentation. Technologies and processing of recombinant DNA, antibiotics, antibodies, vitamins, steroids, and methane are included. Essentials of microbiology, biochemistry, and genetics will precede industrial applications. Prereq.: junior standing. Prereq.: CHEN 2684 or consent of instructor. 3 s.h.

4845. *Chemical Engineering Analysis*. Modeling of processes from unit operations, transport phenomena, and thermodynamics. Topics include the determination of limiting and generalized operating conditions, estimations of operating variables, and process balance of energy, mass, and momentum transfer. Prereq.: CHEN 2684 or consent of instructor. 3 s.h.

4880, 4881. *Chemical Reactor Design 1 and 2*. Chemical reaction equilibria. Theoretical developments and methods of interpreting experimental data pertaining to chemical kinetics. General design principles and construction features of reactors with application of these principles to the design of specific reactors. Prereq.: CHEN 3772 for 4880. CHEN 4880 for 4881. 3+3 s.h.

4882. *Process Dynamics*. Introduction to automatic control and control loop concepts. Laplace transform techniques. Linear open-loop and closed-loop systems. Root-locus and frequency response methods. Design of control systems. Prereq.: CHEN 3786. 3 s.h.

4882L. *Process Dynamics Laboratory*. Experimental studies in process dynamics and control. Treatment of experimental data with correlation and comparison with theory. Oral presentations and preparation of technical reports. Three hours of laboratory. Prereq.: CHEN 4882. 1 s.h.

4887. *Process and Plant Design 1*. An examination of engineering economic analysis to include: cost estimation, profitability, optimum design, principles of fixed and operating costs, materials and site selection, and general and specialized design techniques. Prereq.: CHEN 3787 and unrecalculated GPA of 2.0 or better in major courses. 3 s.h.

4888. *Process and Plant Design 2*. The application of chemical engineering and cost principles to the component design and selection of process equipment. The application of chemical engineering and cost principles to the design of chemical plants and processes including societal aesthetic, environmental, and safety considerations. Prereq.: CHEN 4887. 3 s.h.

5800. *Special Topics*. Special topics and new developments in chemical engineering. Subject matter, credit hours, and special prerequisites to be announced in advance of each offering. Prereq.: Consent of instructor. 1-4 s.h.

5805. *Principles of Biomedical Engineering*. Application of engineering principles and methods of analysis to processes in the human body. Rheological, physical and chemical properties of body fluids. Dynamics of the circulatory system. The human thermal system. Transport through cell membranes. Analysis and design of artificial organs. Prereq.: CHEN 2684 or consent of instructor. 3 s.h.

5810. *The Business of Engineering*. Industrial processing facilities, and the engineers and business people that run them. Decision-making perspectives and the technical and communication skills of each group are compared. Focus is on quality control, R&D, and efficiency. 3 s.h.

5811. *Advanced Transport Phenomena*. Development of basic differential balance equations for mass, momentum and energy. Analytical and approximate solutions to the equation of change with application to the analysis of common engineering problems. Prereq.: CHEN 3786. 3 s.h.

5820. *Industrial Pollution Control*. Types, sources and effects of industrial and hazardous waste; principles of industrial and hazardous waste control; discussion and design of biological, physical, and chemical treatment processes. Prereq.: CHEN 2684 or consent of instructor. 3 s.h.

5821. *Fundamentals of Polymer Science*. The survey of polymerization mechanisms, polymer structure-property relationships, transport properties, flammability-related plasticizers and solvents as well as design applications. Prereq.: CHEN 2684 or consent of instructor. 3 s.h.

5830. *Nuclear Reactors*. Neutron interactions and scattering; moderation ratio, the steady state reactor core and four factor equation, the diffusion equation for various reactor geometries and the reflected reactor core. Prereq.: CHEN 3726 or consent of instructor. 3 s.h.

5835. *Introduction to Nuclear Fusion*. Fusion reactors; the kinetics of fusion reactions. Plasma confinement technology. Prereq.: CHEN 3726. 3 s.h.

5850. *Industrial Processes*. A fundamental approach to the design of industrial chemical processes. Emphasis upon flow-charting, chemical reactions, separations involved, thermodynamics, and economic considerations. Food and pharmaceutical processing is a major focus. Prereq.: CHEN 2684 or consent of instructor. 3 s.h.

5883. *Mathematical Methods in Chemical Engineering*. The applications of advanced mathematics to the solution of chemical engineering problems. Topics covered include treatment and interpretation of engineering data, modeling of chemical engineering systems and formulation of ordinary and partial differential equations governing chemical engineering operations and their solutions by use of numerical and analytical techniques. Prereq.: CHEN 3786. 3 s.h.

5886. *Nuclear Reactor Design*. The steady state reactor core; four-factor equation, resonance escape probability, neutron flux distribution in various geometrics, two-group and multigroup theories. Transient reactor behavior and control; effect of delayed neutrons, fission product poisoning, nuclear fuels, nuclear heat transfer and burnout problems, reactor economy; fuel burnup and power cost. Thermal breeder and fast reactors. Neutron flux distribution measurements. Radiation detection and monitoring. Prereq.: CHEN 3726 or consent of instructor. 3 s.h.

## CHEMISTRY—CHEM Department of Chemistry

### Lower-Division Courses

1500. *Chemistry in Modern Living*. Introduction to basic chemical concepts, the scientific method, and the impact of chemistry on human life and society. Examples may include water treatment, air quality,

plastics, drugs, cosmetics, energy resources, food, and the chemical basis of life. Not intended for Chemistry majors. 3 s.h.

1500L. *Chemistry in Modern Living Laboratory*. Introduction to basic laboratory techniques designed to supplement CHEM 1500. Three hours per week. Concurrent with CHEM 1500. 1 s.h.

1501. *An Introduction to Chemistry*. Metric units, dimensional analysis, chemical nomenclature, the mole concept, chemical stoichiometry. Emphasis on problem solving and the mathematics required for success in the study of chemistry. For students without high school chemistry and others needing preparation for CHEM 1505 or CHEM 1515. Three hours lecture, no laboratory. Prereq: Math 1507 and Math 1508 or concurrent or one unit each of high school algebra and geometry. 3 s.h.

1505/1505L. *Allied Health Chemistry 1*. Introduction to the principles of chemistry including atomic structure, bonding, nomenclature, chemical calculations, chemical reactions, gas laws, solutions, acids and bases, and equilibrium. Intended for majors in allied health and other applied sciences. Two hours lecture, three hours lab-discussion. Prereq: CHEM 1501 or equivalent, MATH 1507 and Math 1508 or equivalent. Concurrent CHEM 1505L. 3 s.h.+0 s.h.

1505R, 1506R. *Recitation for Allied Health Chemistry 1, 2*. Discussion and problem solving exercises to complement and enhance study in CHEM 1505 and 1506. Concurrent with CHEM 1505 and 1506. 1+1 s.h.

1506/1506L. *Allied Health Chemistry 2*. Fundamentals of organic and biological chemistry including applications to the human organism. Two hours lecture, three hours lab-discussion. Prereq.: CHEM 1505. Concurrent: CHEM 1506L. 3 s.h.+0 s.h.

1515/1515L. *General Chemistry 1*. An introduction to the fundamental principles of chemistry, including measurement and calculation; chemical stoichiometry; the properties of gases; atomic and molecular structure; bonding; thermochemistry; and periodic properties. Intended for majors in the natural sciences and engineering. Three hours lecture, three hours lab-discussion. Prereq.: CHEM 1501 or equivalent; MATH 1513 or equivalent. Concurrent: 1515L; 1515R if major or repeating 1515. 4 s.h.+0 s.h.

1516/1516L. *General Chemistry 2*. A continuation of the study of the principles of chemistry, including solution properties; acids and bases; chemical equilibrium; thermodynamics; reaction kinetics; and electrochemistry. Intended for majors in the natural sciences and engineering. Three hours lecture, three hours lab-discussion. Prereq.: CHEM 1515; Concurrent: 1516L; CHEM 1516R if major or repeating 1516. 4 s.h.+0 s.h.

1515R, 1516R. *Recitation for General Chemistry 1, 2*. Discussion and problem solving based on current material in CHEM 1515 and 1516. Concurrent with CHEM 1515 and 1516. 1+1 s.h.

2602. *African and African-American Contributions to Science*. Introduction to basic science concepts, the scientific method, and the impact of chemistry as a central science on society. Examples include works of African-American scientists. 3 s.h.

2604/2604L. *Quantitative Analysis*. Chemical equilibrium, stoichiometry, theory of errors, and volumetric and gravimetric procedures as applied to quantitative determinations. Introduction to electro-analytical, chromatographic and spectrophotometric methods. Emphasis on development of technique. Three hours lecture, six hours lab. Prereq.: CHEM 1516. 5 s.h.+0 s.h.

2650. *Introduction to Undergraduate Research*. Introduction to the methods of chemical research under the direction of a faculty member. May include literature search and analysis, instructional laboratory development, and/or original basic or applied research. May be repeated to a maximum of 4 s.h. Prereq. or concurrent: CHEM 1516 and approval of department chairperson. 1-2 s.h.

### Upper-Division Courses

3719/3719L. *Organic Chemistry 1*. Organic compounds, reactions and theories. Typical preparations and procedures of analysis. Three hours lecture, three hours lab-discussion. Prereq.: CHEM 1516. 4 s.h.+0 s.h.

3720/3720L. *Organic Chemistry 2*. Organic compounds, reactions and theories. Typical preparations and procedures of analysis. Three hours lecture, three hours lab-discussion. Prereq.: CHEM 3719. 4 s.h.+0 s.h.

3719R, 3720R. *Organic Chemistry Recitation 1, 2*. An introduction to the preparation and analysis of organic compounds. Discussion of CHEM 3719 and 3720 material and approaches to problem solving. Required for chemistry majors. Concurrent with CHEM 3719 and 3720. 1+1 s.h.

3729. *Inorganic Chemistry*. Fundamental principles underlying the structure, bonding, and properties of the elements and molecular, solid state, and coordination compounds. Prereq. or concurrent: CHEM 3739. 3 s.h.

3739/3739L. *Physical Chemistry 1*. Principles and applications of thermodynamics and kinetics to chemical systems. Three hours lecture, three hours lab-discussion. Prereq.: CHEM 2604 or CHEN 3771 concurrently; PHYS 2611/2611L; MATH 1572. 4 s.h.+0 s.h.

3740/3740L. *Physical Chemistry 2*. Principles and applications of quantum mechanic and statistical thermodynamics to chemical systems. Three hours lecture, three hours lab-discussion. Prereq.: CHEM 3739; MATH 2673. 4 s.h.+0 s.h.

3764. *Chemical Toxicology*. Introduction to the clinical, forensic, industrial, and environmental aspects of chemical toxicology. Therapeutic and toxic limits

of drugs. Actions, controls and treatment of poisons and environmental agents. Prereq.: CHEM 3720 and either CHEM 2604 or permission of department chair. 3 s.h.

3785. *Biochemistry 1*. Structure and properties of biomolecules, including proteins, lipids, carbohydrates and nucleic acids. Introduction to glycolysis metabolic pathway. Prereq.: CHEM 3720. 3 s.h.

3785L. *Biochemistry Laboratory*. Analysis and separation techniques of biochemistry. Three hours lab-discussion. Prereq. or concurrent: CHEM 3785. 1 s.h.

3786. *Biochemistry 2*. Intermediary metabolism and biochemical information pathways. Prereq.: CHEM 3785. 3 s.h.

3790. *Undergraduate Seminar*. Students participate in departmental seminars and present a seminar to the class. May be repeated once. Prereq. or concurrent: CHEM 2604 and 3720. 1 s.h.

4850. *Chemistry Research*. Research planning, design, and execution including literature survey techniques, proposal writing, and critical scientific analysis. The student gives an oral presentation of a research proposal for CHEM 4850L, or on another topic as approved by the instructor. Prereq.: CHEM 2604 or 3719 and approval of department chairperson. 1 s.h.

4850L. *Chemistry Research Laboratory*. Research participation under the direction of a faculty member. The student prepares an acceptable written report on the completed project. May be repeated to a maximum of 5 s.h. Prereq. or concurrent : CHEM 4850 and approval of department chairperson. 2-3 s.h.

4860. *Regulatory Aspects of Industrial Chemistry*. Roles and responsibilities of industrial chemists. Industrial hygiene and safety. Industrial chemical processes, their waste products, their environmental effects, and the treatment of pollutants. Governmental regulations relating to waste disposal, product safety, occupational safety, resource conservation, environmental protection, and problems of awareness and compliance. Prereq.: CHEM 2604 and 3720. 1 s.h.

4891. *Special Topics*. Topics selected by the faculty from fields of current research interest or of special emphasis. May be repeated with different topics. 1-3 s.h.

5804/5804L. *Chemical Instrumentation*. The theoretical foundations of instrumental procedures and the use of instruments in analytical work. Two hours lecture, six hours lab. Prereq.: CHEM 3740. 4 s.h.+0 s.h.

5821. *Intermediate Organic Chemistry*. An intermediate treatment of organic chemistry building on the principles introduced at the sophomore level. Emphasis on curved arrow notation in mechanism

and the planning of organic syntheses. Structural analysis of organic compounds using NMR, IR and MS and the application of structural knowledge to questions of mechanism. Prereq.: CHEM 3720. 3 s.h.

5822/5822L. *Advanced Organic Laboratory*. An advanced approach to the applications of organic chemistry in the laboratory. Synthesis and purification of organic molecules using modern techniques, structure elucidation using spectroscopic techniques. Lecture discussion includes use of instrumentation, planning of practical syntheses, use of the primary chemical literature and safety in the laboratory. Two hours lecture, six hours lab. Prereq.: CHEM 3720. 4 s.h.+0 s.h.

5830. *Intermediate Inorganic Chemistry*. Reactions and descriptive chemistry of transition metal, organometallic, and main-group compounds. Prereq.: CHEM 3729, 3740 (may be concurrent). 2 s.h.

5831. *Inorganic Chemistry Laboratory*. Preparation of typical inorganic compounds and their characterization. Six hours lab-discussion. Prereq. or concurrent: CHEM 3729 and 3739. 2 s.h.

5832/5832L. *Solid State Structural Methods*. The determination of structures of biological, organic, and inorganic materials in the solid state. Introduction to the crystalline state, defects, diffraction of waves, powder and single crystal diffraction methods of neutron and x-ray analysis, electron microscopy, and solid state NMR. Two hours lecture, three hours lab. Prereq.: CHEM 3740 or 3737 or consent of the chairperson. 3 s.h.+0 s.h.

5836. *Quantum Chemistry*. Basic principles of quantum chemistry, with applications to problems in molecular structure, spectroscopy and thermodynamics. Prereq.: CHEM 3740. 3 s.h.

5861/5861L. *Polymer Science 1: Polymer Chemistry and Plastics*. Preparation, characterization, structure-property relationships, morphology, and uses of the major commercial polymers. Two hours lecture, three hours lab. Prereq. or concurrent: CHEM 3720 and 3739 or 3737 or consent of the chairperson. 4 s.h.+0 s.h.

5862/5862L. *Polymer Science 2: Polymer Rheology, Processing, and Composites*. Polymer rheology, processing methods, and materials characterization. The effects of additives and the major classes of thermoplastic, thermoset, elastomeric, and composite materials. Two hours lecture, three hours lab. Prereq.: CHEM 5861 or consent of the chairperson. 3 s.h.+0 s.h.

5876. *Enzyme Analysis*. Advanced biochemistry laboratory focusing on the methods of enzyme purification and characterization. One hour lecture, two hours lab. Prereq.: CHEM 3785 or equivalent and 3785L or equivalent. 2 s.h.

## CHILD AND FAMILY—CHFM

### Department of Human Ecology

#### Lower-Division Courses

1514. *Introduction to Early Childhood Education*. Historical and theoretical foundations of early childhood education; overview of early childhood environments, relationships with children and families, and curricular issues. Three (3) hours lecture per week and 15 hours of field observations per semester. 3 s.h.

1530. *Infants and Toddlers: Development and Care*. Infant and toddler development and the design of developmentally appropriate curriculum and caregiving environments for children conception to age three. Emphasis on the caregiver-child relationship. Learning will occur through observation, reflection, classroom discussions, focused reading, and practice in infant/toddler settings. Two hours lecture and three hours guided practice. 3 s.h.

2633. *Early Childhood: Integrating Development and Education*. Knowledge and skills to plan curriculum and organize learning environments that are developmentally appropriate and responsive to the needs of a diverse population of children ages three to eight. Includes 10 hours of field experience. Prereq.: ENGL 1550. 3 s.h.

2650. *Introduction to Assessment of Young Children*. Principles of conducting developmentally appropriate assessments of behavior and development of young children; assessment purposes, strategies, and appropriate use of assessment information. Includes five hours of field experience. Prereq.: Minimum grade of C in CHFM 2633 or PSYC 3755. 3 s.h.

2664. *Managing Classroom Behavior and Staff Relationships in Early Childhood Settings*. Principles of effective classroom management in the early childhood classroom; emphasis on positive guidance strategies, the influence of the classroom environment on children's behavior, and establishing a collaborative professional team. Includes 10 hours of field/clinical experience. Prereq: Minimum grade of C in CHFM 1514 and minimum grade of C in CHFM 2633. 3 s.h.

2675. *Integrated Curriculum for Prekindergarten*. Teaching techniques used to implement an integrated early childhood curriculum in the prekindergarten classroom with emphasis on the communication curriculum (language, literacy, and literature) and the inquiry curriculum (math, science, and social studies). Includes 10 hours of field experience. Prereq.: Minimum grade of C in CHFM 1514 and minimum grade of C in CHFM 2633. 3 s.h.

#### Upper-Division Courses

3718. *Family Law*. Fundamental elements of family law, including premarital contracts, traditional and nontraditional marriages and families, procreation rights, legitimacy and paternity, adoption, divorce and separation, property division and support,

custody and termination of parental rights, juvenile law, intra-family tort liability and domestic violence. Cross-listed with CJFS 3718. Prerequisite: SOC 1500. 3 s.h.

3731. *Individual and Family Development*. The family ecosystems, dynamics, and roles throughout the life span, and the impact of heritage and culture on family systems worldwide. Prereq.: PSYC 1560 and ENGL 1551. 3 s.h.

3733L. *Pract. in Preprimary Set*. Includes field placement in a preschool or kindergarten setting. Observe, plan, and implement developmentally appropriate activities for children ages three to eight years. Six hours practicum experience per week. One hour seminar per week. Prereq.: CHFM 2633. 3 s.h.

3750. *Parent and Professional Relationships*. Strategies for building working relationships with parents of young children and other professionals in early childhood education. Ten hours field/clinical experience. Prereq.: Minimum grade of C in CHFM 2633 or PSYC 3755. 3 s.h.

3755. *Parenting*. An examination of parent-child relationships from both a developmental and contextual perspective. Topics include parenting patterns and strategies, parent-child relations as a function of development, and the role of culture and context in the negotiation of roles in parent-child interactions. Prerequisite: PSYC 1560 and SOC 1500. 3 s.h.

3770. *Wellness During the Early Childhood Years*. Principles of maintaining physically and psychologically safe and healthy learning environments for children; includes nutrition, safety in the classroom, stress and mental health issues, and community resources. Prereq.: Minimum grade of C in CHFM 1514 or ECE 2629 or CHFM 3731. 3 s.h.

3790. *Directed Practice in PreK Education*. A culminating practicum for the PreK associate degree candidates designed to provide teaching experiences with children in the early childhood years. Students will apply developmental theories and appropriate practices in settings for young children. 300 hours of field work. Prereq.: CHFM 1514, CHFM 3733L. Coreq.: CHFM 3790S. 4 s.h.

3790S. *Directed Practice Seminar*. Discussion of practicum experiences in assigned preschool classrooms with a focus on developmentally appropriate practices, reflective teaching, and professionalism in early childhood education. Prereq.: CHFM 1514, CHFM 3733L; Coreq.: CHFM 3790. 2 s.h.

4859. *Methods and Materials in Early Childhood Settings*. Methods and techniques used to implement an integrated early childhood curriculum with emphasis on social, emotional, and physical development and concept formation of young children ages 3 to 8. Listed also as ECE 3759. Prereq.: ECE 2630, CHFM 3790. 3 s.h.

5860. *Coordination and Evaluation of Early Childhood Programs*. Administration, organization, and operation of early childhood programs, including legal

and ethical guidelines, managing resources, program development and evaluation, advocacy, and public policy in early childhood education. Includes ten hours field/clinical experience. Prereq.: Minimum grade of C in CHFM 3733L. 3 s.h.

## CIVIL AND CONSTRUCTION ENGINEERING TECHNOLOGY—CCET Engineering Technology

### Lower-Division Courses

2604. *Properties and Strength of Materials*. Introduction to the physical and chemical properties of materials and their behavior under various loads and environments. Concepts of stress and strain developed and evaluated for the application of axial, shear, torsional, and bending loads. Prereq. or concurrent: MET 1515. 3 s.h.

2614L. *Materials Laboratory 1*. Use and care of testing equipment, data retrieval, data reduction and report preparation. Physical testing of metals, concrete, aggregates, asphalts, soils and woods. Three hours per week. Prereq or concurrent: CCET 2604. 1 s.h.

2617. *Construction Methods and Materials*. Basic properties of construction materials. Processing and placement methods. Purchase, use and replacement of construction equipment. Application of engineering economics to construction. Use of building codes. Prereq.: CCET 2604. 3 s.h.

### Upper-Division Courses

3705. *Computing for Technologists*. Development of computer techniques used in solutions to problems in all fields of engineering technology. Students write computer programs to solve problems with which they are familiar. Use of database management, spreadsheets. May be taken by non-CCET majors. Two hours lecture, three hours lab per week. Prereq.: junior standing or consent of instructor. 3 s.h.

3706. *Structural Design*. Structural design using AISC, ACI and similar codes. Selection of members and connections in accordance with manuals and code specifications. Design and AutoCAD projects required. Three hours lecture and three hours computational lab per week. Prereq.: DDT 1505, MET 1515, MATH 1513, CCET 2604. 4 s.h.

3708/3708L. *Building Information Modeling*. Introduction and applications of Autodesk Revit 3D CAD program. Use of Revit software to assemble a complete building information model of a building and use the model to coordinate systems between disciplines, to create material take-offs, construction documents, and presentation drawings. Two hours lecture, three hours lab per week. Prereq.: C or better in CCET 3706. 3 s.h.+0 s.h.

3709. *Structural Analysis 1*. Fundamental determination of member forces in trusses, beams, arches, frames and cables. Calculation of member stresses and deflections. Two hours lecture, three hours computational lab per week. Prereq.: ENTC 1505, MATH 1513, CCET 2604. 3 s.h.

3711. *Specifications and Estimating*. Fundamentals of writing and interpreting specifications for materials and construction methods. Estimating materials and labor costs for construction projects. Use of computer estimating packages. Two hours lecture and three hours computational laboratory. Prereq.: ENTC 1505, MATH 1513, CCET 2604. 3 s.h.

3714. *Soil Mechanics*. A study of soil properties, classifications, strength and behavior. Theory of consolidation, shear strength and stability analysis. Two hours lecture per week. Prereq.: CCET 2614L, CCET 3706, CCET 3709. Concurrent with CCET 3714L. 2 s.h.

3714L. *Soil Mechanics Laboratory*. Practice in soil identification and determination of soil properties. Use and care of basic soil testing equipment and standard test procedures. Three laboratory hours per week. Concurrent with CCET 3714. 1 s.h.

3719. *Environmental Impact of Abandoned Mines*. Mining methods, types of mines, information retrieval, mine stabilization, and the effects of abandoned mines on environmental and human activities, especially deep coal mines in the Mahoning Valley and adjacent areas. Two hours lecture and three hours of lab per week. Prereq. GEOL 1505 or equivalent or permission of instructor. 3 s.h.

3724. *Hydraulics and Land Development*. Study of hydraulics and hydrologic principles and their applications to drainage requirements, storm-water management, detention/retention basin design, erosion and sedimentation control plans and land-use planning. Use of computer software for analysis and design. Two hours lecture, three hours of computational lab per week. Prereq.: DDT 1505, ENTC 1505, MATH 1513, CCET 2604. 3 s.h.

3730. *Transportation Technology*. Transportation planning and highway system design. Familiarization with AASHTO design manuals; geometric design and signalization of highway segments; capacity analysis and route selection. Cost-benefit analysis for transportation projects. Prereq.: CEEN 2610 and CCET 2624. 3 s.h.

3740. *Construction Management*. Design and construction office planning and scheduling techniques. Introduction to computer methods for program planning and updating. Financial, labor, and material resource allocation and tracking. Construction reports, contracts, specifications and general conditions. Relationships among owner, architect/engineer, and constructor. Prereq.: C or better in CCET 2617 and CCET 3711. 3 s.h.



4807. *Project Planning & Scheduling*. Application of planning, scheduling, and control system techniques for an integrated project including theory, options, legal implications, and practices. Students plan and schedule projects using CPM computer software and set up control systems for the project. Three hours lecture, one hour laboratory per week. Prereq.: C or better in both CCET 2617 and CCET 3711. 3 s.h.

4809. *Structural Analysis 2*. Continuation of CCET 3709. Analysis techniques for common structures. Introduction to classical approaches to statically indeterminate structures and calculation of deflections. Use of standard computer programs such as StruCalc, SAP and SABLE. Three hours lecture, one hour computational lab per week. Prereq.: C or better in both CCET 3709 and MATH 1570. 3 s.h.

4810. *Construction Surveying*. Theory and applications of advanced land surveying techniques for: route surveying and geometric design; topographic site surveys and mapping; civil engineering, utilities, and construction surveys; global positioning systems; and quantities and final surveys. Two hours lecture and three hours field surveying laboratory. Prereq.: CEEN 2610, CEEN 2610L. 3 s.h.

4812. *Concrete Design*. Behavior and design of concrete elements subject to flexure, shear, axial and combined effects. Emphasis on reinforced concrete design in accordance with the ACI Code including beams, T-beams, slabs, walls, and columns. An introduction to prestressed and precast concrete design. Three hours lecture, one hour design lab per week. Prereq.: C or better in both CCET 3706 and CCET 3709. 3 s.h.

4813. *Steel Design*. Loading and behavior of steel structures and design of standard rolled shapes in accordance with current LRFD and ASD specifications. Design of welded and bolted connections and an introduction to design of cold-formed steel members. Three hours lecture, one hour design lab per week. Prereq.: C or better in both CCET 3706 and CCET 3709. 3 s.h.

4814. *Foundation Design*. Application of soil mechanics to the design of foundations. Topics include spread footings, drilled piers, piles, retaining walls, sheet piles walls and underground structures. Three hours lecture per week. Prereq.: CCET 3714 and CCET 3714L. 3 s.h.

4815. *Masonry Design*. Design of beams, columns, shear walls and bearing walls using clay and concrete masonry units. Application of allowable stress design (ASD) and strength design (SD) in accordance with the MSJC *Building Code Requirements for Masonry Structures*. Additional topics include prestressed and autoclaved aerated concrete (AAC) masonry. Three hours lecture, one hour lab per week. Prereq.: CCET 2617, C or better in both CCET 3706 and CCET 3709. 3 s.h.

4816. *Timber Design*. Design of beams, poles, piles, diaphragms, shear walls and fasteners using timber elements. Application of the *National Design Specification for Wood Construction* that incorporates a dual format using both allowable stress design (ASD) and load and resistance factor design (LRFD). Additional topics include glued-laminated members and design of mechanical connectors. Design, analysis, construction, and testing of scale models is required. Three hours lecture, one hour lab per week. Prereq.: CCET 2617, C or better in both CCET 3706 and CCET 3709. 3 s.h.

4824. *Environmental Technology*. Application of environmental principles to land planning and development. Wastewater treatment processes and system design. Application of water and wastewater management to specific sites. Permitting and endangerment assessment. Three hours lecture, one hour computational lab per week. Prereq.: C or better in CCET 3724 and junior standing. 3 s.h.

4884. *Civil/Structural Facilities Design*. Interdisciplinary capstone course. An overview of the requirements and design procedures for civil and structural systems. Includes the analysis and design for site development, utilities, foundation, wall systems, framing systems, floor system and the preparation of the plans, specifications and estimate package. Includes a major interdisciplinary group project. Prereq.: Senior standing in CCET or EET permission of instructor. Concurrent: EET 4880. Two hours lecture, three hours design studio. 3 s.h.

4890. *Special Topics in Civil and Construction Engineering Technology*. New developments in CCET. Subject matter, special prerequisites, and credit hours to be announced in advance of each offering. May be repeated with different subject matter to a maximum of 8 s.h. Prereq.: Senior standing in CCET or consent of the instructor. 1-4 s.h.

## CIVIL/ENVIRONMENTAL ENGINEERING—CEEN Department of Civil/ Environmental and Chemical Engineering

### Lower-Division Courses

2601. *Statics*. Principles of engineering mechanics as applied to statics with vector applications to forces and moments; centroid and center of gravity; equilibrium; friction; moments of inertia: relationship between loads, stress and strain in tension, compression, torsion and bending. Prereq.: MATH 1572 and PHYS 2610 or concurrent. 3 s.h.

2602. *Strength of Materials*. Relationships between loads, shear and bending moments in beams; combined stresses in beams; indeterminate beam analysis; virtual load; connections; columns. Prereq.: CEEN 2601. 3 s.h.

2602L. *Strength of Materials Lab.* Experimental verification of strength of materials; testing: tension, torsion, non-destructive tests of steel; concrete compression and Poisson ration, wood tests. Prereq.: Concurrent with CEEN 2602. 1 s.h.

2610. *Surveying.* The theory of surveying and the use of instruments. Problems in leveling, traversing, and topography. Introduction to circular and vertical curves. Prereq.: MATH 1513 or equivalent. 3 s.h.

2610L. *Surveying Laboratory.* Field surveying principles and techniques. Uses of transit and level are stressed. Three laboratory hours per week. Prereq.: Concurrent with CEEN 2610. 1 s.h.

### Upper-Division Courses

3711. *Technology and Society.* A critical exploration of how societal needs affect the creation of technologies and how technology affects society. The course is interdisciplinary in nature and presents various approaches to examining the complex interaction between humans and their tools. Topics include: (1) technology in human history; (2) society, science, and technology development; (3) technology and social change; (4) technology, knowledge, and power; (5) technology, population, and the environment. Prereq.: Junior standing or consent of instructor. Listed also as SOC 3789, BIOL 3789. 3 s.h.

3716. *Fluid Mechanics.* Proportions of fluids, fluid statics, kinematics; Bernoulli equation; fluid momentum; laminar and turbulent flow through simple pipes; boundary layers; dimensional analysis and similitude. Prereq.: CEEN 2602. 3 s.h.

3716L. *Fluid Mechanics Lab.* Experimental verification of the principles of fluid mechanics as applied to incompressible fluid. Three hours laboratory per week. Prereq.: ENGR 1560; Concurrent with CEEN 3716. 1 s.h.

3717. *Hydraulic Design.* Analysis of flow in complex pipe systems; pumps; open channel flow; culverts; spillways; storm water drainage. Three hours lecture and three hours of computational laboratory per week. Prereq.: CEEN 2610 and 3716. 4 s.h.

3720. *Transportation Engineering.* Introductory survey of transportation topics including transportation systems, vehicular operation and control, and transportation planning techniques; introduction to design of highways, airports, and railroads; and traffic engineering. Prereq.: CEEN 2610. 3 s.h.

3736. *Fundamentals of Environmental Engineering.* Causes and effects of water, air and land pollution; measurements of environmental quality; environmental regulations; introduction to methods of pollution control. Prereq.: CHEM 1515, ENGR 1560. 3 s.h.

3749. *Structural Analysis 1.* The determination of shears, moments, and stresses in statically determinate beams, frames, and trusses. Consideration

of dead, live, moving, and wind loads. Elastic deflections of simple structures. Introduction to the analysis of statically indeterminate structures using numerical and energy methods. Prereq.: CEEN 2602. 3 s.h.

3749L. *Structural Analysis 1 Lab.* Introduction to stiffness-based analysis of determinate and indeterminate structures. Computer analysis of various structural systems, including plane and space trusses, continuous beams, plane and space frames, plates. P-delta stability analysis of frames. Three hours computational lab per week. Prereq.: CEEN 2602; concurrent with CEEN 3749. 1 s.h.

3751. *Water Quality Analysis.* Introduction to physical, chemical, and biological measurements of water quality. Sample collection and laboratory analysis of natural waters, drinking water, and wastewater. Interpretation of environmental data. Two hours lecture and three hours laboratory per week. Identical to ENST 3751. Prereq.: CEEN 3736 or ENST 2600; CHEM 1515. 3 s.h.

3751L. *Water Quality Analysis Lab.* Laboratory experience in the analysis of natural waters, drinking water and wastewater. Emphasizes procedures for the collection and interpretation of data on current environmental problems. Three hours laboratory per week. Must be taken concurrently with CEEN 3751. 0 s.h.

4800. *Special Topics.* Special topics and new developments in Civil Engineering. Subject matter, credit hours, and special prerequisites to be announced in advance of each offering. Prereq.: Senior standing or consent of instructor. May be repeated to a maximum of 6 s.h. 3 s.h.

4812. *Construction Management.* Fundamentals of construction management: contracts, bonding, estimating, organization, finance; cost and productivity of equipment, material, and labor; and project planning and scheduling. Prereq.: CEEN 3717 or CEEN 4881. 3 s.h.

4835. *Highway Design.* Methods of highway route location; design methods and standards for highways, intersections, freeways, and interchanges. Includes extensive use of computer-aided design. Prereq.: CEEN 3720. 3 s.h.

4863. *Integrated Design Project.* Students will be required to complete a meaningful design experience that focuses attention on professional practice and is predicated on the accumulated background of curriculum components. Two hours of lecture and three hours of laboratory a week. Prereq.: CEEN 4812 and unrecalculated GPA of 2.0 or better in major courses. 3 s.h.

4879. *Civil Engineering Analysis.* Application of mathematical and numerical methods to the systematic analysis and development of problems in the field of Civil Engineering. Prereq.: CEEN 3749. 3 s.h.

4881. *Geotechnical Engineering*. Properties of soil, classification, capillarity, seepage, permeability, stresses, consolidation, shear strength; analysis and design of foundation structures, retaining walls, piles, drilled piers, sheet pile walls, special footings, stability. Prereq.: MATH 2673; CEEN 3749. 3 s.h.

4881L. *Geotechnical Lab*. Typical soil testing procedures and physical testing of soil samples. Prereq.: Concurrent with CEEN 4881. 1 s.h.

5820. *Pavement Material and Design*. Design methods for flexible, rigid and other wheel-supporting pavements to include investigation, testing and preparation of subgrade, base course and pavement materials, design of various pavement mixtures, stresses in pavements, pavement design, and strengthening existing pavements. Prereq.: CEEN 3720 and 4881. 3 s.h.

5829. *Civil Engineering Materials - Concrete*. A course designed to broaden the student's understanding of Portland Cement Concrete as a construction material. Topics include the study of cement, hydration of cement, aggregates, admixtures for concrete, mix design handling and placing, curing and properties of Portland Cement Concrete. Testing of Concrete, quality control and special concretes are also included. A library research paper on a concrete-related topic of the student's choice is required. Prereq.: CEEN 3749 or permission of instructor. 3 s.h.

5832. *Natural Systems Engineering*. Introduction to the features, functions and values of natural aquatic systems, and engineering approaches to analysis and restoration design. Focus on wetlands and streams. Topics include regulations, wetland delineation, constructed wetland design, basic stream geomorphology, and stream restoration design. Prereq.: CEEN 3736 or permission of instructor. 3 s.h.

5837. *Environmental Engineering Design*. Theory and design of unit operations and processes for treatment of drinking water and municipal wastewater. Prereq.: CEEN 3736. 3 s.h.

5849. *Structural Analysis 2*. Analysis of statically indeterminate beams, trusses, bents and multistory frames, utilizing concepts of strain energy, virtual work, slope-deflection, and moment distribution. Introduction to matrix methods of analysis using force and displacement methods. Prereq.: CEEN 3749. 3 s.h.

5855. *Reinforced Concrete Design*. An introduction to the behavior, analysis, and design of reinforced concrete members. Included are singly and doubly reinforced beams, tee-beams, slabs, short and long columns. Prereq.: CEEN 3749. 3 s.h.

5856. *Steel Design*. An introduction to the behavior and design of steel structures. Included is the design of rolled and built-up tension members, beams, columns, beam-columns, welded and bolted connections. Prereq.: CEEN 3749. 3 s.h.

5877. *Systems Engineering and Project Management*. Systems approach to engineering design; non-linear models; linear programming; dynamic programming; network analysis; project management. Prereq.: MATH 3705. 3 s.h.

5882. *Foundation Engineering*. Analysis and design of various foundations, including abutments, piers, piles, and footings; slope stability of embankments. Prereq.: CEEN 4881 and CEEN 5855. 3 s.h.

5883. *Bridge Engineering*. Analysis and design of concrete and steel bridges; specifications and code requirements; design detailing; effects of natural and man-made hazards on bridges; implications of bridge failures. Prereq.: CEEN 5855 and CEEN 5856. 3 s.h.

5884. *Solid and Hazardous Waste Management*. Sources, characteristics, handling and disposal options for solid waste and hazardous waste; topics include regulations, health effects, waste minimization, collection systems, landfill design, treatment and processing methods, and site assessment. Prereq.: CEEN 3736. 3 s.h.

## CLINICAL LABORATORY TECHNOLOGY – CLTC Department of Health Professions

### Lower-Division Courses

1501. *Introduction to Clinical Laboratory Science*. Overview of the clinical laboratory profession, ethics, responsibilities and clinical relevance of laboratory procedures. Prereq.: Algebra 2, high school chemistry and biology. Concurrent with CLTC 1501L. 2 s.h.

1501L. *Introduction to Clinical Laboratory Science Laboratory*. Phlebotomy, specimen collection and processing; basic clinical laboratory exercises. Three hours lab per week. Concurrent with CLTC 1501. Prereq.: Algebra 2, high school chemistry and biology. 1 s.h.

1502. *Urinalysis and Body Fluids*. Theory and techniques in the analysis of urine and body fluids. Concurrent with CLTC 1502L. Prereq.: CLTC 1501/L, BIOL 2601. 2 s.h.

1502L. *Urinalysis and Body Fluids Laboratory*. Chemical and microscopic analysis of urine. Concurrent with CLTC 1502. Three hours lab per week. Prereq.: CLTC 1501/L, BIOL 2601. 1 s.h.

1503. *Immunohematology*. Fundamental theories and techniques of immunohematology and blood banking; genetic theories, problem solving, and case studies. Concurrent with CLTC 1503L and BIOL 2602. Prereq.: BIOL 2601 and CLTC 1501. 3 s.h.

1503L. *Immunohematology Laboratory*. ABO and RH typing, direct and indirect antiglobulin testing, compatibility testing. Three hours lab per week. Concurrent with CLTC 1503. Prereq.: CLTC 1501/L, BIOL 2601. 1 s.h.

1505. *Phlebotomy*. Principles and practice of blood collection by venipuncture and capillary techniques including directed clinical practice; specimen collection and preservation; infection control and universal precautions. Two hours of lecture and three hours of laboratory per week; 16 hours of clinical practice in an affiliated laboratory. Prereq.: Permission of instructor or enrollment in a healthcare major. 3 s.h.

2601. *Clinical Chemistry 1*. Medical laboratory applications of clinical chemistry. Concurrent with CLTC 2601L. Prereq.: CLTC 1502/L, CHEM 1515. 2 s.h.

2601L. *Clinical Chemistry 1 Laboratory*. Spectrophotometric, semi-automated, and automated analysis of glucose, electrolytes, enzymes, and other chemical constituents of serum. Three hours lab per week. Concurrent with CLTC 2601. Prereq.: CLTC 1502/L, CHEM 1515. 1 s.h.

2603. *Topics in Clinical Laboratory Technology*. Clinical laboratory applications to molecular diagnostics, serology, virology and parasitology. Regulations, information processing, education, ethical, professional issues. Critical analysis of clinical laboratory information. Two hours lecture and six hours laboratory per week. Prereq.: CLTC 1502 and 1503 with a minimal grade of C. 4 s.h.

2609. *Topics in Histotechnology*. Instrumentation, processing, fixation, microtomy, staining, and special staining as relative to the histotechnician. Prereq.: Admission to Histotechnology program, CLTC 1501/L, or permission of instructor. 2 s.h.

2609L. *Topics in Histotechnology Laboratory*. Applications of solution preparation, staining, microtomy, and quality control in the histotechnician laboratory. Concurrent with CLTC 2609. Prereq.: CLTC 1501/L with a minimal grade of C. 1 s.h.

2611. *Histotechnician Seminar 1*. Didactics in specimen processing, fixation, microtomy, sectioning, and general staining methods. Evaluation of clinical progress. Prereq.: CLTC 2609. Concurrent with CLTC 2612. 1 s.h.

2612. *Histotechnician Practicum 1*. Histologic procedures of instrumentation, cell structure, fixatives, processing and sectioning of tissues, and general staining methods. Thirty hours of clinical experience at an assigned affiliated laboratory and six hours of laboratory in the on-campus simulated histology laboratory. Concurrent with CLTC 2611. Prereq.: CLTC 2609 and successful completion of first three semesters of histotechnician curriculum with a minimum GPA of 2.5. 11 s.h.

2621. *Histotechnician Seminar 2*. Didactics in special staining methods, microorganisms, immunochemistry, DNA and RNA probes, electron microscopy and flow cytometry. Preparation for practical examination. Prereq.: CLTC 2611 and 2612. Concurrent with CLTC 2622. 1 s.h.

2622. *Histotechnician Practicum 2*. Histologic procedures of nuclear, cytoplasmic, nervous tissue, connective tissue, microorganisms, and muscle fiber stains. Immunocytochemistry, RNA and DNA probes, flow cytometry, and special techniques. Preparation for the ASCP practical examination. Thirty hours of clinical experience at an assigned affiliated laboratory and six hours of laboratory in the on-campus simulated histology laboratory. Concurrent with CLTC 2621. Prereq.: CLTC 2611 and CLTC 2612. 11 s.h.

2687L. *Microbiology for Health Care Laboratory*. Medical microbiology laboratory for health care professionals. Laboratory methods in the transmission, identification, prevention, and treatment of common bacterial, viral, fungal, and parasitic pathogens with a focus on nosocomial infections. Three hours lab per week. Concurrent with BIOL 1560. Prereq.: BIOL 1545, 1551, 2601, or permission of instructor. 1 s.h.

### Upper-Division Courses

3700. *Clinical Chemistry 2*. Instrumentation and clinical relevance of applied chemical techniques including immunoassays, therapeutic drug monitoring, enzymes, trace elements, and point-of-care technology; quality control and assurance, case studies, and problem solving in clinical chemistry. Concurrent with CLTC 3700L. Prereq.: CLTC 2601 or CHEM 1515. 3 s.h.

3700L. *Clinical Chemistry 2 Laboratory*. Thyroid, digoxin, B12, folic acid, antinuclear antibodies and T and B cell receptor procedures utilized in a clinical laboratory. Three hours lab per week. Concurrent with CLTC 3700. Prereq.: CLTC 2601/L or CHEM 1515. 1 s.h.

3701/L. *Clinical Hematology 1*. Hematopoiesis; theory and laboratory application of manual procedures in hematology including cell counts, hemoglobin, hematocrit, and differentials; introductory hemostasis and laboratory applications. Prereq.: CLTC 1501/L, BIOL 2601 with a minimal grade of C. Two hours of lecture and 3 hours of laboratory per week. 3 s.h.

3702/L. *Clinical Hematology 2*. Advanced theory and laboratory procedures in hematology and hemostasis, including leukemia, anemia, hematopathology and coagulation disorders; abnormal differentials and automated methods. Two hours of lecture and 3 hours of laboratory per week. Prereq.: CLTC 3701/L with a minimal grade of C. 3 s.h.

3703. *Clinical Immunology*. Fundamentals of antigen-antibody reactions applied to serological procedures performed in the clinical laboratory. Three hours lecture per week. Concurrent with CLTC 3703L. Identical with BIOL 3703. Prereq.: CLTC 1501/L, BIOL 2602. 3 s.h.

3703L. *Clinical Immunology Laboratory*. VDRL, ASO, febrile, latex, pregnancy, and viral tests; flocculation, precipitation, complement fixation, and titration procedures for various diseases. Three hours lab per week. Concurrent with CLTC 3703. Identical with BIOL 3703L. Prereq.: CLTC 1501/L, BIOL 2602. 1 s.h.

3706. *Clinical Laboratory Seminar*. Internship evaluation, special topics in the clinical laboratory. Case studies in the clinical laboratory. Concurrent with CLTC 3716. 2 s.h.

3710. *Interpretation of Clinical Laboratory Results*. The significance of laboratory results and how they relate to gender and age. Prereq.: CLTC 2601/L or permission of instructor. 1 s.h.

3716. *Clinical Internship*. Thirty-six hours per week of practical application of skills in affiliate hospitals and private laboratories. Prereq.: Completion of previous five semesters of CLTC curriculum with a grade of C or better and a minimum 2.5 GPA. Concurrent with CLTC 3706. 8 s.h.

3787. *Diagnostic Microbiology*. Clinical applications of human pathogenic microorganisms; infections, frequency, isolation, identification, and treatment of bacteria, fungi, viruses, and parasites. Case studies, problem solving, and quality assurance in clinical microbiology. Three hours lecture per week. Prereq.: BIOL 2602. 3 s.h.

3787L. *Diagnostic Microbiology Laboratory*. A clinical approach to the study of bacteria, fungi, viruses, and parasites. Methods to isolate and identify clinically significant pathogens from clinical specimens; case studies in clinical microbiology. Six hours lab per week. Prereq.: BIOL 2602. Identical with BIOL 3787L. 2 s.h.

4811. *Clinical Experience 1*. Acceptance into a clinical affiliate. Clinical microbiology and laboratory, clinical immunology and laboratory, clinical mycology, clinical parasitology, and virology. Forty hours of clinical experience per week. Prereq.: Permission of program director. 12 s.h.

4821. *Clinical Experience 2*. Acceptance into a clinical affiliate. Immunoematology and laboratory, clinical hematology and laboratory, coagulations and laboratory. Forty hours of clinical experience per week. Prereq.: Permission of program director. 12 s.h.

4831. *Clinical Experience 3*. Acceptance into a clinical affiliate. Clinical chemistry and laboratory, urinalysis and laboratory, laboratory management, laboratory education methods, special topics in clinical laboratory science. Capstone course: senior laboratory research project and resumes completed. Forty hours of clinical experience per week. Prereq.: Permission of program director. 12 s.h.

## COMMUNICATION STUDIES—CMST

### Department of Communication

#### Lower-Division Courses

1545. *Communication Foundations*. Theories, strategies, and skills for competent participation in interpersonal, group, and public communication

situations. Application exercises in interpersonal, group, and public communication. Prereq.: Qualified to take ENGL 1550. 3 s.h.

2600. *Communication Theory*. The study of significant theories of communication that reflect the diversity of communication studies and address different communication contexts: interpersonal, group, public, organizational, and mass. 3 s.h.

2610. *Intercultural Communication*. The study of key historical and contemporary theories that affect communication across cultural boundaries. Exercises for improving communication skills in intercultural communication situations are included. 3 s.h.

2645. *Presentational Speaking*. In-depth examination of the theory and practice of preparing and delivering presentations in today's work environment. Emphasis on using technology aids during presentations. Prereq.: CMST 1545 or equivalent. 3 s.h.

2653. *Group Communication*. Small-group interaction and participation from a communication systems perspective. Includes an examination of group processes and leadership in group interaction. 3 s.h.

2656. *Interpersonal Communication*. An examination of the skills necessary to develop, maintain, and evaluate one-to-one relationships. Through practical experiences from everyday life, the class examines what occurs when one person communicates with another. 3 s.h.

2657. *Organizational Communication*. A general survey of traditional and interpretive approaches to organizational communication as well as career applications. Explores the relationship between communication and organizational effectiveness. 3 s.h.

#### Upper-Division Courses

3700. *Designing Communication Research*. A study of the processes involved in designing both qualitative and quantitative communication research projects. Communication research design and implementation. Prereq.: 15 s.h. of Communication Studies including CMST 2600, and ENGL 1551. 3 s.h.

3717. *Intro to Media Relations Campaigns*. An experiential, service-learning course in designing and implementing Media Relations campaigns. Prereq.: CMST 1545. 3 s.h.

3745. *Individual Studies*. Student selects a special problem or issue in communication to research in detail under the direction of a faculty member, pending department committee approval. Repeatable to 6 hrs. Prereq.: Junior standing. 1-3 s.h.

3750. *Gender Communication*. Principal concepts and issues of gender and communication as they apply to identity, and communication within and between the genders in a variety of contexts. Prereq.: CMST 1545. 3 s.h.

3754. *Argumentation*. Developing critical thinking through systematic evaluation of theories, principles, and practices of argumentation. Prereq.: CMST 1530. 3 s.h.

3756. *Interviewing*. Theories of communication applied to interview situations with a special concern for developing student understanding of and skills needed to participate in one-to-one and panel interviews. Prereq.: CMST 1530. 3 s.h.

3757. *Media Relations Writing*. A lecture-lab course in writing pamphlets, advertisements, newsletters, and websites for media relations campaigns. Prereq.: ENGL 1550 and ENGL 1551. 3 s.h.

3760. *Persuasion*. Theory and application of rhetorical persuasion. Study of major theorists including Aristotle and Kenneth Burke. Presentation required. Prereq.: CMST 1530 and CMST 2645. 3 s.h.

4850. *Computer-Mediated Communication*. Theory and application of CMC including web design, blogging, podcasting, e-mailing, social networking, and multimedia storytelling. Design, implementation, and evaluation of CMC stressing social implications. Prereq.: CMST 1545. 3 s.h.

4851. *New Communication Media*. New media histories, technologies, and cultures. Considers promising future forms, and includes issues of authorship, community, identity, interactivity, visuality, the nature and power of technology, intelligent systems, and artificial life. Prereq.: CMST 2600 and ENGL 1551. 3 s.h.

4855. *Interpersonal Communication Relationships*. Theories of relationship development, maintenance and termination. The impact of face-to-face and mediated communication on interpersonal relationships. Prereq.: CMST 1530 and 2656 and ENGL 1551. 3 s.h.

4859. *Organizational Cultures*. Analysis of organizational cultures. Relationships between organizational culture and communication in modern organizations. Prereq.: CMST 1530 and 2657. 3 s.h.

4896. *Internship*. An application of communication theories and practice within organizational settings. Weekly meetings with faculty supervisor are required. Weekly field work is 15 hours. May be repeated to a maximum of 6 s.h. Prereq.: CMST 2657, senior standing, major in Communication Studies, and approval of *Internship Proposal* form. 3 s.h.

4898. *Media Analysis*. Application of methods of analysis to describe and critique the content of various types of media, including new media, news media, and entertainment media. Emphasis on the relationship between media content, uses, and effects. Prereq.: CMST 3756 and CMST 3799. 3 s.h.

4899. *Senior Project*. Synthesis of research, writing, and presentation skills through the completion of a communication research project and professional development activity. Repeatable to a maximum of 6 s.h. Prereq.: Senior standing, major in Communication Studies, 24 s.h. of Communication Studies major complete, including CMST 3799. Grading is Traditional/PR. 3 s.h.

5852. *Conflict Management and Negotiation*. An in-depth analysis of the theories and variables influencing conflict management, resolution, and negotiation. Includes strategies and skills for mediation and arbitration. Prereq.: CMST 1530, 2653 and 2657. 3 s.h.

5898. *Seminar*. A cooperative exploration of topics in communication studies. May be repeated up to 6 s.h. Prereq.: Senior standing or permission of instructor and 24 s.h. of Communication Studies, including CMST 3799. 3 s.h.

## COMPUTER INFORMATION SYSTEMS—CIS

### Department of Computer Science and Information Systems

#### Upper-Division Courses

3714. *Assembly Language and Architecture*. Fundamentals of computer architecture and organization. Forms of data representation. Assembly language and machine language programming. The assembly process. Methods and protocols for subroutine linkage. Prereq.: CSIS 2610. 3 s.h.

3718. *Operating Systems Concepts*. Concepts of computer operating systems, including memory allocation, job scheduling, process communication, and input/output processing. Examinations of operating systems on several platforms. Prereq.: CIS 2610. 3 s.h.

3735. *UNIX Environment*. Use of the UNIX operating system or similar systems, including file management utilities, editors, compilers, and communication utilities. A comprehensive examination of programming in various shells such as Bourne, C, and Korn. Prereq.: CSIS 2610. 3 s.h.

3741. *Business Programming Project*. This course provides an in-depth study of business programming. It includes the mastery of a high-level language suitable for business programming, such as COBOL, and the development of a large multi-step business application project. Three hours lecture, two hours lab. Prereq.: CSIS 2610. 4 s.h.

4810. *Special Topics*. Study of special topics in computer information systems. Subject matter and credit hours will be announced in advance. May be repeated multiple times if topic is different. Prereq.: At least 3 s.h. of upper-division departmental courses, and permission of chair. 2-4 s.h.

4820. *Computer Center Operations*. The organization of a computer center, with emphasis on features and selection criteria of communication equipment, including mainframe, minicomputer, and microcomputer systems. Prereq.: CIS 3741 or INFO 2663, 3 s.h. of upper-division departmental courses. 3 s.h.

4840. *Business System Analysis and Design*. Development of communication and written skills for the analysis and design of business systems. Utilization of project management techniques for design, development, and maintenance of a departmental level system. Prereq.: CIS 3760, CSIS 3722, CSIS 3723, and 3 additional s.h. of upper-division departmental courses. 4 s.h.

## COMPUTER SCIENCE—CSCI

### Department of Computer Science and Information Systems

#### Lower-Division Courses

2650. *Language Topics*. Intensive language course with emphasis on writing efficient programs in a particular programming language. Each language topic is open only to students without previous credit in that particular language. The language topic and special prerequisites are announced in advance. Prereq.: Permission of chair. 1-3 s.h.

2690. *Individual Study in Computer Programming*. Individual study of a computer language. The instructor is available for consultation and evaluates the student's progress. Grading is CR/NC. May be repeated twice with consent of the chair. 1 s.h.

#### Upper-Division Courses

3710. *Introduction to Discrete Structures*. Basic set theory, including functions and relations. Boolean algebra, propositional logic, regular expressions, and finite automata. Prereq.: CSIS 2610 and MATH 1571 or MATH 1585H, or Math Placement Level 9 or 90. 3 s.h.

3750. *Advanced UNIX and C Programming*. Use of UNIX programming environment and associated tools and utilities. Command language programming. Systems programming with ANSI C. May include UNIX internals and system administration. Prereq.: CSIS 3700. 3 s.h.

3770. *Survey of Programming Languages*. Survey of several programming languages. May include Ada, Modula-2, C, Lisp, and SNOBOL. Prereq.: CSIS 3701. 3 s.h.

3780. *Microcomputer System Software*. Programming microprocessor based systems using assembly language. Study of addressing techniques, machine language, program segmentation, and linking on microcomputers. Prereq.: CSIS 3700. 3 s.h.

4805. *System Programming*. Topics selected from aspects of systems programming, including assemblers, loaders, linkage editors, macro processors, and file management. Prereq.: CSIS 3700 and 3740. 3 s.h.

4830. *Advanced Computer Graphics*. A thorough investigation of graphics algorithms. Topics include hidden surface removal, parametric curves, lighting,

shading, and texturing. Implementation of a graphics project required. Prereq.: CSIS 3730 and MATH 3720. 3 s.h.

4890. *Computer Projects*. Individualized study of a topic in computer science culminating in a written report and an oral presentation. May be repeated up to 8 s.h. Prereq.: 24 s.h. of computer science (including at least 3 s.h. of upper-division CSCI courses) applicable to the minimum requirements of a computer science major, and formal project proposal. 2-4 s.h.

5801. *Software Engineering*. Developing and maintaining complex software systems. Process and life-cycle models, and tools for software development (such as CASE). Specification methods, prototyping, validation and verification strategies, and version maintenance. Management of the system development process. A group project is required. Prereq.: CSIS 3701. 3 s.h.

5806. *Operating Systems*. Study of the various components of operating systems including kernels and monitors, currency and parallel processing, processor management, storage management, device management, I/O processing and file management. Prereq.: CSIS 3700 and 3740. 3 s.h.

5807. *Compiler Design*. Study of compiler design and construction, including context-free languages, lexical analysis, parsing, code generation and optimization. Prereq.: CSIS 3700 and 3740, CSCI 3710. 3 s.h.

5814. *Computer Architecture*. Study of high-performance sequential computer architecture. Topics include performance evaluation, instruction set design, processor implementation techniques, pipelining, vector processing, memory hierarchy design, and parallel architecture. Prereq.: CSIS 3700 and 3740. 3 s.h.

5820. *Simulation*. Methods for modeling discrete event systems by algorithmic approaches using simulation languages. Prereq.: CSIS 3700 and STAT 3743. 3 s.h.

5822. *Database Design and Information Retrieval*. Study of physical database storage, relational and object data modeling, logical database design (normalization process), and structural query languages. Prereq.: CSIS 3700 and CSCI 3710. 3 s.h.

5823. *Communication Networks*. Study of network structures and topologies, international standards, models, communication media and protocols, hardware and software. Prereq.: CSIS 3700 and either CSIS 3723 or 3740. 3 s.h.

5835. *Artificial Intelligence*. Study of the theory and applications of intelligent systems. Topics may include general problem-solving techniques, knowledge representation and expert systems, vision and perception, and natural language processing. AI systems and languages. Prereq.: CSIS 3700 and CSCI 3710. 3 s.h.

5840. *Theory of Finite Automata*. The structural and behavioral aspects of finite automata. Prereq.: CSCI 3710 and MATH 3720. 3 s.h.

5857. *Encoding and Encryption*. Securing computer and information systems through encoding and/or encryption. Private and public cryptographic methods, digital certificates and signatures, cryptovariation techniques, key management, and database security issues. Prereq.: CSIS 1560 or 2610; MATH 1548 or 1571 or Math Placement of 4 or 40 or higher; and at least 3 s.h. of upper-division departmental courses. 3 s.h.

5860. *Programming Language Structures*. Systematic approach to the study of the structures of programming languages. Formal descriptions, syntax, semantics and technical characteristics. Prereq.: CSIS 3701 and CSCI 3710. 3 s.h.

5870. *Data Structures and Algorithms*. Study and application of analysis and design techniques to nonnumerical algorithms. Topics selected from algorithms acting on sets, trees, graphs; memory management; notions of complexity and related areas. Prereq.: CSIS 3700 and CSCI 3710. 3 s.h.

5881. *Microcomputer System Architecture*. State-of-the-art course on microcomputer architecture. Topics include introduction to microcomputer systems, 16 and 32 bit microprocessors, direct memory access and other I/O transfer schemes, architecture of I/O processors, introduction to computer communications. Prereq.: CSIS 3740 and 3780. 3 s.h.

5895. *Special Topics*. A study of special topics in computer science. Subject matter and credit hours will be announced in advance. May be repeated multiple times if topic is different. Prereq.: At least 3 s.h. of upper-division departmental courses, and permission of chair. 2-4 s.h.

## COMPUTER SCIENCE AND INFORMATION SYSTEMS—CSIS

### Department of Computer Science and Information Systems

#### Lower-Division Courses

1500. *Computer Literacy*. A survey of computer concepts and applications. Network access and electronic mail. Emphasis on software applications packages available for microcomputers, including word processing. This course is meant for students with minimal or no background in computers. Credit will not be given for both CSIS 1500 and for either CSIS 1514, CSIS 1525, or CSIS 1590. 3 s.h.

1510. *Global Electronic Information Resources*. A survey of concepts and tools relating to communicating and gathering information on the Internet. Electronic mail, newsgroups, on-line services, and the World

Wide Web. Using Internet and web search tools to locate sites, and to retrieve and evaluate information. Creating home pages on the World Wide Web. Basic telecommunication, hypermedia, and ethical concepts. Prereq.: CSIS 1500. 3 s.h.

1514. *Business Computer Systems*. Hands-on business software, with emphasis on operating systems, word processing, database and spreadsheet applications. This course is not designed for beginning computer users. Beginning computer users should take CSIS 1500: Computer Literacy before taking this course. 3 s.h.

1525. *Survey of Modern Operating Systems*. An introduction to the common operating systems currently used with computers, such as DOS, Microsoft Windows, UNIX, and X-windows. Topics include setting up the user's work environment, file manipulation, and other commands. Not applicable to the CIS or CSCI major. This course is not designed for beginning computer users. Beginning computer users should take CSIS 1500: Computer Literacy before taking this course. 3 s.h.

1550. *Survey of Language Topics*. Introductory language course with emphasis on writing structured programs in a particular computer language. The language topic and special prerequisites are announced in advance. Not applicable to the CIS or CSCI major. Prereq.: Permission of chair. 3 s.h.

1560. *Basic Programming*. An introduction to computer programming using a visual object-oriented programming tool. Topics include control structures, loops, functions, methods, recursion, array processing, and events. Students will learn to design and implement virtual worlds. 3 s.h.

1570. *Web Graphics Programming*. Computer programming in a graphical/web-based language such as JavaScript. Modular program design, control structures, and data types and objects. Application to dynamic web pages, graphics, and animation. 3 s.h.

1580. *Technical Presentation and Communication*. Tools and techniques for presentation of information in a computer-based environment. Introduction to slide making, graphics, and multimedia software. Methods for gathering information and determining requirements, and for designing and critiquing presentations. Prereq.: CSIS 1500. 3 s.h.

1590. *Survey of Computer Science and Information Systems*. Concepts, theory, and contemporary issues underlying the computing sciences. Introduction to computer applications, the YSU computing environment, the use of communication and information networks, and basic problem solving techniques using computers. This course is not designed for beginning computer users. Beginning computer users should take CSIS 1500: Computer Literacy before taking this course. Prereq.: MATH 1507 or at least Level 30 on the Mathematics Placement Test. 3 s.h.



2602. *Programming in C*. Programming concepts and techniques, with emphasis on scientific and engineering applications. An accelerated survey of the C programming language and an introduction to the UNIX programming environment. Not applicable to the CIS or CSCI major. Prereq.: CSIS 1500 and MATH 1513 or Math Placement Level 5 or 50 or higher. 3 s.h.

2610. *Programming and Problem-Solving*. Problem-solving methods and algorithms using a high-level programming language. Designing, coding, debugging, and documenting programs using techniques of good programming style. Three hours lecture, two hours lab. Prereq.: CSIS 1590. 4 s.h.

2615. *Information Structures for Information Technology*. Study and application of information structure concepts such as lists, trees, multilevel lists, files, and data-method integration. Practice using these concepts in a 3D animation environment using an object-oriented programming language in the background. Emphasis on algorithm design, object utilization, and storyboarding. Prereq.: CSIS 1590, and either CSIS 2610 or CSIS 1560. 3 s.h.

2655. *Personal Cyber Security*. PC system security including data assurance, standards and legal issues, and methods and procedures for guarding against potential software attack. Not applicable to the CIS, CSCI, or INFO major. Credit will not be given for 2655 if a student already received credit for CSIS 3755 or its equivalent. 3 s.h.

2660. *Foundations of Electronic Commerce*. Framework of electronic commerce, including e-commerce architecture, infrastructure, technologies, tools, and strategies. Topics include security, environmental, and implementation issues. Includes web site analysis, hardware/software issues, mini-cases, and introduction to site development. Prereq.: CSIS 1590. 3 s.h.

2699. *Computer Science and Information Systems Internship*. Classroom theory applied to on-the-job professional experience related to the student's major. Work for a minimum of 12 hours per week at an approved site, complete a related project, and attend seminars. May be repeated once with the permission of coordinator. Prereq.: Sophomore in good standing and permission of internship coordinator. 1-3 s.h.

### Upper-Division Courses

3700. *Data Structures and Objects*. Program design, style and expression, testing and debugging for larger programs. Introductory concepts of object oriented programming, including classes, methods, encapsulation, and abstract data types. Theory and application of data structures, including linked structures, trees, networks, and graphs. Credit will not be given for both CSIS 2617 and CSIS 3700. Three hours lecture, two hours lab. Prereq.: CSIS 2610. 4 s.h.

3701. *Advanced Object-oriented Programming*. Object-oriented design and programming, including classes,

inheritance, polymorphism, and exception handling. Introductory software engineering techniques for program development, specification, documentation, verification, and user interface design. Prereq.: CSIS 3700. 3 s.h.

3720. *System Configuration and Maintenance*. Theory and practice of installing and maintaining hardware and software for complex systems. Installation of application software, with emphasis on Windows and Mac applications. Essential DOS utilities: formatting, data recovery, protecting data. Printing problems, Windows environment problems, and problems with booting the machine. Small laboratory management. Prereq.: CSIS 1590. 3 s.h.

3722. *Development of Databases*. The basic structure, design, development, implementation, and modification of databases for use in management of information systems. Prereq.: CSIS 1590. 3 s.h.

3723. *Networking Concepts and Administration*. Overview of electronic communications concepts and technologies, with emphasis on Local Area Networks. Network topologies, design, administration, installed applications, and performance monitoring. Privacy, ethical and legal concerns. Prereq.: CSIS 1590. 3 s.h.

3726. *Visual/Object-Oriented Programming*. Use of one or more visual programming languages in conjunction with the concepts of object-oriented programming. Development of interactive programs using a graphical user interface. Database and Internet programming. Three hours lecture, two hours lab. Prereq.: CSIS 2610. 4 s.h.

3730. *Computer Graphics*. Techniques of computer raster graphics, including scan conversion, two- and three- dimensional clipping and windowing, transformations, and viewing in 3D. Algorithms and more advanced topics. Prereq.: CSIS 3700 and MATH 1572. 3 s.h.

3731. *User Interface Design*. The design, implementation, and evaluation of human-computer interfaces. Emphasis on practical applications of guidelines to modern multimedia and graphical user interfaces. Prereq.: CSIS 3701, or CSIS 3726; or CSIS 1560 and INFO 3775. 3 s.h.

3732. *Intranet Database Implementation*. Design and implementation of 3NF PC-based databases uploaded to intranet Web sites. Remote database design, development, and updating using SQL within an application development software package. Validating database integrity. Includes site development and projects. Prereq.: CSIS 3722 and either CSIS 1560 or CSIS 2610. 3 s.h.

3740. *Computer Organization*. Basic hardware components, structure, and implementation of computer systems. Assembly language and instruction set architecture. Combinational and sequential digital logic. CPU and control unit design. Prereq.: CSIS 2610. 4 s.h.

3755. *Information Assurance*. Confidentiality, integrity, and authenticity of information. Methods of controlling access to electronic data, enforcing security policies, protecting against malicious attacks (including web site attacks), intrusion detection, and disaster recovery. Prereq.: CSIS 1590. 3 s.h.

3756. *Security Design*. Operating system security concepts, techniques and applications including MS Windows and LINUX/UNIX platforms. Includes a hands-on design project. Prereq.: Either CSCI 5806 or CSIS 3755 and either CSIS 1525 or CIS 3718. 3 s.h.

3757. *Computer Forensics*. Professional computer forensics, including methods and investigative techniques for the discovery and recovery of digital images and information at all levels, from PCs to large information systems. Chain of evidence and investigative techniques for cybercrime detection. Prereq.: CSIS 3755. 3 s.h.

3760. *Electronic Commerce Programming*. Programming for client/server systems related to electronic commerce, including server-side languages such as Perl and Client-side languages such as JavaScript. Topics include form validation and parsing, database access and manipulation, and design, networking, and security issues. Prereq.: CSIS 2610. 3 s.h.

3761. *Electronic Commerce Strategies*. Advanced concepts for development and maintenance of electronic commerce web sites. Topics include e-commerce paradigms, software and programming, and infrastructure issues. Site design, evaluation, deployment, and administration issues, including prototyping and SDLC issues. Building web-based training components. Includes IT project. Prereq.: CSIS 2660 and OIS 2663. 3 s.h.

3782. *Cisco Networking Academy I*. Current and emerging networking concepts and technology. Topics include networking standards, terminology, and protocols; LANs and WANs, the OSI and TCP/IP models, network topology and design, physical and logical addressing, subnet masking, router configuration and programming. Includes structured cabling project. Three hours lecture and three hours lab. Prereq.: CSIS 1590, and either CSIS 2610 or CSIS 1560. By permit only. 4 s.h.

3783. *Cisco Networking Academy II*. Advanced networking concepts and technology. Topics include LAN switching, VLAN design and implementation, IGRP, Access Control Lists, Novell IPX, Token Ring, Network Management, WAN design, WAN protocols (PPP, Frame Relay, ISDN), CCNA certification review. LAN design project. Three hours lecture and three hours lab. Prereq.: CSIS 3782. 4 s.h.

4804. *Programming in Operations Research Applications*. Basic operations research techniques and programming. Linear programming, queuing, mathematical modeling, and network analysis. Prereq.: CIS 2640 and 3 s.h. of upper-division departmental courses. 3 s.h.

4819. *Parallel and Distributed Computing*. Survey of current development of parallel processing with emphasis on parallel programming. Topics include parallel architecture, interconnection networks for inter-processor communication, parallel sorting/searching algorithms, parallel constructs for parallel programming paradigms, and implementation of the algorithms in a parallel programming language. Prereq.: CSIS 3700 and 3740. 3 s.h.

4822. *Database Applications*. Design and development of applications using database languages. Prereq.: CSIS 3722. 3 s.h.

4823. *Data Communications Networking*. Study of present methods for design and evaluation of information networks, LAN and WAN. Includes queuing, routing, security, reliability, error detection and correction, and distributed processing. Prereq.: CSIS 3723. 3 s.h.

4831. *Virtual Reality Systems*. An investigation into the use, design, implementation, and evaluation of virtual reality interfaces. Experiences with VR systems using both 2D projections and stereoscopic display and other systems. Students work in multidisciplinary groups. Prereq.: CSIS 3730. 3 s.h.

4870. *Web Communications Capstone*. A project course requiring the integration of website development tools and techniques, database development, effective writing for the web, and audience analysis, to produce a website of substantial depth and breadth. Oral and written presentations of final project. Listed also as ENGL 4870. Prereq.: Senior standing and permission of instructor. 3 s.h.

4893. *Computer Science and Information Systems Advanced Internship*. An industrial/academic experience in information systems/technology. Employment for 15 to 20 hours per week. May be repeated once with the permission of internship supervisor. Prereq.: 16 s.h. of department courses (at least 3 s.h. upper division) and permission of department internship supervisor. 2-4 s.h.

5824. *Applied Artificial Intelligence*. Study of artificial intelligence software related to decision making. Topics may include robotic control, expert systems, automated knowledge acquisition, or logic programming. Prereq.: CSIS 3700 and 3 s.h. of upper-division departmental courses, or CSIS 6901. 3 s.h.

5828. *Computer Network Security*. Overview of security issues that arise from computer networks, including the spectrum of security activities, methods, methodologies, and procedures. Intrusion detection, firewalls, threats and vulnerabilities, denial of service attacks, viruses and worms, encryption, and forensics. Prereq.: CSIS 3723 or equivalent. 3 s.h.

5837. *Artificial Intelligence in Game Design*. Artificial intelligence techniques for designing and programming intelligent non-player characters for a variety of different types of game genres. Finite and fuzzy state machines, terrain analysis and path planning, board games, language understanding, and learning. Prereq.: CSIS 3700, CSIS 3726 or CSCI 6901. 3 s.h.

5838. *Graphics and Animation for Gaming*. Design and implementation of animated characters in 3D computer games. Surface creation and effects; skeletal and facial rigging; motion and animation; basic game physics. Use of 3D animation software and scripting languages for game engine programming. Prereq.: CSCI 2610 and at least 3 s.h. of upper division CSIS courses, or CSCI 6901. 3 s.h.

5883. *Remote Access and Multilayer Switched Networks*. Advanced WAN connectivity, including Frame Relay, ATM, ISDN, DSL, and modems; IP address scaling techniques; advanced access control; core issues in network design and management, focusing on multilayer switched networks and emerging multi-service networks. Will incorporate CCNP Cisco Academy curriculum. Three hours lecture, three hours lab. Prereq.: CSIS 3783. 4 s.h.

5884. *Building Scalable Networks and Advanced Internetwork Troubleshooting*. Designing scalable networks; advanced routing protocols; VLSM and route aggregation; management and diagnostic tools; troubleshooting tools and methodology for TCP/IP, Novell, and AppleTalk connectivity, VLANs, routers, and switches; Frame Relay and ISDN connectivity. Will incorporate CCNP Cisco Academy curriculum. Three hours lecture, three hours lab. Prereq.: CSIS 5883. 4 s.h.

## COUNSELING—COUN

### Department of Counseling

1587. *Introduction to Health and Wellness in Contemporary Society*. Provides an introduction to the wellness model integrating physical, mental, and emotional well-being. Using current research, students explore decision-making models examining ethical, theoretical, multicultural, and practical concerns in developing their own wellness strategies. 3 s.h.

1588. *Exploring Leadership: Theory and Practice*. Introduction to the study of leadership through theoretical and practical applications. Through group interaction, discussions, and change projects, students will develop their leadership knowledge while acquiring skills to solve leadership challenges within diverse organizations. The course will provide students with intellectual and interpersonal opportunities to practice the process of becoming effective leaders. 3 s.h.

1589. *Success in Career and Life Planning*. The course will facilitate the development of career and life planning skills. This course is designed for, but not restricted to, entering and undeclared students. This course will emphasize identifying strengths, clarifying values, exploring career options, developing effective decision-making skills, and learning life skills related to health, finances, relationships, and community responsibility. 3 s.h.

2650. *Foundations of Helping Skills for Allied Health Professionals*. Skill development in learning how to foster helping relationships and increase communica-

tion skills with individual, family, or group-related patient needs in a health care setting. Emphasis on ethical, cultural, socioeconomic, and special needs in allied health care settings. Includes an experiential skill video training component. 3 s.h.

2651. *Foundations of Helping Skills for Human Ecology Professionals*. The course will facilitate the development of helping skills with individual, family and/or groups. Emphasis is on ethical, cultural, socioeconomic, and special needs in human service settings. Courses will include overview of counseling skills and theories that will assist students to address client care needs. 2 s.h.

5821, 5822. *Seminar in Guidance and Counseling*. Study of selected topics chosen by staff, e.g. career guidance, counseling process, and other contemporary issues in school personnel work. Prereq.: Upper-division standing. 1-3 s.h.

5823. *Career Education and Career Guidance*. Study of public school career education and career guidance programs; the career education continuum, legislation relating to vocational programs, historical development, and principles of vocational education and vocational guidance. Also a survey of economic services: distributive education, human resources, programs, and placement. Prereq.: Upper-division standing. 2 s.h.

5825. *Group Processes in the School*. An introduction to group activities applicable to the needs of students in the school setting. Includes the study of group processes and group dynamics for social and personal problem solving as well as in the general area of individual and group behavior. Also a study of programs that provide for counselor-teacher cooperation in the development of groups in the classroom. Prereq.: Upper-division standing. 2 s.h.

5879. *Talented Students and Their Families*. A study of consulting and referral practices related to the developmental, social and personal difficulties often experienced by gifted/talented students and their families. Includes a field study component. Prereq.: Upper-division standing. 3 s.h.

5888. *Introduction to Health and Wellness Counseling*. Provides an introduction to basic counseling principles with special focus on those factors encountered in the provision of health and wellness-related services. Prereq.: Upper-division standing. 3 s.h.

5895. *Counseling Workshop*. Selected topics related to prevention and intervention approaches in school and community settings. Designed primarily as continuing professional education, this course is not included in counseling degree programs. Prereq.: Upper-division standing. 1-3 s.h.

5898. *Orientation and Ethical Issues in Community Counseling*. This course provides students with an introduction to the field of professional counseling and the foundations of community counseling. The course addresses the following topics: history, philosophy, cultural dynamics, advocacy, consultation,

technology applications, and trends in professional and community counseling. The counseling profession's ethical standards are also addressed with an emphasis on the ACA code of ethics and counselor ethical decision making processes. Requirements differ for undergraduate and graduate students. 3 s.h.

## CRIMINAL JUSTICE—CJFS

### Department of Criminal Justice

#### Lower-Division Courses

1500. *Introduction to Criminal Justice*. Overview of the American criminal justice process with emphasis on its constituent foundations, its constitutional limits, and the rights of the individual from arrest through sentencing and release. 3 s.h.

1510. *Survey of Forensic Sciences*. Overview of history, evolution, and current status. Discussion of training, education, certification, accreditation, and legal issues. Designed to be accessible to students without a science background and provide an introduction to forensic science for those considering further studies. 3 s.h.

2601. *Policing*. The evolution, structure, and function of modern police organizations; the role of police in a democratic society; the impact of social, political, and economic influences; contemporary practices and controversies. Prereq.: CJFS 1500. 3 s.h.

2602. *Criminal Courts*. Structure and function of criminal courts in American society, perceptions of national commissions; organization, administration, and caseload relationships with appropriate social agencies. Prereq.: CJFS 1500 or permission of instructor. 3 s.h.

2603. *Corrections*. Development and description of the American correctional systems' history and philosophy; the constitutional foundations of its control, and the rights of those within it. Overview of treatment approaches. Prereq.: CJFS 1500. 3 s.h.

#### Upper-Division Courses

3700. *Forensic Fire Investigation*. Principles of fire science including fire detection, suppression, investigation. Special emphasis on concepts of fire progression, cause and origin determinations, and arson investigation. Prereq.: CJFS 1510. 3 s.h.

3702. *Correctional Strategies*. Contemporary theory, practice, and research findings in the administration of juvenile and adult corrections. Community-based programs, including probation/parole/post-release control; institutional resources examined within the perspectives of prevention, control, and rehabilitation of the criminal offender. Concurrent with 3702L. Must be a Criminal Justice major or have permission of chairperson. Prereq.: CJFS 2603. 4 s.h.

3702L. *Correctional Strategies Laboratory*. Contact, observation, and on-site examination and comparison of community programs and institutional facili-

ties. On-site 6 hours per week for 7 weeks (students are divided into two groups). Concurrent with CJFS 3702. Must be a Criminal Justice major or have permission of chairperson. Prereq.: CJFS 2603. 2 s.h.

3710. *Social Statistics*. Measurement and interpretation of social data by use of descriptive techniques. Cross-listed with SOC 3701. Prereq.: CJFS 1500. 3 s.h.

3712. *Criminal Justice Research*. Analysis of the major components of social research, including research design, sampling, measurement, data collection, analysis, and interpretation of findings. Prereq.: CJFS 3710 or STAT 2601 or equivalent. 3 s.h.

3714. *Forensic Science: Crime Scene Investigation*. An introduction to the legal and practical aspects of crime scene investigation. Emphasis on the value of physical evidence and the skills and tools needed to recognize, collect and preserve physical evidence found at a crime scene. Concurrent with CJFS 3714L. Prereq.: CJFS 1510 and sophomore standing. 2 s.h.

3714L. *Forensic Science: Crime Scene Investigation Laboratory*. Laboratory section designed to teach the practical skills employed by criminalists collecting evidence at a crime scene. Students will gain experience using tools, techniques and procedures required to recognize and collect evidence by completing practical exercises. Concurrent with CJFS 3714. Prereq.: CJFS 1510 and sophomore standing. 1 s.h.

3715. *Criminal Justice Management Concepts*. Modern criminal justice management theory; organizational behavior, organizational development, personnel management, executive decision making, supervision problems. Must be a Criminal Justice major or have permission of chairperson. Prereq.: CJFS 2601 or 2602 or 2603. 3 s.h.

3716. *Forensic Science Evidence Analysis*. Serves as an introduction to the techniques, instrumentation and procedures used in the examination and analysis of physical evidence in a forensic laboratory setting and the legal aspects regarding the use of laboratory reports in the investigation process. Concurrent with CJFS 3716L. Prereq.: CJFS 3714, CJFS 3714L. 2 s.h.

3716L. *Forensic Science Evidence Analysis Laboratory*. Laboratory section designed to familiarize students with instrumentation that is commonly used in the examination and analysis of physical evidence. Students will gain experience with the tools, techniques and procedures used for examining physical evidence through practical exercises. Concurrent with CJFS 3716. Prereq.: CJFS 3714, CJFS 3714L. 1 s.h.

3718. *Family Law*. Fundamental elements of family law, including premarital contracts, traditional and nontraditional marriages and families, procreation rights, legitimacy and paternity, adoption, divorce and separation, property division and support, custody and termination of parental rights, juvenile law, intra-family tort liability and domestic violence. Cross-listed with CI1FM 3718. Prerequisite: SOC 1500. 3 s.h.

3719. *Criminal Law*. Development, theories, and purposes of criminal law; elements of a crime, parties to a crime. Prereq.: CJFS 2602. 3 s.h.

3720. *Legal Research*. In-depth study and legal research of case law, statutes, rules and regulations at the federal and state levels. Emphasis on how to find and use primary and secondary authority, how to conduct legal research, in-depth legal writing in areas such as torts, contracts, real estate, and criminal law. Prereq.: CJFS 2602 or permission. 3 s.h.

3721. *Evidence*. Admissibility of evidence, the hearsay rule and its exceptions, opinion evidence, circumstantial evidence, documentary evidence, presumptions, corpus delicti, and evidentiary privileges. Must be a Criminal Justice or Forensic Science major. Prereq.: CJFS 2602. 3 s.h.

3735. *Crime and Delinquency*. Study of the social context of crime in society, including a review of historical theories offered in explanation of criminal behavior. Review of social and psychological factors underlying delinquency, touching on treatment and preventive measures. Prereq.: PSYC 1560 or SOC 1500 or CJFS 3736. 3 s.h.

3736. *Criminal Victimization*. Dynamics of the victim-offender relationships within the Criminal Justice System. Review of advocacy programs including information on victim compensation/assistance programs. Examination of society's attitudes towards victims. Review of current laws advocacy for compensation of crime victims. Prereq.: PSYC 1560 or SOC 1500 or CJFS 1500. 3 s.h.

3740. *Criminal Justice Information Systems*. Information theory and practice applied to criminal justice agencies; automated systems in policing, courts, and corrections at the federal, state, and local levels; problems and constitutional constraints. Microcomputer and Internet assignments. Prereq.: CJFS 1500. 3 s.h.

3751. *Prevention Strategies*. Concepts and strategies of crime prevention, the protection of assets in the public and private sectors. Must be CJFS major, or have permission of chairperson. Prereq.: CJFS 2601. 3 s.h.

3752. *Race, Ethnicity and Crime in America*. A critical analysis of current research and theories of racial and ethnic discrimination within the American criminal justice system. The discussion will center on issues relating to: patterns of criminal behavior and victimization, police practices, court processing and sentencing, the death penalty, and correctional programs. Prereq.: CJFS 1500, SOC 1500, or PSYC 1560. 3 s.h.

3765. *Human Relations*. Methods of coping with conflicts arising from law violation intervention; programs for improving interpersonal relations between police and the community. Prereq.: SOC 1500 and PSYC 1560 plus 9 s.h. in CJFS. 3 s.h.

3777. *POTA-Law Enforcement*. Training academy at YSU consisting of 550 classroom hours. Academy consists of 12 semester hours of credit, which can be

taken full-time in one semester or part-time across two consecutive semesters. Full-time is 5 days a week, 8 hours a day for 15 weeks (12 s.h.). Part-time is 5 days a week 4 hours in the evening for 30 weeks (6 s.h. + 6 s.h.). Upon completion, students receive eligibility from the Ohio Peace Officer Training Commission for certification. Prereq.: Senior standing, completion of the appropriate track courses, and permission from the Academy coordinator. 6-12 s.h.

3799. *Directed Individual Study*. Individual study or field research of a special topic related to the criminal justice field. Application must be made to the department prior to registration. May be repeated once for a maximum of 6 s.h. Prereq.: Senior standing and 15 s.h. of CJFS and approval of instructor. 1-5 s.h.

4800. *Senior Seminar*. Overview of the criminal justice system in the United States. Review of constitutional issues, discussion of contemporary issues. Serves as the criminal justice generalist track senior capstone course. Portfolios and resumes prepared, assessment exam. Must be a Criminal Justice major or have permission of chairperson. Prereq.: Senior standing. 3 s.h.

4803. *Correctional Case Management and Treatment*. Theory and techniques of counseling and interviewing the correctional client including case management. Simulated field and clinical situations to provide experience in interviewing and report writing. Serves as the corrections track senior capstone course. Portfolios are resumes prepared, assessment exam. Must be a Criminal Justice major or have permission of chairperson. Prereq.: CJFS 3702. 3 s.h.

4807. *Criminal Justice Internship*. Field experiences in an appropriate criminal justice agency under the direction of qualified and experienced professionals. Grading is CR/NC. May be repeated once for a maximum of 12 s.h. Prereq.: Senior standing in CJFS and specific emphasis area courses per department guidelines. 3-12 s.h.

4848. *Loss Prevention and Assets Protection Administration*. Security standards, policy, and regulations at the state and federal levels as they impact on the security operations. Administrative decisions regarding security program. Plant protection, safety and security; credit and insurance investigative procedures. Serves as the loss prevention/assets protection track capstone course. Portfolios and resumes prepared, assessment exam. Prereq.: CJFS 3751 and senior standing in criminal justice or permission of chairperson. 3 s.h.

4850. *Special Topics in Criminal Justice*. Contemporary issues in criminal justice. Topics are announced prior to enrollment. Prereq.: Senior standing or permission of instructor. 3-5 s.h.

4851. *Women and Justice*. Examines the historical development and current women's issues as they related to the justice system. Women's roles in the legal system, prisons (as staff and offenders), victims and perpetrators of violence, policing society and organized crime. Female juvenile delinquency and

controversial topics such as abortion and capital punishment. Prereq.: Senior standing or permission of the chair. 3 s.h.

4870. *Law Enforcement Administration*. Detailed examination of the administration of line and staff services of law enforcement agencies and the role of technology in administration. Serves as the law enforcement track senior capstone course. Portfolios and resumes prepared, assessment exam. Must be a Criminal Justice major or have permission of chairperson. Prereq.: CJFS 3715 and senior standing. 3 s.h.

4890. *Judicial Administration*. Court management examined in light of structure, judicial responsibility, and inherent power of courts. Case flow, case management, automation, and judicial staffing. Serves as the legal processes track senior capstone course. Portfolios and resumes prepared, assessment exam. Prereq.: CJFS 3715 and CJFS 3719 and senior standing in criminal justice or permission of chairperson. 3 s.h.

5802. *Corrections Law and Liability*. Analysis and examination of legal mandates and restrictions affecting the field of corrections. History of the development of offender rights, current issues surrounding offender rights, and future concerns in this area. Jail and prison standards, accreditation standards, case law, and liability concerns. Prereq.: CJFS 3702 or approval of instructor. 3 s.h.

5814. *Forensic Science and the Criminal Justice System*. Review of the impact of forensic science on the criminal justice system; discussion of future applications, constitutional considerations, and the significance of physical evidence. Emphasis on management responsibilities with respect to the criminalistics laboratory. Prereq.: CJFS 3714 and CJFS 3714L. 3 s.h.

5820. *Advanced Legal Research*. Advanced techniques in conducting legal research using standard reference tools as well as automated on-line services and the Internet. Analysis of findings of legal issues related to criminal justice, report and memoranda writing utilizing the Harvard University System of Citations, legal forms and terminology. Prereq.: CJFS 3720 or approval of instructor. 3 s.h.

5825. *Criminal Procedures and Constitutional Issues*. Constitutional foundations of the American criminal justice process with special emphasis on recent Supreme Court decisions. Legal and practical applications of the laws of arrest, criminal procedure, search and seizure, court structures, and federal civil rights. Prereq.: CJFS 3719 and must be a criminal justice major or have permission of chairperson. 3 s.h.

5831. *Violence in America*. Analysis of violence in America including official and unofficial statistics, types and levels of violence, research findings, and profiles of offenders. Case analysis of domestic violence, juvenile violence, gangs, and other forms of violence. Prereq.: CJFS 3735. 3 s.h.

5865. *Gathering and Using Information in Criminal Justice*. Specialized communication skills to prepare criminal justice practitioners in information-gathering techniques, written presentation techniques, verbal and nonverbal communication skills within constitutional guidelines. Prereq.: CJFS 3712 or 3765. 3 s.h.

5875. *Juvenile Justice System*. In-depth analysis of the specialized agencies and procedures developed to deal with problems of juveniles from a historical and philosophical perspective. Consideration of the juvenile court, community-based programs, institutionalization. Prereq.: Senior standing. 3 s.h.

5892. *Comparative and International Criminal Justice Systems*. An examination of how countries' criminal justice systems are shaped and molded by elements of culture, religion, and political ideology of the area. Emphasis will be placed on comparing and contrasting the selected countries' criminal justice systems with those found in the United States of America. Prereq.: Senior standing or permission of the chair. 3 s.h.

## DANCE—DNCE

### Department of Theater and Dance

#### Lower-Division Courses

1540. *Modern Dance 1*. Elementary techniques of body movement. Rhythmic fundamentals and Improvisation. 1 s.h.

1541. *Modern Dance 2*. Intermediate modern dance techniques, composition, and improvisation. May be repeated up to six credit hours. Prereq.: DNCE 1540 or permission of instructor. 2 s.h.

1542. *Dance Composition*. Basic principles related to the form and structure of dance composition. Prereq.: DNCE 1541 or permission of instructor. 1 s.h.

1550. *Wellness for Actors and Dancers*. Conditioning, relaxation, and injury prevention techniques related to the needs of dancers and actors. Prereq.: 2 hours credit in any jazz, ballet, or modern dance technique classes or permission of instructor. 1 s.h.

1565. *Topics in Dance*. Selected topics in the practice, theory or scholarship of dance. May be repeated if the topic is different. 1-2 s.h.

1570. *Tap and Jazz 1*. Principles and practices of the basic techniques of tap dance, soft shoe, jazz, and the fundamental forms of dance movement found in musical theater. 1 s.h.

1571. *Tap and Jazz 2*. Further refinement and development of jazz and tap skills. This course may be repeated up to six credit hours. Prereq.: DNCE 1570 or permission of instructor. 2 s.h.

1572. *Ballet 1*. Theory and practice of classical ballet with emphasis on body placement and muscular awareness. Fundamentals of vocabulary, structure, and placement. 1 s.h.

1573. *Ballet 2*. Expands on vocabulary and established patterns of balletic movement. This course may be repeated up to six credit hours. Prereq.: DNCE 1572 or permission of instructor. 2 s.h.

2606. *Creative Dance for Children*. Skills and methods development, and the learning process as it applies to teaching children's dance and creative movement. Prereq.: Sophomore standing or permission of the instructor. 1 s.h.

2662. *Practicum in Theater and Dance*. Practical application of theater or dance skills through participation in special programming of the department, or specified studio/laboratory activities. Expected participation should amount to a minimum of thirty hours per semester. May be repeated for a maximum of 5 s.h. Prereq.: THTR 1561 or 1569 or special permission. Cross-listed with THTR 2662. 1 s.h.

2680. *Tap Dance 3*. Intermediate/advanced tap skills, with emphasis on speed, clarity of sound, and improvisation. May be repeated for a maximum of 2 credit hours. Prereq.: DNCE or permission of the instructor. 1 s.h.

2698. *Survey of Dance*. The role of dance in culture and history, tracing the evolution of various folk, social, and concert forms. Structural and stylistic elements important for the appreciation of movement and dance. 3 s.h.

### Upper Division Courses

3730. *Music for Dance*. Designed to provide the dance student with basic musical knowledge and skills necessary for quality dance performance, production, and accompaniment. Prereq.: Minimum of 6 hours coursework in DNCE. 1 s.h.

3751. *Modern Dance 3*. Intermediate/advanced techniques in modern dance designed to develop professional performance quality. May be repeated up to six credit hours. Prereq.: DNCE 1541 or consent of the instructor. 2 s.h.

3767. *Choreography for Musical Theater*. The study of dance, movement, and staging for the musical theater, culminating in student choreographed/staged works from a variety of musical theater productions. Prereq.: HPES 1540 or THTR 1540 or DNCE 1540 and HPES 1570 or THTR 1570 or DNCE 1570 or HPES 1572 or THTR 1572 or DNCE 1572. 2 s.h.

3770. *Jazz Dance 3*. Intermediate/advanced level class building upon a strong foundation in jazz dance. Refinement of technical and artistic proficiency. May be repeated for a maximum of 6 credit hours. Prereq.: DNCE 1571 or permission of the instructor. 2 s.h.

3781. *Ballet 3*. Intermediate/advanced course building upon skills acquired in Ballet 1 and 2. Designed to enhance technique and artistry. May be repeated for a maximum of six credit hours. Prereq.: DNCE 1573 or consent of the instructor. 2 s.h.

4871. *Jazz Dance 4*. Refinement of skills and artistic qualities essential for the performance of jazz dance repertory at a pre-professional level. May be repeated for a maximum of 6 credit hours. Prereq.: DNCE 3770 or permission of the instructor. 2 s.h.

4881. *Ballet 4*. Advanced-level movement skills and terminology. Skills increase in speed, complexity, and duration. This course may be repeated for a maximum of 6 credit hours. Prereq.: DNCE 3781 or permission of instructor. 2 s.h.

4885. *Dance Kinesiology*. Anatomy and kinesiology for the dancer, common injuries in dance and their care and prevention, study of physiological support systems, as well as applied knowledge of one's body potential and limitations in dance. Prereq.: DNCE 1530, junior/senior standing or consent of instructor. 3 s.h.

4892. *Pedagogy of Dance Technique*. The theory and practice of sound dance teaching methods. An outside field experience in teaching dance will be required. Prereq.: Completion of minimum of 2 hours of dance technique in each of the following forms: Modern, Ballet and Jazz (satisfied by the completion of course work in those areas or by permission of the instructor), plus DNCE 1550, 2606, 3730 and 4885. Senior standing. 3 s.h.

## DENTAL HYGIENE—DHYG

### Department of Health Professions

1514L. *Clinical Dental Hygiene Remediation*. This course is designed to improve the dental hygiene student's clinical skills, and to develop the basic competencies essential for performing invasive dental hygiene procedures. The student's individual clinic deficiencies will be addressed, along with patient management and time utilization. This course may be repeated one time. Four hours of clinic per week for twelve weeks. Prereq.: Unsatisfactory progress in clinical dental hygiene and/or recommendation of the clinic coordinator. 1 s.h.

1535. *General and Oral Pathology*. The cause and nature of disease, together with anatomical and functional changes. Observation and progression of disease in the human as related to diagnosis and treatment planning. Special emphasis is given to oral pathology. Prereq.: DHYG 1521. 2 s.h.

2601. *Dental Hygiene 1*. An introduction to providing dental hygiene care. Theories and principles of patient assessment, prevention of disease transmission, instrumentation, instrument sharpening, and coronal polishing. Application of risk assessment as it relates to the treatment plan through case studies. Prereq.: Admission to the Dental Hygiene Program. 3 s.h.

\*2601 L. *Clinical Dental Hygiene 1*. Preclinical dental hygiene instruction in a simulation laboratory. Introduction of basic dental hygiene procedures and equipment operation. Six hours of lab per week. Prereq.: Admission to the Dental Hygiene Program. 2 s.h.

2602. *Dental Hygiene 2*. Discussion of appropriate preventive dental agents and devices to improve various dental conditions and implementation techniques. Development of individualized patient education instruction and a tobacco cessation program as part of the dental hygiene care plan. Prereq.: DHYG 2601. 2 s.h.

\*2602L. *Clinical Dental Hygiene 2*. Continuation of pre-clinical dental hygiene instruction in the clinical setting. Includes comprehensive patient care planning and implementation techniques. Eight hours of lab per week. Prereq.: DHYG 2601L. 1 s.h.

2620. *Head and Neck Anatomy*. A study of the anatomy of the head and neck, oral structures and tooth morphology. Prereq.: Admission to the Dental Hygiene program. 2 s.h.

\*2620L. *Head and Neck Anatomy Lab*. Applied study of the anatomy of the head and neck, oral structures and tooth morphology. Three hours of lab per week. Prereq.: Admission to the Dental Hygiene program. 1 s.h.

2623. *Pharmacology for the Dental Hygienist*. Importance of pharmacological aspects of those drugs and drug groups with which the dentist and hygienist are directly and indirectly concerned. Prereq.: DHYG 1512L. 2 s.h.

2630. *Management of Medical/Dental Emergencies*. Instruction in the prevention, recognition, and management of medical emergencies in the dental office. Emphasis on case studies to develop critical thinking and decision-making skills in patient management. Prereq.: Admission to the Dental Hygiene Program. 2 s.h.

2640. *Oral Histology*. A study of the tissues of the human body and embryological development. Prereq.: DHYG 2620. 2 s.h.

3703. *Dental Hygiene 3*. Advanced dental hygiene instrumentation and techniques. Patient cases, problem identification, and strategies. Fundamentals of sonic and ultrasonic instrumentation. Prereq.: DHYG 2602. 2 s.h.

\*3703L. *Clinical Dental Hygiene 3*. Clinic application of dental hygiene techniques on student partners and clinic patients. Emphasis on applied preventive measures and patient education. Nine hours of clinic per week. Prereq.: DHYG 2602L. 3 s.h.

3704. *Dental Hygiene 4*. Concepts of nutrition science as they relate to the evaluation and education of dental hygiene patients with emphasis on caries risk assessment. Prereq.: DHYG 3703. 3 s.h.

\*3704L. *Clinical Dental Hygiene 4*. Clinical application of dental hygiene techniques. Emphasis on the interpretation of patient assessment and evidence based research to evaluate patients' oral health and to develop effective treatment plans. Nine hours of clinic per week. Prereq.: DHYG 3703L. 3 s.h.

3750. *Oral Pathology*. The cause and nature of disease, together with anatomical, histological and functional changes. Observation and evaluation of the patients' systemic and oral health status as it relates to treatment planning. Special emphasis is given to oral pathology and case studies. Prereq.: DHYG 2640. 2 s.h.

3760. *Dental Radiology*. History and development of radiographs, radiographic theory and techniques, hazardous effects of radiation, and methods of protection. Emphasis on interpretation of normal anatomic structures and pathologic entities; and the use of diagnosis in prevention of dental and related diseases. Prereq.: DHYG 2602L. 3 s.h.

\*3760L. *Dental Radiology Lab*. The techniques necessary to expose, develop, and mount dental films with emphasis in radiographic interpretation. Three hours of lab per week. Prereq.: DHYG 2602L. 1 s.h.

3770. *Periodontology*. The study of prevention, diagnosis, and treatment of diseases affecting the gingival and supporting structures of the teeth, as well as implant placement and maintenance. Emphasis is on acquisition of knowledge of the histopathology of disease and the biologic basis for periodontal therapy. Prereq.: DHYG 2640. 3 s.h.

3780. *Pharmacology*. Importance of pharmacological aspects of those drugs and drug groups with which the dentist and dental hygienist are directly and indirectly concerned. Application of pharmacology in treatment planning. Prereq.: DHYG 2630. 2 s.h.

3790. *Local Anesthesia and Pain Control for Dental Hygienists*. Instruction in the anatomy, physiology, pharmacology, and administration of local anesthesia and other pain control methods. Prereq.: DHYG 3703L or permission of the Program Director. 2 s.h.

\*3790L. *Local Anesthesia and Pain Control Clinic*. Application of the techniques of local anesthetic administration and pain control on anatomical models and clinical partners. Three hours of clinic per week. Prereq.: DHYG 3703L or permission of the Program Director. 1 s.h.

4805. *Dental Hygiene 5*. The role of the dental hygienist in providing care for special needs patients by recognizing the necessary treatment plan modifications due to physical, mental, medical, and social factors. Prereq.: DHYG 3704. 3 s.h.

\*4805L. *Clinical Dental Hygiene 5*. Advanced clinical application of dental hygiene techniques with emphasis on patient management and radiographic assessment resulting in an individualized and comprehensive treatment plan for periodontal patients. Twelve hours of clinic per week. Prereq.: DHYG 3704L. 4 s.h.

4806. *Dental Hygiene 6*. A study of dental specialties enhancing students' knowledge, and understanding. Indications for referral, specialized instruments, diagnostic tests, and specific oral hygiene instructions will be discussed. Prereq.: DHYG 4805. 3 s.h.



\*4806L. *Clinical Dental Hygiene 6*. Continued application of dental hygiene techniques with emphasis on professionalism and competency in private practice. Twelve hours of clinic per week. Prereq.: DHYG 4805L. 4 s.h.

4830. *Dental Materials*. The sources, physical properties, methods of manufacturing, and uses of various dental materials. Emphasis on the newest products, and interpretation of research supporting product effectiveness. Prereq.: DHYG 3704L. 1 s.h.

\*4830L. *Dental Materials Lab*. Clinical application of selected dental materials and four-handed dentistry enhancing the students' understanding of dental procedures. Technical procedures and delegated responsibilities will be completed on manikins, and student partners. Prereq.: DHYG 3704L. 1 s.h.

4840. *Directed Dental Hygiene Research*. Development of research skills including problem identification, development of a hypothesis, research design, data collection, analysis, and interpretation. Approved dental hygiene topics will be completed as a group under faculty supervision. Prereq.: AHLT 4806. 2 s.h.

4850. *Dental Public Health*. An introduction to public health dentistry, a study of the epidemiology of dental disease, writing grant proposals, and implementation of health promotion theories. Preventing and controlling dental disease through organized community efforts is addressed. Prereq.: DHYG 4805. 3 s.h.

4850L. *Community Clinicals*. Oral health care services provided by senior dental hygiene students at community sites. Culturally competent care to underserved populations is the primary course emphasis. Forty-five hours of community clinical experience throughout the semester. Prereq.: DHYG 4805L. 1 s.h.

4860. *Ethics and Practice Concepts*. The historical, professional, legal, and ethical aspects of dental hygiene. Study of practice management topics relevant to the changing roles of hygienists with emphasis on quality care in a patient centered practice. Prereq.: DHYG 4805. 2 s.h.

## DRAFTING AND DESIGN TECHNOLOGY—DDT Engineering Technology

1503. *AutoCAD 1*. Basic instruction in the use of AutoCAD computer-aided drafting system. Includes primary 2D skills including dimensioning, blocks, external reference and plotting. Customization methods and an introduction to application programming. One and one-half hours lecture, one and one-half hours lab per week. Grading is A, B, C, NC. Prereq.: Math 1504 or at least Level 40 on the Mathematics Placement test. Concurrent with DDT 1504. 2 s.h.

1504. *Drafting and Plan Reading*. Drafting basics including plan, section, and elevation views; orthographic projections; line types and weights; drafting scales; dimensioning; tolerances; grading and contours, and construction layout for the civil, mechanical, and electrical technology disciplines. Development of skills in the interpretation and preparation of plans used for civil, mechanical, and electrical construction and fabrication. One and one-half hours lecture, one and one-half hours laboratory per week. Grading is A, B, C, NC. Prereq.: Math 1504 or at least Level 40 on the Mathematics Placement test. Concurrent with DDT 1503. 2 s.h.

1505. *CAD Technology 1*. Basic instruction in the use of AUTOCAD computer-aided drafting system. Includes primary 2D skills including dimensioning, blocks, external reference and plotting. Customization methods and an introduction to application programming. Three hours lecture, three hours lab per week. Prereq.: High school drafting or equivalent. 4 s.h.

2606. *CAD—Solid Modeling*. Parametric solid modeling and other 3D techniques. Customization techniques and use of an application programming language within the CAD software. Three hours lecture, three hours lab per week. Prereq.: DDT 1503 or DDT 1505. 4 s.h.

2607. *CAD—Microstation*. Introduction and applications of Bentley Microstation CAD program. 2D and complex elements, dimensioning, patterning, plotting and development of basemaps. One hour lecture, three hours lab per week. Prereq.: DDT 1503 or DDT 1505. 2 s.h.

2608. *Machine Elements*. Design and drafting of machine elements common to mechanical equipment, including bending, torsion, and bearing concepts. Application and interpretation of GD & T. Two hours lecture, three hours lab per week. Prereq.: CCET 2604. 3 s.h.

2609. *Industrial Technology*. Materials planning and handling, applications of quality assurance, post-production control. Introduction to ergonomics and manufacturing standards. Two hours lecture, three hours lab per week. Prereq.: MET 2630. 3 s.h.

2610. *Manufacturing Elements*. Mechanical power transmission, mechanisms and linkages. Hydrostatics, system losses, interpretation and analysis of hydraulic and pneumatic schematics. Two hours lecture, three hours lab per week. Prereq.: PHYS 1501. 3 s.h.

2690. *Special Topics in DDT*. Special topics/new developments in drafting and design technology. Subject matter, special prerequisites, and credit hours to be announced in advance of each offering. May be repeated with different subject matter to a maximum of 8 s.h. Prereq.: Consent of the instructor. 1-4 s.h.

## EARLY AND MIDDLE CHILDHOOD EDUCATION— EMCE

### Department of Teacher Education

4815. *Seminar in Elementary School Science*. Critical study of current developments in objectives, methods, materials, and evaluation in science education as they affect the elementary science program. Includes discussions, field trips, demonstrations and laboratory work. Prereq.: Admission to COE upper-division status. 2 s.h.

5811. *Early Childhood Generalist: Math and Science*. By exploring math and science teaching practice for grades 4-5, the candidates will review teaching methods of math and science, master the contents stated in the Ohio Academic Standards, find and design math and science programs and lessons and strengthen the assessment methods for the classroom instruction. Prereq.: Upper division status. 3 s.h.

5812. *Integrated Language Arts and Social Studies for 4<sup>th</sup> and 5<sup>th</sup> Grades*. Candidates will learn language arts and social studies teaching methods, design integrated lessons, incorporate state and national standards, and utilize assessment methods for grades 4-5. Prereq.: Upper division status. 3 s.h.

5816. *Diagnosis and Remediation of Elementary School Mathematics*. In-depth study of diagnosis and remediation as they affect the elementary school mathematics program. Includes discussions, field trips, demonstrations and laboratory work. Prereq.: Admission to COE upper-division status. 2 s.h.

5854. *Middle School Theory and Practice*. Students will analyze and reflect on major concepts, research, and theories about the physical, cognitive, emotional, moral, and social development of students in grades 4-9 and research information concerning the historic, philosophical, and organizational components of middle level schools, including program assessment and evaluation of learning environments. 3 s.h.

5888. *Topical Seminar*. Examination of issues related to the teaching of reading not covered in depth in other courses. Prereq.: Admission to upper-division status in COE or admission to the School of Graduate studies. 1-3 s.h.

## EARLY CHILDHOOD EDUCATION—ECE

### Department of Teacher Education

2629. *Teaching Young Children: Best Practices in Early Childhood Education*. Gives teacher candidates a research-based inquiry into early childhood education and promotes the acquisition of knowledge, skills, and dispositions that will facilitate best practices within the field. 10 field/clinical hours, 3 s.h.

3713. *Teaching of Mathematics: Early Years*. Using NCTM/NAEYC/NCATE and Ohio Model guidelines as the framework, focus on identifying and modeling developmentally appropriate strategies used for problem solving, communicating, and reasoning in early childhood mathematics. Learning to use mathematical connections to stimulate diverse students' development of math concepts and skills and create learning environment combining mathematics pedagogy/methodology in an early grades classroom. Prereq.: BCOE upper-division status and approval of chair. Coreq.: ECE 3715, 3780, and 4814. 3 s.h.

3715. *Teaching Science: Early Years*. Using NSTA/NCATE and Ohio Model guidelines as the framework, focus on establishing and maintaining learning environments that provide diverse students with a holistic, interdisciplinary understanding of science. Topics include teaching for meaningful science understanding, planning and providing an effective and supportive learning environment, planning and implementing curriculum and lessons appropriate for children in their early years, selection and use of instructional aids and resources, assessment, and professional development. Experiences that promote the use of science processes and problem-solving skills for life-long learning. Field experience combining science pedagogy/methodology in an early childhood setting. Prereq.: BCOE upper-division status and approval of chair. Coreq.: ECE 3713, 3780, and 4814. 3 s.h.

3760. *Cross-Curricular Applications and Classroom Management/Guidance*. Synthesis and application of developmental theories and appropriate practices and methods in classrooms for young children, including curriculum integration, quality classroom environments, and classroom management/guidance. (10 hours of focused field placement.) Prereq.: BCOE upper-division status. 3 s.h.

3780. *Social Studies for Young Children*. Methods of teaching social studies to young learners (PreK-3) including exploration of a variety of effective teaching and assessment behaviors related to diverse learner needs. Use of key concepts, application of tools of social studies to foster social development and encourage independent problem solving, investigate the use of technology, create instructional resources; collaboratively plan, teach, and evaluate lessons in inclusive instructional settings; keep a reflective learning log. Prereq.: BCOE upper-division status and approval of chair. Coreq.: ECE 3713, 3715, and 4814. 3 s.h.

4811. *Supervised Student Teaching: Pre-Kindergarten*. Student teaching consists of a 10-week assignment in a preschool. Grading is CR/NC. Prereq.: CHFM 2664, ECE 2630, SPED 2631. 1-12 s.h.

4814. *Language Arts Methods in the Early Years (Ages 3-8)*. Teaching oral and written communication through consideration of listening, speaking, reading, viewing, and related skill areas in the elementary school. Prereq.: BCOE upper-division status and approval of chair. Coreq.: ECE 3713, 3715, and 3780. 3 s.h.

4841. *Supervised Student Teaching: Early Childhood*. A 16-week assignment in a kindergarten-grade 3 setting. Grading is CR/NC. Prereq.: BCOE upper-division status, passing scores on PRAXIS II content and PLT tests, criminal background check, and completion of early childhood program excluding student teaching and student teaching seminar. Coreq.: ECE 4842. 1-10 s.h.

4842. *Student Teaching Seminar in Early Childhood Education*. Development of an effective and developmentally appropriate K-3 classroom environment including: teacher work sample, daily lessons, classroom management, reflective teaching and growing as a professional in the field of early childhood education. Coreq.: ECE 4841. 2 s.h.

4859. *Pre-Kindergarten Teaching Methods and Materials*. Methods and techniques used to implement the pre-kindergarten curriculum with emphasis on communication and creative arts, social, emotional, and physical development, and concept formation. Required for prekindergarten validation of other teaching certificates. Prereq.: SPED 2631, ECE 3759. 3 s.h.

## ECONOMICS—ECON

### Department of Economics

#### Lower-Division Courses

1501. *Economics in Action*. An introduction to the United States' economic system and institutions through the examination of current economic problems. Not applicable for a major or minor in economics. Credit will not be given for 1501 if a student has already received credit for ECON 2610 or its equivalent. 3 s.h.

1502. *Panic and Prosperity, U.S. Economic Policy Since the Great Depression*. Examines the crises and successes of the American economy since 1929, and how the economic policies of different presidential administrations affected the lives of U.S. citizens. Not applicable towards a major or minor in economics. 3 s.h.

1503. *Rich and Poor: Diversity and Disparity in the U.S. Workplace*. Examines how labor markets determine the distribution of income and the dramatic changes in the composition of the American labor force. Explores such issues as the widening gap between low and upper income groups, the characteristics of the poor, affirmative action, the glass ceiling, the mommy track, and family-friendly working environments. Not applicable towards a major or minor in economics. 3 s.h.

1504. *Economics of Aging*. An introduction to the economic consequences of an aging population and the economic status of the aged. Topics include income adequacy in old age, retirement decisions, retirement income planning, social security income, employer-sponsored pensions, and financing health care. Not applicable toward a major or minor in economics. Prereq.: ECON 1501 or GERO 1501. 3 s.h.

2610. *Principles 1: Microeconomics*. Introduction to the theory of markets, including the behavior of consumers and the conduct of private and public business enterprise. Effects of monopoly and competition on private and social welfare. The role of government in promoting the economic welfare of consumers, workers, and minorities. Prereq.: MATH 1501, or a level 20 or higher on the math placement exam. 3 s.h.

2630. *Principles 2: Macroeconomics*. Studies of growth, inflation, and unemployment at the national level and the performance of the U.S. economy in the global setting. The impacts of national economic policies on individual and social welfare. An extensive discussion and evaluation of the U.S. banking system and its effects on individuals and businesses. Prereq.: ECON 2610. 3 s.h.

3701. *Money and Banking*. Organization and operation of commercial banking in the United States; central banking under the Federal Reserve System; basic theory. Monetary policy as a determinant of national income. Prereq.: ECON 2630. 3 s.h.

3702. *Public Finance*. The development and present status of public finance; federal, state and local expenditures and taxation; theories of tax incidence, axioms of taxation, theories in justification and government spending; tax reform. Study of the techniques of fiscal policy with emphasis on its role as a determinant of the level of national income. Prereq.: ECON 2610. 3 s.h.

3705. *Environmental and Resource Economics*. Application of economic theory to environmental problems, analysis of policy alternatives for pollution abatement, and the conservation of exhaustible resources. Determination of efficient management of local and national pollution levels, including air, water, and toxic substances. Possible economic consequences associated with global warming. Prereq.: ECON 1501 or 2610. 3 s.h.

3710. *Intermediate Microeconomic Theory*. A systematic analysis of the theory of demand and the theory of the firm: production input and output choices, and some basic concepts of linear programming. An intensive analysis of the theory of the firm: competitive pricing, monopoly pricing, pricing in imperfect competition; and the theory of rent, profits, interest and wages. Prereq.: ECON 2610, and either MATH 1549, 1552, 1570, or 1571. 3 s.h.

3712. *Intermediate Macroeconomic Theory*. The construction of national income and production accounts and the basic determinant of income, output, and employment. Determination of the level of employment, interest, and money through the classical versus Keynesian aggregate economics. Prereq.: ECON 2630 and either MATH 1549, 1552, 1570, or 1571. 3 s.h.

3720. *Comparative Economic Systems*. An examination of the recent world-wide trend toward free market economy, giving particular attention to basic processes such as resource allocation and product distribution. Frequent references are made to the fail-

ure of Socialism in the USSR and the new approach in Russia, Eastern Europe and China toward market economies. Prereq.: ECON 1501 or 2630. 3 s.h.

3724. *Public Budgeting*. Study of the politics, theories, and techniques of public budgeting. Includes the process of budget preparation, adoption and execution. Topics include debt management and capital budgets. (This course is cross-listed with Political Science 3724.) Prereq.: POL 3720. 3 s.h.

3790. *Statistics for Business and Economics*. Introduction to statistical methods in data analysis and forecasting. Topics include descriptive statistics, probability, hypothesis testing, regression analysis, ANOVA and time series analysis. Practical application of statistical procedures is incorporated into regularly scheduled computer workshops. Prereq.: MATH 1549, 1552, 1570, or 1571. 5 s.h.

4810. *Managerial Economics*. An application of economic analysis to business problems. Emphasis upon executive decisions for the allocation of resources. Prereq.: ECON 2610. 3 s.h.

4843. *Economics of Poverty, Discrimination and Transfer Programs*. Causes of poverty and income inequality and the analysis of the policy options for reducing poverty. Quantification of the dimensions of poverty, the evaluation of the effectiveness of training programs, the effects of antipoverty programs on the behavior of recipients, and the affirmative action debate. Prereq.: ECON 2610. 3 s.h.

4855. *Health Economics*. Application of basic principles to the study of the health care industry. Topics include the supply and demand of medical care, the effects of private and public insurance on the health care industry, trends in health care costs, public policies to equalize access to medical care and the dilemma caused by the improvement in life-sustaining technology. Prereq.: ECON 2610. 3 s.h.

4860. *Selected Topics in Economics*. Advanced study of selected topics in economic analysis and issues in economic policy. May be repeated once with different topic. Prereq.: Econ 2610 and Econ 2630. 3 s.h.

4870. *Economic Internship*. The practical application of economic knowledge and statistical skills in the workplace. Students assist professionals in various kinds of industrial, financial, and public service organizations. Prereq.: By permit only, minimum GPA 2.5. 1-3 s.h.

4880. *Analysis of Economic Problems*. The application and extension of the student's skills in economic analysis and statistical techniques to economic issues. The course covers sources of data, exploratory data techniques, matching of data and statistical tests, interpretation and presentation of the results. Students demonstrate their command of research techniques by the completion of a research paper and its oral presentation. Topics to be determined. Prereq.: ECON 3710, 3712, and either 3790 or the previously offered 3780. 3 s.h.

4898. *Graduate Study in Selected Economic Topics*. For undergraduates taking courses in the MA in Economics program for credit towards an undergraduate degree. Credit earned cannot be later applied to a graduate degree. The student must meet the criteria for undergraduate students taking graduate coursework listed in the *Graduate Bulletin*. May be repeated with different graduate courses. Prereq.: A minimum of 20 hours of coursework in economics at the 2600 level and above, permission of the chair, junior standing. 3 s.h.

4899. *Individual Study in Economics*. Individual study of a topic, area, or problem requiring in-depth reading, and a written project. May be repeated once with a different topic, area, or problem. Prereq.: Junior or senior standing, by permit only. 1-4 s.h.

5801. *Economics of Industrial Organization*. A systematic analysis of the structure, conduct, and performance of American industry. A quantitative analysis plus a comprehensive review of theoretical models of the market, firm behavior, and performance. Prereq.: ECON 2610. 3 s.h.

5806. *History of Economic Thought*. Designed to provide students with an understanding of the development of economic ideas to include: Mercantilism, Physiocrats, the English Classical School, Utilitarianism, early Social Thought, Karl Marx, the German Historical School, Institutionalists and the Keynesian School. Prereq.: ECON 2630. 3 s.h.

5809. *Current Problems in Money, Banking, and Financial Markets*. The financial market system, including money and capital markets. Current problems associated with trends in theory and practice. Theories of the interest rate and monetarism. Prereq.: ECON 3701 or consent of instructor. 3 s.h.

5811. *International Trade*. Theories of international trade and specialization; free trade vs. protectionism; tariff and non-tariff barriers to international trade; international balance of payments and its components; the role of multinational enterprises in contemporary trade pattern; regional economic integrations and world trade; U.S. commercial policies. Prereq.: ECON 2630. 3 s.h.

5812. *International Finance*. Theories of foreign exchange and capital movements, international payments, analysis of spot and forward foreign exchange markets, foreign exchange market arbitrage, speculation, and risk hedging. The Bretton Woods agreement and the contemporary international monetary system. The rise of international organizations and multinational enterprises in the international economy. Prereq.: ECON 2630. 3 s.h.

5822. *Urban and Regional Economics*. Economic analysis of the problems of urbanized areas and the causes of the growth or decline in economic activity in small-area economics. Topics include benefit-cost analysis, economic base analysis, input-output applications, and the theory of location and agglomeration. Prereq.: ECON 2610. 3 s.h.

5824. *Applied Time Series Analysis of Economic and Business Data*. An in-depth analysis of time series models and their applications to problems in economics and business. Emphasis on forecasting. Extensive use of standard computer programs. Prereq.: ECON 2610 and either ECON 3790 or the previously offered 3780 or STAT 5817. 3 s.h.

5831. *Labor Markets and the Economics of Unions*. Economic theory and analysis of labor as an input in the resource market; principles, labor problems, public policy; theories of the development of the labor movement; economic objectives of trade unions; problems in public control. Prereq.: ECON 2610. 3 s.h.

5853. *Applied Econometrics*. The practice of econometrics with emphasis on model construction, estimation, and interpretation of results. Applications in the private and public sectors involve the use of computers and economic software. Prereq.: ECON 2630 and either 3790 or the previously offered 3780. 3 s.h.

5856. *Topics in Quantitative Economics*. Application of different tools of mathematical economics, computational economics, and econometrics in conjunction with economic theory to model economic problems of firms, consumers, financial institutions, and public sectors. Specific content of the course will vary with the instructor. May be repeated once with a different topic. Prereq.: ECON 3790 or the previously offered 3780. 3 s.h.

## EDUCATIONAL TECHNOLOGY—EDTC Department of Teacher Education

3771. *Technology for Teaching*. Introduction to the issues, pedagogies, and skills associated with the use of technology in the educational process. Experiences with computers and educational technology include computer productivity software, information retrieval sources, creation of instructional materials, selection/evaluation of hardware and software, telecommunications, Internet, and introductory multimedia. Emphasis on use and assessment of computers and media as educational tools. Required of all candidates for teaching certificates. Two hours lecture, two hours lab. Prereq.: Admission to upper-division status in COE. 3 s.h.

5899. *Integration of Instructional Computing*. Planning for and integrating computing into classroom instruction and the utilization of a variety of hardware, systems, and peripherals in educational environments. Review and use of educational software in, and develop software integration projects for curricular areas, including instructional uses of productivity software, the Internet, telecommunications, desktop publishing, desktop video, multimedia, and record keeping. Prereq.: EDTC 3771. 3 s.h.

## ELECTRICAL AND COMPUTER ENGINEERING—ECEN Department of Electrical and Computer Engineering

### Lower-Division Courses

1521. *Basic Digital and Computer Circuits*. Introduction to digital and computer design concepts: number systems, switching algebra, logic gates, and truth tables. Combinatorial and sequential design techniques. Comparators, multiplexers, coders and decoders, flip-flops, registers, counters, and their practical applications. 3 s.h.

1521L. *Basic Digital and Computer Circuits Laboratory*. Laboratory exercises to accompany ECEN 1521. Design and testing of combinatorial and sequential logic circuits. Experiments with computer hardware. Prereq. or concurrent: ECEN 1521. 1 s.h.

1555. *Computer Engineering*. Introduction to the personal computer, applications software, technologies, microprocessors, microcomputer programming and applications. Basic operations of digital circuits, interfacing using integrated chips, and analog computers. Experiments accompany lectures, providing practical experience for students. 3 s.h.

1555H. *Honors Computer Engineering*. The personal computer, its components, and the role it plays in control applications, instrumentation, and engineering design. Basic experiments using digital circuits, microcomputers, integrated circuits, and design software integrated into a project with the personal computer and instrumentation. Prereq. or concurrent: ENGL 1550H and admission to the Honors Program, or permission of instructor and Director of Honors Program. 3 s.h.

2610. *Computer Tools for Electrical and Computer Engineering*. Introduction to software packages and resources such as MATLAB, PSpice, and Quartus II for analysis and design of circuits and systems. Prereq. or Concurrent: ECEN 2632 and ECEN 2611. 1 s.h.

2611. *Instrumentation and Computation Lab 1*. Laboratory experiments and computer exercises to accompany ECEN 2632. Laboratory experimentation and basic instrumentation. Computer-aided analysis and simulation. Prereq.: ENGR 1560 or CSIS 2610. Prereq. or concurrent: ENGL 1551 and ECEN 2632. 1 s.h.

2612. *Instrumentation and Computation Lab 2*. Laboratory experiments and computer exercises to accompany ECEN 2633. Laboratory experimentation and basic instrumentation. Computer-aided analysis and simulation. Prereq.: ECEN 2611 and ENGL 1551. Prereq. or concurrent: ECEN 2633. 1 s.h.

2614. *Basics of Electrical Engineering*. Introduction to electrical circuit elements and laws; DC and AC analysis. Introduction to digital devices and circuits with applications. Applications of electromagnetics. Intended for non-electrical engineering majors. Prereq.: MATH 1571. 3 s.h.

2632. *Basic Circuit Theory 1*. Basic principles of linear circuits. Circuits concepts and laws, methods of analysis, network theorems. Source-resistor circuits. Inductors and capacitors. Analysis of AC circuits using phasors; impedance and admittance. Power calculations in DC and AC circuits. Prereq. or concurrent: MATH 1572. 3 s.h.

2633. *Basic Circuit Theory 2*. Continuation of ECEN 2632. First- and second-order transients in RLC circuits. Mutual inductance and transformers. Three-phase circuits. Transform methods in circuit analysis, transfer functions, resonance. Prereq. or concurrent: MATH 2673. Prereq.: ECEN 2632. 3 s.h.

### Upper-Division Courses

3710. *Signals and Systems*. Operation and analysis of communication, control, and computer systems at the signal level. Computer aided design tools and methods to analyze signals and systems. Continuous and discrete-time transforms. Noise analysis, signal detections, line codes, and multiplexing. Prereq.: ECEN 2633, ECEN 1521 and MATH 3705. 3 s.h.

3711. *Intermediate Laboratory 1*. Laboratory experiments and computer exercises in the areas of digital and analog electronics and logic and computer circuits. Designed to accompany the co-requisite courses. Prereq.: ECEN 2612. Prereq. or concurrent: ECEN 3733 and 3771. 1 s.h.

3712. *Intermediate Laboratory 2*. Laboratory experiments and computer exercises in the areas of digital and analog electronics, logic and computer circuits, and electromagnetics. Designed to accompany the co-requisite courses. Prereq.: ECEN 3711. Prereq. or concurrent: ECEN 3742 and either ECEN 3772 or 3734. 1 s.h.

3717. *Sensor Fundamentals*. Basic principles of sensors such as electro-chemical, -mechanical, -optical, and -thermal transducers. Signal conditioning and smart sensors. Applications to process control and environmental systems. Prereq.: MATH 3705, and either PHYS 2611 or ECEN 2632. 3 s.h.

3730. *Microprocessors and Microcontrollers*. Organization and structured assembly language programming. Digital controller devices and their relationships to processors and physical environments. Two hours lecture and three hours laboratory per week. Prereq.: ECEN 3733. 3 s.h.

3731, 3732. *Digital Systems 1, 2*. Analysis, design, and application of logic arrays, basic cells, flip-flops, registers, counters, memories, and controllers. Synchronous and asynchronous finite-state machines. Analysis and design of systems using programmable logic arrays, programmable logic controllers, and microprocessors. Prereq.: ECEN 1521, 1521L, 2632 for 3731; 3731 for 3732. 3+3 s.h.

3733. *Digital Circuit Design*. Modern digital circuit analysis and design. Latches, flip-flops, registers, counters, memories, programmable logic arrays, and arithmetic logic units. Logic gate-level synthesis and computer simulation using CAD tools. Synchronous and asynchronous finite-state machines. Prereq.: ECEN 1521, 2633. Prereq. or concurrent ECEN 3711. 3 s.h.

3734. *Computer Design*. Systematic methodologies for digital computer hardware and software designs. VLSI circuits. SOPC, CPLD, and FPGA designs. Hardware description languages. Prereq.: ECEN 3733. Prereq. or concurrent ECEN 3712. 3 s.h.

3741. *Electromagnetic Fields 1*. Maxwell's equations. Static electric and magnetic fields. Magnetic materials and forces, dielectrics, conductance, capacitance, and inductance. Poisson's and Laplace's equations. Prereq.: ECEN 2632, PHYS 2611, MATH 3705. 3 s.h.

3742. *Electromagnetic Fields 2*. Maxwell's equations. Time varying electric and magnetic fields. Electromechanical devices, transmission lines, microwaves. Antennas and radiation. Prereq.: ECEN 3741. 3 s.h.

3771. *Digital and Analog Circuits 1*. Terminal characteristics of electronic devices such as diodes, BJTs (bipolar junction transistors), FETs (field effect transistors), and operational amplifiers. The design of digital circuits with these devices. Basic bias and small-signal models for analog amplifiers. Computer-aided design and analysis. Prereq.: ECEN 2633. 3 s.h.

3772. *Digital and Analog Circuits 2*. Continuation of ECEN 3771. Bias and signal modeling for amplifier design. Large-signal, small-signal and DC amplifiers. Single-stage, multistage and power amplifiers. Frequency response. Applications with op amps such as amplifiers, comparators, filters, and oscillators. Computer-aided design and analysis. Prereq.: ECEN 3771. 3 s.h.

4803/4803L. *Linear Control Systems*. System modeling, responses and performance measures. Stability analysis by root locus, Bode, and Nyquist plots. Computer-aided control system design. Compensator design. Three hours lecture, three hours laboratory per week. Prereq.: ECEN 2633, 3712, MATH 3705, CEEN 2620. 4 s.h.+0 s.h.

4811. *Senior Laboratory*. Laboratory experiments and computer exercises in the areas of applied electromagnetics, energy conversion. Designed to accompany the co-requisite course. Prereq.: ECEN 3712. Prereq. or concurrent: ECEN 4844. 1 s.h.

4844. *Electromagnetic Energy Conversion*. An examination of lumped electromagnetic parameters with development of theoretical, experimental, and design parameters for electrical energy conversion devices such as transformers, motors, and generators. Typical and special applications. Prereq.: MECH 2641, ECEN 3741 and 21 s.h. of ECEN courses. 3 s.h.

4851. *VLSI System Design*. Basic MOSFET models. Layout of inverters, NAND, NOR, PLA, PAL and ROMs. CMOS process and design rules. VLSI system design methodology and computer EDA tools such as PSpice and layout editors. Prereq.: ECEN 3771, ECEN 3733. 3 s.h.

4852. *Neural Networks and Robotics*. Principles for control applications and robotics, direct inverse control, neural networks, and fuzzy set theory. Applications including adaptive control, neural networks for motion control and path planning in robotics. Prereq.: ECEN 3733. 3 s.h.

4853. *Computer Networks*. Computer networks and Internet applications: http, ftp, e-mail, DNS, socket programming. Network transport: UDP, TCP. Network layers: IP, routing, taxonomy, Ethernet, wireless protocol. Reliable data transfer, and congestion controls. Prereq.: ECEN 3730. 3 s.h.

4854. *Principles of Electromagnetic Compatibility*. Review of electromagnetic theories. Techniques of electromagnetic compatibility in electronic systems and computer hardware. Modeling and simulation of transmission lines and circuits. Electromagnetic discharge and grounding problems for high-frequency applications. Radio-frequency emissions from electronic devices. Shielding techniques to prevent ESD and EMI. Prereq.: PHYS 2611, MATH 3705. 3 s.h.

4855. *Advanced Digital Control*. Fundamentals of sampled linear control systems, digital controllers and observers. Analysis techniques including difference and state-variable equations, transfer functions, transforms. Sampling, stability, and discrete approximation. Prereq.: ECEN 3733. 3 s.h.

4856. *Embedded Systems*. Fundamentals of small-scale and medium-scale embedded systems. Design techniques for processors, timers, input device interfacing, interrupt controllers, and drive circuits. Real-time operating system programming tools. Hardware-software co-designs. Prereq.: ECEN 3733. 3 s.h.

4881. *Modern Control System Design*. Advanced control system analysis and design. LQR, pole placement, state observer design. Introduction to system identification and adaptive controllers. MATLAB simulation and real-time implementation of controllers. Two hours lecture, three hours laboratory per week. Prereq.: ECEN 4803. 3 s.h.

4899. *Senior Design Project*. An electrical/computer engineering design problem is chosen or assigned; students work in teams. Proposals are presented which describe the design problem and approaches to it. The final design is presented in written and oral forms. This capstone course is intended to mimic a typical industrial or research project and includes ethical and economical considerations with the engineering work. Three hour lecture/discussion, three hours of laboratory per week. Prereq.: ECEN 4811 and 27 s.h. of ECEN courses. 4 s.h.

5800. *Special Topics*. Special topics, new developments in Electrical Engineering. Subject matter, special prerequisites, and credit hours to be announced in advance of each offering. May be repeated with different subject matter to a maximum of 6 s.h. Prereq.: Senior standing in Electrical and Computer Engineering. 1-3 s.h.

5807. *Advanced Digital and Analog Circuits*. Chip circuitry for devices such as BJT, CMOS, and ECL-based digital logic chips. Switching devices such as SCRs, triacs, and timers. Switching power supplies. Power amplifiers. Applications and specifications of off-the-shelf IC devices. Computer-aided design and analysis. Prereq.: ECEN 3772. 3 s.h.

5808. *Advanced Signals and Systems*. Communication and control system modeling and simulations; signal analysis in continuous-time, discrete-time and frequency domains. Advanced communication system applications. Prereq.: ECEN 3710 or Graduate Standing. 3 s.h.

5816. *Theory and Fabrication of Solid-State Devices*. An introductory study of physical theory, design, and fabrication of discrete devices and integrated circuits. Electronic properties of semiconductors such as carrier concentration, energy gap, mobility, lifetime. Techniques of fabrication such as oxidation, diffusion, alloying ion implantation, metallization, masking. Prereq.: ECEN 2633, PHYS 2610, ECEN 3741. 3 s.h.

5817. *Sensor Design and Application*. Designs and applications for measurement and control; includes electro-chemical, -mechanical, -optical, and -thermal transducers. Signal conditioning and smart sensors. Prereq.: ECEN 3771 or ECEN 3717. 3 s.h.

5830. *Digital Signal Processing*. Discrete time signals and systems; discrete, fast, and inverse Fourier transforms. Digital filter analysis and design, digital signal processing applications. Two hours lecture, three hours laboratory. Prereq.: ECEN 3711 and ECEN 3710. 3 s.h.

5835. *Computer Architecture with VHDL*. Use of hardware description languages to design computer components and systems. Arithmetic and logic units, control units, VHDL models for memories and buses, interfacing, transfer design. Survey of modern computer systems. Prereq.: ECEN 3734. 4 s.h.

5840. *Electric Power Systems*. Modeling of power system components. Power flow, faults, protection systems, and stability problems. Special projects and laboratory experiments including CAD applications for analysis, design, and simulation of power system networks. Three hours lecture, three hours laboratory per week. Prereq. or concurrent: ECEN 4844. 4 s.h.

5850. *Communications Applications*. Applicable technologies and "real-world" communication components and systems. Design and analysis tools. Emerging technologies, "killer apps", networking, data acquisition, and convergence. Prereq.: ECEN 3710 or Graduate Standing. 3 s.h.

5860. *Energy Radiation and Propagation*. Examination of dipole, loop aperture, reflector, lens, surface wave, traveling wave, and other antennas; array theory; radiation resistance, directivity, and input impedance. Investigation of theoretical and practical applications of fiber optics. Prereq.: ECEN 3741 and 21 s.h. of ECEN courses. 3 s.h.

5879. *Computer-Aided Design*. The design, analysis, and modeling of linear and nonlinear networks and systems using a simulation and modeling computer program. Development and use of library models of devices, subcircuits, and subsystems. Prereq.: ECEN 2611 and 21 s.h. of ECEN courses. 3 s.h.

5890. *Power Electronics*. SCRs, rectifier circuits, commutation techniques, AC controllers, converters, and inverters. Special projects and laboratory experiments including computer applications for analysis, design, and simulation of power electronics network. Three hours lecture, three hours laboratory per week. Prereq.: ECEN 3771 and 21 s.h. of ECEN courses. 4 s.h.

## ELECTRICAL ENGINEERING TECHNOLOGY—EET Engineering Technology

### Lower-Division Courses

1501. *Circuit Theory 1*. Theoretical analysis of DC electrical circuits including units conversions, current voltage, power, Ohm's Law, Kirchhoff's Laws, network theorems, capacitance, magnetic circuits, inductance and transient analysis of RL and RC circuits. Prereq. or concurrent: ENTC 1505. Concurrent with EET 1501L. 3 s.h.

1501L. *Circuit Theory 1 Lab*. Use of electrical components to construct circuits and use of electrical instrumentation including meters and oscilloscopes to analyze DC resistive series/parallel networks and basic RC & RL transient circuits. Computer circuit analysis with PSPICE. Three hours per week. Concurrent with EET 1501. 1 s.h.

1502. *Circuit Theory 2*. Study of AC sinusoidal waveforms, phasor representations, phasor algebra and phasor diagrams. Solution of steady state single phase series/parallel networks including network theorems, power and power factor, resonant circuits, filters, mutual inductance, transformers and balanced three-phase systems. Prereq.: C or better in EET 1501 & EET 1501L. Concurrent with EET 1502L. 3 s.h.

1502L. *Circuit Theory 2 Lab*. Measure effective values of AC currents and voltages, observe waveforms with oscilloscopes, verify impedance concepts and phasor diagrams for AC series/parallel networks and resonant circuits. Computer circuit analysis with PSPICE. Three hours per week. Concurrent with EET 1502. 1 s.h.

2605. *Electronics 1*. Physical basis of semiconductor materials, diodes, rectifier circuits, Zener diode regulators, clippers, clampers, special purpose diodes. Bipolar junction transistors (BJT) characteristics, bias circuits, equivalent circuit models, amplifiers and field effect transistor (FET) characteristics. Prereq.: EET 1502, 1502L. Concurrent with EET 2605L. 3 s.h.

2605L. *Electronics 1 Laboratory*. Use of meters, oscilloscope, transistor curve tracer for experiments on diode characteristics, rectifier circuits, clippers, clampers, Zener regulators, BJT and FET characteristics, BJT bias circuits and amplifiers. Computer circuit analysis with PSPICE. Three hours per week. Concurrent with EET 2605. 1 s.h.

2620. *Digital Electronics*. An introductory study of number systems and conversions, codes, Boolean algebra, and logic gates. Includes Boolean function simplification, truth tables, Karnaugh maps, and combination circuits. Prereq.: C or better in EET 1501 and EET 1501L; or CSIS 1590. Concurrent with EET 2620L. 2 s.h.

2620L. *Digital Electronics Lab*. Experiments utilizing digital integrated circuits to implement various logic functions discussed in EET 2620. Three hours per week. Concurrent with EET 2620. 1 s.h.

2650. *Personal Computer Hardware*. Fundamentals of assembly, troubleshooting, and repair of personal computers. Hardware topics include power supplies, motherboard, memory, keyboards, monitors, floppy drives, hard drives, and peripherals. Upgrading of PC hardware. Two hours lecture, three hours lab per week. Prereq. or concurrent: ENTC 1505 or consent of instructor. 3 s.h.

2651. *Digital Communication Systems 1*. Introduction to telecommunications; noise types and measurements; amplitude, frequency and pulse modulation and encoding techniques; transmission codes; terminals; serial interfaces using RS 232, RS 499, RS 422A and 423A; loop standards; UART and UART interface. Two hours lecture, three hours lab per week. Prereq.: C or better in EET 1501 & EET 1501L. 3 s.h.

2652. *Digital Communication Systems 2*. Continuation of EET 2651. Includes the telephone set and subscriber loop interface; telephone network. Modems; synchronous protocols; error detection correction; control. Two hours lecture, three hours lab per week. Prereq.: EET 2651. 3 s.h.

2653. *Fiber Optics*. Light propagation in fiber; connections, attenuation, and signal distortion; splicing and analysis of coupling losses; optical transmitters and receivers for analog and digital signals. Two hours lecture, three hours lab per week. Prereq.: C or better in EET 1501 & EET 1501L. 3 s.h.

2670. *Process Instrumentation*. Introduction to the principles and practice of measurement and control of temperature, pressure, flow, level, and other process variables commonly encountered in industrial



systems. Includes characteristics, installation, and troubleshooting of process transducers, sensors, and detectors. Three hours lecture, three hours lab per week. Prereq. or concurrent: EET 2605/L. 4 s.h.

2671. *Computer Instrumentation and Control*. Use of personal computers as a data acquisition and control device in industrial processes. Specification, installation, troubleshooting or various I/O cards. Development of PC-based data acquisition and control system using commercially available software. Three hours lecture, three hours lab per week. Prereq.: EET 2670/L. 4 s.h.

2680. *Digital Broadcasting I*. Introduction to communication systems; signal modulation techniques; analog, digital, and mixed systems; digital processing principles; filters and transforms; sampling; sound, light, and image portrayal; digital television; FCC rules. Three hours lecture, three hours lab per week. Prereq.: EET 1502, 1502L, PHYS 1501, 1501L, EET 2620, 2602L, Prereq. concurrent with EET 2605, 2605L. 4 s.h.

2681. *Digital Broadcasting 2*. Transmission media; MPEG data compression; digital coding; storage devices; production-related interfaces; digital television broadcasting; multiplexing; error correction; wiring practices; shielding and grounding techniques; FCC rules. Three hours lecture, three hours lab per week. Prereq.: EET 2680, or concurrent with EET 2606, 2606L. 4 s.h.

3706. *Electronics 2*. Field effect transistor (FET) bias circuits and amplifiers, thyristor circuits, frequency effects (Bode plots), differential amplifiers, linear and non-linear op amp circuits, active filters, oscillators and regulated power supplies. Prereq.: C or better in EET 2605 & 2605L. Concurrent with EET 3706L. 3 s.h.

3706L. *Electronics 2 Laboratory*. Experiments involving field effect transistors (FETs), integrated circuits (ICs), operational amplifiers, frequency effects on gain, oscillator circuits and regulated power supplies. Computer circuit analysis with PSPICE. Three hours per week. Concurrent with EET 3706. 1 s.h.

3710. *Electrical Machines*. Construction, operating principles and characteristics, efficiency and control of DC motors, generators, and specialized machines. AC single and 3-phase transformers, alternators, induction and synchronous motor principles, characteristics, efficiency and control. Prereq.: EET 1502, EET 1520L. Concurrent with 3710L. 3 s.h.

3710L. *Electrical Machines Lab*. Experiments with DC motors and generators and AC transformers, alternators, induction and synchronous motors to observe operation, efficiency, control and machine characteristics. Three hours per week. Concurrent with EET 3710. 1 s.h.

3712. *Programmable Logic Controllers*. Development of ladder logic programming and application to programmable logic controllers (PLCs). Exami-

nation of input/output (I/O) device characteristics and interfacing including both digital and analog I/O. Installation, maintenance and safety practices for PLCs. Prereq.: EET 1502, EET 1502L; C or better in EET 2620 & EET 2620L. Concurrent with EET 3712L. 3 s.h.

3712L. *PLC Laboratory*. Exercises in ladder logic programming for programmable logic controllers (PLCs) using concepts developed in EET 3712. Input/Output (I/O) concepts related to PLCs. Three hours per week. Concurrent with EET 3712. 1 s.h.

### Upper-Division Courses

3725. *Electromechanical Systems*. AC/DC circuit analysis techniques including network theorems, PSPICE computer circuit analysis and laboratory experiences with applications to AC/DC machinery, electronics, digital circuits and control systems. Three hours lecture, three hours lab per week. Prereq.: C or better in MATH 1570. 4 s.h.

3730. *Logic Systems Design*. The characteristics and applications of integrated circuit logic families and various memory devices. Emphasis on the design of digital systems with SSL, MSI, and LSI as system components. Prereq.: C or better in EET 2620, EET 2620L; EET 2605, & EET 2605L. Concurrent with EET 3730L. 3 s.h.

3730L. *Logic Systems Design Lab*. Laboratory exercises dealing with applications of concepts developed in EET 3730. Three hours per week. Concurrent with EET 3730. 0 s.h.

3735/3735L. *Microprocessor Architecture and Programming*. An introduction to microprocessor architecture, memory organization, and input/output addressing. Emphasis on machine/assembly language programming to teach concepts of buses, machine cycles, and internal data flow. Two hours lecture and three hours of lab per week. Prereq.: C or better in EET 2620 & EET 2620L; or CSIS 1590. 3 s.h.+0 s.h.

3745. *Microprocessor Systems 2*. Continuation of EET 2645 with emphasis on advanced programming techniques, memory mapping, I/O ports, and basic I/O interfacing. Prereq.: EET 3735, EET 3735L. Concurrent with EET 3745L. 3 s.h.

3745L. *Microprocessor Systems 2 Lab*. Laboratory exercises utilizing a microcomputer to provide practical applications of concepts developed in EET 3745. Three hours per week. Concurrent with 3745. 0 s.h.

3760. *Variable Speed Drives*. Introduction to electronic speed control of direct and alternating current motors. Power conversion and waveform modulation techniques, drive sizing, harmonics, and motor performance. Prereq.: EET 3712, EET 3712L. Concurrent with EET 3760L. 3 s.h.

3760L. *Variable Speed Drives Lab*. Exercises in variable speed drive applications, demonstrating the concepts developed in EET 3760. Concurrent with 3760. 0 s.h.

3780. *Communication Systems*. Audio signals, noise, untuned and RF amplifiers, amplitude, frequency, pulse modulation, transmission lines, antennas, and multiplexing of communication channels. Prereq.: EET 1502, EET 1520L. Concurrent with EET 3780L. 3 s.h.

3780L. *Communication Systems Lab*. Laboratory exercises dealing with application of concepts developed in EET 3780. Three hours per week. Concurrent with EET 3780. 0 s.h.

4810. *Electrical System Design*. The design and layout of electrical systems for power, light, heat, signals, and communications in commercial, industrial, and residential buildings. Two hours lecture, three hours of lab per week. Prereq.: EET 3710, EET 3710L. 3 s.h.

4820. *Power System Protection and Control*. An introduction to electrical power system protection and control utilizing intelligent smart grid technologies. Topics include power system analysis, real time data acquisition and control, synchrophasor measurements, communications, and application of microprocessor-based protective relaying. Two hours lecture per week. Concurrent with EET 4820L. Prereq.: C or better in EET 3710, EET 3710L and EET 3712 and EET 3712L. 3 s.h.

4820L. *Power System Protection and Control Lab*. Establishing communications, programming, and testing of various microprocessor based power system protective relays, including time-overcurrent, bus, differential, motor, distributed generation, and transformer relays. Three hours lab per week. Concurrent with EET 4820. Prereq.: C or better in EET 3710 and EET 3710L and EET 3712 and EET 3712L. 0 s.h.

4845. *Microprocessor Systems 3*. Continuation of EET 3745 with emphasis on real data acquisition, A/D and D/A conversions, and industrial applications. Prereq.: EET 3730, EET 3730L, EET 3745, EET 3745L. Concurrent with EET 4845L. 3 s.h.

4845L. *Microprocessor Systems 3 Lab*. Laboratory exercises utilizing a microcomputer to provide practical applications of concepts developed in EET 4845. Three hours per week. Concurrent with 4845. 0 s.h.

4850. *Integrated Circuit Applications*. Introduction to integrated circuits technology and typical application. Prereq.: EET 3706, EET 3706L. Concurrent with EET 4850L. 3 s.h.

4850L. *Integrated Circuit Applications Lab*. Laboratory exercises dealing with the application of concepts developed in EET 4850. Three hours per week. Concurrent with EET 4850. 0 s.h.

4870. *Process Control Technology*. Application of Laplace transform solution of differential equations to system transfer functions. Development of control system transfer functions, control system components and analysis of linear control systems. Prereq.: MATH 2670, EET 1502, EET 1502L. 4 s.h.

4880. *Electrical and Mechanical Facilities Design*. Multidisciplinary study of building systems; HVAC, plumbing, electrical power, lighting, and commu-

nication systems. Computational labs and group projects for each topic. Prereq.: Senior standing and permission of the CCET or EET student's program advisor. Concurrent: CCET 4884. Two hours lecture and three hours computational lab. 3 s.h.

4890. *Special Topics in EET*. Special topics/new developments in electrical engineering technology. Subject matter, special prerequisites, and credit hours to be announced in advance of each offering. May be repeated with different subject matter to a maximum of 8 s.h. Prereq.: Senior standing in EET or consent of the instructor. 1-4 s.h.

## ELECTRIC UTILITY TECHNOLOGY—EUT Engineering Technology

1500. *Electrical Fundamentals*. Introduction to direct and alternating current circuits. Study of resistance, capacitance, inductance, Ohm's and Kirchoff's Laws applied to circuits. Three hours lecture per week. Concurrent with EUT 1500L. Prereq.: ENTC 1500 and MATH 1501 or at least level 3 on the Mathematics Placement Test. 3 s.h.

1500L. *Electrical Fundamentals Lab*. Lab component of EUT 1500. Provides hands-on instruction in the use of electrical test equipment including digital multimeters, power supplies, oscilloscopes, etc. Three hours per week. Concurrent with EUT 1500. Prereq.: ENTC 1500 and MATH 1501 or at least level 3 on the Mathematics Placement Test. 1 s.h.

1502. *Power Plant Fundamentals*. Introduction to power plant systems including boiler, turbine, generator, condenser, pumps, and auxiliary equipment. Emphasizes use of schematics and diagrams in discussing plant systems. Includes plant safety training. Four hours lecture per week. Prereq.: MATH 1501 or Level 3 on MPT and eligible to enroll in ENGL 1550. Concurrent: EUT 1502L. Prereq. or concurrent: ENTC 1500. 4 s.h.

1502L. *Power Plant Fundamentals Lab*. Lab component to accompany EUT 1502. Provides introduction to power generating plant systems and equipment including boiler, turbine, generator, condenser, pumps, and auxiliary equipment. Emphasizes the use of schematics and diagrams in discussing plant systems. Three hours laboratory per week. Concurrent with EUT 1502. 1 s.h.

1503. *Power Plant Mechanical Equipment*. Introduction to various mechanical equipment found in power plants including pumps, fans, blowers, valves, heat exchangers and power transmission equipment. Mechanical concepts of force and torque. Basic types of bearings, seals, and lubrication. Mechanical assembly drawings and diagrams. Three hours lecture per week. Concurrent with EUT 1503L. Prereq.: ENTC 1500 and EUT 1502/L, and MATH 1501. 3 s.h.

1503L. *Power Plant Mechanical Equipment Lab.* Lab component to accompany EUT 1503. Provides hands-on activities related to pumps, fans, blowers, valves, heat exchangers, bearings, seals, lubrication, and power transmission equipment. Three hours lab per week. Concurrent with EUT 1503. Prereq.: ENTC 1500, EUT 1502/L, and MATH 1501. 1 s.h.

1504. *Maintenance Fundamentals 1.* Introduction to blueprint reading and technical diagrams, use of hand tools and power tools, safety and health, development of troubleshooting skills, chemical hazards, and material safety data sheets. Three hours lecture, and three hours lab per week. Prereq. or concurrent: ENTC 1500. 4 s.h.

1505. *Maintenance Fundamentals 2.* Introduction to piping systems, basic hydraulics and pneumatics, hydraulic and pneumatic troubleshooting, rigging and equipment installation, welding principals, oxy-acetylene cutting and welding. Three hours lecture, three hours lab per week. Prereq.: EUT 1502 and EUT 1504; Concurrent or Prereq.: EUT 1503. 4 s.h.

2600. *Electric Utility Distribution Systems.* Applications of transformers, switchgear, regulators, overhead conductors and underground cable. Power factor correction, voltage regulation, coordination and overcurrent protection of distribution circuits. Prereq.: EUT 1500. 4 s.h.

2601. *Electrical Codes and Standards.* National Electrical Code and National Electrical Safety Code as applied to overhead and underground electric utility distribution systems. Pole guying, overhead conductor sag and tension, cable pulling, and clearances. Four hours lecture per week. Prereq.: EUT 2600. 4 s.h.

2604. *Power Plant Electrical Equipment.* Study of three-phase power systems including motors, generators, transformers, and switchgear. NEC and NESC Code requirements, automatic and manual motor controls, variable speed drives, circuit protection. Three hours lecture per week. Concurrent with EUT 2604L. Prereq.: EUT 1500 and EUT 1500L. 3 s.h.

2604L. *Power Plant Electrical Equipment Lab.* Lab component to accompany EUT 2604. Provides hands-on activities related to three-phase power systems, motors, generators, transformers, and switchgear. Three hours lab per week. Concurrent with EUT 2604. Prereq.: EUT 1500 and EUT 1500L. 1 s.h.

2605. *Intermediate Power Plant Systems.* Continuation of EUT 1502. Study of power plant cycles, thermodynamic properties of water and steam, and use of steam tables. Includes thermodynamic analysis of boiler system, feedwater, superheat, and reheat systems, heat transfer in pre-heaters, turbine, condensers, and pumps. Three hours lecture per week. Concurrent with EUT 2605L. Prereq.: EUT 1503, and EUT 1503L. 3 s.h.

2605L. *Intermediate Power Plant Systems Lab.* Lab component to accompany EUT 2605. Provides hands-on and computational methods to dynamic analysis of boiler system, feedwater, superheat, and reheat systems, heat transfer in pre-heaters, turbine, condenser, and pumps. Three hours per week. Concurrent with EUT 2605. Prereq.: EUT 1503, and EUT 1503L. 1 s.h.

2606. *Power Plant Operator Practice.* Discusses the operation of large utility power plants including start-up and shut-down of all major systems, disturbance response, and safe operation of plant systems. Three hours lecture per week. Concurrent and EUT 2605/L. Prereq.: EUT 1503 and EUT 1503/L. 3 s.h.

2607. *Power Plant Instrumentation and Control.* Introduces basic principles of process instrumentation and control systems. Measurement parameters such as flow, pressure, level, temperature, and pH. Includes coverage of programmable logic controllers, and distributed control systems. Three hours lecture per week. Concurrent with EUT 2607L. Prereq.: EUT 2604/L and EUT 2605/L. 3 s.h.

2607L. *Power Plant Instrumentation & Control Lab.* Lab component to accompany EUT 2607. Provides hands-on activities related to process instrumentation and control systems. Three hours per week. Concurrent with EUT 2607. Prereq.: EUT 2604L, and EUT 2605L. 1 s.h.

2608. *Advanced Power Plant Systems.* Continuation of EUT 2605. Examines on-line boiler control concepts, including combustion, feedwater, header pressure, oxygen content, power demand, and other processes as applied to utility boilers and process heat supply boilers. Also examines pollution control systems, gas turbines and diesel generators. Three hours lecture per week. Concurrent with EUT 2607/L and EUT 2608L. Prereq.: EUT 2605/L. 3 s.h.

2608L. *Advanced Power Plant Systems Lab.* Lab component to accompany EUT 2608. Provides hands-on activities related to on-line boiler control concepts, pollution control systems, gas turbines and diesel generators. Three hours per week. Concurrent with EUT 2607/L and EUT 2608. Prereq.: EUT 2605/L. 1 s.h.

2610. *Industrial Electronics.* Introduction to semi-conductors, power supplies, amplifiers, oscillators, and digital logic systems commonly encountered in an industrial setting. Three hours lecture, three hours lab per week. Prereq.: EUT 1500. 4 s.h.

2611. *Electrical Systems 1.* Introduction to power distribution systems commonly found in electric utility generating plants and large commercial and industrial facilities. Topics include service equipment, medium and low voltage switchgear, conductors, conduit and cable tray, fuse and breaker characteristics, motor control circuits, insulation and ground testing, and lighting fundamentals. Emphasis placed on applicable NEC and NESC Codes. Three hours lecture, three hours lab per week. Prereq.: EUT 1500, EUT 1503. 4 s.h.

2612. *Electrical Systems 2*. Discussion, demonstration, and practice of manufacturer's operation and maintenance procedures for a variety of electrical equipment found in electric utility generating plants including soot blowers, coal feeders and pulverizers, precipitators, motors, transformers, and ignitors. Three hours lecture, three hours lab per week. Prereq.: EUT 2611. 4 s.h.

2620. *Instrumentation and Control Systems 1*. Computers, I/O devices, maintaining and troubleshooting computer systems, and programmable logic controllers. Instruction in pipefitting and tubing required for IC systems. Three hours lecture, three hours lab per week. Prereq.: EUT 1500. 4 s.h.

2621. *Instrumentation and Control Systems 2*. Discussion, demonstration, and practice of manufacturer's operation and maintenance procedures for a variety of instrumentation and control equipment found in electric utility generating plants including boiler controls, turbine supervisory controls, emission controls, distributed control systems, and PLCs. Three hours lecture, three hours lab per week. Prereq.: EUT 2620. 4 s.h.

2630. *Machine Shop and Welding*. Introduction to machine-shop practices including work layout and shop safety, lathes, milling machines, grinding, and machine-shop job analysis. Arc welding operations including SMAW, GMAW, GTAW, pipe welding, hard facing will also be covered. Three hours lecture, three hours lab per week. Prereq.: EUT 1505. 4 s.h.

2631. *Mechanical Systems 1*. Introduction to mechanical drive maintenance, mechanical and fluid drive systems, bearing and shaft seal maintenance, pump installation and maintenance, maintenance pipefitting, tubing and hose system maintenance, valve maintenance and piping system protection, and bulk handling conveyor systems. Three hours lecture, three hours lab per week. Prereq.: EUT 1505, Concurrent or Prereq.: EUT 2630. 4 s.h.

2632. *Mechanical Systems 2*. Discussion, demonstration, and practice of manufacturer's operation and maintenance procedures for a variety of mechanical equipment found in electric utility generating plants including soot blowers, coal pulverizers and ball mills, mill exhausters fans, and bearing maintenance. Three hours lecture, three hours lab per week. Prereq.: EUT 2631. 4 s.h.

2633. *Vibration, Alignment and NDT*. Advanced coverage of alignment, vibration analysis, balancing, and non-destructive testing (NDT) of rotating equipment including pumps, fans, turbines, generators, and motors. Three hours lecture, three hours lab per week. Prereq.: EUT 2631. 4 s.h.

2690. *Electric Utility Lab 1*. Provides the skill required to work on secondary circuits, transmission support systems, transformers, and services. OSHA regulations and rigging safety awareness. Twenty contact hours per week. Prereq.: Acceptance into EUT program. 6 s.h.

2691. *Electric Utility Lab 2*. Provides the skill required to install-three phase primary conductors, transformers, cable components; operate line fuses, reclosers, power banks, capacitors, and voltage regulators. Twenty contact hours per week. Prereq.: EUT 2690. 6 s.h.

2692. *Electric Utility Lab 3*. Provides the skill required to install primary URD equipment, and subtransmission structures. Live line maintenance techniques. Troubleshooting of URD primary and secondary circuits. Twenty contact hours per week. Prereq.: EUT 2691. 6 s.h.

2693. *Electric Utility Lab 4*. Provides the skill required to climb transmission structures and perform intermediate tasks. Substation equipment, minimum approach distances, and substation safety. Twenty contact hours per week. Prereq.: EUT 2692. 6 s.h.

2699. *Electric Utility Co-op*. Compensated and evaluated work experience with local utility company. Forty contact hours per week. Prereq.: EUT 2691, permission of program coordinator. 2 s.h.

## EMERGENCY MEDICAL SERVICES—EMS

### Department of Health Professions

1500. *Emergency Medical Technician*. Provides the basic knowledge and skills to be an Emergency Medical Technician. Meets all National Highway and Safety administration National Emergency Medical Services Education Standards and the State of Ohio Approved Emergency Medical Services Curriculum Standards for the Emergency Medical Technician. Must be taken concurrently with 1500L and 1500C. 4 s.h.

1500C. *Emergency Medical Technician Clinical and Field Internship*. Clinical and Field Internship experience necessary to acquire the skills required to be an Emergency Medical Technician. Meets all national and state curriculum standards for the EMT. Must be taken concurrently with EMS 1500 and EMS 1500L. Ten hours per week after week 12. 1 s.h.

1500L. *Emergency Medical Technician—Laboratory*. Laboratory experience necessary to acquire skills required to be an Emergency Medical Technician. Meets all National and State curriculum standards for the EMT. Six hour lab. Must be taken concurrently with EMS 1500 and EMS 1500C. 2 s.h.

1501. *Introduction to Prehospital Medicine*. Introduction to the roles, responsibilities, EMS systems, and medical and legal considerations of the EMS profession. Prereq.: Admission to the EMS program. 1 s.h.

1502. *General Pathophysiology for the Paramedic*. Study of general lifespan development of the body, how pathophysiologic changes affect it. Provides a foundational basis for viewing the body as a system,

understanding its functions, anticipated reaction to injury, illness and intervention. Prereq.: Admission to EMS program or permission of instructor. 3 s.h.

1503. *Patient Assessment and Airway Management*. Intensive course designed to prepare the student in the methodology of advanced patient assessment, and the relevance of clinical signs and symptoms identified. Airway anatomy, equipment, procedures as they pertain to advanced airway management. Prereq.: Admission to EMS program or permission of instructor. 3 s.h.

1504. *Principles of Trauma*. Study of traumatic emergencies normally encountered prehospitally with emphasis on pathophysiology, etiology, symptomatology, and management. Prereq.: Admission to EMS program or permission of Program Director. 3 s.h.

1505. *Emergency Medical Techniques 1 Lab*. Includes simulated emergency traumatic situations and actual patient contact emphasizing physical assessment, patient interviewing, and management techniques. Meets 3 hours per week. Must be taken concurrently with EMS 1501, 1502, 1503, and 1504. (1 s.h.) Prereq.: Admission to the EMS program or special permission of program director. 1 s.h.

1506. *Emergency Medical Services Clinical 1*. Clinical experiences in the emergency department and in the operating room allowing the student to work on various skills necessary for the paramedic. Total of 90 clinical hours. Must be taken concurrently with EMS 1503 & 1505. Prereq.: Admission to EMS program or permission of instructor. 1 s.h.

1507. *Cardiovascular Emergencies*. Intense study of the etiology, pathophysiology, symptomatology, and management principles for cardiovascular emergencies. Includes electrophysiological principles of EKG interpretation. Must be taken concurrently with EMS 1508. Prereq.: Admission to EMS program or permission of instructor. 3 s.h.

1508. *Cardiovascular Techniques Lab*. Performance of fundamental techniques employed in the management of cardiovascular emergencies. Three hours lab per week. Must be taken concurrently with EMS 1507. Prereq.: EMS 1502, 1503, and 1504. 1 s.h.

1512. *Medical Conditions and Management Techniques*. Study of pathophysiology, symptomatology, etiology, and management techniques of commonly encountered medical emergencies. Must be taken concurrently with EMS 1513. Prereq.: EMS 1502, 1503, 1504. 3 s.h.

1513. *Emergency Medical Techniques 2 Lab*. Simulated situations and actual patient contact emphasizing performance of emergency medical techniques utilized to manage common medical emergencies. Must be taken concurrently with EMS 1512. Prereq.: EMS 1505. 1 s.h.

1514. *Emergency Medical Services Operations*. Introduction to common rescue tools and techniques utilized in basic victim disentanglement and extrication. Prereq.: Admission to EMS program or permission of instructor. 1 s.h.

1515. *Clinical Experience 2*. Hospital clinical experience to include rotations through the following: Adult emergency department, critical and intensive care units. Total of 95 hours. Must be taken concurrently with EMS 1508 and 1513. Prereq.: EMS 1506. 1 s.h.

1516. *Prehospital Field Experience 1*. Field experience with an approved advanced life support unit under the direct supervision of a selected paramedic field preceptor. Total of 200 hours. To be taken concurrently with EMS 1507 and 1512. Prereq.: EMS 1504. 1 s.h.

2600. *Emergency Medical Services Special Populations*. Study of etiology, pathophysiology, symptomatology and management of special needs patients. Includes gynecology, obstetrics, neonatology, pediatrics, geriatrics, behavioral, abuse/assault, infectious and communicable diseases, and chronic care. Must be taken concurrently with EMS 2601. Prereq.: EMS 1507 and 1512 or permission of instructor. 3 s.h.

2601. *Emergency Medical Techniques 3 Lab*. Techniques necessary to effectively manage conditions in EMS 2600. Three hour lab. Must be taken concurrently with EMS 2600 and 2605. Prereq.: Admission to the EMS program or permission by program director. 1 s.h.

2603. *Clinical Experience 3*. Precepted hospital clinical in the adult emergency department with an assigned emergency room physician. Total of 70 hours. Must be taken concurrently with EMS 2605. Prereq.: EMS 1515. 1 s.h.

2604. *Prehospital Field Experience 2*. Performance of advanced life support procedures under the direct supervision of a selected paramedic field preceptor. Total of 150 hours. Prereq.: EMS 1516. 1 s.h.

2605. *Pulmonary Emergencies*. Intense study of the etiology, pathophysiology, symptomatology, and management principles of pulmonary emergencies. Must be taken concurrently with EMS 2601. Prereq.: EMS 1507 and 1512. 3 s.h.

2606. *EMS Special Certifications*. Provides the Paramedic with certifications beneficial to prehospital care. These certifications are nationally recognized and commonly sought after by paramedics, and desired by employers. Include PALS, PHTLS, NRP, and EMPACT. To be taken concurrently with EMS 2607. Prereq.: Admission to EMS program or special permission of instructor. 1 s.h.

2607. *EMS Special Certifications Lab*. Focus on skills and competencies required for PALS, PHTLS, NRP. To be taken concurrently with EMS 2606. Prereq.: Admission to the EMS program or special permission by the program director. 1 s.h.

2608. *Clinical Experience IV*. Hospital clinical experience to include rotations through the following departments: triage, pediatric emergency department, obstetric/gynecological, neonatal, well-baby clinic, psychiatric. Total of 95 hours. Prereq.: EMS 2600. 2 s.h.

2609. *EMS Prehospital Field Internship*. Capstone Precepted Field Internship with an emphasis on Team Leadership Skills. A minimum of 30 Team Leads and at least 200 hours with assigned field preceptor are required. Prereq.: EMS 2604. 2 s.h.

2613. *Critical Care Paramedic*. In-depth study of the underlying abnormalities and physiologic disturbances resulting from traumatic injuries and medical illnesses as it relates to emergency medical care. Includes analysis of case studies. Must be taken concurrently with EMS 2614. Prereq.: EMS 2608, 2609, or permission of instructor. 3 s.h.

2614. *Critical Care Paramedic Laboratory*. Designed to prepare the student as a competent care provider in the transport of critical patients by ground or air unit. Topics include 12-leads, IABPs, RSI, lab data, EtCO<sub>2</sub> monitoring, and advance pharmacology. Must be taken concurrently with EMS 2613. Prereq.: NREMT and permission of instructor. 1 s.h.

2631. *Advanced Clinical and Field Internship Experience*. Field internship in a variety of advanced life-support units to expose the student to hospital-based, public third service, private, and fire service EMS. Includes a field component involving wilderness rescue and emergency medicine. Must be taken concurrently with EMS 2613. 2 s.h.

## EMERGENCY MEDICAL TECHNOLOGY—EMTC

### Department of Health Professions

2610. *Pathophysiology for Critical Care Paramedicine*. In-depth study of the underlying abnormalities and physiologic disturbances resulting from traumatic injuries and medical illnesses as it relates to emergency medical care. Includes analysis of case studies. Must be taken concurrently with EMTC 2611. Prereq.: NREMT-P and permission of instructor. 2 s.h.

2611. *Assessment and Management Techniques for Critical Care Paramedicine*. Designed to prepare the student as competent care provider in the transport of critical patients by ground or air unit. Topics include 12-leads, IABPs, RSI, lab data, EtCO<sub>2</sub> monitoring, and advanced pharmacology. Must be taken concurrently with EMTC 2610. Prereq.: NREMT-P and permission of instructor. 4 s.h.

2620. *Research Methodology for EMS*. Introduction to research problems and hypotheses, research design, sampling designs, data collection methods, and data analysis. Critiques of emergency medicine research and development of a research problem and design. Prereq.: EMTC 2610 and 2611. 2 s.h.

2630. *Multiskilled EMS Practitioner*. Principles, concepts, clinical knowledge, and skills necessary to prepare the multiskilled EMS practitioner. Prereq.: EMTC 2610 and 2611. 2 s.h.

2631. *Advanced Clinical and Field Internship Experience*. Field internship in a variety of advanced life-support units to expose the student to hospital-based, public third service, private, and fire service EMS. Includes a field component involving wilderness rescue and emergency medicine. Must be taken concurrently with EMS 2613. 2 s.h.

## ENGINEERING—ENGR

### College of Engineering and Engineering Technology

1500. *Engineering Orientation*. Introduction to engineering careers and the different engineering disciplines. Academic success strategies and university resources to support student success. Prereq.: Eligibility to take MATH 1513 or higher level math course. 1 s.h.

1550. *Engineering Concepts*. Introduction to the basic skills needed in engineering including engineering computing and an introduction to the engineering design process utilizing science, technology, engineering, and mathematics (STEM) fundamentals. One hour lecture and three hours laboratory per week. Prereq.: Eligibility to take MATH 1513 or higher level math course. 2 s.h.

1555. *Engineering Drawing & Visualization*. Development of visualization and sketching skills and drafting convention including standard views and dimensioning. Three hours laboratory per week. To be taken prior to or concurrently with ENGR 1560 for those lacking high school drawing proficiency. Grading is A, B, C, NC. Does not count toward a degree. 1 s.h.

1560. *Engineering Computing*. Computing skills required in engineering. Structured programming. Commercial CADD software to create engineering drawings and solid models. Engineering problems solved in teams with results professionally presented. Two hours lecture, three hours lab. Prereq.: ENGR 1550, MATH 1571 or concurrent, demonstration of high school drawing proficiency or ENGR 1555. ENGR 1555 may be taken concurrently. 3 s.h.

3719. *Environmental Impact of Abandoned Mines*. Mining methods, types of mines, information retrieval, mine stabilization, and the effects of abandoned mines on environmental and human activities, especially deep coal mines in the Mahoning Valley and adjacent areas. Two hours lecture and three hours of lab per week. Prereq.: GEOL 1505 or equivalent or permission of instructor. 3 s.h.

3798. *Co-op Assignment 1*. Cooperative educational experiences while enrolled in the College. Students may be assigned to public, corporate or governmental organizations during alternate or parallel work

periods for practical learning and training in the major field of study. Consult department for rules and regulations. Prereq.: Junior standing, Engineering major, selection of employer, and approval of student's program. 1 s.h.

4898. *Co-op Assignment 2*. Cooperative educational experiences while enrolled in the College. Students may be assigned to public, corporate or governmental organizations during alternate or parallel work periods for practical learning and training in the major field of study. Consult department for rules and regulations. Prereq.: Senior standing, Engineering major, selection of employer, and approval of student's program. May be repeated. 1 s.h.

## ENGINEERING TECHNOLOGY—ENTC

1500. *Technical Skills Development*. A course designed to develop the technical, analytical and problem solving skills of students planning to enter an engineering or technical course of study. Three (3) hours of lecture and three (3) hours lab per week. Grading is A, B, C, NC. Prereq. or concurrent: MATH 1501. 4 s.h.

1505. *Engineering Technology Concepts*. The role of the technician, technologist, engineer and scientist in the technology team; a study of basic mathematical, scientific, and communicative techniques as applied to the work of engineering technologists; ethical, global, and societal issues facing the engineering technology professional. Three hours lecture, three hours lab per week. Grading is A, B, C, NC. Prereq.: MATH 1504 or at least Level 40 on the Mathematics Placement Test or grade of B in both ENTC 1500 and MATH 1501. 4 s.h.

2615. *Design Project*. The student undertakes a project designed to utilize principle methods studied in previous courses. The subject of the project is determined jointly by the student and instructor and developed formally by the student. The course is normally taken during the final stages of the student's program. Prereq.: Consent of instructor. 3 s.h.

3799. *Professional Practice in Engineering Technology*. This course provides students with cooperative education experiences in various engineering technology disciplines. To receive credit for the course, the student is expected to work at the assignment a minimum of 400 hours, submit a report of activities, and obtain approval of the department Professional Practice Committee. Course may be repeated up to a maximum of 3 s.h. toward the BSAS. Students are considered full-time even though only 1 s.h. is given for each course. Grading: PR, CR, NC. Prereq.: Consent of department chairperson. 1 s.h.

4895. *Independent Engineering Technology Project*. Individual study under direction of a faculty member. Written and oral report required. May be repeated for a maximum of 4 s.h. Prereq.: Junior standing, consent of instructor, and prior approval of the project by the IETP committee of engineering technology faculty. 1-4 s.h.

## ENGLISH—ENGL Department of English

### English-as-a-Second-Language

1509. *Academic English for Non-native Speakers*. Development of writing and reading comprehension skills in English through outlining, summary, and response. Emphasis on vocabulary, main idea, detail, and conclusion in assigned reading and writing. Entrance on basis of English-as-a-Second-Language placement test. Must be taken until a grade of C or better is achieved. May be repeated once with a different topic. **Does not count toward a degree.** Grading is ABC/NC. 3 s.h.

1512. *English Conversation for Non-native Speakers*. Development of conversation skills. Focus on oral-aural fluency, idiomaticity, extracting and organizing information, and situation-oriented communication strategies. Emphasis on meaningful topics relevant to the students' pursuit of their academic goals. Entrance on basis of English-as-a-Second-Language placement test. **Does not count toward a degree.** Grading is ABC/NC. 1 s.h.

### Lower-Division Courses

1539. *Fundamentals of College Writing*. Intensive individualized instruction in written communication and college-level reading practices in a computer-assisted environment. Open to students based on their Composition and Reading Placement Test results; does not count toward the graduation requirement in composition. Grading for English 1539 is ABC/NC. **Does not count toward the graduation requirement in composition and does not count toward a degree.** 4 s.h.

1540. *Introduction to College Writing*. Practice in adapting college-level writing conventions, organizational strategies, and revision and editing techniques to a variety of writing tasks. Focus on responding to written texts in ways that demonstrate expressive, analytical, and evaluative thinking. Students divide their time between regular classrooms and computer classrooms, where they have the opportunity to acquire and develop basic word-processing and electronic communication skills. Does not count toward the graduation requirement in composition. Open to students on the basis of Composition and Reading Test results. Grading is ABC/NC. **Does not count toward the graduation requirement in composition and does not count toward a degree.** 3 s.h.

1550. *Writing 1*. Strategies for writing as a means of critical inquiry, with focus on writing processes and on the roles of writer, audience, and purpose as they affect writing. Students divide their time between regular classrooms and computer classrooms, where they have the opportunity to acquire and develop basic word-processing and electronic communication skills. Open to students on the basis of Composition and Reading Test results or successful completion of ENGL 1539 or ENGL 1540. Grading is ABC/NC. 3 s.h.

1550H. *Honors Writing 1*. Strategies for writing as a means of critical inquiry, with focus on writing processes and on the roles of writer, audience, and purpose as they affect writing. Writing assignments treat a broad range of ideas, especially in response to challenging readings. Stylistic experimentation is encouraged so that each student can develop a distinctive writing style. Students divide their time between regular classrooms and computer classrooms, where they have the opportunity to acquire and develop basic word-processing and electronic communication skills. Prereq.: Eligibility for the Honors program and permit on the basis of Composition and Reading Test results or upon recommendation of 1550 instructor and approval of the Director of Composition. Grading is ABC/NC. 3 s.h.

1551. *Writing 2*. Practice in writing with emphasis on the process of investigation: exploration of topics, formulation of tentative theses, collection of data from suitable primary and secondary sources, and clear and appropriate presentation of the results of these inquiries. Students divide their time between regular classrooms and computer classrooms, where they have the opportunity to perform research on the World Wide Web. Prereq.: ENGL 1550 or Composition and Reading Test results. Grading is ABC/NC. 3 s.h.

1551H. *Honors Writing 2*. Research on a topic of some depth, conducted independently and focused on a single project that results in a substantial investigative paper. Students divide their time between regular classrooms and computer classrooms, where they have the opportunity to perform research on the World Wide Web. Prereq.: Eligibility for the Honors Program and either ENGL 1550H or recommendation of ENGL 1550 instructor and approval of Director of Composition. Grading is ABC/NC. 3 s.h.

1560. *Language, Ethnicity, and Gender*. Basic understanding of relations between ethnicity, gender, and speech style, distinguishing linguistics, sociolinguistics, and women's issues. Examination of topics such as language, socialization, oral vs written language, language and class membership and intra-ethnicity variation in Urban Vernacular English. Listed also and FNLG 1560. 3 s.h.

1590. *Introduction to Literature*. Primarily British or American works in a variety of genres, chosen to illuminate a central topic, are read and discussed critically to promote understanding and enjoyment of reading. Focused on one of four topics: Nature and the Environment, The Good Life, Science and Technology, or Social Justice. 3 s.h.

2601. *Intermediate Writing for Teachers*. A course to increase proficiency in critical reading and writing. Designed specifically for students entering the College of Education; reading, discussions and writing assignments emphasize current issues in Education. Assignments allow students to practice, collaboratively and individually, the kinds of writing used in teaching. Does not count toward the English major. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

2602. *Media Writing*. Introduction to writing for the mass media. Development of writing techniques and examination of styles and approaches used in writing for various mass audiences. Fulfills requirement for Integrated Language Arts Middle Childhood teaching license. Listed also as JOUR 2602. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

2603. *Journalism Ethics and Social Responsibilities*. Examination of ethical standards and moral theories and their practical application in professional journalism through case studies. Students will learn to become active critics of media professionals. Crosslisted with JOUR 2603. 3 s.h.

2605. *Journalism as Literature*. Examination of literary works by journalists. Study of journalism techniques transferred to literary storytelling. Crosslisted with JOUR 2605. 3 s.h.

2610. *World Literature*. A survey of nonwestern literatures, emphasizing their cultural, historical, literary, and global contexts. 3 s.h.

2617. *Women in Literature*. Examination of works by and about women, drawn primarily from American and English writers. 3 s.h.

2618. *American Literature and Diversity*. Writers and works in relation to the diversity of American culture, politics, lifestyles, and social movements. 3 s.h.

2620. *African Literature*. Survey of pre-colonial, colonial, post-colonial, and modern African literature, with emphasis on experiences, styles, and themes of African writers. The effects of African literature on cultural discourse throughout the world. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

2622. *News Reporting 1*. Study of news reporting and writing, with emphasis on journalistic and AP style, development of news judgment, interviewing, and storytelling through traditional and new media. Coursework may require travel for reporting projects. Crosslisted with JOUR 2622. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

2623. *Literature, Work, and Class*. Analysis of literary representations of work and class, with special attention to working class authors, subjects, and styles. Focuses on social and historical influences, as well as the impact of social changes and new knowledge upon working-class literature. 3 s.h.

2624. *Imaging and Design of News*. Focus on the use of photographs, graphics, tables, charts, and other visual products to tell news stories. Includes study of basic visual literacy, design principles and technology. Coursework may require travel for reporting projects. Crosslisted as JOUR 2624. 3 s.h.

2626. *American Journalism*. The development of journalism in America, the role of the news media and its effects on American society and special consideration of journalism as a tool of diversity and as a literary tradition. Crosslisted with JOUR 2626. Prereq.: Completion of ENGL 1550 with a C or better. 3 s.h.



2631. *Mythology in Literature*. Introductory study of myths, chiefly classical, with some attention to their origins and cultural significance, and of literary works, both classical and modern, in which myths are used. 3 s.h.

2632. *Introduction to Photojournalism*. The basics of photojournalism, including composition, lighting, editing, news judgment, history and ethics. Listed also as JOUR 2632. 3 s.h.

2646. *Introduction to Fiction Writing*. Examination and application of narrative techniques and conventions designed to introduce the basic elements of writing fiction. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

2647. *Introduction to Poetry Writing*. Examination and application of poetic techniques and conventions designed to introduce the basic elements of writing poetry. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

2651. *Introduction to Language*. Introduction to language principally for prospective teachers, with emphasis on the nature and function of language and its history, variations, and acquisition. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

2665. *Introduction to Film Study*. Introduction to film as a medium of artistic expression. Technical aspects of film and the relationship of film to other media and to society. 3 s.h.

### Upper-Division Courses

3700. *Literary Study*. Gateway course for English majors. Content to include key terms, strategies for reading, interpretation, research, and the conventions for assessing and using sources. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

3703. *Literature for Young Children*. Study of the development of children's literature, giving the prospective elementary teacher criteria for evaluating books for children. Required of all elementary education candidates. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

3704. *Literature for Middle School Readers*. Study of fiction and nonfiction genres for students in the middle school grades, including characters and authors from various cultures and ethnicities. Required of middle childhood reading and language arts majors. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

3705. *Young Adult Literature*. Study of literature for and about adolescents and of related topics, including young adults as readers, critical standards for evaluation, and the use of adolescent literature in secondary schools. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

3706. *Introduction to Literary Theory*. Provides an introduction to literary theory and criticism for English majors, emphasizing the history and applica-

tion of critical approaches to literature. By reading core works in literary theory, students will learn application of theoretical approaches to various texts. Prereq.: ENGL 3710, 3711, 3712 or 3713. 3 s.h.

3710. *British Literature 1*. Beginnings to the Enlightenment. Students read a selection of British literature, emphasizing literary history and written analysis. Prereq.: ENGL 3700 or concurrent with ENGL 3700. 3 s.h.

3711. *British Literature 2*. From Romanticism to the Present. Students read a selection of British literature, emphasizing literary history and written analysis. Prereq.: ENGL 3700 or concurrent with ENGL 3700. 3 s.h.

3712. *American Literature 1*. Colonial period to 1865. Examine works from a range of American authors and genres—drama, fiction, poetry, short stories, novels, and non-fiction essays—within their cultural, historical, and literary contexts. Prereq.: ENGL 3700 or concurrent with ENGL 3700. 3 s.h.

3713. *American Literature 2*. 1865 to present. Examine works from a range of American authors and genres—drama, fiction, poetry, short stories, and non-fiction essays—within their cultural, historical, and literary contexts. Prereq.: ENGL 3700 or concurrent with ENGL 3700. 3 s.h.

3716. *Introduction to Magazine Journalism*. Focus on forces driving the magazine industry. Study of business models, freelancing, and writing for specialized audiences; includes basic feature writing and imaging techniques. Listed also as JOUR 3716. Prereq.: JOUR/ENGL 2622 or JOUR/ENGL 2624. 3 s.h.

3717. *Editorial and Opinion Writing*. Techniques, approaches and practice in writing reviews, editorials, and opinion columns. Exercises in criticisms of the arts, editorial research, and editorial style. Listed also as JOUR 3717. Prereq.: JOUR 2622 or ENGL 2622. 3 s.h.

3720L. *Magazine Journalism Workshop*. Working for campus publications to apply news gathering and reporting skills. Emphasis on organizational culture of magazines. Coursework may require travel for reporting projects. May be repeated for up to 3 s.h. Listed also as JOUR 3720L. Prereq.: JOUR 3716 or ENGL 3716 or consent of instructor. 1 s.h.

3721L. *Journalism Workshop*. Application of the principles of news reporting skills in student media. May be repeated once. Listed also as JOUR 3721L. Prereq.: ENGL 2622 or JOUR 2622. 3 s.h.

3722L. *Radio News Workshop*. Production of news and feature stories to be aired on radio; development of interview and media production skills for news. Coursework may require travel for reporting projects. Listed also as JOUR 3722L. Prereqs.: JOUR 2622 or ENGL 2622. 3 s.h.

3723. *Advanced Journalism Editing and Design*. Application of visual literacy and editing skills. Emphasis on editorial decision making, journalistic

style editing, quantitative reasoning, fact-checking, and practice of traditional and multimedia design techniques. Listed also as JOUR 3723. Prereqs.: JOUR 2622 or ENGL 2622; and JOUR 2624 or ENGL 2624. 3 s.h.

3732. *Images of Women*. An examination through language, literature, folklore, film and myth of the ways in which the meanings and representations of women have been constructed and implemented in Western culture. Introduces key concepts and theoretical frameworks drawn from current scholarship about women. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

3738. *Selected Topics in World Literature*. A comparative examination of a genre, historical period, or literary movement. May be repeated once with different topic. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

3739. *Writing for Middle School Teachers*. Designed to strengthen proficiency in writing, with emphasis on issues related to the teaching of English in middle school. Limited to students seeking middle childhood licensure with a concentration in Language Arts. Prereq.: Admission to upper division status in the Beeghly College of Education. 3 s.h.

3740. *Advanced Writing*. Designed to strengthen proficiency in essay writing, with emphasis on the development of ideas, analysis of style, clarity of thought and expression, editing, and proofreading. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

3741. *Advanced Writing for Teachers*. Designed to strengthen proficiency in writing, with emphasis on issues relating to the teaching of English. Limited to students seeking English or Integrated Language Arts certificates. Prereq.: Admission to upper-division status in the College of Education. 3 s.h.

3743. *Professional and Technical Communication*. Intermediate composition course to introduce essential elements of professional and technical communication: audience and task analysis; techniques of gathering, interpreting, and presenting information; appropriate conventions, styles, and formats; elements of collaborative, global, and electronic communication; and application of computer technology to document design and production. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

3744. *Proposal and Report Writing*. Application of rhetorical strategies and principles of design to the preparation of texts in two specific professional communication genres: the proposal and the report. Prereq.: ENGL 3743. 3 s.h.

3745. *Writing for Online Environments*. Practice in writing electronic documents, including web pages, interactive forms, and online portfolios. Prereq.: ENGL 2622 or 3743. 3 s.h.

3746. *Fiction Writing Workshop*. Supervised workshop in which students develop their individual narrative skills, styles, and talents. May be repeated once. Prereq.: ENGL 2646. 3 s.h.

3747. *Poetry Writing Workshop*. Supervised workshop in which students develop their individual poetic skills, styles, and talents. May be repeated once. Prereq.: ENGL 2647. 3 s.h.

3748. *Screenwriting*. Examination and application of story concepts, theme and character development, structure, page design, and formatting. Students will develop their own story, treatment, and screenplay. May be repeated once. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

3750. *Language and Culture*. Language structure as an instrument in human behavior and social institutions with emphasis on cross-cultural and intercultural communication. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

3751. *Readings in Professional Writing and Editing*. Study of nonfiction works relevant to the theory and practice of professional writers and editors. Prereq.: ENGL 3743 with C or better. 3 s.h.

3755. *Principles of Linguistic Study*. Survey of elements of linguistic structure, methods of analysis and description, theoretical models, and the role of language in human affairs. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

3757. *Development of the English Language*. Sounds, vocabulary, grammar, and usage, from old to contemporary English. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

3758. *Projects in Working Class Reporting*. Collaboration with the Center for Working Class Studies. Emphasis on using journalistic techniques to cover issues important to working-class people. Coursework may require travel for projects. Listed also as JOUR 3758. Prereq.: ENGL 1551. 3 s.h.

3759. *Sports Journalism*. Techniques of sport reporting with emphasis on game reporting, sports features, columns, photography and new media storytelling. Coursework may require travel for reporting projects. Listed also as JOUR 3759. Prereqs.: JOUR 2622 or ENGL 2622 or consent of instructor. 3 s.h.

3760. *News Reporting II*. Focus is on advanced news reporting and storytelling skills. Includes in-depth coverage of feature writing, investigative, and enterprise journalism. Coursework may require travel for reporting projects. Listed also as JOUR 3760. Prereq.: JOUR 2622 or ENGL 2622. 3 s.h.

3761. *New Media Journalism*. Focus on new trends and techniques of electronic news organizations. Emphasis on storytelling using multimedia and non-linear methods of delivery. Coursework may require travel for reporting projects. Listed also as JOUR 3761. Prereqs.: JOUR 2622 or ENGL 2622; and JOUR 2624 or ENGL 2624. 3 s.h.

3762. *Political Reporting*. Development of skills necessary to report, write, record, and publish stories about the American political system. Coursework may require travel for reporting projects. Listed also as JOUR 3762. Prereqs.: JOUR 2622 or ENGL 2622. 3 s.h.

3765. *Film Genres*. Study of a particular type of film, such as comedy, western, documentary, or science fiction. May be repeated once with a different topic. Prereq.: ENGL 3710, 3711, 3712, 3713 or 2665. 3 s.h.

3770. *American Literature in Historical Perspective*. Poetry, prose, drama, and other forms of literary expression examined within the context of a specific aspect of American social, intellectual, and cultural history. May be repeated once with different topic. Cross-listed with AMER 3770. Prereq.: ENGL 3712 or 3713. 3 s.h.

3780. *American Genres*. Study of a particular type of literature (e.g., short story, autobiography, or film) as it developed in the United States. May be repeated once with a different topic. Prereq.: ENGL 3712 or 3713. 3 s.h.

3790. *Selected Topics in Multicultural Studies*. Concentrated study of discourse in English, primarily literature, from cultures other than the dominant or majority culture of a given society. Designed to develop awareness and sensitivity to issues of difference, power, and cross-cultural perspectives, and to address and facilitate students' multicultural literacy. May be repeated once with different topic. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

4821. *Advising Student Media*. Study of the role and responsibilities of the media advisor in high school and college. Topics include the unique legal and ethical concerns of student media, the training of student staff, the relationship of the student press to the academic administration, and publication-management concerns. Listed also as JOUR 4821. Prereq.: JOUR 2622 or ENGL 2622 or 3741. 3 s.h.

4822. *Magazine Writing and Reporting*. Advanced study of writing and reporting techniques for magazine journalists. Emphasis on learning freelance skills, getting work published, and marketing yourself as a magazine writer. Coursework may require travel for reporting projects. Listed also as JOUR 4822. Prereq.: JOUR 3716 or ENGL 3716. 3 s.h.

4823. *In-Depth Reporting*. Emphasis on extended research, extensive interviewing and investigative reporting techniques. Coursework may require travel for reporting projects. Listed also as JOUR 4823. Prereqs.: JOUR 3721L or ENGL 3721L. 3 s.h.

4824. *Press Law and Ethics*. Study of First Amendment rights of the press; examination of laws concerning libel, privacy, copyright, obscenity, censorship, open meetings and open records in Ohio; discussion of press responsibilities. Listed also as JOUR 4824. Prereq.: JOUR 2622 or ENGL 2622 or JOUR 3721L. 3 s.h.

4825. *Selected Topics in Journalism*. Study of approaches to and special aspects of journalism not covered in depth in other journalism courses. May be repeated once with change of topic. Listed also as JOUR 4825. Prereq.: JOUR 2622 or ENGL 2622 or JOUR 3721L. 3 s.h.

4830. *Major Figures in British Literature*. Concentrated study of the works of a British writer who has contributed significantly to the literary tradition. May be repeated once with different topic. Prereq.: ENGL 3710 or 3711. 3 s.h.

4831. *British Genres, Circles, and Movements*. Study of a literary genre, a group of writers who shared a cultural context or who influenced one another's work, or a trend or development in literature. May be repeated once with different topic. Prereq.: ENGL 3710 or 3711. 3 s.h.

4843. *Advanced Professional and Technical Communication*. Advanced instruction in professional writing and editing, further expanding skills developed in Professional and Technical Communication (English 3743) through the creation and design of documents such as newsletters, instruction manuals, product documentation, and books. Prereq.: ENGL 3743. 3 s.h.

4849. *Professional and Technical Editing*. Study of the skills needed to make appropriate decisions about the content, grammar, mechanics, style, organization, and format of scholarly, trade, journalistic, and other professional publications, including newsletters and electronic publications. Topics include stages in the publishing process, proofreading, hard-copy versus online editing, mechanical and substantive editing, and the use of house and press styles. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

4850. *Sociolinguistics*. An investigation of the relationship between language and society. Includes discussion of dialects and standard language, language planning, linguistic identity, multi- and bilingualism, class, gender, ethnicity, and social interaction. Listed also as FNLG 4850. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

4851. *Language Acquisition*. A study of research on the learning of first and second languages. Topics include developmental sequences, learner variables, critical periods and conditions for learning, and the roles of input and interaction. The course is designed for those planning to teach languages. Listed also as FNLG 4851. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

4852. *Linguistics of Literacy*. Examination of the linguistic, social, and cultural dimensions of reading and writing and their impact on literacy acquisition and performance in language. Prereq.: ENGL 2651 and junior standing. 3 s.h.

4855. *Advanced Linguistics*. In-depth study of selected issues in contemporary linguistic theory. Especially recommended for students pursuing advanced studies or a minor in linguistics or planning graduate studies. Prereq.: ENGL 2651 or 3755. 3 s.h.

4856. *TESOL Methods*. Introduction to teaching English as a Second Language (ESL), including reading, writing, listening, and speaking. Focus on using communicative methods with non-native speakers. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

4857. *TESOL Practicum*. Supervised teaching in English as a Second Language (ESL) program. Additionally, weekly seminar attendance required. Prereq.: Permission of chair. 3 s.h.

4858. *English Grammar*. Descriptions and analysis of English language structure. Prereq.: Completion of ENGL 1551 with grade C or better. 3 s.h.

4859. *Selected Topics in Discourse*. Study in depth of a specific topic such as stylistics, semantics, or rhetoric. May be repeated once with different topic. Prereq.: ENGL 3740, 3741, or 3755 as appropriate to topic. 3 s.h.

4860. *The Medieval World*. British literature from the Anglo-Saxon period to the age of Chaucer, presented in the context of the period's history and culture. Prereq.: ENGL 3710. 3 s.h.

4862. *Themes in American Literature*. In-depth examination of a significant theme in American literature and culture through analysis of prose, poetry, drama, and/or film from different historical periods. Prereq.: ENGL 3712 or 3713. 3 s.h.

4864. *American Literary Conversations*. Study of two or more American writers whose work is related. Focuses on writers who influenced each other, who wrote during the same period, or who explored similar themes or used similar literary styles. Prereq.: ENGL 3712 or 3713. 3 s.h.

4865. *Selected Topics in Film*. An important aspect of or approach to film not covered in other courses. May be repeated once with different topic. Prereq.: ENGL 3710, 3711, 3712, 3713, or 2665. 3 s.h.

4870. *Web Communications Capstone*. A project course requiring the integration of website development tools and techniques, database development, effective writing for the web, and audience analysis, to produce a website of substantial depth and breadth. Oral and written presentations of final project. Listed also as CSIS 4870. Prereq.: Senior standing and permission of instructor. 3 s.h.

4871. *The Black Experience in American Literature*. Study of African-American literature that explores the intersections between race, gender, and class in America, with emphasis on black minority culture, experience, and perspective. Prereq.: ENGL 3712 or ENGL 3713. 3 s.h.

4880. *Oral Communication for English Majors*. Emphasis on improving oral communication skills for English majors. Students will receive instruction on effective oral communication and practice both individual and group presentations. Prereq.: Concurrent enrollment in upper-division British or American literature course. 1 s.h.

4881. *Shakespeare and His World*. Study of Shakespeare's works along with an exploration of the artistic and social forces that shaped his writing. Prereq.: ENGL 3710. 3 s.h.

4882. *The English Renaissance*. Study of British literature from 1500 to 1660 and the social, cultural, and artistic forces that influenced it. Prereq.: ENGL 3710. 3 s.h.

4886. *Restoration and Eighteenth Century British Literature*. Study of British literature of the period and the social, cultural, and artistic forces that influenced it. Prereq.: ENGL 3710. 3 s.h.

4887. *The Romantic Period*. Study of British literature from 1776 to 1832 and the social, cultural, and artistic forces that influenced it. Prereq.: ENGL 3711. 3 s.h.

4890. *Senior Seminar*. Study of literature, linguistics, or criticism and theory requiring a long, critical, research-based paper. Prereq.: ENGL 3710, 3711, 3712 or 3713 and six additional courses in the major. 3 s.h.

4891. *Individual Study*. Exploration of a topic in English studies. An academic project or written report produced in consultation with an English instructor is required. May be repeated with different topics for a maximum of 3 s.h. Prereq.: Senior standing in English and department permit. 1-3 s.h.

4892. *Nineteenth Century British Literature Studies*. Nineteenth-century writers, works, and themes read in the context of the period's culture and history. Prereq.: ENGL 3711. 3 s.h.

4893. *Journalism Senior Project*. Capstone experience for journalism major. Individualized enterprise/investigative reporting projects with demonstration of advanced newsgathering techniques. Coursework may require travel for reporting projects. Listed also as JOUR 4893. Prereqs.: Senior standing; and JOUR 3760 or ENGL 3760; and JOUR 4824 or ENGL 4824. 3 s.h.

4894. *Journalism Internship*. Supervised journalism work experience. Students complete 60 hours for each hour registered. Internship placement is selective. Coursework may require travel for reporting projects. May be repeated with the approval of the department chairperson for up to 6 hours. Listed also as JOUR 4894. Prereqs.: JOUR 3760 or ENGL 3760; and JOUR 3721L or ENGL 3721L; senior standing, 2.5 GPA and permit. 3 s.h.

4895. *Early Twentieth Century British Studies*. Literature read in the context of the period's literary movements, culture, and history. Prereq.: ENGL 3711. 3 s.h.

4896. *British Literature from World War II to the Present*. Literature read in the context of the period's literary movements, culture, and history. Prereq.: ENGL 3711. 3 s.h.

4897. *English Internship*. Supervised experience directed by an English faculty member and a designated representative of a participating organization. Enrollment is contingent upon the availability of internships. Students are selected on the basis of qualifications including GPA, courses taken, recommendations and an interview. Prereq.: 12 hours of English, junior or senior standing, and a department permit. 1-3 s.h.

4898. *Professional Writing Internship*. Supervised work-and-learning experiences in professional communication under the direction of a faculty member and an employee of a participating firm. Ten to 20 hours of student time each week. Enrollment is contingent upon the availability of internships. Students are selected on the basis of relevant qualifications, including GPA, courses taken, recommendations, and an interview. May be repeated with the approval of the department chairperson. Prereq.: 12 s.h. in Journalism and/or Professional Writing and Editing. 1-3 s.h.

4899. *Professional Writing Senior Project*. Capstone experience for the Professional Writing and Editing major. Individualized research, analysis, development, and oral presentation of a project that incorporates audience-appropriate writing, design, and/or editing in a usable high-quality product. Taken during the student's final undergraduate year. Prereq.: Senior standing and permission of a Professional Writing and Editing advisor. 3 s.h.

## ENVIRONMENTAL STUDIES — ENST Interdisciplinary

### Lower-Division Courses

1500. *Introduction to Environmental Science*. Basic environmental science literacy for informed citizens as inhabitants and stewards of Earth. The use of science and the scientific method to understand, assess, and manage the environment to improve human health, conserve energy and resources, preserve nature, and sustain quality of life. 3 s.h.

1500L. *Introduction to Environmental Science Lab*. The use of the scientific method to explore various fields in environmental science including water quality, risk assessment, biodiversity and mineral uses. This field and laboratory work supplements ENST 1500. Prereq. or concurrent: ENST 1500. 1 s.h.

2600. *Foundations of Environmental Studies*. A survey of the principles and issues of environmental studies including basic ecology, biodiversity, hazardous and solid waste management, sustainable development, energy production and conservation, environmental ethics, air, water and soil pollution. 3 s.h.

2600L. *Foundations of Environmental Studies Laboratory*. Laboratory and field investigations identified in ENST 2600. Emphasis on the scientific method, problem solving and critical thinking skills in environmental assessment techniques, active exploration of environmental concerns and their solutions. Three hours per week. Three to five Saturday field trips required in lieu of some laboratory time. 1 s.h.

2650. *Independent Study*. The introductory study of problems or issues in Environmental Studies or a review of the literature relating to a specific environmental topic. May be repeated for different topics for a total of 6 s.h. Prereq.: Permission of the director. 1-3 s.h.

### Upper-Division Courses

3700. *Environmental Chemistry*. Study of the fundamental chemical principles underlying common environmental problems, including water pollution, toxicology, chemical biotransformation and degradation. Chemistry of pesticides, petroleum hydrocarbons and heavy metals are also investigated. Prereq.: ENST 2600 and CHEM 1515; Concurrent with ENST 3700L Environmental Chemistry Lab. 4 s.h.

3700L. *Environmental Chemistry Lab*. Students will investigate various analytical and instrumental techniques used in the examination of chemicals in environmental media (soil, water, biota). Includes proper handling, storage and precautions in the laboratory and the environment. Concurrent with ENST 3700 Environmental Chemistry. 0 s.h.

3730. *Air Quality*. Sources, dispersions, consequences and abatement of air pollutants emanating from industry and transportation. Topics also include the history, legislation, standards and economics of air pollution. Prereq.: CHEM 1515. 3 s.h.

3750. *Seminar*. Guest lecturers will examine current topics in environmental issues, including current research, application of technology, management strategies to reduce environmental impact, environmental ethics, policy, etc. Prereq.: ENST 2600. 1 s.h.

3751. *Water Quality Analysis*. Introduction to physical, chemical, and biological measurements of water quality. Sample collection and laboratory analysis of natural waters, drinking water, and wastewater. Interpretation of environmental data. Two hours lecture and three hours laboratory per week. Identical to CEEN 3751. Prereq.: CEEN 3736 OR ENST 2600; CHEM 1515. 3 s.h.

3751L. *Water Quality Analysis Lab*. Laboratory experience in the analysis of natural waters, drinking water and wastewater. Emphasizes procedures for the collection and interpretation of data on current environmental problems. Three hours laboratory per week. Must be taken concurrently with ENST 3751. Identical to CEEN 3751. Prereq.: Must be taken concurrently with ENST 3751 (Note: already in course description.) 0 s.h.

3780. *Environmental Research*. A research project that involves problem identification, hypothesis formation, experimentation, data analysis and interpretation. The research may be either basic or applied. Prereq.: Junior standing in ENST and permission of the director. 1-4 s.h.

3781. *Environmental Sampling Methods*. Sampling design, including number and types of samples and procedures for taking representative samples of air, water, soil and contents of storage and shipping containers. Two hours of lecture, three hours of laboratory. Prereq.: ENST 2600 and STAT 2601 or equivalent. 3 s.h.

3790. *Internship/Cooperative*. Students work under the direction of a faculty supervisor in a governmental agency or in the private sector as environmental

specialists. An activities log and summary report are required. The course may be repeated. Prereq.: Junior standing in ENST and permission of the director.

1-4 s.h.

4840. *Topics*. Independent study of special topics not included in available courses. Students do extensive reading in, and write a formal report on, a specific area of Environmental Studies. Prereq.: Junior standing or consent of instructor. 1-3 s.h.

5800. *Environmental Impact Assessment*. Analysis of the potential environmental effects resulting from the construction of buildings, highways, parking lots, mines, reservoirs, and waste disposal facilities. Standard procedures are taught for evaluating and reporting the environmental impact of these activities. Prereq.: ENST 5860 and senior standing.

3 s.h.

5810. *Environmental Safety*. The proper use of environmental monitoring instruments and personal protective gear. Participation in a series of realistic, hands-on simulation exercises that address a variety of waste clean-up situations. Class meets three hours per week. Prereq.: ENST 2600 or equivalent experience.

1 s.h.

5820. *Sustainability, Climate Change, and Society*. This course explores environmental, economic, and social aspects of sustainable development, with an emphasis on economy and society. Through topics such as water, food, and climate change, we examine the role of humans and institutions in sustainable development and possibilities for reconfiguring relationships between our institutions and the natural world. Prereq.: junior, senior or graduate level standing.

3 s.h.

5830. *Risk Assessment*. An in-depth study of human health and ecological risk assessment. Includes hazard identification, dose-response evaluation, exposure assessment, and the characterization, limitations, management, communication, and perceptions of risk. Standard procedures to conduct a site-specific baseline risk assessment, to calculate risk-based concentrations that may be used to develop preliminary remediation goals, and to evaluate human health risks during the implementation of remedial alternatives. Prereq.: ENST 3700, ENST 5860, and senior or graduate standing.

3 s.h.

5860. *Environmental Regulations*. An examination of federal and state regulations that relate to cleanup of abandoned waste sites, management of waste from current waste generators, development of new hazardous products and chemicals, safety and health issues, and control of pollution into air and water. Prereq.: ENST 2600 or equivalent.

3 s.h.

5888. *Environmental Biotechnology*. Lectures will cover the use of microbes for solving environmental problems. In the laboratory, teams of students will design and implement experiments in bioremediation. This course is intended for students in biology, environmental studies, chemistry, and engineering. Two hours lecture and four hours lab. Prereq.: CHEM 3719 or CEEN 3736.

4 s.h.

## ENTREPRENEURSHIP — ENT College of Business Administration

3700. *Entrepreneurship—New Venture Creation*. An examination of the entrepreneurial process from opportunity recognition and assessment through the launch of the new firm. Emphasis placed on exploring creativity and innovation. Students will develop a feasible business idea, present the idea as an elevator pitch, and write a business proposal. Prereq.: BUS 1500; sophomore standing and 2.5 gpa. 3 s.h.

3750. *Entrepreneurship—New Venture Financing*. A study of the financing of entrepreneurial ventures, including ways entrepreneurs and managers identify and commit the necessary resources to create and fund ventures. Prereq.: ENT 3700. 3 s.h.

4800. *Entrepreneurship—Business Plan Development*. The business plan is the roadmap to success for a new enterprise. Each student, working independently, will develop a plan for starting, acquiring, or expanding a business. Prereq.: ENT 3700. 3 s.h.

4850. *Entrepreneurship Internship*. Through employment in local small businesses, the student receives an in-depth exposure to the entrepreneurship world. The student works under direct supervision of the president of a firm for the semester. A journal and final report are required. Prereq.: ENT 3700. 3 s.h.

## FINANCE — FIN Lariccia School of Accounting and Finance

### Lower-Division Course

2600. *Finance Field Experience*. Internship and/or cooperative education experiences in finance. Students may be assigned to corporate, non-profit, or government entities on a semester basis. Can repeat this course once for a different field experience. Prereq.: 2.5 GPA, department approval, and sophomore standing. 1 s.h.

2615. *Planning Your Financial Future*. An introductory course to personal finance planning. Emphasis on establishing financial goals and monitoring progress toward reaching those goals to improve the individual's quality of life. Topics include financial planning process, budgeting, credit, financing strategies, education planning, tax planning, etc. Open to business and non-business majors. Serves as the first course for students who are interested in the finance field. 3 s.h.

### Upper-Division Courses

3720. *Business Finance*. Study of the financial problems associated with the life cycle of business. Analysis of problems relating to estimating the financial needs of an enterprise and to evaluating the alternative means of providing temporary and

permanent capital. Relationship of current financial decision with financial policy is analyzed from the viewpoint of management and the investor. Prereq.: C or better in ACCT 2603 and 2603L. 2.5 overall GPA. 3 s.h.

3721. *Personal Financial Management*. An integration of the comprehensive financial planning process into the individual's financial life cycle. Includes accumulation, preservation, and distribution of financial assets. Topics include financial planning basics and risk management, investment selection, retirement planning and employee benefits, tax considerations, estate and trust basics. Prereq.: C or better in FIN 3720. Junior standing and 2.5 overall GPA. 4 s.h.

3725. *Real Estate Investment*. Topics include real property ownership, real estate markets, valuation methods, financing methods and management of real estate investments. Prereq.: C or better in FIN 3720. 2.5 overall GPA. 3 s.h.

3726. *Risk Management*. Introduces students to risk management and insurance decisions in personal and business financial planning. Topics include insurance for life, health, disability, property and liability risks as well as annuities, group insurance, long-term care insurance and social security. Prereq.: C or better in FIN 2615 and FIN 3720. 2.5 overall GPA. 3 s.h.

3730. *Investment Planning*. Introduces topics of investment planning, vehicles, analysis and strategies required in the financial planning process. Discussions are within the context of risk and return, asset valuation, various financial instruments, financial mathematics, asset pricing models and portfolio management. The aim of the course is for students to gain the knowledge to evaluate alternative investment choices in the context of client's financial planning needs. Prereq.: C or better in FIN 3720. 2.5 overall GPA. 4 s.h.

4833. *Retirement Plans & Employee Benefits*. Provides students with retirement and employee benefits topics required for a financial planning career discussed within the context of time value of money, inflation, and taxation. Specifically, insurance (life, disability and medical) issues, ESOPs and deferred compensation plans, private and public retirement plans and distribution rules are reviewed in-depth. Prereq.: C or better in FIN 3730. 2.5 overall GPA. 4 s.h.

4835. *Advanced Business Finance*. In-depth examination of the techniques and analyses employed in the financial management process. Advanced study of working capital management, capital budgeting, and long- and short-term financing choices. Integrated decision making tools such as the options framework as well as economic value added. Prereq.: C or better in FIN 3720. 2.5 overall GPA. 4 s.h.

4836. *Financial Markets*. An examination of global financial markets, institutions, and instruments with emphasis on factors influencing how firms and individuals make financing and investing decisions. Advanced coverage of primary market financing, investment banking, stock and index options, financial futures. Prereq.: C or better in FIN 3720, and 3730. 2.5 overall GPA. 4 s.h.

4838. *Financial Plan Development*. Prepares students with financial planning knowledge, skills and ability to integrate, apply and communicate to their clients. Planning recommendations are demonstrated through real-life case studies. The focus of this capstone course is on the fundamental planning practices, professional skills and integration of concepts and knowledge. Prereq.: C or better in FIN 3726, FIN 4833 and ACCT 4815. 2.5 overall GPA. 4 s.h.

4839. *International Accounting and Finance*. Cross-functional introduction to multinational enterprises and multinational financial management with emphasis on foreign currency risk management; measuring and managing accounting and economic exposure; foreign trade and investment analysis; various topics in international accounting and finance. Prereq.: C or better in FIN 3720. 2.5 overall GPA. 3 s.h.

4841. *Seminar in Investments and Security Markets*. An examination of the literature on efficient capital markets with implications for security selection and portfolio management. Prereq.: C or better in FIN 3720. 2.5 overall GPA. 3 s.h.

4845. *Business Valuation*. Study of business valuation techniques currently used in valuing publicly traded and private equity to include: cash flows, forecasting, estimating cost of capital for public and private companies, valuation of stand-alone companies and business units from perspective of acquirer and seller. Prereq.: C or better in FIN 3720. 2.5 overall GPA. 3 s.h.

4850. *Finance Internship*. The student is given the opportunity to relate theory to practice in a career related on-site field experience with a participating organization. Prereq.: Finance major, junior standing, 2.75 Finance GPA, 2.5 overall GPA and approval of director. 3 s.h.

4853. *Financial Analysis*. Theory and practice of financial analysis. Analysis and interpretation of financial information with emphasis on practical applications. Projected financial statements, budgeting, valuation and computer modeling of current financial problems. Prereq.: C or better in FIN 3720. 2.5 overall GPA. 4 s.h.

4860. *Special Topics in Finance*. Subject matter, credit hours, and prerequisites will be announced in advance of each topic. Prereq.: Permission of director. 2.5 overall GPA. 1-4 s.h.

## FOOD AND NUTRITION— FNUT

### Department of Human Ecology

#### Lower-Division Courses

1512. *Food Safety and Sanitation*. Safe food handling and sanitation practices for students desiring to be employed in the food service industry. Upon successfully completing the ServSafe® exam, the student will be awarded the ServSafe® Certification and the Ohio Department of Health Food Protection Certification. 1 s.h.

1543. *Personal Nutrition*. Basic normal nutrition adaptable to individual lifestyles throughout the lifespan. Emphasis on valid nutrition information, wellness, and healthful food choices. Not applicable to the food and nutrition major. 1 s.h.

1551. *Normal Nutrition*. The fundamentals of normal nutrition as they apply to health; nutritional needs during various stages of the life cycle; dietary guides and their application to the selection of adequate diets; problems of nutritional deficiencies and excesses. Prereq.: CHEM 1500 or high school equivalent. 3 s.h.

1553. *Food Science and Management Principles*. Scientific principles and methods used in selecting, purchasing, and preparing food. Consideration given to nutritional, aesthetic, and socioeconomic factors in meal planning. 3 s.h.

1553L. *Food Science and Management Principles Laboratory*. Application of principles from FNUT 1553. Must be taken concurrently with FNUT 1553. Three hours lab per week. 1 s.h.

2603. *Medical Nutrition Therapy 1*. Principles and methods of diet modifications for common diseases; planning and evaluation of modified diets; application of computers for diet analysis. Must be taken concurrently with 2603L. Prereq.: FNUT 1551L and BIOL 1552L. 3 s.h.

2603L. *Medical Nutrition Therapy 1 Lab*. Application of basic principles of medical nutrition therapy; nutritional assessment; diet calculations. Three hours lab per week. Concurrent with 2603. 1 s.h.

2609L. *Food Systems: Supervised Practice*. Observation of food service facility organization and management function; participation in the operations of a clinical food service facility. Six hours clinical experience per week, one hour seminar per week. Prereq.: ACCT 2602 with a grade of C or better, pre-req. or concurrent with FNUT 2612 and 2610. Permit required. 3 s.h.

2610. *Organization and Management*. Concepts of organization and management related to hospital/health care; selecting, training, developing, and supervising for the advancement of personnel. Emphasis on labor-management relations and legal aspects of the management-guest relationship with particular attention to personal and property liability. 3 s.h.

2612. *Food Systems: Operation, Production, and Service*. The fundamentals of food service operations including menu planning, purchasing of foods and equipment, care of foods and equipment, efficient work methods, budget and cost control. Also standard principles, techniques in quantity food production, management, and service. Prereq.: FNUT 1553 and 1553L. 3 s.h.

2612L. *Food Systems: Operations, Production, and Service Laboratory*. Application of the fundamentals of food systems operations, management, and service. Six hours lab per week. Prereq.: FNUT 1553 and 1553L. Concurrent with FNUT 2612. Permit required. 2 s.h.

2613L. *Medical Nutrition Therapy Supervised Practice*. Application of the nutrition care process in a medical setting for the dietetic technician. Includes a two hour on-campus seminar, and six hours of supervised clinical experience per week. Prereq.: FNUT 2603 and 2603L. 4 s.h.

2628. *Practicum in Dietetic Technology*. Experience in supervision of food production; assessment, documentation, and teaching of the individual patient or client groups; community nutrition. The role of the dietetic technician in the health care delivery system; overview of current opportunities in the food service field; standards of professional responsibility, practice, and self development. Fifteen discussion hours and 210 hours of clinical experience. Prereq.: FNUT 2609L, 2613L. Overall GPA of 2.5 required. 3 s.h.

2650. *Seminar in Dietetic Technology*. The role of the dietetic technician in the health care delivery system; overview of current opportunities in the food service field; standards of professional responsibility, practice, and self development. Concurrent with FNUT 2628. Permit required. 1 s.h.

2652L. *Nutrition Assessment Laboratory*. Procedures and techniques in anthropometric, biochemical, clinical and dietary assessment of nutritional status in healthy and at-risk populations. Three hours lab per week. Prereq.: FNUT 1551 and FNUT 2603 or concurrent. 1 s.h.

#### Upper-Division Courses

3720. *Nutrition, Health, and Aging*. Current knowledge of nutrition as it relates to overall health and human aging. Needs of the elderly in normal and diseased conditions. Nutritional needs/concerns of the elderly in the contexts of their physiological, social, and psychological dilemmas. Prereq.: SOC 1500. 3 s.h.

3735. *Nutritional Biochemistry*. Designed for nutrition majors, covers the basic concepts of classification, structure, and function of biological molecules, major metabolic pathways, heredity and immune function, with emphasis on the understanding of the metabolism and function of nutrients. Prereqs.: FNUT 1551, CHEM 1506/L, BIOL 1552/L. 2 s.h.



3759. *Advanced Nutrition*. Integrated approach to nutrition and health, emphasizing metabolism and functions of nutrients at the cellular level; nutritional needs for optimal health; problems of over nutrition and under nutrition. Prereq.: FNUT 1551, CHEM 1506/L, FNUT 3735. 3 s.h.

3760. *Medical Nutrition Therapy 2*. The nature and etiology of diseases and the relationship of diet to good health and to disease processes; the special dietary needs of abnormal conditions. Prereq. or concurrent: FNUT 2603 and 3759 or concurrent with FNUT 3760. 3 s.h.

3760L. *Medical Nutrition Therapy 2 Laboratory*. Orientation to the dietetic profession. Select clinical experiences providing opportunities for developing an understanding and working knowledge of the nutrition care process and its application to individuals exhibiting special nutritional needs. Six hours lab. Concurrent with FNUT 3760 and FNUT 3760R. Restricted course. 2 s.h.

3760R. *Medical Nutrition Therapy 2 Laboratory Recitation*. Orientation to the dietetic profession. Lecture to further students' understanding and working knowledge of the nutrition care process and its application to individuals exhibiting special nutritional needs. Concurrent with FNUT 3760 and FNUT 3760L. Restricted course. 2 s.h.

3761. *Science of Nutrition in Exercise*. Advanced study of concepts related to the integration of nutrition and physical activity in athletic as well as normal and diseased populations. Emphasis on substrate utilization and modification, and nutrient/ergogenic supplementation and crash diets. Prereq.: FNUT 1551 and FNUT 3735. 3 s.h.

4802. *Research Methods in Dietetics*. Overview of research methodology, statistics and applications in the field of nutrition and dietetics. Prereq.: MATH 2623 or 2625 and junior standing. 2 s.h.

4802L. *Research Methods in Dietetics Laboratory*. Application of basic concepts of research methodology and statistics to dietetic practice. Three hours lab per week. Concurrent with FNUT 4802. Permit required. Prereq.: FNUT 4802. 1 s.h.

4810. *Experimental Foods*. Advanced study of food science and technology; methodology of food research including evaluation by sensory and objective methods. Prereq.: FNUT 1553, CHEM 3706. Permit required. 2 s.h.

4810L. *Experimental Foods Laboratory*. Application of scientific principles and experimental procedures to cooking processes. Three hours lab per week. Concurrent with FNUT 4810. Permit required. 1 s.h.

4858. *Food Service Systems Management*. Advanced food service systems management principles and processes as they relate to resources and operating subsystems. Focus on subsystem interrelationships. Prereq.: FNUT 2612 and a minimum of 20 s.h. of Human Ecology credit. Permit required. 4 s.h.

4858L. *Food Systems Management Laboratory*. Application of the management process to institutional food service systems. Thirteen hours supervised practice, one hour lecture per week. Prereq.: Restricted to Coordinated Program in Dietetics. 3 s.h.

4860. *Medical Nutrition Therapy 3*. The nature and etiology of selected disease conditions with focus on solving dietetic problems accompanying them. Prereq.: FNUT 3760. 3 s.h.

4860L. *Medical Nutrition Therapy 3 Lab*. Selected clinical experience providing opportunities for application of nutritional care process to individuals exhibiting special nutritional needs. Twelve hours lab, one hour lecture per week. Restricted to Coordinated Program in Dietetics. 3 s.h.

4872. *Maternal and Child Nutrition*. Principles of the nutritional care process as it relates to the maternal and pediatric population. Prereqs.: FNUT 2603 & 2603L, CHFM 3731 or special approval. 2 s.h.

4872L. *Maternal and Child Nutrition Laboratory*. Selected clinical experiences providing opportunities for application of nutritional care process to maternal and child population. Four hours clinical experience, one hour lecture per week. Concurrent with FNUT 4872. Permit required. Restricted to Coordinated Program in Dietetics. 2 s.h.

4873. *Nutrition and Aging*. Nutritional needs of the elderly as influenced by the aging process and disease states; factors affecting the food availability, food intake, and nutritional status of the elderly; nutritional services for the elderly. Prereq.: FNUT 3760. 2 s.h.

4873L. *Nutrition and Aging Laboratory*. Supervised practice experiences providing opportunities for application of the dietetic process in the extended care setting. One hour lecture, eight hours clinical experience per week. Prereq.: Restricted to Coordinated Program in Dietetics. 2 s.h.

4874. *Community Nutrition and Wellness*. Public health nutrition and wellness programs and their services to the community. Emphasis on program funding, cultural competence and needs of the underserved and elderly. Prereq.: FNUT 2603. 3 s.h.

4874L. *Community Nutrition and Wellness Laboratory*. Selected clinical experiences providing opportunities for application of the nutrition care process and wellness education to individuals and groups in the community setting. Sixteen hours clinical experiences, one hour lecture per week. Prereq.: Restricted to Coordinated Program in Dietetics. 3 s.h.

4885. *Practicum in Dietetics*. Supervised practice providing opportunities to integrate application and management of medical nutrition therapy into professional practice. Fifteen lecture hours and 280 clinical experience hours. Prereq.: FNUT 4858L and 4860L. 4 s.h.

4895. *DPD Capstone*. Application of dietetics principles learned in the classroom to situations in clinical, food service-management, and community settings. Provides opportunities for communication with diverse groups, critical thinking, and problem solving. Emphasis on case-study presentations of current issues and trends in the field. One (1) hour lecture and six (6) hours of laboratory per week. Prereq.: FNUT 4858, FNUT 4874, HMEC 4890.

3 s.h.

5825. *Current Nutrition Concepts*. Readings and critical appraisal of research literature in nutrition. Prereq.: FNUT 3759, CHEM 3705.

3 s.h.

5862. *Food and Culture*. Food practices of selected world cultures. Evaluation of these practices in meeting dietary needs with consideration of the existing social, economic, and environmental conditions. Prereq.: CHFM 3731.

2 s.h.

5862L. *Food and Cultures Laboratory*. Concurrent with FNUT 4862. Three hours lab per week. Permit required.

1 s.h.

5872. *Maternal and Child Nutrition*. Principles of the nutritional care process as it relates to the maternal and pediatric population. Prereq.: CHFM 3731 or special approval.

2 s.h.

5873. *Nutrition and Aging*. Nutritional needs of the elderly as influenced by the aging process and disease states; factors affecting the food availability, food intake, and nutritional status of the elderly; nutritional services for the elderly. Prereq.: FNUT 3760.

2 s.h.

## FOREIGN LANGUAGES— FNLG

### Department of Foreign Languages and Literatures

## Foreign Languages—FNLG

### Lower-Division Courses

1500. *Introduction to Foreign Language Study*. An introductory exploration of human language and foreign language learning. Topics include language and society, language and culture (linguistic and cultural knowledge), strategies for learning a foreign language, practical applications of knowing foreign languages, issues of proficiency and bilingualism, intercultural communication, basic terms and concepts, language use and gender. For students without previous foreign language study. Prereq.: Placement test or permission of department chairperson.

3 s.h.

1550. *Elementary Foreign Language*. Intensive training in understanding, speaking, reading, and writing a foreign language not regularly offered. Geography and daily life, as well as appreciation of the culture of its speakers, are studied. Students should achieve an intermediate-low level of proficiency. Assignments in the Language Learning and Resource Center (LLRC). Grading is ABC/NC.

4 s.h.

1560. *Language, Ethnicity, and Gender*. Basic understanding of relations between ethnicity, gender, and speech style, distinguishing linguistics, sociolinguistics, and women's issues. Examination of topics such as language, socialization, oral vs written language, language and class membership, and intra-ethnicity variation in Urban Vernacular English. Listed also as ENGL 1560.

3 s.h.

1560H. *Language, Ethnicity, and Gender*. Basic understanding of relations between ethnicity, gender, and speech style, distinguishing linguistics, sociolinguistics, and women's issues. Examination of topics such as language, socialization, oral vs written language, language and class membership, and intra-ethnicity variation in Urban Vernacular English. Listed also as ENGL 1560.

3 s.h.

2600. *Intermediate*. Intensive training in understanding, speaking, reading, and writing a foreign language not regularly offered; knowledge of geography and daily life as well as appreciation of the culture. Students should achieve an intermediate-mid level of proficiency. Assignments in the LLRC. Prereq.: FNLG 1550.

4 s.h.

2601. *Advanced Intermediate*. Intensive training in understanding, speaking, reading, and writing a foreign language not regularly offered; knowledge of geography and daily life as well as appreciation of the cultures of speakers of the language. Assignments in the LLRC as appropriate. Prereq.: FNLG 2600.

3 s.h.

2602. *Advanced Intermediate 2*. A distance learning class and a continuation of FNLG 2601 with intensive training in understanding, speaking, reading, and writing a foreign language not regularly offered. Prereq.: FNLG 2601 in the same language.

3 s.h.

2605. *Topics in Foreign Drama*. Study of representative plays written in a language other than English (but read in English translation); examination of relevant critical theories and of historic and institutional factors affecting the development of the genre; special attention to ethical issues raised in the plays. This course may not be repeated for credit.

3 s.h.

2610. *Foreign Film*. Study of representative films originally produced in a language other than English; examination of relevant critical theories and of historic and institutional factors affecting the development of the genre; special attention to cultural issues raised in the films.

3 s.h.

2615. *Introduction to French Literature*. A survey of the principal milestones of French literature, illustrated by reading representative works of various periods and parts of the Francophone world in their English translations. French majors must supplement this course by registering for FRNC 2608 during the same semester. This course is for non-French majors. Prereq.: ENGL 1551.

3 s.h.

2660. *Women in the Ancient World*. Study of various aspects of the lives of women in Ancient Greece and Rome. Emphasis on examination and evaluation of primary sources. All readings are in English.

3 s.h.

2685. *Topics in Russian Literature and Culture*. Studies of selected authors, genres, or themes in Russian literature read in English translation. Topic is announced each time course is offered. May be repeated once for credit if topic is different. 3 s.h.

### Upper-Division Courses

3701. *Advanced Foreign Language 1*. A distance learning class and a continuation of FNLG 2602 with intensive training in understanding, speaking, reading, and writing in a foreign language not regularly offered. Prereq.: FNLG 2602 in the same language. 3 s.h.

3702. *Advanced Foreign Language 2*. A distance learning class and a continuation of FNLG 3701 with intensive training in understanding, speaking, reading, and writing in a foreign language not regularly offered. Prereq.: FNLG 3701 in the same language. 3 s.h.

3799. *Study Abroad in Foreign Language*. An individually-arranged program of foreign study in a language not regularly offered. Programs can be of two general types: (1) trips or residential programs sponsored by consortial universities, and (2) independent academic coursework through institutions with which YSU does not have a consortial agreement. A written statement detailing the student's academic plan must be approved by the Chair of Foreign Languages and the Dean of CLASS prior to the trip. May be repeated up to a total of 15 s.h., if specific course content changes. Note: study abroad generally requires about one year's advance planning. Prereq.: sophomore status and approval of the Chair of Foreign Languages. 1-15 s.h.

4801. *Methods of Foreign Language Teaching*. Methods of teaching foreign languages (K-12) with emphasis on the Ohio model and the ACTFL guidelines; curricula planning, teaching technology, the rationale for foreign language study, public and professional relations. Elementary, middle school, or high school field experience. Prereq.: Upper-division status in BCOE and successful completion of at least one course at the 3700 level in FRNC, ITAL, SPAN, or GRMN. 3 s.h.

4899. *Professional Development for Teachers*. Students will 1) attend an appropriate professional conference and produce a journal detailing their experiences at the conference, and 2) assemble and present a portfolio of their previous language coursework to the faculty and other interested parties. Prereq.: Permission of the Department Chair. 1 s.h.

5850. *Sociolinguistics*. An investigation of the relationship between language and society. Includes discussion of dialects and standard language, language planning, linguistic identity, multi- and bilingualism, class, gender, ethnicity, and social interaction. Listed also as ENGL 4850. Prereq.: ENGL 1551. 3 s.h.

5851. *Language Acquisition*. A study of research on the learning of first and second languages. Topics include developmental sequences, learner variables,

critical periods and conditions for learning, and the roles of input and interaction. The course is designed for those planning to teach languages. Listed also as ENGL 4851. Prereq.: ENGL 1551. 3 s.h.

## AMERICAN SIGN LANGUAGE — ASL

### Lower-Division Courses

1550. *Elementary American Sign Language 1*. Introduction to the fundamentals of American Sign Language (ASL), including vocabulary, syntax, and grammatical non-manual signals. Introduction to the history and culture of the Deaf Community. Grading is ABC/NC. 2 s.h.

1551. *Elementary American Sign Language 2*. Continuation of ASL 1550 with further development of vocabulary, syntax and grammatical non-manual signals and additional study of the history and culture of the Deaf Community. Prereq.: ASL 1550. 2 s.h.

1552. *Intermediate American Sign Language 1*. Continuation of ASL 1551 with further development of vocabulary, syntax and grammatical non-manual signals and additional study of the history and culture of the Deaf Community. Prereq.: ASL 1551. 2 s.h.

2600. *Intermediate American Sign Language 2*. Continuation of ASL 1552 with further development of vocabulary, syntax and grammatical non-manual signals and additional study of the history and culture of the Deaf Community. Prereq.: ASL 1552. 2 s.h.

## Arabic—ARBC

### Lower-Division Courses

1550. *Elementary Arabic*. Intensive training in understanding, speaking, reading, and writing Arabic. Geography and daily life, as well as appreciation of the culture of Arabic speakers, are studied. Assignments in the Language Learning and Resource Center (LLRC). Grading is ABC/NC. 4 s.h.

2600. *Intermediate Arabic*. A continuation of ARBC 1550 with intensive training in understanding, speaking, reading, and writing Arabic. Geography and daily life, as well as appreciation of the culture of Arabic speakers, are studied. Assignments in the Language Learning and Resource Center (LLRC). Prereq.: ARBC 1550. 4 s.h.

2605. *Advanced Intermediate Arabic*. A distance learning class and a continuation of ARBC 2600 with intensive training in understanding, speaking, reading, and writing Arabic. Geography and daily life, as well as appreciation of the culture of Arabic speakers, are studied. Assignments in the Language Learning and Resource Center (LLRC). Prereq.: ARBC 2600. 3 s.h.

2606. *Advanced Intermediate Arabic 2*. A distance learning class and a continuation of ARBC 2605 with intensive training in understanding, speaking, reading, and writing Arabic. Prereq.: ARBC 2605. 3 s.h.

### Upper-Division Courses

3701. *Advanced Arabic 1*. A distance learning class and a continuation of ARBC 2606 with intensive training in understanding, speaking, reading, and writing Arabic. Prereq.: ARBC 2606. 3 s.h.

3702. *Advanced Arabic 2*. A distance learning class and a continuation of ARBC 3701 with intensive training in understanding, speaking, reading, and writing Arabic. Prereq.: ARBC 3701. 3 s.h.

3799. *Study Abroad in Arabic*. An individually-arranged program of foreign study in the Arabic language. Programs can be of two general types: (1) trips or residential programs sponsored by consortial universities, and (2) independent academic coursework through institutions with which YSU does not have a consortial agreement. A written statement detailing the student's academic plan must be approved by the Chair of Foreign Languages and the Dean of CLASS prior to the trip. May be repeated up to a total of 15 s.h., if specific course content changes. Note: study abroad generally requires about one year's advance planning. Prereq.: Sophomore status and approval of the Chair of Foreign Languages. 1-15 s.h.

## Chinese—CHIN

### Lower-Division Courses

1550. *Elementary Chinese*. Intensive training in understanding, speaking, reading, and writing Chinese. Geography and daily life, as well as appreciation of the culture of Chinese speakers, are studied. Assignments in the Language Learning and Resource Center (LLRC). Grading is ABC/NC. 4 s.h.

2600. *Intermediate Chinese*. Continuation of CHIN 1550 with intensive training in understanding, speaking, reading, and writing Chinese. Geography and daily life, as well as appreciation of the culture of Chinese speakers, are studied. Assignments in the Language Learning and Resource Center (LLRC). Prereq.: CHIN 1550. 4 s.h.

2605. *Advanced Intermediate Chinese*. A distance learning class and a continuation of CHIN 2600 with intensive training in understanding, speaking, reading, and writing Chinese. Geography and daily life, as well as appreciation of the culture of Chinese speakers, are studied. Assignments in the Language Learning and Resource Center (LLRC). Prereq.: CHIN 2600. 3 s.h.

2606. *Advanced Intermediate Chinese 2*. A distance learning class and a continuation of CHIN 2605 with intensive training in understanding, speaking, reading, and writing Chinese. Prereq.: CHIN 2605. 3 s.h.

### Upper-Division Courses

3701. *Advanced Chinese 1*. A distance learning class and a continuation of CHIN 2606 with intensive training in understanding, speaking, reading, and writing Chinese. Prereq.: CHIN 2606. 3 s.h.

3702. *Advanced Chinese 2*. A distance learning class and a continuation of CHIN 3701 with intensive training in understanding, speaking, reading, and writing Chinese. Prereq.: CHIN 3701. 3 s.h.

3799. *Study Abroad in Chinese*. An individually-arranged program of foreign study in the Chinese language. Programs can be of two general types: (1) trips or residential programs sponsored by consortial universities, and (2) independent academic coursework through institutions with which YSU does not have a consortial agreement. A written statement detailing the student's academic plan must be approved by the Chair of Foreign Languages and the Dean of CLASS prior to the trip. May be repeated up to a total of 15 s.h., if specific course content changes. Note: study abroad generally requires about one year's advance planning. Prereq.: sophomore status and approval of the Chair of Foreign Languages. 1-15 s.h.

## French—FRNC

### Lower-Division Courses

1550. *Elementary French*. Intensive training in understanding, speaking, reading, and writing French. Geography and daily life, as well as appreciation of the culture of its speakers, are studied. Assignments in the Language Learning and Resource Center (LLRC). Grading is ABC/NC. 4 s.h.

2600. *Intermediate French*. Intensive training in understanding, speaking, reading, and writing French; knowledge of the natural and cultural features of French-speaking countries and regions. Assignments in the Language Learning and Resource Center (LLRC). Prereq.: Placement test or FRNC 1550. 4 s.h.

2605. *Advanced Intermediate French*. Advanced training in understanding, speaking, reading, and writing French; knowledge of the natural and cultural features of French-speaking countries and regions. Assignments in the Language Learning and Resource Center (LLRC). Prereq.: Placement test or FRNC 2600. 3 s.h.

2606. *Intensive French Review*. Intensive review of basic French speaking and writing language skills. Grammatical structures and vocabulary in context. Prereq.: Placement test or FRNC 2600. 3 s.h.

2608. *Directed Reading*. Reading authentic French texts of intermediate difficulty relevant to the content of another course not taught in French. Reading comprehension strategies and vocabulary building. Primarily for students not majoring in French. May be repeated once. Prereq.: FRNC 2605 or Placement test. 1 s.h.

2610. *Translation*. Techniques of translating complex sentence structures into English from general, business, technical, and scientific materials. Prereq.: Placement exam or FRNC 2600. 3 s.h.

### Upper-Division Courses

3701. *Service Learning in French*. Using the French language to engage in community service or an internship. Completion of a journal written in French and detailing the experience is required. May be repeated up to 4 s.h. Prereq.: Approval of Department Chair, and FRNC 2600 or placement test. 1-2 s.h.

3710. *Applied French Phonetics*. A systematic study of French phonetics to correct defects in pronunciation and intonation and give students a better understanding of the differences between the French and English sound systems. Prereq.: FRNC 2605 and 2606. 3 s.h.

3716. *Advanced French Grammar and Composition*. A systematic study of French language morphology, sentence structure, and usage applied to a variety of written discourse styles. Contrast with English discourse styles and effective grammatical use. Prereq.: FRNC 2605 and 2606. 3 s.h.

3717. *Advanced French Conversation*. Development of oral expression through discussion of current topics in the context of French and Francophone culture, politics, and economics. Expansion of vocabulary. Prereq.: FRNC 2605 and 2606. 3 s.h.

3720. *Literature and Culture: France*. A study of major works of French literature through its history, placed in the cultural context which helped produce them. Prereq.: FRNC 2605 and FRNC 2606. 3 s.h.

3725. *Francophone Literature and Culture*. A study of major works representative of Francophone literature in their cultural context. Prereq.: FRNC 2605 and FRNC 2606. 3 s.h.

3730. *Literature and Culture: America*. A study of major works in Francophone literature in North America in its cultural context. Prereq.: FNLG 2615 and FRNC 3715. 3 s.h.

3736. *Introduction to French Linguistics*. Examination of basic concepts and issues of modern French linguistic theory. Emphasis is on sociolinguistics with attention also to phonology, morphology, syntax and pragmatics. Prereq.: FRNC 2605 and 2606. 3 s.h.

3740. *French for Business and Communication*. Development of oral and written communication in business and other practical situations. Business practices in French-speaking countries. Prereq.: FRNC 2605 and 2606. 3 s.h.

3750. *French Civilization and Culture*. A study of contemporary French civilization and culture, focusing on what the French consider typical of their character, as exemplified by their traditions, magazines, films, and heroes. Readings and class work in French. Prereq.: FRNC 2605 and 2606. 3 s.h.

3799. *Study Abroad in French*. An individually-arranged program of foreign study in the French language. Programs can be of two general types: (1) trips or residential programs sponsored by consortial universities, and (2) independent academic coursework through institutions with which YSU does not have a consortial agreement. A written statement detailing the student's academic plan must be approved by a member of the French faculty, the chair of Foreign Languages and the dean of CLASS prior to the trip. Credit toward fulfillment of requirements for the French major will be determined by the chair of Foreign Languages and not the French faculty. May be repeated up to a total of 15 s.h., if specific course content changes. Note: study abroad generally requires about one year's advance planning. Prereq.: Sophomore status and approval of the chair of Foreign Languages. 1-15 s.h.

4874. *Advanced Writing*. A course designed to develop skills in free composition on assigned topics. Prereq.: FRNC 3750 and one of the following: 3720, 3725, 3730. 3 s.h.

4885. *French Conversation and Composition Capstone*. Capstone course emphasizing impromptu conversations and in-class essay writing. Students must achieve a level of Intermediate High on both the ACTFL Oral Proficiency Interview and the ACTFL Writing Proficiency Test. Prereq.: 15 s.h. in French at the 3700 level or above and permission of Chair. 3 s.h.

## German—GRMN

### Lower-Division Courses

1550. *Elementary German*. Intensive training in understanding, speaking, reading, and writing German. Geography and daily life, as well as appreciation of the culture of its speakers, are studied. Students should achieve an intermediate-low level of proficiency. Assignments in the Language Learning and Resource Center (LLRC). Grading is ABC/NC. 4 s.h.

2600. *Intermediate*. Intensive training in understanding, speaking, reading, and writing German; knowledge of geography and daily life as well as appreciation of the cultures of German speakers. Students should achieve an intermediate-mid level of proficiency. Assignments in the LLRC. Prereq.: Placement test or GRMN 1550. 4 s.h.

2603. *Directed Reading 1*. Reading authentic German texts of intermediate difficulty relevant to the content of another course not taught in German. Reading comprehension strategies and vocabulary building. Primarily for students not majoring in German. May be repeated once. Prereq.: German 2600 or placement exam. 1 s.h.

2605. *Advanced Intermediate*. Intensive training in understanding, speaking, reading, and writing German; knowledge of geography and daily life as well as appreciation of the cultures of German speakers.

By the end of the course the students should achieve an intermediate-high level of proficiency. Assignments in the LLRC. Prereq.: Placement test or GRMN 2600. 3 s.h.

2610. *Translation 1*. Techniques of translating complex sentence structures into English from general, business, technical, and scientific materials. Prereq.: GRMN 2600. 3 s.h.

### Upper-Division Courses

3705. *German Film and Culture Since 1950*. Significant German feature films portraying various aspects of German culture such as daily life, filmic versions of literature, life in East and West Germany, and post-unification cultural differences. Focus on listening comprehension and written expression. Prereq.: Placement test or GRMN 2600. 3 s.h.

3720. *German Literature*. Reading of German prose and/or poetry focusing on an author, a genre, or a literary trend. Prereq.: GRMN 2605. 3 s.h.

3725. *Phonetics and History of the Language*. Theory and practice in German phonetics with special emphasis on improving the pronunciation and intonation of second-language learners. A history of the German language with attention to changes in sounds, forms, word order, vocabulary, and writing systems. Prereq.: GRMN 2605 3 s.h.

3740. *Conversation and Composition*. Development of oral fluency, writing style, and understanding spoken German. Special emphasis on expanding active and passive vocabulary; advanced grammar structures. Prereq.: Placement test or GRMN 2605. 3 s.h.

3750. *Cultural Heritage 1*. A survey of German civilization from the beginnings to 1949, including such topics as literature, history, music, and art. Prereq.: Any 3700 German course. 3 s.h.

3751. *Cultural Heritage 2*. A survey of German civilization since 1949, including such topics as literature, history, music, and art. Prereq.: Any 3700 German course. 3 s.h.

3753. *Directed Reading 2*. Reading advanced authentic German texts relevant to the content of another course not taught in German. Reading comprehension strategies and vocabulary building. Primarily for students not majoring in German. May be repeated once. Prereq.: GRMN 3740 or 2 s.h. credit for GRMN 2603. 1 s.h.

3762. *Translation 2*. A continuation of *Translation 1* with more advanced texts from students' fields of interest including natural sciences, social sciences, business, and humanities. Prereq.: GRMN 2610 and any GRMN at 3700 level. 3 s.h.

3785. *Special Topics*. Studies in German language, literature, or civilization ranging from medieval to modern times. Topic announced each time course is offered. May be repeated for a maximum of 6 s.h. Prereq.: 6 s.h. GERMAN at 3700 level. 3 s.h.

4861. *Literary Trends Since 1950*. Study of a major author or a genre since World War II using appropriate German films. Prereq.: GRMN 3750 or 3751. 3 s.h.

4880. *Research and Writing*. A thorough investigation of a problem in German or German-American language, literature or culture, or in German-language education. Extensive oral and written reporting or research results. Capstone course. Prereq.: GRMN 3750 or 3751. 3 s.h.

## Greek (Ancient)—GRK

### Lower-Division Courses

1550. *Elementary Ancient Greek*. Introduction to Ancient Greek with emphasis on those aspects of grammar most essential for developing the ability to read Greek. Translation of simple Ancient Greek texts into English. Assignments in the Language Learning and Resource Center (LLRC). Grading is ABC/NC. 4 s.h.

2600. *Intermediate*. Continuation of GRK 1550 with emphasis on more complex aspects of Ancient Greek grammar. Translation of more advanced Ancient Greek texts, including some authentic passages. Assignments in the LLRC. Prereq.: Placement test or GRK 1550. 4 s.h.

2603. *Directed Reading 1*. Reading of selections from an Ancient Greek author or genre with emphasis on translation. Review of Ancient Greek grammar and introduction of some advanced grammatical constructions not covered in Ancient Greek 1550 or 2600. May be repeated once if topic is different. Prereq.: Placement test or GRK 2600 or permission of department chairperson. 3 s.h.

### Upper-Division Courses

3753. *Directed Reading 2*. Reading of selections from an Ancient Greek author or genre with emphasis on translation and interpretation of text. Review of Ancient Greek grammar. Introduction of relevant modern scholarship. Writing of evaluative essays. May be repeated once if topic is different. Prereq.: GRK 2603 and permission of department chairperson. 3 s.h.

4883. *Directed Reading 3*. Reading of selections from an Ancient Greek author or genre with emphasis on translation and interpretation of text. Review of Ancient Greek grammar. Writing of a research paper. May be repeated once if topic is different. Prereq.: GRK 3753 and permission of department chairperson. 3 s.h.

## Hebrew—HBRW

### Lower-Division Courses

1550. *Elementary Hebrew*. Beginning training in understanding, speaking, reading, and writing Hebrew. Geography and daily life, as well as appreciation of

the culture of its speakers, are studied. Assignments in the Language Learning and Resource Center (LLRC). Grading is ABC/NC. 4 s.h.

2600. *Intermediate*. Intensive training in understanding, speaking, reading, and writing Hebrew; knowledge of geography and daily life as well as appreciation of the culture of Hebrew speakers. Assignments in the LLRC. Prereq.: Placement test or HBRW 1550. 4 s.h.

2605. *Advanced Intermediate*. Reading and discussion in Hebrew of selections from the Old Testament. Prereq.: Placement test or HBRW 2600. 3 s.h.

### Upper-Division Courses

3706. *Readings in Hebrew Scripture*. Reading and discussion in Hebrew of selections from the Hebrew Scriptures. May be repeated once if the texts studied are different. Prereq.: HBRW 2605. 3 s.h.

3799. *Study Abroad in Hebrew*. An individually-arranged program of foreign study in the Hebrew language. Programs can be of two general types: (1) trips or residential programs sponsored by consortial universities, and (2) independent academic coursework through institutions with which YSU does not have a consortial agreement. A written statement detailing the student's academic plan must be approved by a member of the Hebrew faculty, the chair of Foreign Languages and the dean of CLASS prior to the trip. May be repeated up to a total of 15 s.h., if specific course content changes. Note: study abroad generally requires about one year's advance planning. Prereq.: Sophomore status and approval of the chair of Foreign Languages. 1-15 s.h.

## Italian—ITAL

### Lower-Division Courses

1550. *Elementary Italian*. Intensive training in understanding, speaking, reading, and writing Italian. Geography and daily life, as well as appreciation of the culture of its speakers, are studied. Assignments in the Language Learning and Resource Center (LLRC). Grading is ABC/NC. 4 s.h.

2600. *Intermediate Italian*. Intensive training in understanding, speaking, reading, and writing Italian; knowledge of geography and daily life as well as appreciation of the cultures of Italian speakers. Assignments in the Language Learning and Resource Center (LLRC). Prereq.: Placement test or ITAL 1550. 4 s.h.

2605. *Advanced Intermediate Italian*. Intensive training in understanding, speaking, reading, and writing Italian; knowledge of geography and daily life as well as appreciation of the cultures of Italian speakers. Assignments in the Language Learning and Resource Center (LLRC). Prereq.: Placement test or ITAL 2600. 3 s.h.

2606. *Intensive Italian Review*. Intensive training in understanding, speaking, reading, and writing Italian. Grammatical structures and vocabulary in context. Prereq.: Placement test or ITAL 2600. 3 s.h.

2610. *Introduction to Italian Film*. Analysis, written and oral, of Italian films presented in conjunction with FNLG 2610. Prereq.: ITAL 2600; Coreq.: FNLG 2610. 1 s.h.

### Upper-Division Courses

3701. *Service Learning in Italian*. Using the Italian language to engage in community service or an internship. Completion of a journal written in Italian and detailing the experience is required. May be repeated up to 4 s.h. Prereq.: Approval of Department Chair; and ITAL 2600 or placement test. 1-2 s.h.

3720. *Advanced Italian Grammar and Composition*. In-depth study of Italian grammar through exercises and original composition. Prereq.: ITAL 2605 and 2606. 3 s.h.

3725. *Italian Phonetics*. Theory and practice in Italian phonetics with special emphasis on improving the pronunciation and intonation of second language learners. Prereq.: ITAL 2605 and 2606. 3 s.h.

3730. *Advanced Italian Conversation*. Designed to develop oral facility through exercises and discussion of assigned topics, and through prepared and extemporaneous situational dialogues. Prereq.: ITAL 2605 and 2606. 3 s.h.

3735. *Italian Civilization and Culture*. A condensed study of the geography, history, literature, and social heritage of Italy, from the fall of the Roman Empire to the present. Includes class discussion for improvement of oral facility. Prereq.: ITAL 2605 and 2606. 3 s.h.

3740. *Survey of Italian Literature 1*. Introduction to Italian literature from the 14th century to the Renaissance through representative selections of key literary figures. Theoretical and critical approaches to help interpret texts. Prereq.: ITAL 2605 and 2606. 3 s.h.

3741. *Survey of Italian Literature 2*. Introduction to Italian literature from the Enlightenment to the present through representative selections of key literary figures. Theoretical and critical approaches to help interpret texts. Prereq.: ITAL 2605 and 2606. 3 s.h.

3743. *Topics in Italian Literature I*. A study of a genre, author, or literary movement. May be repeated with a different topic. Prereq.: ITAL 2605 and 2606. 3 s.h.

3750. *Italian Literature of the 20<sup>th</sup> Century*. A study of the literature of the 20<sup>th</sup> century and its movements and innovations, with concentration on D'Annunzio, Ungaretti, Quasimodo, Montale, Moravia, and Pirandello. Prereq.: ITAL 2605 and 2606. 3 s.h.

3760. *Italian Literature of the 19<sup>th</sup> Century*. A study of the literature of the 19<sup>th</sup> century with concentration on Leopardi, Manzoni, Pascoli, and Carducci. Prereq.: ITAL 2605 and 2606. 3 s.h.

3798. *Study Abroad in Sicily*. A structured but individualized program of study at the Culturforum Italian Language School in Cefalù, Sicily. Prereq.: ITAL 2605 and 2606 and permission of chair. 4 s.h.

3799. *Study Abroad in Italian*. An individually-arranged program of foreign study in the Italian language. Programs can be of two general types: (1) trips or residential programs sponsored by consortial universities, and (2) independent academic coursework through institutions with which YSU does not have a consortial agreement. A written statement detailing the student's academic plan must be approved by a member of the Italian faculty, the chair of Foreign Languages and the dean of CLASS prior to the trip. Credit toward fulfillment of requirements for the Italian major will be determined by the chair of Foreign Languages and the Italian faculty. May be repeated up to a total of 15 s.h., if specific course content changes. Note: study abroad generally requires about one year's advance planning. Prereq.: Sophomore status and approval of the chair of Foreign Languages. 1-15 s.h.

4800. *"Risorgimento," Romanticism, and Rome (1800-1860)*. A study of the historical circumstances and the artistic and literary trends that preceded the "Risorgimento" or the unification of Italy. Prereq.: ITAL 2605 and 2606. 3 s.h.

4825. *Viability, "Verismo," and Verga (1860-1920)*. A study of the historical and cultural circumstances in addition to the artistic and literary trends that followed the "Risorgimento" or the unification of Italy. Prereq.: ITAL 2605 and 2606. 3 s.h.

4850. *Literature of the 16<sup>th</sup> Century*. A course dealing with the literature of the Renaissance and concentrating on Ariosto, Bandello, Machiavelli, and Tasso. Prereq.: ITAL 2605 and 2606. 3 s.h.

4860. *Italian Literature of the 14<sup>th</sup> Century*. A study of Italian literature of the 14<sup>th</sup> century with concentration on Dante, Petrarch and Boccaccio. Prereq.: ITAL 2605 and 2606. 3 s.h.

4870. *Topics in Italian Literature 2*. A study of a genre, author, or literary movement. May be repeated with a different topic. Prereq.: ITAL 2605 and 2606. 3 s.h.

4880. *Italian Conversation and Composition Capstone*. Capstone course emphasizing impromptu conversations and in-class essay writing. Students must achieve a level of Intermediate High on both the ACTFL Oral Proficiency Interview and the ACTFL Writing Proficiency Test. Prereq.: 15 s.h. in Italian at the 3700 level or above and permission of Chair. 3 s.h.

## Latin—LATN

### Lower-Division Courses

1550. *Elementary Latin*. Introduction to Latin, with emphasis on those aspects of grammar most essential for developing the ability to read Latin. Translation of simple Latin texts into English. Introduction to the

culture of the late Roman Republic, including reading selected primary sources in English. Assignments in the Language Learning and Resource Center (LLRC). Grading is ABC/NC. 4 s.h.

2600. *Intermediate*. Continuation of Latin 1550 with emphasis on more complex aspects of Latin grammar. Translation of more advanced Latin texts, including some authentic passages. Introduction to the culture of the Augustan Age, including reading selected primary sources in English. Assignments in the LLRC. Prereq.: Placement test or LATN 1550. 4 s.h.

2603. *Directed Reading 1*. Reading of selections from a Latin author or genre with emphasis on translation. Review of Latin grammar and introduction of some advanced grammatical constructions not covered in Latin 1550 or 2600. May be repeated once if topic is different. Prereq.: Placement test or Latin 2600. 3 s.h.

### Upper-Division Courses

3753. *Directed Reading 2*. Reading of selections from a Latin author or genre with emphasis on translation and interpretation of text. Review of Latin grammar. Introduction to relevant modern scholarship. Writing of evaluative essays. May be repeated once if topic is different. Prereq.: LATN 2603 and permission of department chairperson. 3 s.h.

4883. *Directed Reading 3*. Reading of selections from a Latin author or genre with emphasis on translation and interpretation of text. Review of Latin grammar. Writing of a research paper. May be repeated once if topic is different. Prereq.: LATN 3753 and permission of department chairperson. 3 s.h.

## Russian—RUSS

### Lower-Division Courses

1550. *Elementary Russian*. Intensive training in understanding, speaking, reading, and writing in Russian. Geography and daily life, as well as appreciation of the culture of its speakers, are studied. Student should achieve a novice-high level of proficiency. Assignments in the Language Learning and Resource Center (LLRC). Grading is ABC/NC. 4 s.h.

2600. *Intermediate*. Intensive training in understanding, speaking, reading, and writing in Russian; knowledge of geography and daily life as well as appreciation of the culture of Russian speakers. Students should achieve an intermediate-low level of proficiency. Assignments in the LLRC. Prereq.: Placement test or RUSS 1550. 4 s.h.

2605. *Advanced Intermediate 1*. Russian phonetics and conversation. Focus on sounds, intonation, and forms of speech etiquette. Prereq.: Placement test or RUSS 2600. 3 s.h.



2606. *Advanced Intermediate 2*. Reading and listening. Focus on morphology and syntax. Topics will vary according to the student's major area of interest. May be repeated if topic is different. Prereq.: Placement test or RUSS 2605. 3 s.h.

### Upper-Division Courses

3700. *Directed Study*. Readings or independent language study work relating to the students' major. May be repeated up to a total of 6 s.h. Prereq.: RUSS 2605. 1-3 s.h.

3799. *Study Abroad in Russian*. An individually-arranged program of foreign study in the Russian language. Programs can be of two general types: (1) trips or residential programs sponsored by consortial universities, and (2) independent academic coursework through institutions with which YSU does not have a consortial agreement. A written statement detailing the student's academic plan must be approved by a member of the Russian faculty, the chair of Foreign Languages and the dean of CLASS prior to the trip. May be repeated up to a total of 15 s.h., if specific course content changes. Note: study abroad generally requires about one year's advance planning. Prereq.: Sophomore status and approval of the chair of Foreign Languages. 1-15 s.h.

## Spanish—SPAN

### Lower-Division Courses

1550. *Elementary Spanish*. Intensive training in understanding, speaking, reading, and writing Spanish. Geography and daily life, as well as appreciation of the culture of its speakers, are studied. Assignments in the Language Learning and Resource Center (LLRC). Grading is ABC/NC. 4 s.h.

2600. *Intermediate Spanish*. Intensive training in understanding, speaking, reading, and writing Spanish; geography and daily life, as well as appreciation of the cultures of Spanish speakers are studied. Assignments in the Language Learning and Resource Center (LLRC). Prereq.: Placement test or SPAN 1550. 4 s.h.

2605. *Advanced Intermediate Spanish*. Review and expansion of basic Spanish language skills and cultural information. Assignments in the Language Learning and Resource Center (LLRC). Prereq.: Placement test or SPAN 2600. 3 s.h.

### Upper-Division Courses

3701. *Service Learning in Spanish*. Using the Spanish language to engage in community service or an internship. Completion of a journal written in Spanish and detailing the experience is required. May be repeated up to 4 s.h. Prereq.: Approval of Department Chair; and SPAN 2600 or placement test. 1-2 s.h.

3702. *Intensive Spanish Review*. Further study of the Spanish language and Hispanic cultures through oral, written, and reading activities. Focus is on contextualized vocabulary and review of grammar to help students move towards a more advanced level. Prereq.: SPAN 2600. 3 s.h.

3724. *Spanish Pronunciation*. Theory and practice of Spanish pronunciation. Description of production of Spanish speech sounds and general characteristics of Spanish pronunciation. Topics on intonation. Audio-lingual practice in class and in language laboratory. Prereq.: SPAN 3702. 3 s.h.

3735. *Advanced Spanish Grammar and Composition*. A systematic study of Spanish morphology, sentence structure, and usage applied to a variety of written discourse styles such as description, narration, and exposition. Discussion of contrasts with English discourse styles, and effective grammatical use. Prereq.: SPAN 3702. 3 s.h.

3736. *Introduction to Spanish Linguistics*. Examines some of the basic concepts and issues of modern Spanish linguistic theory in the areas of phonology, morphology, syntax and pragmatics, with special emphasis on sociolinguistics. Prereq.: SPAN 3702. 3 s.h.

3737. *Translation and Composition*. Study of translation techniques, and practice in translating from Spanish into English and from English into Spanish, working with a variety of texts from the social sciences, natural sciences, and technology. Emphasis on interpretation of vocabulary and idioms. Prereq.; SPAN 3735 or 3736. 3 s.h.

3740. *Business Spanish*. Principles of effective commercial letter and report writing and oral communication in business in the Spanish-speaking world. Prereq.: SPAN 2605. 3 s.h.

3755. *Advanced Spanish Conversation*. Development of oral expression through discussion of current topics in the context of worldwide Hispanic culture, politics, and economics. Expansion of vocabulary. Laboratory work according to individual needs. Prereq.: SPAN 3702. 3 s.h.

3758. *Culture and Literature of Spanish-Speaking Groups in the U.S.* Provides an overview of the significant culture and literature of the diverse Hispanic groups in the U.S. The relationship between literature and society broached through an in-depth discussion of several representative texts and their historical and political background. Prereq.: SPAN 3702. 3 s.h.

3762. *Culture: Spain*. Examination of the cultural landscape and major issues in Spanish society through the study of art, history, geography, politics, music, cinema, popular culture, and cultural groups in the various regions of Spain. Prereq.: SPAN 3702. 3 s.h.

3763. *Introduction to Literature: Spain*. Introduction to Peninsular literature through representative selections of key works of fiction, poetry and film. Theoretical and critical approaches to help the student interpret texts. Prereq.: SPAN 3702. 3 s.h.

3766. *Culture: Spanish-America*. This course examines the cultural landscape and major issues in Spanish-American society through the study of art, history, geography, politics, music, cinema, popular culture, and cultural groups in the various regions. Prereq.: SPAN 3702. 3 s.h.

3767. *Introduction to Literature: Spanish-America.* Introduction to Spanish-American literature through representative selections of key works of fiction, poetry and film. Theoretical and critical approaches to help the student interpret texts. Prereq.: SPAN 3702. 3 s.h.

3799. *Study Abroad in Spanish.* An individually-arranged program of foreign study in the Spanish language. Programs can be of two general types: (1) trips or residential programs sponsored by consortial universities, and (2) independent academic coursework through institutions with which YSU does not have a consortial agreement. A written statement detailing the student's academic plan must be approved by a member of the Spanish faculty, the chair of Foreign Languages and the dean of CLASS prior to the trip. Credit toward fulfillment of requirements for the Spanish major will be determined by the chair of Foreign Languages and the Spanish faculty. May be repeated up to a total of 15 s.h., if specific course content changes. Note: study abroad generally requires about one year's advance planning. Prereq.: Sophomore status and approval of the chair of Foreign Languages. 1-15 s.h.

5855. *Topics in Spanish Language and Linguistics.* An introduction to the terminology, concepts, bibliography and current issues in Spanish language and linguistics. Major topics include phonology, morphology, semantics, syntax, applied linguistics, transformational grammar, and other topics related to language variation and society. May be repeated once when topic varies. Prereq.: Any 3700-level SPAN course. 3 s.h.

5870. *Topics in Spanish Literature: Spain.* Study of an author, a genre, or a movement in Spanish literature from 1492 to the present. The topic will be announced each time the course is offered. May be taken three times if content is not repeated. Prereq.: SPAN 3762 or 3763. 3 s.h.

5885. *Topics in Hispanic Literature and Film.* Examines the relationship between the Hispanic narrative discourse and cinema, including film adaptations of literary works. Modern social and cultural issues, as well as Hispanic self-images. May be taken three times if content is not repeated. Prereq.: one of SPAN 3762, 3763, 3766, 3767. 3 s.h.

5890. *Topics in Spanish Literature: Spanish-America.* Study of an author, a genre, or a movement in Latin America from 1492 to the present. The topic will be announced each time the course is offered. May be taken three times if content is not repeated. Prereq.: SPAN 3766 or 3767. 3 s.h.

## Swahili—SWAH

1550. *Elementary Swahili.* Intensive training in understanding, speaking, reading, and writing Swahili. Geography and daily life, as well as appreciation of the culture of its speakers, are studied. Students should achieve intermediate low-level proficiency. Assignments in the Language Learning and Resource Center (LLRC). Grading is ABC/NC. 4 s.h.

2600. *Intermediate.* Intensive training in understanding, speaking, reading, and writing Swahili; knowledge of geography and daily life as well as appreciation of the culture. Students should achieve Intermediate Mid Level proficiency. Assignments in the LLRC. Prereq.: Placement test or SWAH 1550. 4 s.h.

## FOUNDATIONS OF EDUCATION—FOUN Department of Educational Administration, Research, and Foundations

1501. *Introduction to Education.* Historical, political, legal, cultural and ethical perspectives on the work and roles of teachers and schooling. Issues confronting educators, voters, parents and children. Twenty-five hours of field work, orienting students to classrooms and to the organization and governance of school districts. 3 s.h.

3708. *Education and Society.* School as a dynamic social institution. An analysis of how schools interact with diverse communities and with social, political, and cultural institutions and traditions. Twenty-five hours of field research. Prereq.: Admission to the College of Education or permission of chairperson. 3 s.h.

3710. *Educational Assessment.* Critical review of types, purposes, procedures, uses, and limitations of assessment strategies and techniques including authentic assessment, value-added assessment, and alternate assessment. Standardized testing and implications for current practice. Prereq.: Upper Division. 3 s.h.

5875. *Seminar in Foundations of Education.* Selected topics for a focused study on problems, issues, or concerns to be addressed by a sociological, historical, philosophical, assessment, or research perspective. Prereq.: Permission of chairperson. 1-3 s.h.

5880. *Special Topics in Foundations of Education.* An advanced study of sociological, historical, and/or philosophically based research which provides analysis of a particular educational issue with special emphasis on implications for diverse populations and/or diverse school settings. Prereq.: Permission of chairperson. 1-3 s.h.

## GEOGRAPHY—GEOG Department of Geography

### Lower-Division Courses

1503. *Physical Geography.* An introductory analysis of selected elements of the natural habitat and their geographic distribution. Includes processes involved in weather, climates, soils, vegetation, and landforms. 3 s.h.

2610. *Map Use and Interpretation*. The use of maps, aerial photography, and satellite imagery to depict physical and cultural landscapes. Topics include map elements and how to locate, read, and interpret maps and remotely-sensed imagery. 3 s.h.

2611. *Geospatial Foundations*. An overview of geospatial science and technology, including introductory concepts in spatial analysis, Geographic Information Systems, remote sensing, and GPS. The class provides a survey of theoretical geospatial topics as well as their applications in a computer lab setting. 3 s.h.

2626. *World Geography*. A comparative study of representative regions of the world. Attention is focused on an examination of the physical, cultural, social and political attributes of selected regions. 3 s.h.

2630. *Weather*. An examination of basic weather elements, their interrelationships and the natural laws that govern them. Focus is on both global scale atmospheric processes and localized factors that influence weather conditions and patterns. 3 s.h.

2630L. *Weather Lab*. Observation, collection and analysis of atmospheric data, and determination and prediction of weather conditions. Atmospheric laws and meteorological principles, concepts, and processes are investigated using the scientific method. Two hours of laboratory per week. Optional lab to accompany GEOG 2630: Weather. Prereq.: GEOG 2630 or concurrently with GEOG 2630. 1 s.h.

2630H. *Honors Weather*. An examination of basic weather elements, their interrelationships and the natural laws that govern them. Focus is on both global scale atmospheric processes and localized factors that influence weather conditions and patterns. 3 s.h.

2640. *Human Geography*. An examination of the place to place variation in people's utilization of the earth. Topics include the distribution of people, spatial variations in culture, urbanization and politicalization of space. 3 s.h.

2640H. *Honors Human Geography*. An examination of the place to place variation in people's utilization of the earth. Topics include the distribution of people, spatial variations in culture, urbanization and politicalization of space. 3 s.h.

2650. *Global Economic Landscapes*. Geographic patterns of economic activities such as agriculture, manufacturing, retailing and services, and regional patterns and issues in the emerging global economy. 3 s.h.

### Upper-Division Courses

3703. *Human Impacts on the Environment*. Focus is on the interaction between natural systems and human activities that results in environmental change and degradation of the Earth's atmosphere, waters, soil, vegetation, and animal life. Societal conflicts,

mitigation, conservation, and sustainable resource strategies are discussed. Prereq.: GEOG 1503; or GEOL 1504 or 1506; or ENST 1500; or HIST 3774. 3 s.h.

3705. *Mountain Geography*. Investigates the physical, biological, and cultural processes that take place in selected mountain environments. Topics also include resource use, environmental change, and sustainable development at both regional and global scales. Prereq.: BIOL 1505 or ENST 1500 or ENST 2600 or GEOG 1503 or GEOL 1504 or GEOL 1505. 3 s.h.

3712. *Thematic Map Design and Symbolization*. An introduction to cartographic design. Emphasis is on composition elements and the construction and perception of point, line, and area map symbols. The use of color, statistical techniques, and animated maps are also explored. Prereq.: GEOG 2610, 2626, or 2640. 3 s.h.

3713. *Geography of South America*. Spatial patterns found in the physical and cultural landscapes of South America. Prereq.: GEOG 2626 or 2640; or HIST 3728. 3 s.h.

3715. *Geography of Middle America*. Spatial patterns found in the physical and cultural landscapes of Middle America (Mexico, Central America, and the Caribbean). Prereq.: GEOG 2626 or 2640; or HIST 3727. 3 s.h.

3717. *Geography of Europe*. Spatial patterns found in the physical and cultural landscapes of Europe. Prereq.: GEOG 2626 or 2640. 3 s.h.

3719. *Geography of the United States*. Spatial patterns found in the physical and cultural landscapes of the United States. Prereq.: GEOG 2626 or 2640; or HIST 2605 or 2606. 3 s.h.

3721. *Geography of Ohio*. Spatial patterns found in the physical and cultural landscapes of Ohio. Prereq.: GEOG 2626 or 2640; or HIST 2605 or 2606 or 3748. 3 s.h.

3722. *Historical Geography of the United States*. Spatial patterns in the United States over time. Topics include discovery and exploration, regional variation in settlement, ethnicity and material culture, and the role of transportation in the American landscape. Prereq.: GEOG 2626 or 2640; or HIST 2605 or 2606. 3 s.h.

3724. *Themes in Cultural Geography*. A seminar focusing on cultural traditions in geography in the United States. Primary focus is on scholars, traditions, theory and methodology of cultural geography as published in the professional literature. Prereq.: GEOG 2626 or 2640 or ANTH 1500 or SOC 1500. 3 s.h.

3726. *Urban Geography*. A study of the changing spatial patterns associated with the rise of urbanization, comparative urban developments and cities as a part of the urban system. Prereq.: GEOG 2626 or 2640; or HIST 3736; or SOC 3707. 3 s.h.

3730. *Global Climates*. An examination of the earth's climates and the processes and controls responsible for their occurrence, distribution and change. Prereq.: GEOG 1503 or 2630. 3 s.h.

3733. *Severe and Hazardous Weather*. Focus is on severe weather that may threaten harm to life and/or property. The scientific underpinning of severe weather types and their geographic distributions, hazards, and mitigation measures. Topics include extratropical cyclones; thunderstorms; lightning; tornadoes; hurricanes; floods; droughts; cold and heat waves; blizzards; snow, ice and wind storms; and El Niño/La Niña. Prereq.: GEOG 1503 or 2630. 3 s.h.

3735. *Water in the Earth System*. Focus is on the cycling of water within the Earth system. Covers the unique properties of water, the global water cycle, the distribution of water within the various reservoirs of the hydrosphere, the role of water in energy transfer and systems interactions, and human impacts on water resources. Prereq.: GEOG 1503 or 2630; or GEOL 1504 or 1505 or 2602; or ENST 1500 or 2600. 3 s.h.

3737. *Soils and Land Use*. Examination of soil characteristics influencing land use planning and development. Topics include the basic physical and chemical properties of soil, soil water, the soil-forming factors, the use and interpretation of county soil reports, and soil characteristics beneficial and detrimental to selected land use practices. Participation in field trips is required. Prereq.: GEOG 1503; or GEOL 1504 or 1505; or ENST 2600; high school chemistry recommended. 3 s.h.

3740. *Business Geographics*. The application of geographic concepts and techniques to business problems, with emphasis on the use of geographic data, locational decision-making and the analysis of markets. Prereq.: GEOG 2640 or 2650. 3 s.h.

3741. *Transportation Geography*. Spatial properties of interregional and intraurban transportation. Topics include network development, movement patterns of people and commodities and the impact of transportation on other activities. Prereq.: GEOG 2626 or 2640 or 2650 or 3745. 3 s.h.

3745. *The Automobile in American Culture*. The impact of the automobile on the economic, cultural and environmental landscapes of the United States from a geographic standpoint. Prereq.: GEOG 2640 or 2650 or 3741. 3 s.h.

3750. *Topics in Regional Geography*. Application of the regional method to selected areas of the world. Topic is announced each time the course is offered. May be repeated three times for credit if content is not repeated. Maximum credit 9 s.h. Prereq.: GEOG 2626 or 2640. 3 s.h.

3755. *Tourism Geography*. Geographic analysis of leisure travel and the travel industry including patterns of travel, impacts of tourism and marketing of tourism sites. Prereq.: GEOG 2626 or 2640; or HMGT 1501. 3 s.h.

3775. *Field Methods in Geography*. Practical experiences in geographic data collection. Emphasis on applying techniques of observation, sampling, surveying, interviewing and mapping to both physical and human spatial phenomena. Participation in field trips is mandatory. Prereq.: GEOG 1503 or 2610 or 2640. 3 s.h.

3780. *Medical Geography*. A geographical and epidemiological approach to disease study. Examines the diffusion and distribution of illnesses and the social and environmental factors contributing to their occurrence. Global disease trends, health care issues and development are explored and compared. Prereq.: GEOG 2626 or 2640 or ANTH 1500 or BIOL 2602 or SOC 1500. 3 s.h.

4825. *Geography Internship*. Practical application of geographic principles and skills in the public or private workplace. A minimum of 40 clock hours per credit hour per semester is required in the work setting. An activities log must be maintained and oral and written reports of the internship experience are required. May be repeated for up to 6 s.h. Prereq.: 3 s.h. upper-division geography. By permit only. 1-3 s.h.

4840. *Seminar in Geography*. Selected aspects of geography not covered in existing courses. Topic to be announced each time the course is offered. May be taken up to two times for credit if topic is not repeated. Prereq.: 9 s.h. of geography. 3 s.h.

4890. *Geography Capstone*. Investigation of research topics, methods, and issues in geography. Students select a geographic research topic, collect and analyze data using appropriate methods and present findings in oral and written form. Prereq.: Senior standing in Geography. 3 s.h.

5802. *Biogeography*. The distribution and scale of flora and fauna and the factors and processes that produce these patterns. Topics also include disturbance events, dispersal, colonization and invasion, and biological hierarchy. Prereq.: BIOL 1505 or BIOL 2602 or GEOG 1503. 3 s.h.

5805. *Remote Sensing I*. Analysis and interpretation of earth features from both airborne and satellite observation platforms. Themes include photogrammetry, digital data manipulation, multispectral imagery, and interpretation of environmental features. Not available to students who have taken GEOG 3710. Prereq.: GEOG 2610 or 2611 or 3712; and Junior standing. 3 s.h.

5806. *Remote Sensing II*. A continuation of Remote Sensing I; focusing on advanced theory of image classification, image processing and enhancement, and spatial analytical methods. Prereq.: GEOG 5805. 3 s.h.

5810. *Geographic Information Science I*. Introduction to the principles of collection, storage, manipulation, retrieval, analysis and visualization of spatial data in a computer environment. Not available to students who have taken GEOG 3732. Prereq.: GEOG 2610 or 2611 or 3712; and Junior standing. 3 s.h.

5811. *Geographic Information Science II*. A continuation of GIScience I focusing on theory and application of advanced techniques in spatial data handling, modeling, and spatial analysis. Not available to students who have taken GEOG 3765. Prereq.: GEOG 5810. 3 s.h.

5812. *Global Positioning Systems and GIScience*. Background, application and theory of satellite positioning technology. Incorporates GPS field data collection and subsequent integration with GIS analysis tools. Prereq.: GEOG 5810. 3 s.h.

5814. *3D Modeling and GIS*. 3D modeling and visualization techniques using GIS (Geographic Information Science) and Geo-Spatial technology. Topics include 3D surfaces, animations, design and rendering of spatial data. Prereq.: GEOG 5810. 3 s.h.

5820. *Directed Research in Geography*. An in-depth study of a specific problem in geography. The problem is dependent upon the student's interest and competence, availability of faculty supervision and department equipment. May be repeated up to 3 s.h. Prereq.: 20 s.h. of Geography. 1-3 s.h.

5850. *International Area Study*. A course in the geography and history of a selected international area with emphasis on cultural development by traveling in the selected region. The class and travel is supervised by the geography and/or history faculty. The course grade is based upon a term paper which must be submitted within 60 days after the end of the course. Prereq.: permission of the chairperson. 3 s.h.

## GEOLOGY—GEOL

### Department of Geological and Environmental Sciences

#### Lower-Division Courses

*Students cannot receive credit for both 1504 and 1505.*

1500/1500L. *Environmental Geology*. An introductory course that examines interactions between human society and our changing planet, the affects of natural/geologic hazards on humans, and anthropogenic (human-caused) impacts on nature, geology, and society. Three hours of lecture and two hours lab per week. 4 s.h.+0 s.h.

1504. *The Dynamic Earth*. An examination of earth as consisting of interrelated geologic systems which are dynamic and constantly changing. Includes study of surface, lithologic and tectonic systems. 3 s.h.

1505/1505L. *Physical Geology*. A study of the various physical and chemical processes acting on and within the earth, and their products. The laboratory component includes identification of minerals and rocks, and the interpretation of topographic and geologic maps. Three hours of lecture, two hours of lab per week. 4 s.h.+0 s.h.

1505H. *Honors Physical Geology*. Concepts of the earth as a dynamic planet, investigated through a variety of lectures, text and journal readings, and independent library-research assignments. Prereq.: Eligibility for the Honors Program or consent of instructor. 3 s.h.

1508. *Geology of Gemstones and Allied Minerals*. Formation, occurrence, and distribution of gem materials. Properties and identification of gem stones; factors affecting their value. Introduction to synthetic/artificial gem materials. Not applicable toward the geology major. 3 s.h.

1509L. *Geoscience Laboratory*. Problem solving and assessment of case histories to illustrate the scientific method and geologic principles and concepts. Two hours laboratory per week. 1 s.h.

1510. *Geology of National Parks*. Geologic history of national parks; geologic processes observed in North American parks and Hawaii. Simulated field trips to several major parks. Not applicable toward the geology major. 3 s.h.

2602. *Introduction to Oceanography*. Survey of geological, physical, chemical, and biological oceanography; description and distribution of properties and their relationship to circulation, shorelines, ocean features, sediments, organisms, and environments. 3 s.h.

2605. *Historical Geology*. An in depth study of the origin and evolution of the Earth and its systems and life forms throughout geologic time. The course is designed to develop student critical thinking skills through analysis of concepts and issues, and the integration of maps, lithologic information, and fossil information. Three hours lecture and two hours lab per week. Field trips are an integral part of the course. Prereq.: GEOL 1505 and GEOL 1505L. 4 s.h.

2611. *Geology for Engineers*. Study of geologic principles, processes, and materials; focus on recognition of geologic factors as they apply to engineering operations and projects. Laboratory work includes examination of minerals, rocks, maps, and case histories. Two hours lecture, two hours laboratory per week. 3 s.h.

2614. *Mesozoic Dinosaurs and Other Reptiles*. A survey of major Mesozoic dinosaurs and reptiles, including discussion of their environment, organic evolution, diversity, and controversies pertaining to their classification and extinction. Prereq.: GEOL 3713. 3 s.h.

2615. *Geology and the Environment 1*. A study of the interrelationship of human activity and the geologic environment. An examination of geologic hazards, geologic considerations in waste disposal, resource utilization, and land use. Prereq.: GEOL 1504 or 1505 or 2611. 3 s.h.

2620. *Intro to Natural Gas and Water Resources*. A survey of the history, science and technology of oil and gas exploration and production and water resource

related issues with an emphasis on non-conventional production in the Appalachian Basin. Prereq.: MATH 1513, CHEM 1516 and CHEM 1516L. 3 s.h.

2699. *Individual Study*. The introductory study of problems or issues in geology, or a review of literature relating to a specific geologic topic. A maximum of 3 s.h. may be taken. Prereq.: 8 s.h. in Geology, consent of department chairperson and instructor. 1-3 s.h.

### Upper-Division Courses

3700. *Mineralogy*. The occurrence, composition, and crystallography of common and economically important minerals. Identification of minerals using physical, chemical, optical and x-ray properties. The theory and use of the polarizing microscope and its application to the study of crystalline material, including asbestos materials. Two hours lecture, four hours of lab per week. Prereq.: CHEM 1515 (may be concurrent) and GEOL 3713. 4 s.h.

3701. *Geomorphology*. A study of landforms and the processes which create them, using aerial photographs, geologic maps, and topographic maps. The laboratory work emphasizes recognition and interpretation of landforms. Two hours lecture, two hours laboratory per week. Prereq.: GEOL 1505. 3 s.h.

3702. *Glacial Geology*. A study of glacier types: their origin, movement, erosional/depositional contributions, and their relationship to various non-glacial features. Emphasis is on the Pleistocene glacial succession in North America. Field trips are an integral part of the course. Prereq.: GEOL 1505. 3 s.h.

3704. *Structural Geology*. Description and interpretation of geologic structures, mechanical properties; stress-strain relationships, regional structure of North America, and major tectonic theories. Prereq.: GEOL 3713. Geology majors must take GEOL 3704L concurrently with 3704. 2 s.h.

3704L. *Structural Geology Laboratory*. Structural geology techniques and analyses, including orthographic solutions, stereographic projections, and interpretation of maps. Two hours lab per week. Prereq. or concurrent: GEOL 3704 and MATH 1504, or consent of instructor. 1 s.h.

3706. *Geology of Economic Mineral Deposits*. A study of the occurrence, origin, and distribution of mineral deposits, with special attention to their economic use. Field trips are mandatory. Prereq.: GEOL 1505 and 3713. 3 s.h.

3709. *Subsurface Investigations*. An introduction to subsurface investigative methods that integrate principles of geophysics, geochemistry, interpretation of well logs and other bore hole data, outcrops and published information in the solution of actual geological problems. Two hours lecture, two hours lab per week. Students are expected to perform field work in addition to regularly scheduled class time. Prereq.: GEOL 3713; MATH 1571 recommended. 3 s.h.

3714. *Principles of Paleontology*. A detailed study of fossil invertebrates, including their origin, classification, paleoecology and stratigraphic utilization. Two hours lecture and two hours lab per week. Prereq.: GEOL 1514. 3 s.h.

3716. *Environmental Impact of Abandoned Mines*. Mining methods, types of mines, information retrieval, mine stabilization, and the effects of abandoned mines on environmental and human activities, especially of deep coal mines in the Mahoning valley and adjacent areas. Two hours lecture and two hours lab per week. Prereq.: GEOL 1505 and 3713 or equivalent. 3 s.h.

3718. *Igneous and Metamorphic Petrology*. An in-depth study of the petrogenesis of igneous and metamorphic rocks based on their chemical and petrographic characteristics. Three hours lecture, three hours lab per week. Prereq.: GEOL 3700. 4 s.h.

3719. *Environmental Impact of Abandoned Mines*. Mining methods, types of mines, information retrieval, mine stabilization, and the effects of abandoned mines on environmental and human activities, especially deep coal mines in the Mahoning Valley and adjacent areas. Two hours lecture and three hours of lab per week. Prereq.: GEOL 1505 or equivalent or permission of instructor. 3 s.h.

3720. *Field Investigations in Geology*. A field-based approach to the study of geologic concepts and problems. Class and travel supervised by the Geology faculty; location, duration of stay, hours, credit, and grading criteria dependent on the site and nature of the geologic concepts and problems investigated. The course may be repeated. A maximum of 4 s.h. may be applied toward Geology major requirements. Prereq.: By permit only. 1-4 s.h.

4804. *Ground Water*. A study of the geologic and hydrologic factors controlling the occurrence and behavior of water beneath the earth's surface. Two hours lecture, two hours lab per week. Prereq.: GEOL 1505 and 3713; MATH 1571 recommended. 3 s.h.

4824. *Tectonics*. Geodynamics and the workings of plate tectonics. Kinetics and dynamics of plate motion, plate driving forces, thermal structure of the earth, and thermal convection in the earth. Tectonic and structural features on the earth. Geophysical, stratigraphic and structural signatures of extensional rifting, strike-slip faulting, subduction zones, plate collisions and mountain belts. Prereq.: GEOL 3704, 3718 and 5802. 3 s.h.

4825. *Geophysical Well Log Analysis*. An introduction to geophysical well logging, analysis, and interpretation applications in the oil and gas industry. Topics include well construction, drilling mud properties, and interpretation of gamma ray, SP, resistivity, sonic, neutron density, and cement bond logs. Prereq.: GEOL 2620 or permission of instructor, PHYS 1502 or PHYS 2611 recommended. Junior standing. 3 s.h.

4899. *Special Topics*. Selected aspects of geology not covered in existing courses. Topics to be announced each time course is offered. May be repeated for different topics. Prereq.: appropriate 3700- or 4800-geology course and permission of the chairperson. 1-3 s.h.

5802. *Sedimentology and Stratigraphy*. The study and interpretation of sedimentary rocks, including physical characteristics, petrography, depositional environments, principles of correlation, and principles of basin analysis. Two hours lecture, two hours lab per week. Prereq.: GEOL 1505, 3713 and 3 s.h. upper-division geology. 3 s.h.

5805. *Special Problems in Geology*. An in-depth study of a specific problem in one of the branches of geology. The problem depends on the student's interest and qualifications and the equipment availability. A maximum of 8 s.h. may be taken. Prereq.: 8 s.h. in Geology, consent of the department chairperson and instructor. 1-4 s.h.

5815. *Geology and the Environment 2*. In-depth examination of earth processes, earth resources, and properties of earth materials as they relate to human activities, and their geologic consequences. Prereq.: GEOL 2615 or ENST 2600. 3 s.h.

5817. *Environmental Geochemistry*. An application of low-temperature aqueous geochemistry and geochemical computer modeling to environmental problems such as acid mine drainage, geochemical cycling of trace elements and nutrients, hazardous waste remediation, nuclear waste disposal, and surface and ground-water contamination. Prereq.: GEOL 3700 and CHEM 1516. 3 s.h.

## GERONTOLOGY—GERO

### Department of Sociology and Anthropology

1501. *Introduction to Gerontology*. Basic introduction to the interdisciplinary study of aging. Includes social, psychological, economic, cultural, health, and policy issues. Discussion of normal vs. abnormal (disease-related) aspects of aging. 3 s.h.

3703. *Aging and Society*. An interdisciplinary introduction to studies in aging. Examines the impact of population aging and its effect on society at large. Also examines individual aging processes and social significance of aging. Prereq.: SOC 1500 or GERO 1501. Listed also as SOC 3703. 3 s.h.

3745. *Sociology of Health, Illness, and Healthcare*. Social attitudes toward illness. Cultural and social factors in disease definition of illness, and organization of the health professions and health facilities. Prereq.: SOC 1500, GERO 1501, or admission to NEOMED-YSU program. Listed also as SOC 3745. 3 s.h.

3755. *Theories of Gerontology*. Review and critical analysis of current theories of the social aspects of aging and their use in research. Prereq.: SOC 1500 or GERO 1501. Listed also as SOC 3755. 3 s.h.

3756. *Aging and Ethnicity*. Aging in American sub-cultures, noting differences in status/role systems, demographic distributions, life styles, methods of dealing with the elderly, and related problems. Listed also as SOC 3756. Prereq.: SOC 1500 or GERO 1501. 3 s.h.

3757. *Aging and Social Policy*. Critical examination of social policies and social systems which affect aging and retirement. Prereq.: SOC 1500, GERO 1501, or POL 1560. Listed also as SOC 3757 and POL 3757. 3 s.h.

3758. *Long-Term Care*. Examines critical issues in long-term care systems, services, and programs. Impacts of social demographic and economic changes on long-term care needs, demands, and supplies. Contemporary trends and future outlooks of long-term care. Listed also as SOC 3758. Prereq.: SOC 1500 or GERO 1501. 3 s.h.

3790. *Aging in Cross-Cultural Perspective*. Examines the phenomenon of aging from cross-cultural perspectives with an emphasis on cultural evolution and its impact upon the status, roles and cultural values associated with aging and the aged. Listed also as SOC 3790 and ANTH 3790. Prereq.: GERO 1501 or ANTH 1500, or SOC 1500. 3 s.h.

4804. *Family, Health, and Aging*. Examines family and health related aspects of aging. Positive and negative interactions among family members and caregivers, and their impact on mental and physical quality of life of the elderly. Listed also as SOC 4804. Prereq.: GERO 3703 or SOC 3703. 3 s.h.

4821. *Internship in Gerontology*. Application of gerontological knowledge in settings such as social agencies, government offices, hospitals, nursing homes, or industry. May be repeated up to 15 s.h., but only a maximum of 6 semester hours can be applied to the gerontology major. Prereq.: Junior standing, 9 s.h. of Gerontology, and permission of chairperson. 3-15 s.h.

4850. *Research Methods*. An introduction to methods employed in social research. Attention is given to (1) the logic of scientific inquiry and the relationship between theory and methods; (2) the various qualitative and quantitative methods; (3) research design, data collection, organization, analysis, interpretation and application; (4) the social, cultural, political, and ethical context of social research; and (5) computer skills employed in data analysis. Prereq.: SOC 3701, ANTH 3701, or GERO 3701. Listed also as ANTH 4850 or SOC 4850. 3 s.h.

4851. *Capstone in Gerontology*. A capstone experience for the interdisciplinary study of aging. Students will complete a major research project. Prereq.: Senior status in Gerontology and SOC 4850. 3 s.h.

## HEALTH AND HUMAN SERVICES—HHS

### College of Health and Human Services

1510. *Investigations Into Economic Class in America*. The course examines the impact of economic class on individuals and communities. Investigating society's rules and resources provides a way to understand individuals, institutions, and society. Problem identification, analysis, and a structured process for change offer pathways to solutions for personal and community issues. 3 s.h.

3791. *Community Medicine Seminar*. Exploration of a variety of contemporary community health issues using problem-solving methods from a community medicine perspective. Prereq.: Admission to NEOMED-YSU BS/MD program. 3 s.h.

4800. *Study Abroad in Health and Human Services*. Students travel to designated countries in order to provide services for citizens while immersed in diverse cultures and traditions. The country traveled to and the service activities engaged in vary. Assignments and evaluation are based on service course objectives supervised by Health and Human Service faculty. Prereq.: junior standing, major in BCHHS, and permission of the Dean's Office. In some cases sophomore students may enroll (permission required). Course may be repeated each semester; fundraising and travel funds required. 1-6 s.h.

## HISTORY—HIST

### Department of History

#### Lower-Division Courses

1500. *Discovering World History*. Introduction to the methods, problems, and content of world history from Antiquity to the present. Emphasizes the relevance of past events and developments to the modern world. Does not count toward the major or minor in history, nor toward integrated social science degrees. 3 s.h.

1501. *American Dreams: Introduction to U.S. History*. Survey of American history focusing on five strategic events in the American past. Emphasis is on cultural conflict and compromise, institutional developments and revolutions, and the emergence of democracy as concept and practice. This course is intended for those students for whom history is not a requirement. 3 s.h.

1511. *World Civilization to 1500*. Origins and growth of the major civilizations of the world from earliest times to about 1500. Placement into ENGL 1550 or completion of ENGL 1539 or 1540. 3 s.h.

1512. *World Civilization from 1500*. Development of the major civilizations of the world from 1500 to the present. Placement into ENGL 1550 or completion of ENGL 1539 or 1540. 3 s.h.

1511H. *World Civilization to 1500*. An honors course in the origins and growth of the major civilizations of the world from earliest times to about 1500 with emphasis on the analysis and critical evaluation of historical developments. Prereq.: Eligibility for admissions to University Honors Program, or recommendation of a history instructor. 3 s.h.

1512H. *World Civilization from 1500*. An honors course in the development of the major civilizations of the world from about 1500 to the present with emphasis on the analysis and critical evaluation of historical developments. Prereq.: Eligibility for admissions to University Honors Program, or recommendation of a history instructor. 3 s.h.

2601. *American Military History*. A survey of American military history from the origin of the United States Army to the present, with emphasis on how military policies and strategies have been influenced by the domestic and foreign affairs of the United States. Identical with MSCI 2601. 3 s.h.

2605. *Turning Points in U.S. History 1*. Key episodes in the social, economic, political and cultural developments of the United States to 1877, exploring how diverse peoples shaped the growing nation. Cross-listed with AMER 2605. Prereq.: Readiness for ENGL 1550. 3 s.h.

2605H. *History of the United States 1*. An honors course concerning the political, social, and economic development of the United States to 1877 with emphasis on the analysis and critical evaluation of historical developments. Prereq.: Eligibility for admission to University Honors Program, or recommendation of a history instructor. 3 s.h.

2606. *Turning Points in U.S. History 2*. Key episodes in the social, economic, political and cultural developments of the United States since 1877, exploring how diverse peoples shaped the growing nation. Cross-listed with AMER 2606. Prereq.: Readiness for ENGL 1550. 3 s.h.

2606H. *History of the United States 2*. An honors course concerning the political, social, and economic development of the United States from 1877 to the present with emphasis on the analysis and critical evaluation of historical developments. Prereq.: Eligibility for admission to University Honoree Program, or recommendation of a history instructor. 3 s.h.

2655H. *History of Western Civilization 1*. An honors course in Western Civilization to 1715 with emphasis on the analysis of historical developments. 3 s.h.

2656H. *History of Western Civilization 2*. An honors course in Western Civilization from 1715 to the present with emphasis on the analysis of historical developments. 3 s.h.

#### Upper-Division Courses

3700. *The Atlantic World*. Development of the Atlantic rim from 1450 to 1700 with emphasis on the processes of exploration, cultural contact, and



colonization. Cross-cultural focus on West Africa, the Caribbean and eastern North America. Prereq.: HIST 1511 or 2605. 3 s.h.

3702. *Early America*. From the first English interactions with the Native Americans and Africans, to the rebellion for Independence, to the struggles over the creation of the Constitution. Prereq.: HIST 2605. 3 s.h.

3704. *Age of Jefferson and Jackson*. Early 19<sup>th</sup> century America, with emphasis on politics and culture before 1845. Prereq.: HIST 2605. 3 s.h.

3706. *Age of Lincoln and Grant*. The period from 1845 to 1877, including the development of the North-South conflict, the war years, and the Reconstruction. Prereq.: HIST 2605. 3 s.h.

3710. *Incorporation of America, 1877-1919*. The history of the United States from Reconstruction to the Treaty of Versailles, focusing on the transformation from a rural, agricultural nation to an urban, industrial nation. The nation's political, social, economic and cultural development, along with foreign policy. Prereq.: HIST 2606. 3 s.h.

3712. *United States in Crisis: 1920-1945*. The Roaring Twenties, Great Depression, New Deal, and World War II. An examination of the social, economic, and political forces that enables America to cope with dramatic foreign and domestic crises. Prereq.: HIST 2606. 3 s.h.

3713. *Cold War America: 1945-1990*. An exploration of U.S. efforts to grapple with the Soviet Union, civil rights and equality, the role of government, changing sexual and social mores, the welfare state, and deindustrialization. Prereq.: HIST 2606. 3 s.h.

3715. *Introduction to Historic Preservation*. Introduction to the field of historic preservation. Provides historical context for the discipline as well as a basic grounding in the concepts and opportunities of the field. Prereq.: HIST 2605 and 2606. 3 s.h.

3717. *Constitutional History of the United States*. The development of the American constitutional system from colonial times to the present. Prereq.: HIST 2605 or 2606. 3 s.h.

3723. *History of American Sports*. An examination of sports within America from earliest times to the present. Special emphasis on the manner in which sports and society have influenced each other, such as racial and class relationships, social mobility, politics, religion, and foreign policy. Prereq.: HIST 2605 or 2606. 3 s.h.

3724. *Colonial Latin America*. Latin America from pre-Hispanic times to the independence, wars including both Spanish America and Brazil. Examines colonial institutions and the experiences of indigenous people, people of African descent, and women. Prereq.: HIST 1512 or 2605. 3 s.h.

3725. *Modern Latin America*. History of Latin America from the independence wars to the present. Examines political and economic developments as

well as the social history of indigenous people, people of African descent, and women. U.S. influence in the region is also studied. Prereq.: HIST 1512 or 2606. 3 s.h.

3726. *History of Women in the United States*. Analysis of the various roles and contributions of women in American history. Prereq.: HIST 2605 or 2606. 3 s.h.

3727. *Mexico and the Caribbean*. Includes Mexico, Colombia, Venezuela, and the Central American republics. Special consideration is given to 20<sup>th</sup> century Mexico. Prereq.: HIST 2611, or consent of instructor. 3 s.h.

3730. *The Black Experience in American History*. A historical study of Black people's roles in and contribution to the political, social, and economic development of American society. Prereq.: HIST 2605 or 2606, or AFST 2600. 3 s.h.

3731. *History of African American Mayors*. Study of African American mayors, beginning with the 1967 elections of Carl Stokes and Richard Hatcher to the present. Focus is on why African Americans were elected mayors, and what benefits they contributed to the African American community as well as to their respective cities. Prereq.: HIST 2606 or AFST 2600. 3 s.h.

3734. *History of Organized Crime in the United States*. The history or organized crime emphasizes the organization of the criminal underworld, the ethnic, racial, and religious composition of criminal groups, and the impact of organized crime on prostitution, gambling, Prohibition, and drugs. Prereq.: HIST 2605 or 2606. 3 s.h.

3736. *History of American Cities*. City politics, social change, ethnic and racial issues, industrialization, and city planning during the 19<sup>th</sup> and 20<sup>th</sup> centuries. Other issues include the provision of city services, the rivalry between cities, and the development of the federal-urban relationship. Prereq.: HIST 2605 or 2606. 3 s.h.

3740. *The Vietnam War*. American involvement in Southeast Asia from the days of French rule to the fall of the Saigon government and beyond. Includes the war debate at home, and other consequences of the war. Prereq.: HIST 1512, 2606, or 2662. 3 s.h.

3741, 3742. *Diplomatic History of the United States 1, 2*. A study of American foreign relations as determined by interaction between domestic and international pressures (1) to 1900 and (2) since 1900. Prereq.: HIST 2605 for 3741, HIST 2606 for 3742. 3+3 s.h.

3743. *Labor in United States History*. Traces the transformation of American workers and the impact of the labor movement upon the United States. Emphasizes the diversity of the working class and the historical context of the of the political and social implications of the labor movement. Prereq.: HIST 2606. 3 s.h.

3744. *The History of American Business*. An examination of the growth and structural development of American business and its relationship to government from colonial times to the present with emphasis on the 20<sup>th</sup> century. Prereq.: HIST 2605 or 2606. 3 s.h.

3745. *History of Jewish Labor*. Examines Jewish labor history in Europe, the United States, and Israel. Explores the social history of the worker, gender and national differences, living and working conditions, as well as labor movements and worker political mobilization. Prereq.: HIST 1512 or 2606. 3 s.h.

3747. *History of Appalachia*. From 18<sup>th</sup> century settlement to present, emphasizing images of the region and its people, and focusing on issues of economic development, folk culture, religion, race, gender and outmigration. Prereq.: HIST 2605 or 2606. 3 s.h.

3748. *History of Ohio*. The important events and movements that have shaped Ohio history in the social, economic, religious and political areas. Prereq.: HIST 2605 or 2606. 3 s.h.

3749. *History of African-United States Relations*. Survey of African-U.S. relations from the transatlantic slave trade to the present with emphasis on the 20<sup>th</sup> century. Prereq.: HIST 2663 or consent of instructor. 3 s.h.

3750. *History of Modern Africa*. The impact of colonialism on the peoples of 20<sup>th</sup> century Africa, focusing on subSahara: Colonialism, colonial administration, urbanization, nationalism, pan-Africanism, decolonialization and the challenges of modern Africa. Prereq.: HIST 2663 or consent of instructor. 3 s.h.

3751. *History of South Africa*. From the beginnings of the 19<sup>th</sup> century to the present. Prereq.: HIST 1512, 2605, 2606, or 2663. 3 s.h.

3752. *Ancient History 1*. From the Neolithic Revolution to the Peloponnesian Wars. Intensive study of civilizations of Mesopotamia and Egypt, as well as Hellenic history. Prereq.: HIST 1511. 3 s.h.

3753. *Ancient History 2*. The Hellenic Period to the fall of Rome. Intensive study of the Age of Alexander and the Roman Republic. Prereq.: HIST 1511. 3 s.h.

3755. *Early Medieval Civilization*. A political, economic, intellectual and cultural history which traces events and developments throughout Europe from the collapse of the Ancient World to the beginning of the High Middle Ages. Prereq.: HIST 1511. 3 s.h.

3756. *High Medieval Civilization*. A political, economic, intellectual and cultural history which traces events and developments throughout Europe during the High Middle Ages (eleventh through fifteenth centuries). Prereq.: HIST 1511. 3 s.h.

3757. *History of Medicine*. Practices and theories of healing, and their relation to social and intellectual context, from ancient times to the present. Prereq.: HIST 1511 or 1512, or a social science course. 3 s.h.

3758. *Renaissance Europe*. A survey of European history from the end of the High Middle Ages to the 16<sup>th</sup> century. Emphasizes the rise of humanism and of Renaissance culture in Italy, its dissemination beyond the Alps as well as the development of national states and the flowering of the Late Medieval tradition in western and eastern Europe. Prereq.: HIST 1511. 3 s.h.

3759. *The Reformation Era*. The history of Europe from the Lutheran Revolt to the Peace of Westphalia in 1648. Major themes of study are the causes of the Reformation, the impact of Luther, Calvin and the Radical Reformation, the Catholic Reform movement, the Wars of Religion, and the rise of the modern secular states. Prereq.: HIST 1512. 3 s.h.

3760. *The Age of Louis XIV*. The history of Europe from 1600 to the outbreak of the French Revolution in 1789. Emphasis on France under Louis XIV and Louis XV, Old Regime society, and the intellectual creativity of the Eighteenth-Century Enlightenment. Also focuses on the widening confrontation between science and religion, the growth of Europe's overseas empire, and the emergence of the modern nation-state. Prereq.: HIST 1512. 3 s.h.

3761. *The French Revolution and Napoleon (1789-1815)*. The French Revolution is examined in detail, especially from its outbreak to the fall of Robespierre. The last portion deals with the rise of Napoleon, his political role, his military campaigns, the reconstruction of Europe, and his fall at Waterloo. Prereq.: HIST 1512. 3 s.h.

3762. *The Second World War*. An examination of the war's diplomatic and ideological origins; social, economic, and political factors; and strategic, tactical, and technological dimensions of the conflict in all major theaters. Prereq.: HIST 1512 or 2606. 3 s.h.

3763. *Modern France, 1815 to Present*. France from the fall of Napoleon to the present. Major cultural, intellectual, and political themes of the period. Impact of the two World Wars, France's post-war revival, the student riots of 1968, and the changes which have transformed French politics and society in the 1980s. Prereq.: HIST 1512. 3 s.h.

3764. *Modern Europe, 1715 to the Present*. A survey of European history from the Enlightenment to the European Union. Themes include the development and debate surrounding European civilization's emphasis on individuality, technology, capitalism, class, war, and progress. Prereq.: HIST 1512. 3 s.h.

3765. *Europe from the Congress of Vienna to the Franco-Prussian War (1815-1871)*. Such movements as Nationalism, the impact of the Industrial Revolution, Marxism, the growth of Democracy, Liberalism and Conservatism, Romanticism and Realism, Reform and Revolution, from the main themes of the period. The course is divided into two historical periods, from 1815 to the Revolution of 1848, and from 1848

to 1871 with the emphasis on the unification of Italy and of Germany and the New Europe that arose as a consequence. Prereq.: HIST 1512. 3 s.h.

3766. *Europe from the Franco-Prussian War to World War I*. The impact of the Paris Commune; revolutionary movements and their contradictions; imperialism, political anti-Semitism, and the images of war; the Bismarckian international order and its suicide. Prereq.: HIST 1512. 3 s.h.

3767. *Europe from World War I to the Present*. War, revolutions, and the European order; Versailles and its contradictions; the Fascist response to Communism and Depression; the interaction of Democracies, Fascism, and Stalinism in the making of World War II and the Cold War. Prereq.: HIST 1512. 3 s.h.

3769. *Modern Germany*. Unification and modernization; scientific, technological, and cultural splendors; world power and disaster; Nazism, the Holocaust, and German society. Prereq.: HIST 1512. 3 s.h.

3770. *Asia to 1500*. Political, economic, religious, artistic, and philosophical developments in India, China and along the Silk Road, from ancient times to 1500 C.E. Prereq.: HIST 1511. 3 s.h.

3772. *History of Modern China*. China from the mid-19th century to date, with emphasis on Western impact, industrialization, intellectual trends, the Revolution of 1911, national reconstruction, student movements, the rise of Communism, and the contemporary scene. Prereq.: HIST 2662 or consent of instructor. 3 s.h.

3774. *Global Environmental History: Topics and Methods*. The historical development and diversity of ideas and actions regarding the interaction of human societies and the natural environment. From 1492 to the present, with particular emphasis on the nineteenth and twentieth centuries. Economic growth and resource depletion. Emergence and development of conservation, environmentalism, ecology. Ideas, events, and institutions. Historiography and methods of environmental history. Prereq.: HIST 1511, 1512, 2605 or 2606. 3 s.h.

3775. *Global Industrial Revolution*. Major themes and events in the origins and global diffusion of industrialization from the 18th to the 21st centuries. The Industrial Revolution and associated changes in technology, society, culture, economy, geo-politics, environment, and public health. Prereq.: HIST 1512 or 2605 or 2606. 3 s.h.

3776. *History of Modern Japan*. Japan's history from the Meiji Restoration to date, including the industrialization, the party movement, intellectual development, the rise and fall of militarism, postwar reconstruction, and current problems. Prereq.: HIST 2662 or consent of instructor. 3 s.h.

3778. *Russia to 1855*. History of Russia from its ninth century origins to the eve of the Great Reforms of Tsar Alexander II. Surveys political, social, cultural, and intellectual developments, the Orthodox Church, and Russian expansion and colonization in Siberia and Alaska. Prereq.: HIST 1511 or 1512. 3 s.h.

3779. *Russia 1855 to Present*. The Russian Empire from the Great Reforms of Alexander II to its collapse during WWI, the Revolutions of 1917, the rise and fall of the Soviet Union (1922-1991), and Soviet successor states to the present. Prereq.: HIST 1512. 3 s.h.

3780. *History of Eastern Europe*. The histories of the nations that have made up Central and Eastern Europe from the earliest times to their present, and their contributions to world civilization. Prereq.: HIST 1511 or 1512. 3 s.h.

3782. *History of the Balkans*. Southeastern Europe from the 4<sup>th</sup> century to the present, including the impact of the Byzantine and Ottoman Empires and the two World Wars. Prereq.: HIST 1511 or 1512. 3 s.h.

3783. *Britain and Its Empire 1: 1688-1870*. An integrative history of Britain and its empire, from the Glorious Revolution to Victoria's crowning as Empress of India. Emphasis on how the development of British liberal politics, industrial society and Romantic culture influenced its empire and vice versa. Prereq.: History 1512. 3 s.h.

3784. *Britain and Its Empire 2: 1870-Present*. An integrative history of Britain and its empire, from the opening of the Suez Canal to the present. Emphasis on how Britain's decline as a world political, diplomatic, military and industrial power impacted its world empire during the twentieth century, noting how the empire changed Britain itself in the process. Prereq.: History 1512. 3 s.h.

3785. *The Mediterranean World: Modern Italy, 1815-Present*. Survey of Italian history from the Risorgimento to the present. Emphasis on the reasons for the late emergence of Italian nationhood, the rise of Italian nationalism, unification, the weakness of Italian democracy, the rise of Fascism, and the political instability Italians have experienced since 1945. Prereq.: HIST 1512. 3 s.h.

3787. *History of Women in Europe*. Analysis of the various roles and contributions of women in European history from the Renaissance to the present. Prereq.: HIST 1512. 3 s.h.

3788. *The Holocaust*. Study of the attempted genocide against the Jews in World War II. Special emphasis on racial theories that gave rise to Nazism, politics of collaboration, various forms of resistance, and ethical problems associated with the concentration camps. Prereq.: HIST 1512. 3 s.h.

3789. *Jewish History*. An overview of Jewish history in the past twenty centuries, with emphasis on achievements in the arts, sciences, and politics, and on precedents for the Holocaust. Prereq.: HIST 1511 and 1512. 3 s.h.

3790. *Medieval Britain*. From the Celtic times to 1485. Emphasizes the political and cultural evolution of the British people before and after the Norman Conquest, including the creation of the English identity, the development of constitutional monarchy, the propaganda value of architecture, art, and literature, and the role of the Church. Prereq.: HIST 1511. 3 s.h.

3793. *Tudor-Stuart Britain*. England, Scotland, Wales, and Ireland from the end of the War of the Roses to the ascension of George I to the British throne in 1714. Emphasis on the development of the centralized Tudor state, colonization of the New World and India, the English Civil War and Glorious Revolution, European wars for naval supremacy, and the culture of the Shakespearean age. Prereq.: HIST 1512. 3 s.h.

3794. *The First World War*. An examination of the origins of the war, the social, economic, intellectual and political repercussions, and the technical and military developments. Prereq.: HIST 1512. 3 s.h.

3795. *The World since 1945*. Global developments including the Cold War, decolonization and economic dependency in the non-western world; militarism and terrorism; pollution; and the internationalism of the world. Prereq.: HIST 1512. 3 s.h.

3796. *Genocide and Mass Murder*. The origins, definitions, causes and forms of genocide. Case studies will be drawn from across geographical regions and time periods such as Armenia, the Holocaust, Cambodia, the former Yugoslavia, Rwanda and the Sudan. Prereq.: HIST 1512 or consent of instructor. 3 s.h.

3797. *Middle East 1: The Islamic Centuries*. From Muhammad to the collapse of the Ottoman Empire. Intensive study of the medieval Islamic caliphates, Crusades, Turks, and European imperialism. Prereq.: HIST 1511 or 2661. 3 s.h.

3798. *Middle East 2: The Modern Period*. The 20<sup>th</sup> century. Impact of oil, Arab nationalism, Zionism, Islamic fundamentalism. Prereq.: HIST 1512 or 2661. 3 s.h.

4801. *Select Problems in American History*. Specific problems in American history in such areas as economics, political theory, and cultural and intellectual history. May be repeated with different content. Prereq.: Consent of instructor. 3 s.h.

4808. *Oral Communication Projects in History*. Development of oral communication skills for students of history. Emphasizes the understanding of effective speaking practices, the development of self-analysis, and the presentation of material gathered from a linked course. Concurrent: Enrollment in an upper division history course. 1 s.h.

4809. *Documentation and Interpretation of Historic Sites*. Methods of documenting historic properties especially as related to the National Register of Historic Places. Includes interpretation of historic sites for public exhibit. Prereq.: HIST 3715. 3 s.h.

4811. *Practicum in Historic Preservation*. Experience in historic preservation through student participation in a wide variety of historic preservation projects. Prepares students for internships outside the university. Prereq.: HIST 3715 and permission of Historic Preservation Committee. 3 s.h.

4812. *Historic Preservation Internship*. Practical application of principles and methods in the field of historic preservation with the goal of producing a completed project. Internship to be selected by student in conjunction with program director. May be repeated once. Prereq.: HIST 3715 and approval of internship committee. 3 s.h.

4815. *American Material Culture*. A discussion and analysis of the use and importance of material artifacts as texts for the recovery of the American past. Emphasis on sources not traditionally utilized by historians. Examples include the contextual analysis of children's books, foodways, and sacred spaces. Prereq.: HIST 2605 and 2606, or AMER 2601 and 3701. Cross-listed with AMER 4815. 3 s.h.

4850. *International Area Study*. A course in the geography and history of a selected international area with emphasis on cultural development by traveling in the selected region. The class and travel is supervised by the Geography and/or History faculty. The course grade is based upon a term paper which must be submitted within 60 days after the end of the course. Prereq.: By permit only. 3-9 s.h.

4851. *Select Problems in European History*. Specific problems in European history in such areas as economics, political theory, and cultural and intellectual history. May be repeated with different content. Prereq.: Consent of instructor. 3 s.h.

4860. *Select Problems in Transnational History*. Transnational issues in African, Asian, Latin American, and/or Middle Eastern history in such areas as economic, political, social, cultural and intellectual history. May be repeated with different content. Prereq.: Consent of the instructor. 3 s.h.

4870. *Senior Research Seminar*. A seminar that requires the writing of an extensive paper based mainly on primary material. All history majors must take this course. Prereq.: Senior standing and completion of four upper-division history courses with a grade of C or better. 3 s.h.

5806. *American Architectural History 1*. Development of structural styles and trends within the United States, focusing on formal architectural styles. Prereq.: HIST 2605 and 2606. 3 s.h.

5807. *American Architectural History 2*. Development of vernacular, folk, and industrial architecture in the United States. Focus is on local variants with emphasis on 20th Century specimens. Field trips will view representative building types, especially housing. Prereq.: HIST 5806. 3 s.h.

5810. *Conservation of the Historic Built Environment*. The theory and practice of preserving and rehabilitating all aspects of the historic built environment. Provides broad exposure through field experience. Prereq.: HIST 3715. 3 s.h.

## HONORS PROGRAM— HONR Interdisciplinary University Honors Study

1500. *Intro. To Honors*. Prepares students for the expectations and requirements of the Honors Program. Students develop skills that aid in their overall academic endeavors and explore topics pertinent to their development within the Honors Program and as citizens of the university, local, national and global communities. Prereq.: Admission to the University Honors Program or eligibility for admission to the University Honors Program. 1 s.h.

1599. *Special Topics*. An introductory-level examination of some topic appropriate for honors study. Typically team-designed. In certain cases, students may arrange to have the course counted toward the major by negotiation with the major department. With approval of the director of Honors, may be repeated for credit with different topics. Prereq: Admission to the Honors Program or permission of instructor and director of Honors. 3 s.h.

2601, 2602. *Honor Seminar*. An interdisciplinary seminar series dealing with topics appropriate to students in the Honors Program. The subjects include, but are not limited to, creativity, the organization and function of the university, the total human being, critical thinking, current events, etc. Prereq.: Eligibility for the Honors Program. 1-2 s.h.

2699. *Special Topics*. A close examination of some topic appropriate for lower-division honors study. Typically team-designed. In certain cases, students may arrange to have the course counted toward the major by negotiation with the major department. With approval of the director of Honors, may be repeated for credit with different topics. Prereq: Admission to the Honors Program or permission of instructor and director of Honors. 3 s.h.

3701, 3702. *University Honors Seminar*. A critical investigation of selected areas underlying civilization, embracing and integrating the particular studies of science, society, and the humanities. Prereq.: Eligibility for the Honors Program. 1-2 s.h.

3799. *Special Topics*. A close examination of some topic appropriate for upper-division honors study. Typically team-designed. In certain cases, students may arrange to have the course counted toward the major by negotiation with the major department. With approval of the director of Honors, may be repeated for credit with different topics. Prereq: Admission to the Honors Program or permission of instructor and director of Honors. 3 s.h.

4890. *Senior Honors Thesis*. Directed research for students pursuing senior honors thesis research. Prereq.: Junior status; completion of 18 s.h. of Honors coursework; submission of an approved Honors thesis proposal; and permission of the honors director. May be repeated for up to 3 s.h. 1-3 s.h.

## HOSPITALITY MANAGEMENT—HMGT Department of Human Ecology

1500. *Introduction to Hospitality Industry*. General overview of the hospitality industry with perspectives on the organizational structure, operations, management and various associated issues. 3 s.h.

2603. *Hospitality Managerial Accounting 1*. Using the "Uniform System of Accounting for Small Hotels, Motels, and Motor Hotels," introduces the unique requirements of hospitality industry record keeping. Focus on using financial data to safeguard assets, control costs, budget and plan, and practice yield management. Prereq.: Math 1552 or 2623. 4 s.h.

2622. *Hotel Management*. The role of service departments within a hotel, such as housekeeping, front office, security (or night audits), and concierge. Topics include: fundamental lodging classifications and brands in the lodging industry, recent trends, the relationship between the hotel rooms department and other departments. Prereq: HMGT 1500 or 1501. 3 s.h.

2634. *Hospitality Management Information Systems*. Overview of the management information systems of hotels, restaurants, and other hospitality industries. Prereq.: CSIS 1514 3 s.h.

2691. *Hospitality Cooperative Work Experience*. Work experience in which the student assumes supervisory responsibilities within an assigned food-service or lodging facility. One hour seminar and 20 hours work experience per week. Prereq.: C or better in HMEC 1550 and HMGT 1500; 2.0 g.p.a. 3 s.h.

3719. *Facilities Management*. Maintenance, engineering and security principles for lodging and food service properties. Technical information, preventive maintenance, engineering, housekeeping and security department roles; security techniques used to enhance safety of persons and property, including loss prevention, administration, organization, emergency planning, and liability. Prereq.: HMGT 1500 or 1501. 4 s.h.

3725. *Food and Beverage Management*. Managerial authority and responsibilities in setting goals, forecasting, controlling quality and costs, establishing policy in the successful operation of a food and beverage department. Two hours lecture, two hours lab. Prereq.: FNUT 2612. 3 s.h.

3734. *Front Office Operation*. Advanced study of the front-office management from reservations through checkout including the property management systems, central reservation system, and their impacts on other lodging operations. Prereq.: C or better in HMGT 2622. 3 s.h.

3745. *Hospitality Marketing and Sales*. Basic concepts and practices of modern hospitality marketing, which enable students to develop strategic and operating marketing plans for hospitality industries. Prereq.: C or better in HMGT 1500 or 1501. 4 s.h.

4804. *Hospitality Industry Law and Ethics*. Legal aspects of managing a hotel, resort, or restaurant. Provides an understanding of preventive measures to avoid or successfully deal with litigation. Includes legal research, licensing, innkeepers' obligations. Prereq.: MGT 2604; C or better in HMEC 1550 and HMG 3719. 3 s.h.

4846. *Event Management*. Focus on the career of meeting and convention management, includes adult learning theory, finance, promotion, post-meeting evaluation, facility selection, budgeting, exhibit management, physical facilities, pre-event planning. Prereq.: MKTG 3703 or C or better in HMG 3745. 3 s.h.

4896. *Hospitality Operations Management*. Capstone course requiring a broad application of knowledge and skills. Students solve operational dilemmas and make decisions reflecting the diverse nature of managing a hotel, resort, and food-service property. Prereq.: C or better in HMG 2691 and CHFM 3731. 3 s.h.

## HUMAN ECOLOGY—HMEC Department of Human Ecology

1550. *Human Ecology Professions*. Orientation to the history, philosophy, and human eco-system foundation of family and consumer science careers; standards for professional, ethical practice; decision making and career planning. An introductory course for all Human Ecology Department majors or those considering a human ecology major. Prereq.: Minimum grade of C in ENGL 1539 or 1540 or 1550 or 1550H or 1551 or 1551H or Placement 00 in ENGL 1550 or 1550H or 1551 or 1551H. 1 s.h.

3780. *Consumer Economics*. Managing personal and family economic resources through the critical thinking and rational decision-making processes. Includes discussion of current consumer issues and resources for consumer information. Prereq.: ECON 1501 or 1502 or 1503 or 2610. 3 s.h.

4800. *Teaching in Family and Consumer Sciences*. Methods of organization, instruction, and evaluation for teaching in vocational family and consumer sciences. Prereq.: Minimum grade of C in CHFM 3731. 3 s.h.

4835. *Field Experiences in Human Ecology*. Internship in a community agency or commercial enterprise related to human ecology. Four hours experience or two hours of seminar weekly equal one credit hour. May be repeated up to 6 s.h.. Prereq.: twelve s.h. of Human Ecology credit and junior standing. Student must file application one semester prior to registering. 3 s.h.

4836. *Internship*. Integration of theory and practice through supervised field-based experiences in a professional setting. May be taken over consecutive semesters with PR grading for first semester; 75 hours of field work per credit hour. May be repeated

up to 12 s.h. Prereq.: Junior standing, HMEC 1550, 2.0 overall GPA., 2.5 GPA. in major, and 18 s.h. in required major courses. 1-9 s.h.

4852. *Family Resource Management*. A systems view of family functioning with the emphasis on managerial decision making and effective use of resources. Prereq.: CHFM 3731 or PSYC 3707 or SOC 3705. 3 s.h.

4853. *Family Financial Education*. Financial management principles and application in the context of family type and stage of the life cycle; financial literacy education curricula, resources, and teaching strategies. Prereq.: Minimum grade of C in HMEC 3780 and HMEC 4852. 3 s.h.

4875. *Directed Individual Study*. Individual study or research of a special problem or issue related to human ecology. Application must be made with the department prior to registration. Prereq.: 12 s.h. human ecology credit and senior standing. 1-3 s.h.

4876. *Undergraduate Research*. Individual research that addresses a significant family or consumer issue; research methods, literature review, and proposal development. Prereq.: CHFM 3731 and PSYC 2617 or FNUT 4802. 2 s.h.

4877. *Research Capstone*. Individual research that addresses a significant family or consumer issue; collection and analysis of data; dissemination of results through written and oral reports. Prereq.: HMEC 4876. 2 s.h.

4890. *Communication of Contemporary Issues*. This course enables students to understand the inter-relationships of the specializations in the field of family and consumer sciences while exploring public policy issues that impact the family and the profession. Students will develop skills in the application of demonstration, audiovisual, and public relations tools and techniques in communicating human ecology information to target groups from preschool to adult. Two hours of lecture and 2 hours of lab per week. Prereq.: Minimum grade of C in CMST 1545 and Minimum grade of C in HMEC 1550; Prereq or Coreq: CHFM 3731. 3 s.h.

5870. *Human Ecology Workshop*. Special workshops in a professional area of human ecology as needed. Prereq.: junior standing. 1-3 s.h.

5892. *Community Programming in Human Ecology*. Development of human ecology programs for special populations including adults, aging, disadvantaged, displaced homemakers, teenage parents, handicapped, and others with special needs. Prereq.: CHFM 3731. 3 s.h.

5893. *Work and Family*. Interaction of work and family systems; implications for education, business, and human services; development of programs to assist individuals in balancing multiple roles. Prereq.: CHFM 3731, SOC 3705, or PSYC 3707. 3 s.h.

5895. *International Studies in Human Ecology*. Professional areas of human ecology and their relationship to native cultures are the focus of travel to designated countries. Class sessions and travel as well as pre-tour and post-tour assignments and evaluation based on course objectives supervised by human ecology faculty. Prereq.: CHFM 3731, junior standing, permission of instructor and H. E. department chairperson. 1-4 s.h.

## HUMAN PERFORMANCE AND EXERCISE SCIENCE— HPES

### Department of Human Performance and Exercise Science

1500. *Physical Activity Core Concepts*. Essential concepts that document the relationship between physical activity and maintaining optimal health. Personal and social implications of physical inactivity are also explored. Two HPES activity courses must be taken in addition to this course to satisfy the requirements for GER credit. 1 s.h.

#### Activity Classes

Taking HPES 1500 and any two of the following activity courses—HPES 1502, 1507, 1510, 1511, 1512, 1513, 1514, 1515, 1519, 1520, 1521, 1522, 1523, 1524, 1526, 1528, 1529, 1530, 1531, 1537, 1544, 1545, 1548, 1554, 1555, 1556, 1557, 1564, 1565, 1566, 1588, 2697

—counts as 3 s.h. for the PS Domain of the GER:

The three courses do not need to be taken concurrently.

1502. *Volleyball 1*. Basic rules and fundamental skills of volleyball including serves, bump, overhead pass, and block. 1 s.h.

1507. *Volleyball 2*. Intermediate-to-advanced volleyball skills including diving, rolling, and various team offensive and defensive strategies. Prereq.: HPES 1502. 1 s.h.

1510. *Archery*. Techniques of target archery. Selection, care, and repair of equipment. 1 s.h.

1511. *Badminton*. Skills, mechanics, and rules of badminton. 1 s.h.

1512. *Bowling 1*. Fundamentals of bowling the straight ball. Equipment selection, correction of errors, and scoring. For beginning bowlers. 1 s.h.

1513. *Bowling 2*. Intermediate bowling. Refinement of bowling skills and use of the hook delivery. Tournament planning, team strategy, and competition. Prereq.: HPES 1512. 1 s.h.

1514. *Fencing 1*. Fundamentals of foil fencing. Methods of attack and parry, and elementary bouting and judging. 1 s.h.

1515. *Fencing 2*. Intermediate strategies and techniques of foil fencing and bouting. Prereq.: HPES 1514. 1 s.h.

1519. *Racquetball*. Racquetball rules and techniques for singles and doubles play. Basic strategy and skill development. 1 s.h.

1520. *Golf 1*. Fundamental skills of golf. Includes grip, stance, swing patterns, and putting as well as rules of course play. 1 s.h.

1521. *Golf 2*. Intermediate golf. Refinement of swing patterns, methods of instruction, correction of errors. Emphasis on the use of various clubs and types of shots. Prereq.: HPES 1520. 1 s.h.

1522. *Tennis 1*. Fundamental skills of tennis including forehand and backhand drives and service. Basic rules, strategy, and method. 1 s.h.

1523. *Tennis 2*. Theory and practice of intermediate-to-advanced tennis skills and play. Prereq.: HPES 1522. 1 s.h.

1524. *Physical Fitness and Exercise Programs*. Discussion and participation in activities designed to develop and improve the health-related aspects of physical fitness including weight and stress control. 1 s.h.

1526. *Marksmanship*. The safety and practice of handling firearms. Target shooting in prone, kneeling and standing positions. 1 s.h.

1528. *Advanced Physical Fitness and Exercise Programs*. Discussion of and participation in strenuous activities designed to develop and improve the health- and performance-related aspects of physical fitness. 1 s.h.

1529. *Recreational Games*. Fundamentals, skills, techniques, strategy, and rules of racquetball, paddle tennis, table tennis, shuffleboard, and other recreational games. 1 s.h.

1530. *Aquatics 1*. Introduction to swimming and survival skills, floating, drownproofing, basic swim strokes (side, elementary back and front crawl), beginning diving, and simple aquatic games. This course is designed for the student who cannot swim; it is not open to swimmers. 1 s.h.

1531. *Aquatics 2*. Intermediate swimming. Introduction to back crawl, breaststroke and butterfly. Techniques in underwater swimming; use of mask, snorkel and fins. Elementary lifesaving skills and refinement of basic springboard diving. Prereq.: HPES 1530. 1 s.h.

1534. *Fitness Swimming*. Utilization of freestyle swimming stroke to improve/maintain fitness across the lifespan. Content includes stroke mechanics, turning technique, and swim training program design to meet individual fitness and health goals. Prereq.: Ability to swim for 250 yards. 1 s.h.

1537. *Aquatic Exercise*. Fitness through aquatic conditioning exercises tailored to the individual needs of the student. Open to swimmers and non-swimmers. 1 s.h.

1544. *Step Aerobics*. Rhythmic exercise and conditioning activities performed to music, utilizing a step platform as the foundation of the workout.

Designed to improve cardio-respiratory endurance and flexibility. Emphasis on understanding the five basic components of fitness and basic principles and techniques involved in step training. 1 s.h.

1545. *Folk and Square Dance*. European and Mediterranean folk dances, American Square dances, and mixers. Beginning materials and practice. 1 s.h.

1548. *Aerobic Dance*. Rhythmic exercises and conditioning activities performed to music. Designed to improve cardiovascular fitness, flexibility, and general muscle tone. 1 s.h.

1549. *Varsity Competition*. Credit may be obtained through competition in varsity athletic programs. Prereq.: Consent of coach. 1 s.h.

1550. *Pilates*. Instruction in principles of body alignment and posture and participation as it pertains to fundamental Pilates techniques. 1 s.h.

1552. *Yoga*. Instruction in principles of meditation, body alignment and posture, and participation as it pertains to fundamental yoga techniques. 1 s.h.

1554. *Fitness Walking*. Information on the benefits of walking for fitness. Health advantages, appropriate conditioning, pace, warm-up and cool-down. Practical experience in the skills needed to achieve success in developing and adhering to a walking program. 1 s.h.

1555. *Jogging*. Holistic approach to the theory and practice of jogging with emphasis on the physiological benefits. 1 s.h.

1556. *Racquetball 2*. Advanced racquetball techniques, strategy, conditioning, and mental preparation for singles, doubles, and tournament play. Emphasis on the use of various advanced shots, positioning, and officiating. Prereq.: HPES 1519. 1 s.h.

1557. *Weight Training*. Introduction to progressive resistive exercise for men and women. Topics include strength training, types of equipment, exercise techniques, circuit training, competitive weightlifting, body building, and injury prevention. 1 s.h.

1558. *Physical Fitness for Life*. Participation in exercise and physical activities, and identification of resources and assessment instruments utilized in developing an individualized, well-rounded, effective, lifelong physical fitness program. One hour lecture, two hours lab. 2 s.h.

1559. *Aerobic Conditioning Activities*. Analyses and practices in activities designed to develop and improve cardiovascular endurance. Such activities include, but are not limited to, aquatics, fitness walking and jogging. One hour lecture, two hours lab. Prereq.: Exercise science major, or Physical education major. 2 s.h.

1560. *Resistance Training*. Concepts and applications of progressive resistance exercise. Emphasis on advanced principles and techniques for developing muscular strength and endurance for fitness and athletic performance. Two hours lab. Prereq.: Exercise science major or Physical education major. 1 s.h.

1563. *Rock Climbing*. Instruction and participation in fundamental rock climbing techniques that include safely constructing anchor systems, employing belay methods, equipment selection, and beginning climbing skills. A weekend, off-campus field-experience is required. 1 s.h.

1564. *Bicycling*. Instruction and practice in bicycling skills, techniques, and procedures necessary for intermediate or long trips. Students must provide their own three-, five-, or ten-speed bicycle. 1 s.h.

1565. *Self-Defense*. The defensive techniques of Judo and Aikido designed to counter attacks with a knife, club, gun or bare fist. Balance, control, safety, falling. 1 s.h.

1566. *Judo*. Introduction to the history, philosophy and techniques of Judo. Fundamental techniques include falls, hand and leg throws, grappling, various holds and joint locks. 1 s.h.

1568. *Taekwondo/Karate*. An introduction to the history, philosophy and techniques of taekwondo/karate. Fundamental techniques include: stances, kicks, punches, and forms. 1 s.h.

1575 *Performance and Analysis of Net/Wall Games*. Analysis and practice in performing and teaching tennis, racquetball, badminton, volleyball and other net/wall games. One hour lecture, two hours lab. 2 s.h.

1588. *Selected Activities in Human Performance and Exercise Science*. Knowledge of and practice in a particular area of dance, fitness, or sport. Activity is announced each time the course is offered. May be repeated up to 4 s.h. with change in topic. 1-2 s.h.

2630. *Lifeguard Training*. Water rescue, preventive lifeguarding techniques, emergency procedures. Red Cross certificate granted upon satisfactory completion of all requirements. 2 s.h.

2631. *Water Safety Methods for Instructors*. Techniques for teaching and supervising swimming, emergency water safety, and basic water safety. Introduction to infant and preschool aquatic programs. A water safety instructor's certificate granted upon satisfactory completion of all requirements. Prereq.: Current lifeguard training certificate or emergency water safety certificate. 2 s.h.

2632. *Skin and Scuba Diving*. Basic skin-diving with the use of mask, fins, and snorkel. Scuba diving skills with the use of tank and regulator. Emphasis on diving physics, physiology, lifesaving, first aid, and safety skills related to skin and scuba diving. Two hours lecture, two hours lab. Student must furnish mask, fins, and snorkel. 2 s.h.

2635. *Openwater Scuba Diving*. Practical experiences in physiological and psychological stress, underwater navigation, effects of hypothermia, decompression, repetitive diving, and rescue techniques. Students completing this course receive basic scuba certification. Five hours lecture, ten hours lab per semester. Prereq.: HPES 2632. 1 s.h.



2637. *Skin, Scuba and Openwater Diving*. Basic scuba and skin-diving skills with use of tank and regulator. Practical experiences in physiological and psychological stress, effects of hypothermia, decompression, and rescue techniques related to repetitive diving. Students completing course receive basic openwater certification. Students must furnish mask, fins, and snorkel. Two days openwater field experience. Two hours lecture, two hours lab. 3 s.h.

2697. *Camping*. The specific skills and problems encountered in camping: shelter, clothing, food, transportation, and site selection. Two hours lab. 1 s.h.

#### Lecture-Laboratory Classes for Majors or Minors only

1506. *Performance and Analysis of Track and Field*. Skills, techniques, and rules of track and field events. Includes progressions, organizational strategies, and field day administration for teachers. Two hours lab. Prereq.: Physical education major. 1 s.h.

1567. *Performance and Analysis of Invasion Games*. Analysis and practice in performing and strategies for teaching invasion games including soccer, team handball, basketball, and variations of hockey and football. Information such as rules, terminology, etiquette, strategies, progressions, lead-up games, officiating, and assessment. One hour lecture, two hours lab. Prereq.: Physical education major. 2 s.h.

1573L. *Tactical Approach to Teaching Team Sports*. Analysis and practice in performance and strategy development, for teaching team sports using a concept-based model. Two hours lab per week. Prereq.: Physical education major. 1 s.h.

1574. *Performance and Analysis of Lifetime Sports*. Analysis and practice in performing and teaching golf, bowling and other lifetime sports. Two hours lab. Prereq.: Physical education major. 1 s.h.

1575. *Performance and Analysis of Net/Wall Games*. Analysis and practice in performing and teaching tennis, racquetball, badminton, volleyball and other net/wall games. One hour lecture, two hours lab. Prereq.: Physical education major. 2 s.h.

1577. *Performance and Analysis of Aquatic Activities*. Analysis and practice in performing and teaching swimming, diving, water safety skills, and aquatic exercise. Two hours lab. Prereq.: Physical education major. 1 s.h.

1579. *Rhythmic Movement for Children*. Content and teaching strategies related to rhythmic movement for children grades PreK-4. Rhythmic movement skills and concepts explored to provide successful dance experiences for children. One hour lecture, one hour lab. Prereq.: Physical education major. 1 s.h.

1589. *Scientific Basis of Fitness*. Introduction to components of physical fitness and their physiological basis. Role of exercise in prevention of cardiovascular and other hypokinetic diseases. Participation and

application of training principles in a variety of fitness activities. Selection and proper use of exercise equipment. One hour lecture, two hours lab. Prereq.: Physical education major. 2 s.h.

1595. *Introduction and Concepts of Physical Education and Exercise Science*. Introduction to physical education, exercise science and related professions. Includes exploration of the general concepts, goals, aims, objectives, professional organizations, scholarly literature, sub-disciplines within the field, and career employment opportunities. 2 s.h.

2605. *Sports First Aid and Injury Prevention*. Basic injury prevention, evaluation, and emergency care. Certification in ARC Standard First Aid and Adult CPR. Basic wrapping and strapping techniques used with common sports injuries. Two hours lecture, two hours lab. Prereq.: Exercise science major, or Physical education major. 3 s.h.

2610. *Introduction to Outdoor Pursuits*. Philosophy and content of outdoor education including participation in activities such as canoeing, backpacking, orienteering, and initiative activities. Emphasis on risk management as it pertains to land and water-based outdoor pursuits. Two hours lab. Prereq.: physical education major. 1 s.h.

2615. *Methods of Teaching Rhythmic Aerobic Activity*. Rhythm and movement fundamentals related to aerobic dance and step aerobics. Methods and materials of teaching rhythmic aerobic activity culminating in practical teaching experience in the classroom. One hour lecture, two hours lab. Prereq.: HPES 1589. 2 s.h.

2618. *Physical Education Practicum*. A supervised experience in a minimum of 14 physical activity sub-disciplines (e.g., sports management, sporting goods industry, not-for-profit organizations, physical activity administration, physical activity skill instruction, etc.) under the direction of a qualified individual. Prereq.: Physical education major and HPES 1595. 2 s.h.

2620. *Exercise Equipment Management*. Factors to consider when purchasing new or used exercise equipment, equipment repair and preventive maintenance procedures, and equipment-related risk management. Prereq.: Permission of instructor. 1 s.h.

2624. *Physical Education for Children in Early Childhood Settings*. Principles, methods, materials, and organization of activities for preschool-grade 3 children. Active participation, approximately 15-20 hours field work in area preschools/schools. Prereq.: 30 s.h. 3 s.h.

2625. *Pedagogical Aspects of Exercise Science*. Effective instructional practices and development of organizational skills and characteristics required for teaching in exercise programs. Two hours lecture, two hours lab. Prereq.: HPES 1559 and 1595. 3 s.h.

2628. *Movement for Early Childhood*. Laban's movement approach to teaching fundamental movement patterns, educational dance, gymnastics, games, and creative activities for grades PreK-3. Two hours lecture, two hours lab. Prereq.: Physical education major. 3 s.h.

2661. *Games Analysis*. Selection, analysis, adaptation, and creation of games for varying developmental levels and environmental situations in grades 3-12. Large and small group, coeducational, fielding/running, self-challenging, and multicultural activities. Two hours lecture, two hours lab. Prereq.: 4 s.h. from among HPES 1506, 1559, 1560, 1567, 1574, 1575 and 1577. 3 s.h.

2670. *Introduction to Biomechanics*. Knowledge and methods of mechanics as they apply to the structure and function of the living human system. Includes the physical characteristics of the human body and principles of mechanical physics. Prereq.: BIOL 1552 or 1545. 2 s.h.

2671. *Principles and Analysis of Motor Development*. Application of a lifespan motor development approach to critically analyzing movement patterns. Motor patterns, applications to teaching. Two hours lecture, two hours lab. Prereq.: HPES 1595 and 4 s.h. from among HPES 1506, 1567, 1574, 1575 and 2610. 3 s.h.

2672. *Biomechanics*. Knowledge and methods of mechanics as they apply to the structure and function of the living human system. Muscular structure and function in relation to physical movement, analysis of fundamental movements. Includes the physical characteristics of the human body and principles of mechanical physics. Two hours lecture. Two hours lab. Prereq.: BIOL 1552/L or 1545/L. 3 s.h.

2699. *Sport in American Culture*. Sport in American culture from the colonial period to the present as it relates to such areas as education, literature, film and drama, minorities, politics, professional sport, religion and urbanization. 3 s.h.

3700. *Exercise Testing and Prescription 1*. Introductory exercise leadership skills including exercise testing and prescription, and design of safe and effective programs. Includes a minimum of 30 hours of field experience in exercise testing, leadership, observation, and career exploration. Content based on American College of Sports Medicine objectives. Prereq.: HPES 2625. 4 s.h.

3702. *Health Education Theory and Methods*. Overview of health education theory, history, ethics, and methods for the community, school, workplace and health care setting. Provides a foundation in teaching methods. Prereq.: PHLT 1568. Also listed as PHLT 3702. 3 s.h.

3705. *Statistics and Research Design in Exercise Science*. Scientific methods in exercise science including research design and statistical analyses. Experience with statistical software and understanding published research. Two hours lecture, two hours lab.

Prereq.: HPES 1559, 1595, and MATH 1507. Minimal Math Placement level 30 can replace MATH 1507. 3 s.h.

3710. *Physiology of Exercise*. Acute responses and chronic adaptations of the body to physiological demands of physical activity. Topics related to the optimization of performance in sport and exercise include neuromuscular and cardiorespiratory function, energy production and utilization, and environmental influences. Concurrent with HPES 3710L. Prereq.: CHEM 1515, and BIOL 1552 or BIOL 3730; or consent of instructor. 4 s.h.

3710L. *Physiology of Exercise Laboratory*. Experiments and basic laboratory procedures in the field of exercise physiology. Concurrent with HPES 3710. 1 s.h.

3715. *Health Education for Grade PreK-6*. Comprehensive School Health Education curricula, methods and materials for teaching pre-kindergarten through sixth grade students. Prereq.: PHLT 1568, 3702 and BIOL 1545 or AHLT 1500 and 1501. Also listed as PHLT 3715. 3 s.h.

3716. *Health Education for Grades 7-12*. Comprehensive School Health Education curricula, methods and materials for teaching seventh through twelfth grade students. Prereq.: PHLT 1568, PHLT 3702 or HLT 3702, and BIOL 1545 or AHLT 1500 and 1501. 3 s.h.

3720. *Kinesiology and Applied Anatomy*. Muscular structure and function in relation to physical movement; analysis of fundamental movements. Prereq.: PHYS 1501. 3 s.h.

3720L. *Kinesiology and Applied Anatomy Laboratory*. Analysis and basic laboratory procedures in relation to physical movement and biomechanics. Two hours lab. Prereq.: PHYS 1501. Concurrent with HPES 3720. 1 s.h.

3722. *Physical Education in Elementary Grades for Classroom Teachers*. Principles, methods, materials, and organization of activities for elementary school children. Active participation required, including approximately 15 hours of field work in area schools. Prereq.: HPES 2622. 2 s.h.

3730. *Exercise Testing and Prescription 2*. Intermediate exercise testing, exercise prescription based on metabolic calculations and program development for special populations. Supervised field experience in exercise leadership involving 5-8 hours per week. Content based on American College of Sports Medicine objectives. Prereq.: HPES 3700 AND 3710. 4 s.h.

3750. *Principles of Coaching*. The scientific, psychological, and management aspects of coaching. Includes ethics and management responsibilities, personnel management, community relations, conditioning, and other related topics. Prereq.: Junior standing. 2 s.h.

3760. *Strength Training and Conditioning*. Scientific principles, concepts, and adaptations to resistance exercise. Practical application of lifting and spotting technique, testing procedures, program design, and organization and administration of the strength and conditioning facility. Two hours lecture, two hours lab. Prereq.: HPES 1560 and 3710. 3 s.h.

3765. *Athletic Training 1*. Practical and theoretical aspects of the prevention of athletic injuries. Includes supplies, wrapping and strapping, protective equipment. Emphasizes prevention, evaluation, and emergency care. One hour lecture, two hours lab. Prereq.: BIOL 1552 or 1545, HPES 1589 and 2605, and involvement as a student athletic trainer. 2 s.h.

3766 *Principles and Analysis of Motor Development*. Application of a lifespan motor development approach to critically analyzing movement patterns. Emphasis on motor development beyond biomechanical aspects of movement, and on teaching applications. Two hours lecture, two hours lab. Prereq.: HPES 2672/L. 3 s.h.

3767/L. *Pedagogy in P-12 Physical Education*. Effective teaching practices and development of skills including classroom management, lesson planning, and selection of appropriate methods of instruction. Liability issues. Clinical experiences (observation and peer teaching). Three hours lecture, two hours lab. Prereq.: 20 s.h. in major and HPES 2661, and 3766. 4 s.h.+0 s.h.

3780. *Methods of Teaching Dance*. Rhythm and movement fundamentals and forms: folk, square, social and aerobic. Methods and materials of teaching dance culminating in clinical or field experiences. One hour lecture, two hours lab. Prereq.: HPES 3767. 2 s.h.

4803. *Issues and Trends in Exercise Science*. Current issues and trends and their impact on exercise science and the general public as they relate to the American College of Sports Medicine's behavioral objectives for various professional certificates. Prereq.: 64 s.h. or permission of instructor. 1 s.h.

4805. *Administration of Exercise Programs*. Provides an overview of legal, management, and marketing skills necessary to implement exercise related wellness programs. Requires development of business plan including facility design and equipment selection. Prereq.: HPES 3700. 4 s.h.

4808. *Assessment Instruments and Strategies in Health and Physical Education*. Theory, purposes, procedures, uses, and limitations of standards-based assessment for teaching P-12 health and physical education including cognitive, motor, and affective domains. Practical experience in designing and implementing performance based assessment. Two hours lecture, two hours lab. Prereq.: Physical Ed or Health Ed major and 72 s.h. 3 s.h.

4810. *Exercise Testing and Prescription 3*. Clinical exercise tests (electrocardiography, pulmonary function, submaximal/maximal cardiorespiratory tests)

and exercise prescription (cardiovascular, pulmonary, diabetes, stress, cancer, PVD and hypertension). Supervised experience in clinical exercise facilities nine hours during the semester. Content based on American College of Sports Medicine objectives. Prereq.: HPES 3705 and 3730. 5 s.h.

4850. *Exercise Testing and Prescription for the Health Professions*. Introduction to exercise testing and prescription for healthy adults as well as clinical (cardiovascular, pulmonary, diabetes, obesity, osteoporosis, arthritis) and other special (pregnancy, children, elderly) populations. For Health Professions majors. Not applicable to the major in Exercise Science. Two hours lecture, two hours lab. Prereq.: Senior standing or permission of instructor. 3 s.h.

4851. *Cultural Aspects of Physical Education and Sport*. Survey of major historical, psychosocial developments, and philosophical issues in physical education and sport from ancient times to the present. Prereq.: 20 s.h. in physical education major. 3 s.h.

4852. *Psychosocial Aspects of Physical Education and Sport*. Survey of major psychosocial principles, developments and concerns as they relate to the participant in physical activity and sport. Prereq.: 20 s.h. in major. 2 s.h.

4855. *Organization and Administration of Human Performance and Exercise Programs*. Organizational patterns and administrative methods in activities, including instructional programs, intramurals and recreation. Prereq.: 20 s.h. in major. 3 s.h.

4865. *Athletic Training 2*. Advanced techniques of athletic training with emphasis on evaluation, treatment and rehabilitation of athletic injuries. Topics include application of therapeutic modalities, reconditioning programs, and the role of the athletic trainer in sports medicine. One hour lecture, two hours lab. Prereq.: HPES 3765. 2 s.h.

4870. *Exercise and Aging for Health Professions*. For majors in Gerontology/Health Professions who work with older adults in exercise/physical activity programs. Emphasis on physical aspects/limitations of aging, exercise testing, prescription, and programs for the elderly. Not applicable to the major in Exercise Science. Prereq.: Senior standing or permission of instructor. 3 s.h.

4876. *Teaching of Elementary Physical Education*. Curriculum principles, methods and materials for teaching elementary physical education. Includes development of a portfolio and field work in area schools. Two hours lecture, two hours lab. Prereq.: HPES 3767 and UDS COE. 3 s.h.

4878. *Teaching of Middle/Secondary Physical Education*. Curriculum, principles, methods and materials for teaching secondary physical education. Includes the development of a reflective teaching journal and portfolio, and field work in area schools. Two hours lecture, two hours lab. Prereq.: HPES 3767. 3 s.h.

4880. *Internship*. A culminating experience in an approved fitness or sports-related setting under the direct supervision of a qualified individual and coordinated by a supervising faculty member. Requires 400 hours to obtain 8 s.h. Prereq.: Completion of Exercise Science core requirements through HPES 4820. 8-12 s.h.

4884. *Physical Education Internship*. A culminating experience in an approved sport or fitness-related facility or place of business under the direct supervision of a site and university supervisor. Capstone course. Requires 600 contact hours to obtain 12 s.h. Prereq.: Completion of all HPES major core courses. 12 s.h.

4885. *Selected Topics in Human Performance and Exercise Science*. In-depth study of special subject matter within the field of physical education. Topic announced each time course is offered. May be repeated for a maximum of 6 s.h. with change in topic. Prereq.: 72 s.h. or consent of instructor. 1-3 s.h.

4890. *Undergraduate Research*. Research participation under the direction and guidance of a full-time faculty member. Provides the advanced student with research experience in HPES. May be repeated to a maximum of six s.h. Junior standing or permission of instructor. 1-3 s.h.

4895. *Adapted Physical Education*. The organization of physical education activities selected to meet the individual needs of exceptional students. Students will create and teach appropriate lessons in a school setting. Approximately 20 hours of field work. Prereq.: HPES 3766. 3 s.h.

4898. *Seminar: Human Performance and Exercise Science*. Special and current problems in HPES. Prereq.: 72 s.h. 1 s.h.

4899. *Physiology of Exercise for Physical Education*. Acute responses and chronic adaptations of the body to the physiological demands of physical activity. Prime focus is application to the teaching of physical education. Prereq.: HPES 3766/L. 2 s.h.

4899L. *Physiology of Exercise for Physical Education Laboratory*. Experiments and basic laboratory procedures in the field of exercise physiology. Concurrent with HPES 4899. 1 s.h.

## INDUSTRIAL AND SYSTEMS ENGINEERING — ISEN

### Department of Mechanical and Industrial Engineering

1560. *Principles of Systems Design*. An introduction to creative thought processes and analytical tools that are used to develop human usable systems. Cognitive theory provides a foundation for analyzing human/machine interactions within systems. Cases are used to elucidate accident causation theory and exercise the application of risk reduction strategies. Prereq.: ENGR 1550. 2 s.h.

3710. *Engineering Statistics*. Applications of data collection and analysis techniques to engineering problems. Techniques for data structuring, data modeling, parameter estimation, and design of experiments utilizing engineering data. Prereq.: MATH 1571. 3 s.h.

3716. *Systems Analysis and Design*. Analysis and design of systems. Decomposition of large systems into subsystems. Analysis, modeling, and design of subsystems. Integration of subsystems. Visual BASIC programming as a modeling tool. Prereq.: MATH 1571. 3 s.h.

3720. *Statistical Quality Control*. Concepts of data-based quality control techniques. Intermediate design of experiments as an off-line quality control technique using ANOVA techniques. Process control chart construction and applications as on-line quality control techniques. Basics of acceptance sampling systems and standards. Prereq.: ISEN 3710 or equivalent. 3 s.h.

3723. *Manufacturing Processes*. Introduction to properties and uses of engineering materials. Introduction to mechanical testing methods, metrology, tolerances, testing and inspection; semi-finished product manufacturing; macro-processing (forming, casting, powder metallurgy, metal working, composite fabrication); joining; nontraditional manufacturing processes; and surface processing. Prereq.: Math 1572. 3 s.h.

3724. *Engineering Economy*. The analysis and evaluation of factors that affect the economic success of engineering projects. Topics include interest, depreciation, cost classification, comparison of alternatives, make-buy decisions, replacement models and after-tax analysis. Prereq.: MATH 1571. 3 s.h.

3727. *Simulation of Industrial Engineering Systems*. Techniques for the digital simulation of industrial engineering systems which can be represented via discrete event models. The generation of random variables, shaping of probability distributions, model structuring, model verification, and the simulation of inventory, queuing, and quality control systems in a high-level structured programming language. A special-purpose simulation language for expanding the class of problems which can be economically modeled. Prereq.: ISEN 3710, 3716. 3 s.h.

3736. *Methods Engineering*. Techniques for analysis of task performance, the use of process charts, and various methods of work simplification, human-machine relation analysis. Theory and practice of time study and other methods of measuring and establishing performance level and productivity. Prereq.: ISEN 3710 or equivalent. 2 s.h.

3736L. *Methods Engineering Laboratory*. Practice in analyzing and recording tasks. Determination of time standards and productivity requirements. Analysis and evaluation of actual plant operations. Taken concurrently with ISEN 3736. Three hours laboratory per week. 1 s.h.

3745. *Accounting for Engineers*. Review of labor and material costing systems. Introduction to cost accounting systems. Practice in development of forecasting and estimating systems. Process, operation and product costing systems. Elements of financial accounting systems that affect engineering decisions. Prereq.: ISEN 3724 or equivalent. 3 s.h.

4810. *Special Topics*. Special topics and new developments in Industrial Engineering. Subject matter, credit hours, and special prerequisites to be announced in advance of each offering. Prereq.: senior standing in Industrial Engineering or consent of instructor. 3 s.h.

4811L. *Manufacturing Practices 1 Laboratory*. Experimental analysis of manufacturing processes. Process control and data acquisition. Experimental design applied to processes including polymer processes, casting, machining, and joining. Three hours laboratory. Prereq. or concurrent with ISEN 3723. 1 s.h.

4821. *Capstone Design 1: Manufacturing and Service Systems*. The application of engineering techniques to the analysis, design, layout, and justification of manufacturing and service facilities. Subjects covered include, equipment selection, process flow, and material flow. The system design involves field investigation, acquisition and analysis of data, use of computer-aided facilities planning and design software, preparation of drawings, and writing a final report. Grading is Traditional/PR. Prereq.: ISEN 3723, ISEN 3736, ISEN 5801, and 96 s.h. of engineering degree credits. 3 s.h.

4822. *Capstone Design 2: Logistics Systems*. Analysis, planning and design of material handling, storage/warehouse and logistics systems. The fundamental analytic tools, approaches, and techniques which are useful in the planning, design, layout, and operation of logistics systems and integrated supply chains. Development and use of fundamental models to illustrate the underlying concepts involved in both intra- and inter-company logistics operations. Prereq.: ISEN 4821. 3 s.h.

5801. *Operations Research 1*. Formulation and solution of engineering problems using linear programming. Model formulation, the primal, dual, and transportation simplex methods, duality theory, and sensitivity analysis. Prereq.: MATH 2673. 3 s.h.

5811L. *Manufacturing Practices I Laboratory*. Experimental analysis of manufacturing processes. Process control and data acquisition. Experimental design applied to processes including polymer processes, casting, machining, and joining. Three hours laboratory. Prereq. or concurrent with ISEN 3723. 1 s.h.

5812L. *Manufacturing Practices 2 Laboratory*. Experimental analysis of advanced manufacturing techniques. Advanced sensing and controlling technologies. Real-time monitoring, metrology, and data

acquisition. Numerically controlled (NC) machines and programming. Net-shape and additive manufacturing. Prereq. or concurrent with ISEN 5823. 1 s.h.

5820. *Advanced Quality for Engineers*. Applications and practices of quality control in industry. Engineering and administrative aspects of quality control programs, process control, and acceptance sampling. Application of quantitative methods to the design and evaluation of engineered products, processes, and systems. Prereq.: ISEN 3720. 3 s.h.

5823. *Automation*. Principles and applications of sensing, actuation and control. Emphasis on hydraulic and pneumatic systems. Industrial process controllers, sensors and machine vision. Design and cost considerations for industrial automation applications. Prereq.: MECH 2641, ECEN 2614 or consent of instructor. 3 s.h.

5825. *Advanced Engineering Economy*. An extension of the topics in engineering economy. Analysis of rationale and norm of decision making, risk and uncertainty models, utility theory, measurement of productivity, and advanced project comparison methods. Prereq.: ISEN 3724. 3 s.h.

5830. *Human Factors Engineering*. Various aspects of human factors in the design of human-machine systems and environments. Study of human sensory, perceptual, mental, psychomotor, and other characteristics; techniques of measuring human capabilities, limitations, safety, comfort, and productivity. Prereq.: MATH 2673. 3 s.h.

5850. *Operations Research 2*. Formulation and solution of industrial engineering problems using operational research models. Topics include queuing models and the specialization of linear models to equipment replacement, project planning, assignment, and transshipment problems. Prereq.: ISEN 5801. 3 s.h.

5880. *Management of Technology*. Addresses two important aspects of technology management. The general aspects of forecasting, planning for adoption, and the effective use of technology in a production/service environment. The technical aspects of the projects as related to the design, production, and support of the products and systems. Prereq.: Senior standing or consent of instructor. 3 s.h.

5881. *Competitive Manufacturing Management*. Basic principles of manufacturing competitiveness. The role of engineers in promoting competitiveness. Discussion of new technologies used in modern manufacturing management including, continuous improvement, waste elimination, JIT, lean production systems, setup time reduction, equipment maintenance/improvement, total quality management, and supply chain management. Prereq.: ISEN 3723 or consent of instructor. 3 s.h.

## INFORMATION TECHNOLOGY—INFO

### Department of Computer Science and Information Systems

#### Lower-Division Courses

1575. *Document Preparation*. Preparation of documents using information processing and standard and advanced electronic productivity tools such as templates, tables, columns, forms macros, graphics, and merging. Integration of documents with other software. Creating and maintaining hypertext documents. Prereq.: Knowledge of word processing or ENGL 1550. 4 s.h.

2600. *Concepts of Information Technologies*. The foundation and general principles behind information technology, including data representation, encoding systems, encryption methods, database fundamentals, logic for programming, basic data analysis, and graph applications in networking. 3 s.h.

2663. *Information Technology Management*. Principles and practices of effective information systems management. Includes organization environment, leadership issues, information system types, strategic role of information technology, planning issues, managing and supporting essential technologies, system development and computing, and successful integration of people and technology. Prereq.: CSIS 1590 or IT 2600. 3 s.h.

2672. *Desktop Publishing 1*. Document creation using desktop publishing software on a microcomputer. Application must be mastered on a software package used by industry. Lab time required. Prereq.: CSIS 1590. 3 s.h.

2673. *Desktop Publishing 2*. Specialized and advanced document creation using desktop publishing software used by industry. A second software package must be mastered. Lab time required. Prereq.: OIS 2672. 3 s.h.

2698. *Special Topics*. An in-depth study of information technologies. Topics vary. May be repeated for different topics. Prereq.: Permission of chairperson. 1-3 s.h.

#### Upper-Division Courses

3704. *Business Communication*. Communication theory and practice. Business letter writing; oral communication. Review of English usage. Prereq.: ENGL 1550. 3 s.h.

3714. *Advanced Spreadsheets*. Includes macros, look-up tables, advanced problems, templates, and projects with emphasis on accounting and finance applications. Prereq.: CSIS 1514 or 1590. 3 s.h.

3774. *Multimedia Technology*. Technical configurations, graphic creation, manipulation, exchange, and digital asset management. Web and multimedia audio and video. Video strategies on the Internet.

Fundamental Web utility tools. Storyboarding strategies, layout, and design issues. Three hours lecture, two hours lab. Prereq.: CSIS 1590. 4 s.h.

3775. *Multimedia Authoring*. A study of multimedia authoring tools. Methods for integrating text, graphics, sound, and video. Project required. Three hours lecture and two hours lab. Prereq.: INFO 3774. 4 s.h.

3776. *Web Site Development*. Foundations of web site development including e-commerce, multimedia, database integration, security, and accessibility. Use of scripting languages for interactivity. Three hours lecture and two hours lab. Prereq.: INFO 3774. 4 s.h.

3777. *Computer Technology for Digital Image Processing*. Study of tools and technology for digital image processing. Creating and capturing still and video images for use in Web site development. Techniques used in compression and archiving of graphics files. Project required. Three hours lecture and two hours lab. Prereq.: INFO 3774. 4 s.h.

3787. *Training and Employee Development*. Theory and practice of designing training programs. Analyzing training needs, selecting instructional strategies, and implementing and evaluating training programs. Prereq.: INFO 3774 or both INFO 1575 and CSIS 1590. 3 s.h.

3790. *Integrated Information Systems*. Students organize and operate an information center utilizing decision-making skills, and information systems procedures and components. Lab time required. Prereq.: INFO 3714 or CSIS 3723. 3 s.h.

4880. *Information Technology Analysis and Design*. Information systems integration and modeling. Analysis of dynamic information flow, functional requirements, and system design in theory and practice. Prereq.: CSIS 3722 and either 3723 or 3782. 3 s.h.

4895. *Special Topics*. A study of special topics in information technologies. Subject matter and credit hours will be announced in advance. May be repeated multiple times if topic is different. Prereq.: At least 3 s.h. of upper-division departmental courses and permission of chair. 2-4 s.h.

5875. *Advanced Multimedia Authoring*. Advanced study of multimedia authoring tools. Analysis of commercial applications. Group project required. Three hours lecture and two hours lab. Prereq.: INFO 3775. 4 s.h.

## JOURNALISM—JOUR

### Department of English

#### Lower-Division Courses

2602. *Media Writing*. Introduction to writing for the mass media. Development of writing techniques and examination of styles and approaches used in writing for various mass audiences. Fulfills requirement

for Integrated Language Arts Middle Childhood teaching license. Listed also as ENGL 2602. Prereq.: Completion of ENGL 1551 with grade C or better.

3 s.h.

2603. *Journalism Ethics and Social Responsibilities*. Examination of ethical standards and moral theories and their practical application in professional journalism through case studies. Students will learn to become active critics of media professionals. Crosslisted with ENGL 2603.

3 s.h.

2605. *Journalism as Literature*. Examination of literary works by journalists. Study of journalism techniques transferred to literary storytelling. Crosslisted with JOUR 2605.

3 s.h.

2622. *News Reporting I*. Study of news reporting and writing, with emphasis on journalistic and AP style, development of news judgment, interviewing, and storytelling through traditional and new media. Coursework may require travel for reporting projects. Crosslisted with ENGL 2622. Prereq.: Completion of ENGL 1551 with grade C or better.

3 s.h.

2624. *Imaging and Design of News*. Focus on the use of photographs, graphics, tables, charts, and other visual products to tell news stories. Includes study of basic visual literacy, design principles and technology. Coursework may require travel for reporting projects. Crosslisted as ENGL 2624. No prerequisites.

3 s.h.

2626. *American Journalism*. The development of journalism in America, the role of the news media and its effects on American society, and special consideration of journalism as a tool of diversity and as a literary tradition. Crosslisted with ENGL 2626. Prereq.: Completion of ENGL 1550 with a C or better.

3 s.h.

2632. *Introduction to Photojournalism*. The basics of photojournalism, including composition, lighting, editing, news judgment, and ethics. Listed also as ENGL 2632.

3 s.h.

### Upper-Division Courses

3716. *Introduction to Magazine Journalism*. Focus on forces driving the magazine industry. Study of business models, freelancing, and writing for specialized audiences; includes basic feature writing and imaging techniques. Listed also as ENGL 3716. Prereq.: JOUR 2622 or ENGL 2622; and JOUR 2624 or ENGL 2624.

3 s.h.

3717. *Editorial and Opinion Writing*. Techniques, approaches and practice in writing reviews, editorials, and opinion columns. Exercises in criticisms of the arts, editorial research, and editorial style. Listed also as ENGL 3717. Prereq.: JOUR 2622 or ENGL 2622.

3 s.h.

3720L. *Magazine Journalism Workshop*. Working for campus publications to apply news gathering and reporting skills. Emphasis on organizational culture of magazines. Coursework may require travel for

reporting projects. May be repeated for up to 3 s.h. Listed also as ENGL 3720L. Prereq.: JOUR 3716 or ENGL 3716 or consent of instructor.

1 s.h.

3721L. *Journalism Workshop*. Application of the principles of news reporting skills in student media. May be repeated once. Listed also as ENGL 3721L. Prereq.: ENGL 2622 or JOUR 2622.

3 s.h.

3722L. *Radio News Workshop*. Production of news and feature stories to be aired on radio; development of interview and media production skills for news. Coursework may require travel for reporting projects. Listed also as ENGL 3722L. Prereq.: JOUR 2622 or ENGL 2622.

3 s.h.

3723. *Advanced Journalism Editing and Design*. Application of visual literacy and editing skills. Emphasis on editorial decision making, journalistic style editing, quantitative reasoning, fact-checking, and practice of traditional and multimedia design techniques. Listed also as ENGL 3723. Prereq.: JOUR 2622 or ENGL 2622; and JOUR 2624 or ENGL 2624.

3 s.h.

3758. *Projects in Working Class Reporting*. Collaboration with the Center for Working Class Studies. Emphasis on using journalistic techniques to cover issues important to working-class people. Coursework may require travel for projects. Listed also as ENGL 3758. Prereq.: ENGL 1551.

3 s.h.

3759. *Sports Journalism*. Techniques of sports reporting with emphasis on game reporting, sports features, columns, photography and new media storytelling. Coursework may require travel for reporting projects. Listed also as ENGL 3759. Prereq.: JOUR 2622 or ENGL 2622 or consent of instructor.

3 s.h.

3760. *News Reporting II*. Focus is on advanced news reporting and storytelling skills. Includes in-depth coverage of feature writing, investigative, and enterprise journalism. Coursework may require travel for reporting projects. Listed also as ENGL 3760. Prereq.: JOUR 2622 or ENGL 2622.

3 s.h.

3761. *New Media Journalism*. Focus on new trends and techniques of electronic news organizations. Emphasis on storytelling using multimedia and non-linear methods of delivery. Coursework may require travel for reporting projects. Listed also as ENGL 3761. Prereq.: JOUR 2622 or ENGL 2622; and JOUR 2624 or ENGL 2624.

3 s.h.

3762. *Political Reporting*. Development of skills necessary to report, write, record, and publish stories about the American political system. Coursework may require travel for reporting projects. Listed also as ENGL 3762. Prereq.: JOUR 2622 or ENGL 2622.

3 s.h.

4821. *Advising Student Media*. Study of the role and responsibilities of the media advisor in high school and college. Topics include the unique legal and ethical concerns of student media, the training of student staff, the relationship of the student press

to the academic administration, and publication-management concerns. Listed also as ENGL 4821. Prereq.: JOUR 2622 or ENGL 2622 or 3741. 3 s.h.

4822. *Magazine Writing and Reporting*. Advanced study of writing and reporting techniques for magazine journalists. Emphasis on learning freelance skills, getting work published, and marketing yourself as a magazine writer. Coursework may require travel for reporting projects. Listed also as ENGL 4822. Prereq.: JOUR 3716 or ENGL 3716. 3 s.h.

4823. *In-Depth Reporting*. Emphasis on extended research, extensive interviewing and investigative reporting techniques. Coursework may require travel for reporting projects. Listed also as ENGL 4823. Prereq.: JOUR 3721L or ENGL 3721L. 3 s.h.

4824. *Press Law and Ethics*. Study of First Amendment rights of the press; examination of laws concerning libel, privacy, copyright, obscenity, censorship, open meetings and open records in Ohio; discussion of press responsibilities. Listed also as ENGL 4824. Prereq.: JOUR, 2622 or ENGL 2622 or JOUR 3721L. 3 s.h.

4825. *Selected Topics in Journalism*. Study of approaches to and special aspects of journalism not covered in depth in other journalism courses. May be repeated once with change of topic. Listed also as ENGL 4825. Prereq.: JOUR 2622 or ENGL 2622 or JOUR 3721L. 3 s.h.

4893. *Journalism Senior Project*. Capstone experience for journalism major. Individualized enterprise/investigative reporting projects with demonstration of advanced newsgathering techniques. Coursework may require travel for reporting projects. Listed also as ENGL 4893. Prereq.: Senior standing; and JOUR 3760 or ENGL 3760; and JOUR 4824 or ENGL 4824. 3 s.h.

4894. *Journalism Internship*. Supervised journalism work experience. Students complete 60 hours for each hour registered. Internship placement is selective. Coursework may require travel for reporting projects. May be repeated with the approval of the department chairperson for up to 6 hours. Listed also as ENGL 4894. Prereq.: JOUR 3760 or ENGL 3760; and JOUR 3721L or ENGL 3721L; senior standing, 2.5 GPA and permit. 3 s.h.

## LIBERAL ARTS AND SOCIAL SCIENCES—LASS

### College of Liberal Arts and Social Sciences

2610. *International Perspectives Credit for Study Abroad*. The Social and Personal Awareness requirement will be reduced to one course for students who complete at least 3 semester hours of YSU approved coursework with a grade of 'C' or better while residing outside the United States for the equivalent of a semester. To receive the requirement reduction,

the coursework must be approved by the Center for International Studies and Programs prior to the student studying abroad. 0 s.h.

3750. *Study Abroad*. An individually-arranged program of foreign study. Programs can be of 3 general types: (1) study trips conducted by YSU faculty, (2) trips or residential programs sponsored by consortial universities, and (3) independent trips. For independent trips, YSU faculty will design appropriate educational objectives and evaluate students' performance in meeting these objectives. A written plan detailing these objectives must be approved by a faculty member of the Global Awareness Committee and the dean of Arts and Sciences prior to the commencement of the trip. For all three categories, credit toward fulfillment of the degree requirements will be determined by the dean(s) of the relevant college(s), in consultation with the appropriate department chairperson(s). Note: study abroad generally requires about one year's advance planning. Prereq.: Sophomore status. 1-15 s.h.

3760. *Washington Center Internship*. Qualified students will work in selected public and private agencies in the Washington, D.C. area, thus providing access to government and community leaders and activities, and gaining experience by participating in projects, seminars, and courses. A final project is required. Students must take an additional academic credit course at Washington Center. Additional details are available through the Department of Political Science. Credit may be applicable to the major. Grading for this course will be CR/NC. Prereq.: Junior or senior standing, acceptance by the Washington Center, and permission of the chairperson of the major. 6-12 s.h.

3780. *Lifetime Learning Experience*. Credit for significant life or work experience specifically related to their primary concentration area. Prereq.: Junior standing in General Studies. 1-6 s.h.

4805. *Integrated Social Studies Seminar*. A study of selected topics integrating the concepts and methods of the social studies disciplines. May be repeated with a different topic. Prereq.: Senior standing in the Integrated Social Studies Curriculum with at least 40 semester hours of social studies courses and a minimum of one course in each discipline, or senior standing as a major in one of the social studies disciplines. 3 s.h.

4840. *Columbus Program in Intergovernmental Issues*. This Columbus residential internship is designed to give students practical experience and firsthand exposure to governmental processes, private organizations, and public agencies, officials, and policies involved in state government. This course is in collaboration with Kent State University which provides the primary instructors. Prereq.: Junior or senior standing; POL 1560; and acceptance into the program by the KSU program director prior to registration. 15 s.h.



4851. *Capstone in Gerontology*. A capstone experience for the interdisciplinary study of aging. Students will complete a major research project. Prereq.: Senior status in Gerontology and SOC 4850. 3 s.h.

4880. *General Studies Capstone*. Practical learning within the primary concentration area. May be an internship, field experience or scholarly thesis. The capstone experience must be approved by the student's general studies advisor or committee. Prereq.: Completion of 20 s.h. in the primary concentration area and consent of the advisor. 3 s.h.

4890. *Internship*. Integrate theory and practice through supervised learning experiences provided by an appropriate working professional and an Arts and Sciences faculty member. Students will submit a proposal for the internship, maintain a journal of experiences, and submit a final project paper. Students should expect to spend at least 4 hours/week per credit. Prereq.: Junior standing with at least 6 s.h. of coursework in the discipline of the internship, and consent of the appropriate chairperson. May be repeated for a maximum of 6 s.h. 2-3 s.h.

## LINGUISTICS—ENGL

### Department of English

3755. *Principles of Linguistic Study*. Survey of elements of linguistic structure, methods of analysis and description, theoretical models, and the role of language in human affairs. Prereq.: ENGL 1551. 3 s.h.

#### Group 1

ENGL 2651. *Introduction to Language*. Introduction to language principally for prospective teachers, with emphasis on the nature and function of language and its history, variations, and acquisition. Prereq.: ENGL 1551. 3 s.h.

ENGL 3750. *Language and Culture*. Language structure as an instrument in human behavior and social institutions with emphasis on cross-cultural and intercultural communication. Prereq.: ENGL 1551. 3 s.h.

ENGL 3757. *Development of the English Language*. Sounds, vocabulary, grammar, and usage, from old to contemporary English. 3 s.h.

ENGL 4850. *Sociolinguistics*. An investigation of the relationship between language and society. Includes discussion of dialects and standard language, language planning, linguistic identity, multi- and bilingualism, class, gender, ethnicity, and social interaction. Listed also as FNLG 4850. Prereq.: ENGL 3755. 3 s.h.

ENGL 4855. *Advanced Linguistics*. In-depth study of selected issues in contemporary linguistic theory. Especially recommended for students pursuing advanced studies or a minor in linguistics or planning graduate studies. Prereq.: ENGL 3755. 3 s.h.

ENGL 4858. *English Grammar*. Descriptions and analysis of English language structure. Prereq.: ENGL 3755. 3 s.h.

FRNC 3710. *Applied Phonetics*. A systematic study of French phonetics to correct defects in pronunciation and intonation and give students a better understanding of the differences between the French and English sound systems. Prereq.: FRNC 2605. 3 s.h.

FRNC 3715. *Conversation and Composition*. Skills in written and oral expression developed through directed composition and conversation, discussion of assigned topics, extemporaneous situational dialogues, and written papers on topics of special interest to the participants. Prereq.: FRNC 2605. 3 s.h.

FRNC 4885. *Special Topics*. Studies in French language, literature, or civilization ranging from medieval to modern times. Topic announced each time course is offered. May be taken three times for credit if content is not repeated. Prereq.: FRNC 3750 and one of the following: 3720, 3725, 3730. 3 s.h.

GRMN 3725. *Phonetics and History of the Language*. Theory and practice in German phonetics with special emphasis on improving the pronunciation and intonation of second language learners. A history of the German language with attention to changes in sounds, forms, word order, vocabulary, and writing systems. Prereq.: GRMN 2605 or Placement exam. 3 s.h.

ITAL 3720. *Advanced Grammar and Composition*. Study in depth of Italian grammar through exercises and original composition. Prereq.: ITAL 2605. 3 s.h.

ITAL 3725. *Phonetics*. Theory and practice in Italian phonetics with special emphasis on improving the pronunciation and intonation of second language learners. Prereq.: ITAL 2605. 3 s.h.

SPAN 3724. *Spanish Pronunciation*. Theory and practice of Spanish pronunciation. Description of production of Spanish speech sounds and general characteristics of Spanish pronunciation. Topics on intonation. Audio-lingual practice in class and in language laboratory. Prereq.: SPAN 2605. 3 s.h.

SPAN 3735. *Advanced Spanish Grammar and Composition*. A systematic study of Spanish morphology, sentence structure, and usage applied to a variety of written discourse styles such as description, narration, and exposition. Discussion of contrasts with English discourse styles, and effective grammatical use. Prereq.: SPAN 2605. 3 s.h.

SPAN 3736. *Introduction to Spanish Linguistics*. Examines some of the basic concepts and issues of modern Spanish linguistic theory in the areas of phonology, morphology, syntax and pragmatics, including readings and discussion on these topics. Prereq.: SPAN 2605. 3 s.h.

SPAN 5855. *Topics in Spanish Language and Linguistics*. An introduction to the terminology, concepts, bibliography and current issues in Spanish language

and linguistics. Major topics include phonology, morphology, semantics, syntax, applied linguistics, transformational grammar, and other topics related to language variation and society. May be repeated once when topic varies. Prereq.: Any 3700-level SPAN course. 3 s.h.

### Group 2

ENGL 4851. *Language Acquisition*. A study of research on the learning of first and second languages. Topics include developmental sequences, learner variables, critical periods and conditions for learning, and the roles of input and interaction. The course is designed for those planning to teach languages. Listed also as FNLG 4851. Prereq.: ENGL 3755. 3 s.h.

ENGL 4856. *TESOL Methods*. Introduction to teaching English as a Second Language (ESL), including reading, writing, listening, and speaking. Focus on using communicative methods with non-native speakers. Prereq.: ENGL 3755. 3 s.h.

ENGL 4857. *TESOL Practicum*. Supervised teaching in English as a second language (ESL) program. Additionally, weekly seminar attendance required. Prereq.: ENGL 4856. 3 s.h.

ENGL 4858. *English Grammar*. Descriptions and analysis of English language structure. Prereq.: ENGL 3755. 3 s.h.

ENGL 4859. *Selected Topics in Discourse*. Study in depth of a specific topic such as stylistics, semantics, or rhetoric. May be repeated once with different topic. Prereq.: ENGL 3740, 3741, or 3755 as appropriate to topic. 3 s.h.

PHIL 2619. *Introduction to Logic*. Introduction to syllogistic or classical logic, symbolic and inductive logic. Emphasis on the rules of syllogism, propositional functions, classes, truth tables, Venn diagrams; the use of analogy, generalization, the verification of hypotheses, and the scientific method. 3 s.h.

PHIL 3714. *Language and Mind*. Introduction to the study of traditional philosophical problems in the analysis of linguistic structures and functions and of their implications for the nature of mind, including meaning, mental representation and causation, information processing, and psychological explanation. Prereq.: One 2600-level PHIL course. 3 s.h.

PHIL 3719. *Symbolic Logic*. The structure and properties of axiomatic systems; the theory of propositional and relational logic; the algebra of classes; related topics. Prereq.: PHIL 2600. 3 s.h.

CSCI 5835. *Artificial Intelligence*. Study of the theory and applications of intelligent systems. Topics may include general problem-solving techniques, knowledge representation and expert systems, vision and perception, and natural language processing. AI systems and languages. Prereq.: CSIS 2617 and 3710. 3 s.h.

PSYC 3761. *Cognition*. Experimental methods, research findings, and current theories concerned with human cognitive processes. The information-processing approach, focusing on how information is transformed, stored, manipulated, and retrieved. Topics include attention, pattern recognition and categorization, memory, and language. Concurrent: PSYC 3761L. Prereq.: PSYC 2618. 3 s.h.

PSYC 3761L. *Cognition Laboratory*. Laboratory demonstrations and experiments using research techniques in cognition. Two hours per week. Concurrent: PSYC 3761. 1 s.h.

PSYC 3764. *Psycholinguistics*. An overview of language production, use, and comprehension including the biological basis of speech and language development, social aspects of language, and bilingualism. Prereq.: PSYC 2618 or ENGL 3755. 3 s.h.

PSYC 3764L. *Psycholinguistics Laboratory*. Research techniques in basic and applied psycholinguistics. Two hours per week. Concurrent: PSYC 3764. 1 s.h.

PSYC 4850. *Seminar*. Major topics in psychology not covered in listed courses. Two s.h. may be applied to the psychology major. Prereq.: Senior standing in psychology. 2 s.h.

## MANAGEMENT — MGT Department of Management

### Business Core

2604. *Legal Environment of Business 1*. Various sources of laws, basic legal reasoning and application. Emphasis on basic legal concepts of contracts, labor, tax, antitrust and business organizations, and their relationship to business and society. 3 s.h.

3725. *Fundamentals of Management*. Emphasizes the basic principles of management rather than those involved in business organization. The nature of managerial action within an organization, formal and informal structure, process of making decisions, and interrelated activities in management. Prereq.: 2.5 GPA and junior standing. 3 s.h.

4844. *Strategic Human Resource Management*. Capstone course of the human resource (HR) major and should be taken in students' last semester. Purpose is to integrate knowledge within HR and across disciplines in developing and implementing HR strategy. Special focus will be given to developing the proficiencies necessary to serve as an HR consultant, especially in quantifying the impact of HR practices. Prereq.: MGT 4810 or MGT 4819 or consent of instructor. Coreq.: MGT 4845. 3 s.h.

4845. *Projects in Human Resource Management*. Emphasizes experiential, practical application of knowledge to real-life human resource challenges. Prereq.: MGT 4810 or MGT 4819 or consent of instructor. Coreq.: Mgt. 4844. 1 s.h.

4850. *Strategic Management and Leadership*. Analysis of problems and issues faced by organizations operating in today's dynamic environment interspersed with multiple stakeholders. Students integrate concepts and techniques learned from a range of disciplines and apply them to all levels of firms functioning in a wide variety of industries. Prereq.: MGT 3725, MKTG 3703, FIN 3720. 3 s.h.

### Management Core

3750. *Managing Individuals in Organizations*. Study of the contributions of the fields of organizational behavior and human resources as they apply to organizational functionality. Topics include individual and group decision-making, motivation, perceptions, and attitudes as they impact human resource processes, including job design, selection, organizational development, total rewards, employee relations, and workplace health, safety, and security. Prereq.: MGT 3725 or Concurrent. 3 s.h.

3789. *Operations Management*. Study of current operations management theories and practices with emphasis on direction, planning, and control of production systems. Includes detailed analysis in such areas as materials management, work measurement, quality control, scheduling, maintenance, and forecasting. Prereq.: MGT 3725, ECON 3780. 3 s.h.

4890. *International Business*. Management problems of firms engaged in international business, including the strategy of foreign involvement and control of foreign activities. Emphasis on management issues unique to firms in international operations. Prereq.: MGT 3725. 3 s.h.

### Human Resource Management

1510. *Union Leadership Skills*. Introduction to basic leadership skills with emphasis on human relations, motivation, communication skills, decision making, problem solving, parliamentary procedure. 3 s.h.

3705. *Fundamentals of Occupational Safety*. Overview of the broad concepts of occupational safety and health that provide a proper foundation for understanding the basic principles of workplace safety and health programs. Analysis of the regulatory environment including OSHA and Workers' Compensation; the development of safety management programs; the evaluation of workplace hazards; and discussion of the economic, political, and societal implications involving workplace safety and health. Prereq.: MGT 1510 or ENST 2600 or CJFS 1500 or BUS 1500 or consent of instructor. 3 s.h.

3715. *Labor Law and Negotiations*. Introduction to private and/or public sector labor law. Includes the study of the legal principles surrounding employee organizing, unfair labor practices, bargaining, striking, and picketing; involves participation in a negotiations simulation. Prereq.: MGT 1510 or MGT 2604 or BUS 1500 or consent of instructor. 4 s.h.

3720. *Contract Administration and Grievance Procedure*. Study of the development of economic and non-economic contract language for collective bargaining agreements, and the preparation and participation in grievance processing and labor arbitration cases. Prereq.: MGT 1510 or BUS 1500 or consent of instructor. 4 s.h.

3734. *Human Resources Management*. Management and the human resource field; organization and jobs; employment and development of people. Review of applications of job design and analysis, human resource planning, recruitment and selection, equal employment opportunity legislation, training and development, career management. Human resource management theories and concepts integrated into experiential exercises which simulate practical applications. Prereq.: MGT 3725. 3 s.h.

3740. *Labor Studies Seminar*. Study of selected issues and problems on the basis of interest and need. May be repeated for a maximum of 9 s.h. Prereq.: Permission of instructor. 3 s.h.

3755. *Managing Diversity*. Current topics in diversity: national and international demographics of the changing face of the work force; processes that create diversity including the organization of work; managing differences in work settings; management responses to diversity; and connections to larger institutional dynamics. Prereq.: Junior standing in a declared major and one lower level GER approved SI course or permission of the instructor. 3 s.h.

4810. *Compensation and Performance Appraisal*. Design and administration of compensation systems. Topics: pay equity, job evaluation, wage and salary structure, merit and incentive programs, benefits packages and compensation legislation. Emphasis on the role of performance appraisal in administration decision making. Prereq.: MGT 3725 and MGT 3750. 4 s.h.

4819. *Selection, Training, and Development*. Intensive analysis of programs for personnel acquisition, the training and development of employees. Includes the human resources planning process. Examination of federal and other employment legislation where applicable. Prereq.: MGT 3725 and MGT 3750. 4 s.h.

4820. *Supply Chain Management*. A comprehensive description of supply chain management practices and principles to achieve a competitive advantage in a global society and integrating these principles as a core competency in enterprise strategy. Topics include logistics, technology (information networks, ERP, SAP), operations (inventory management, transportation, warehousing, and material handling) and network designs. Prereq.: MGT 3789. 3 s.h.

5845. *Work in America*. Examines the changing characteristics, expectations, and representations of work in America. Includes the exploration of demographic, historic, economic, technological, sociological, religious, ethical, popular, and poetic perspectives on work. Prereq.: MGT 3715 or Junior standing and 6 s.h. of GER approved SI courses. 3 s.h.

**Management Information Systems**

3761. *Information Systems for Management*. Study of information systems and their interaction with individuals and organizations, providing a basic understanding of hardware, software, and computer technology used in information systems. Prereq.: 2.5 GPA and junior standing. 3 s.h.

3771. *Social Media and E-Commerce*. Technologies available to organizations to reach customers, sell products, and create business values that continue to change and emerge. The course provides students with an understanding of social media and e-commerce technologies from a business/managerial perspective. Underlying issues surrounding the technologies, their development, and utilization of web-based initiatives are studied. Prereq.: 2.5 GPA AND MGT 3761 or concurrent. 3 s.h.

4821. *Business Process Integration*. This course examines the forces driving enterprise integration as well as the management decisions associated with the design and implementation of enterprise systems. Students successfully completing this course will have thorough understanding of enterprise integration as well as practical experience of configuring and using SAP Prereq.: MGT 3761 or ACCT 3709 and 2.5 GPA. 3 s.h.

5825. *PC Applications in Business*. In-depth study of business microcomputer applications with emphasis on the development of personal decision support systems using database and spreadsheet software packages. Prereq.: MGT 3761. 3 s.h.

5835. *Systems Analysis and Design*. Information systems and system development life cycle (SDLC) sizing tools and techniques used to document an information system. Prereq.: MGT 3761 AND 2.5 GPA. 3 s.h.

5865. *Database Management Systems*. Design and management of organizational data resources. Database issues include design, definition, creation, documentation update, maintenance, revision, selection, acquisition, and use. The implementation of the hierarchical, network, and relational models with emphasis on business applications. Prereq.: MGT 3761 AND 2.5 GPA. 3 s.h.

5875. *Decision Support/Expert Systems*. Fundamental techniques, construction, and use of decision support systems, expert systems, and management support systems. Prereq.: MGT 3761. 3 s.h.

**Operations Management**

3737. *Management Science*. An understanding of methods of management science from an executive or managerial viewpoint, emphasizing formulation of business problems in quantitative terms. Topics such as linear programming, dynamic programming, game theory, Monte Carlo method, probability theory, queuing theory, inventory theory, transportation method, and simulation discussed and evaluated. Prereq.: MATH 1548, ECON 3780. 3 s.h.

4815. *Total Quality Management*. Study of the influence of quality on all phases of business operations from strategic planning to process control, quality measurement to systems and process design. Statistical process control in detail, but all aspects of quality management are reviewed. Prereq.: MGT 3789. 3 s.h.

4881. *Project Management*. Study of project management topics regarding project planning, work breakdown structure, scheduling, PERT/CPM, controlling and managing the costs, resource allocation, project control, and project termination. Includes the environment in which project managers work and its organizational structures: functional, project, and matrix organizations. Computer-based project management software is also introduced. Prereq.: MGT 3761 AND 2.5 GPA 3 s.h.

4882. *Seminar in Logistics*. In-depth study of selected topic(s) in logistics. Application to practical logistics problems culminating in a written report and an oral presentation. Intended for students in the logistics minor. Prereq.: Senior status and completion of 9 s.h. in the minor. 3 s.h.

4896. *Logistics Internship*. Work and study in the public or private sector centered upon the development of a significant logistics project under the direction of university faculty and designated member(s) of the participating agency. Intended for students in the logistics minor. Prereq.: MGT 4882 or completion of 12 s.h. in the minor. 3 s.h.

**Other Management Courses**

2600. *Management Field Experience*. Internship and/or cooperative education experiences in management. Students may be assigned to corporate, non-profit, or government entities on a semester basis. Can repeat this course once for a different field experience. Prereq.: 2.5 GPA, department approval, and sophomore standing. 1 s.h.

2699. *Industry Studies Seminar*. Specialized course for students from a specific industry involving selected issues and problems on the basis of interests and needs. Prereq.: Permission of instructor. 1-2 s.h.

3714. *Legal Environment of Business 2*. In-depth analysis of commercial law areas covered on the CPA exam, with emphasis on sales, secured transactions, real and personal property, insurance, bankruptcy, and commercial paper. Prereq.: MGT 2604, junior standing. 3 s.h.

3735. *Communications for Management and Business*. Analyzes communication and information processes as means for coordinating and controlling organizational activities. Analytical writing activities required including a long, formal report. Prereq.: ENGL 1551, MGT 3725, permission of instructor. 3 s.h.

4840. *Managing Organizational Environments*. Dynamics of structure, design, strategy and culture

in the context of an organization's relationships to external environments; included are institutional forces, the global environment, and the new technological environment. Organizational ethics as cultural components that define appropriate ways for stakeholders to deal with one another and with the organization's environments. Prereq.: MGT 3725, permission of instructor. 3 s.h.

4846. *Globalization and Worker Rights*. The study of worker rights in the global economy. This includes comparative labor standards, political debates over worker rights, and responses to globalization by corporations, unions, and human rights organizations in the form of codes of conduct, social monitoring, framework agreements, and strategic campaigns. Prereq.: Junior standing and MGT 3725 or MGT 3715. 3 s.h.

4854. *Managing in Emerging Economies*. The course is designed to provide an understanding of the business environments in the major emerging economies of the world, provide insights into the distinctive business opportunities and challenges in these economies, gain a feel for the strategic and operating issues that managers are likely to encounter in these markets, and develop conceptual frameworks to address these issues. Prereq.: Mgt 3725, BUS 3715, min 2.5 overall GPA. 3 s.h.

4855. *Business Ethics*. Analysis of ethical considerations involved in the management of a business in relation to society, stockholders, customers, employees, competitors, and government. Prereq.: MGT 3725 and 3750. 3 s.h.

4870. *Small Business/Entrepreneurship*. Study of the small business environment and the problems in starting a business. How small businesses apply the managerial functions in using their resources. Cross-listed with MKTG 4870. Prereq.: Senior standing or permission of instructor. 3 s.h.

4871. *Small Business Enterprise*. Students work with actual problems faced by small businesses under faculty supervision. Problems are defined, analyzed, researched. Recommendations are developed and presented to clients for evaluation. Cross-listed with MKTG 4871. Prereq.: MGT 4870 or permission of instructor. 3 s.h.

4880. *Special Topics in Management*. Subject matter, credit hours, and specific prerequisites to be announced in advance of each offering. Prereq.: Senior standing in MGT or permission of instructor. 1-4 s.h.

4895. *Management Internship*. Offers the student the opportunity to relate theory to practice through on-the-job work experience with participating organization. Mandatory bi-weekly meetings with faculty advisor to insure maximum learning from the experience. Offered all three semesters each year based on the availability of internships. A written evaluation of the job experience is required. Prereq.: 20 s.h. of MGT courses including 3725 and 3750, and department screening and approval. 3 s.h.

4899. *Independent Study*. Development of a special topic of interest to the student under the direct supervision of a management faculty member. Credit hours vary according to the nature of the project. Prereq.: MGT core and permission of department chairperson. 1-3 s.h.

5860. *Comparative Management*. Comparative Study of organization, managerial styles, and leadership in foreign countries based on historical and environmental factors. Analysis of the reasons that managerial activity and the effectiveness of management vary among different business systems. Prereq.: MGT 3725 and 3750. 3 s.h.

## MARKETING — MKTG

### Department of Marketing

#### Lower-Division Course

1520. *Selected Marketing Topics*. Topics vary each semester. Subject matter and number of credit hours announced in advance of each offering. May be taken twice with change of topic. 1-3 s.h.

#### Upper-Division Courses

3702. *Business Professionalism*. This course is intended to help students prepare for and accomplish a successful transition from college to a professional career. Students will be challenged to understand the various elements of business professionalism including etiquette, communications, image, conflict resolution, career exploration and job search. Prereq.: BUS 1500 and junior standing, and course must be taken concurrently with MKTG 3703. 1 s.h.

3703. *Marketing Concepts and Practice*. The activities involved in marketing products, services, and ideas examined within a framework of customer management. Topics include global marketing environment, market analysis and segmentation, consumer behavior, product development and management, pricing, promotion, and distribution. Marketing is examined from its role as a central function of business and non-profit organizations, and from its dominant role in a market economy. Prereq.: BUS 1500 and junior standing. 3 s.h.

3709. *Retail Marketing*. Retailing is the largest industry and the dominant employer in the U.S. economy. The industry is explored, with particular emphasis on understanding the activities of retailers, both large and small. Topics include shopper behavior, store location, store layout, product presentation, and customer service. The criteria for success in retailing, the impact of technology on retailing, and the retail process examined within the larger domain of marketing. Beneficial to all marketing and business majors, as well as others engaged in shopping activities. Prereq.: MKTG 3703 and GPA of 2.5. 3 s.h.

3713. *Retail Merchandise Buying*. The product dimension of retailing. The strategies and philosophies that determine excellence in merchandise selection.

Topics include the organization of the buying function, determining what to buy based on customer needs, visiting the market, vendor analysis and selection, Quick Response (QR) and Efficient Consumer Response (ECR), and the retail buyer's responsibilities in other areas of the retail firm. Extensive attention to global sourcing. Prereq.: MKTG 3703. 3 s.h.

3720. *Industrial Marketing*. Characteristics of Manufacturers' goods, channels of distribution, functions of intermediates, distribution costs, marketing research, government control, and legal limitations. Product policies, service policies, packaging policies, price policies. Industrial advertising organization, planning and budgeting, uses of advertising agencies and national advertising media, sales manuals, dealer helps. Prereq.: MKTG 3703 and GPA of 2.5.. 3 s.h.

3726. *Consumer Behavior*. Individual and group behavior as related to marketing consumer behavior, considered from both the standpoint of the marketing manager and from that of the individual as a consumer. The behavioral sciences serve as a background to provide standards for the social and human evaluation of current marketing activities. Topics include the buyer as problem solver, buying decision processes and models, measurement of promotional effectiveness, and life style analysis. Prereq.: MKTG 3703 and GPA of 2.5.. 3 s.h.

3732. *Non-Textiles/Furnishings*. The principles and functions of non-textiles and furnishings. The sources of raw materials, manufacturing processes, care, use, and selling points of these types of merchandise: paper, leather, furs, jewelry, metals, stones, and cosmetics. The furnishings industry is examined with emphasis on forecasting, planning, selecting, negotiating, pricing, and recording of merchandise. Prereq.: MKTG 3703. 4 s.h.

3740. *Professional Selling*. Personal selling and sales management examined within the marketing environment. Emphasis on marketing relationships, buyer motivation and behavior, selling strategy and sales management techniques. Prereq.: BUS 1500 and sophomore standing. 3 s.h.

3750. *Product Management*. New product development process from idea generation to launch; diffusion of innovation and sales forecast of new product, market entry strategy, branding of new product, business plan for new product. Prereq.: MGT 3703 and overall GPA of 2.50. 3 s.h.

3755. *Shopping Center Fundamentals*. General survey of the elements in the development of planned shopping centers. The history and social significance of planned shopping centers, their present position and future directions. Prereq.: MKTG 3703. 3 s.h.

3757. *Shopping Center Development*. Examination of shopping centers from a marketing and development standpoint. Topics include marketing strategies, site selection, promotions, tenant mix, and public relations. Prereq.: MKTG 3703. 3 s.h.

4815. *Marketing Research*. Introduction to the major areas of research marketing. Problem definition, research design, gathering information and analysis to assist marketing management with the decision making process. Both empirical and theoretical concepts. Review of research problems, approaches and trends in industrial retailing, wholesaling, trade associations, advertising, publishing and consulting firms. Prereq.: MKTG 3703 and GPA of 2.5.. 3 s.h.

4825. *Marketing Management*. Comprehensive study of the management functions in marketing including organization, planning, research, merchandising, sales, advertising and promotion, marketing channels, and control related to corporate policies and objectives. Management practices covering recruiting, selection, training, equipping, compensating, and supervising. Prereq.: MKTG 3703, MKTG 3726 and MKTG 3740 and GPA of 2.5.. 3 s.h.

4842. *Special Topics in Marketing*. Topics vary each semester. Subject matter, number of credits, and prerequisites announced in advance of each topic. No more than one Special Topic per semester is permitted. May be taken twice with change of topic. Prereq.: Permission of chairperson. 1-3 s.h.

4845. *International Marketing*. Development of United States trade, foreign trade promotion, organization, export and import procedures and practices. Presented from the viewpoint of the international marketing manager who must recognize differences between markets in various countries as influenced by their particular cultural and economic environments. Prereq.: MKTG 3703 and GPA of 2.5. 3 s.h.

4846. *Marketing Channels and Logistics*. Consideration of the problems likely to arise in the planning for and movement of goods through channels of distribution from producer to end-user. Elements of the logistical system, including transportation modes, plant and warehouse location, and inventory size determinations. Behavioral and functional relationships with and between channel members in a supply chain. Prereq.: MKTG 3703 and GPA of 2.5. 3 s.h.

4848. *Marketing and Social Responsibility*. Present marketing practices and their impact on the values of society and the impact of social and ethical trends upon marketing. Search for the consumers' interest, the social audits, marketing responsibilities, product safety, ecological considerations, legal restraints, and pricing and sales practices. Prereq.: MKTG 3703 and GPA of 2.5. 3 s.h.

4850. *Marketing Internship*. Through employment with participating business organizations the student receives professional marketing experience. Candidates work for the entire semester at a local business organization under the direct guidance of a faculty advisor. Required paper at the end of the course on the relationship of marketing theory and practice. Prereq.: MKTG 3703. 3 s.h.

4851. *Services Marketing*. Cross-functional approach to the marketing of customer services in profit and non-profit organizations, including domestic and international opportunity analysis, customer analysis, financial analysis, strategy formulation, process and systems management, and quality improvement. Prereq.: MKTG 3703. 3 s.h.

4865. *Shopping Center Operations*. Comprehensive review of the practices and procedures involved in the operation of shopping mall properties, including merchandising, maintenance, security, mall-tenant relations, and community relations. Prereq.: MKTG 3703. 3 s.h.

4870. *Small Business/Entrepreneurship*. Study of the small business environment and the problems in starting a business. How small businesses apply the managerial functions in using their resources. Cross-listed with MGT 4870. Prereq.: MKTG 3703. 3 s.h.

4871. *Small Business Enterprise*. Students work with actual problems faced by small businesses under faculty supervision. Problems are defined, analyzed, researched. Recommendations are developed and presented to clients for evaluation. Cross-listed with MGT 4871. Prereq.: MKTG 3703. 3 s.h.

## MATERIALS ENGINEERING — MTEN College of Engineering

2606. *Engineering Materials*. Properties and uses of engineering materials, manufacturing processes, including heat treatments and forming operations. Introduction to mechanical testing methods. Listed also as MECH 2606. Prereq.: MATH 1572. 3 s.h.

3721. *Engineering Plastics*. Preparation, characterization, manufacture, properties and applications of commercial polymers. Prereq.: CHEM 1516/1516L, CHEN 2683, and MTEN 3721L or concurrent. 3 s.h.

3721L. *Engineering Plastics Laboratory*. Preparation of thermoplastics and thermoset plastics utilizing injection molding. Measurement of plastics properties using Instron analysis to predict performance. Prereq.: CHEM 1516/1516L, CHEN 2683 and MTEN 3721 or concurrent. 1 s.h.

3745. *Corrosion of Engineering Materials*. General principles and forms of corrosion and degradation, preventative measures and designs which avoid corrosion and environmental degradation, failure analysis. Prereq.: CHEM 1516/L. 3 s.h.

3745L. *Corrosion of Engineering Materials Laboratory*. Measurement of corrosion rates of engineering materials, especially metals, IR compensation, polarization resistance, and electrochemical impedance spectroscopy for coated and uncoated materials. Prereq.: CHEM 1516/L, MTEN 3745 (or concurrent). 1 s.h.

3752. *Ceramic Materials*. Composition, microstructure, processing, and properties of commonly used ceramics and glasses. Advanced ceramics including piezoelectric ceramics, optical fibers, microelectromechanical systems (MEMS), and carbon polymorphs such as fullerenes and carbon nanotubes. Prereq.: MECH 2606 or MTEN 2606. 3 s.h.

3753. *Materials used in Electrical Devices*. Properties and processing of materials used in modern electronic devices. Manufacturing techniques used to make common electronic devices such as p-n rectifying junctions, MOSFET transistors, integrated circuits, magnetic storage devices, LEDs, and lasers. Prereq.: MECH 2606 or MTEN 2606. 3 s.h.

3768. *Engineering Forensics using the SEM*. Use of Scanning Electron Microscope (SEM) for forensic and failure analysis investigations. Individual term projects using the stereomicroscope, preparing SEM samples, taking SEM photomicrographs, and using the energy dispersive x-ray analyzer. Two hours lecture and three hours lab per week. Prereq.: MECH 2606 or MTEN 2606. 3 s.h.

3783. *Properties, Processing, and Applications of Metals*. Composition, processing, heat treatment, microstructure, and properties of commonly used engineering alloys. Alloy and heat treatment selection for the optimization of desired properties for engineering applications. Two hours lecture, three hours lab per week. Prereq.: MECH 2606 or MTEN 2606. 3 s.h.

4815. *Introduction to Biomaterials*. The uses of synthetic materials including metals and alloys, ceramics, pyrolytic carbon and polymers within a human body. Reaction of human body to devices made out of the synthetic materials. Impact of human environment on the materials. Use of biomaterials in orthopedic, drug delivery, skin grafts, etc. Prereq.: MTEN 3721. 3 s.h.

4820. *Fiber-reinforced Composite Materials*. Introduction to the manufacture and applications of fiber-reinforced composite materials. Topics covered include polymer, ceramic and metallic matrix composite materials. Principles in selection and processing of composite materials are considered. Prereq.: MTEN 3721. 3 s.h.

4825. *Foamed Materials*. Properties, processing, and applications of foamed materials with an emphasis on metallic foams. Prereq.: MTEN 3783 or permission of instructor. 3 s.h.

4888. *Materials Engineering Design*. Development of materials engineering designs from the proposal phase to the detailed engineering phase. The application of materials engineering and cost principles to the design of processes and products including societal, aesthetic, environmental and safety considerations. Prereq.: ISEN 3724 and senior standing. 3 s.h.

5868. *Failure Analysis Using the SEM*. Advanced methods in failure analysis of products and structures. Failure modes and mechanisms. Characteristics of fracture surfaces. Failure analysis investigations using the stereomicroscope and the Scanning Electron Microscope (SEM). Two hours lecture, three hours lab per week. Prereq.: 96 s.h. of degree credit and permission of instructor. 3 s.h.

## MATHEMATICS—MATH

### Department of Mathematics and Statistics

#### Lower-Division Courses

1500. *Number Concepts and Beginning Algebra*. Activity-based approach to signed numbers, fractions, percentages, solving equations, word problems, proportional reasoning, graphing, slope, Pythagorean theorem and square roots. *Does not count toward a degree.* 5 s.h.

1501. *Elementary Algebraic Models*. Arithmetic of integers and of rational numbers; linear equations and inequalities in one variable; polynomials, factoring, algebraic fractions, radicals and quadratic equations; linear systems in two variables; graphs. Prereq.: Level 10 on Math Placement Test or MATH 1500. *Does not count toward a degree.* 5 s.h.

1502, 1503. *Beginning Algebra 1, 2*. Topics include arithmetic of integers and rational numbers, linear equations and inequalities, quadratic equations, factoring, systems of linear equations, word problems and graphing quadratic functions. MATH 1502 and MATH 1503 are equivalent to MATH 1501. Prereq.: Level 10 on Math Placement Test or MATH 1500. *Does not count toward a degree.* 3+3 s.h.

1507. *Intermediate Algebra*. Topics include functions of the following: linear, polynomial, rational, exponential, and logarithmic. Emphasis on function relations and graphing by algebraic techniques and technology. Solving linear, nonlinear equations and inequalities. Prereq.: MATH 1501 or Level 20 on Math Placement Test. *Does not count toward a degree.* 3 s.h.

1508. *Introduction to Trigonometry*. Angle measurement, similar triangles, trigonometric ratios in the plane, right triangle trigonometry, cosine and sine laws. Sine, cosine, and tangent functions and their graphs. Fundamental trigonometric identities, equation solving, and inverse trigonometric functions. Prereq.: MATH 1501 or Level 2 on the Math Placement Exam. 2 s.h.

1513. *Algebraic and Transcendental Functions*. Function concepts including trigonometric, exponential, and logarithmic functions. Application problems and graphing. Supplemental topics. Prereq.: At least Level 40 on the Mathematics Placement Test or MATH 1507 and MATH 1508. 5 s.h.

1552. *Applied Mathematics for Management*. Apply functions, linear systems, linear programming to business including use of technology; mathematics of finance and an introduction to limits, derivatives and integrals with business applications. No credit for students who have completed MATH 1570 or 1571. Prereq.: MATH 1507 or at least Level 40 on the Mathematics Placement Test. 4 s.h.

1564, 2665. *Foundations of Middle School Mathematics 1, 2*. Conceptual foundations of topics from number theory, operations, functions, algebra, geometry, measurement, probability, and data analysis. Emphasis on multiple approaches and representations, problem solving, and communication of mathematical reasoning. Includes inquiry-based laboratory experiences with manipulatives and computing technology. Prereq.: At least Level 40 on the Mathematics Placement Test or concurrent registration in MATH 1507 (for both). 4+4 s.h.

1570, 2670. *Applied Calculus 1, 2*. The elements of differential and integral calculus, with emphasis on applications. Analytical geometry, differentiation and integration techniques and series representations. Introduction to differential equations, transform calculus, and Fourier analysis. This is a basic methods course particularly adapted for those who require applied topics in mathematics. Not applicable toward the Mathematics major. Credit will not be given for both MATH 1549 and 1570. Prereq.: MATH 1513 or at least Level 50 on the Mathematics Placement Test. MATH 1570 for MATH 2670. 4+5 s.h.

1571, 1572, 2673. *Calculus 1, 2, 3*. A sequence of integrated courses in analytic geometry and calculus. A detailed study of limits, derivatives, and integrals of functions of one and several variables with applications. Prereq.: MATH 1571 requires at least Level 70 on the Mathematics Placement Test, or MATH 1513. MATH 1571 for MATH 1572, MATH 1572 for MATH 2673. 4+4+4 s.h.

1580H. *Biomathematics 1*. Counting techniques, probability, matrices and linear systems. Emphasis on the role of mathematical models in explaining and predicting phenomena in life sciences. Prereq.: Admission to NEOMED-YSU program. 2 s.h.

1581H. *Biomathematics 2*. A study of functions, differential and integral calculus. Emphasis on the role of mathematical models in explaining and predicting phenomena in life sciences. Credit will not be given for both MATH 1581H and 1571. Prereq.: Admission to NEOMED-YSU program 4 s.h.

1585H, 2686H. *Calculus 1, 2 Honors*. A sequence of honors courses in analytical geometry and calculus which cover essentially the same material as MATH 1571, 1572, 2673, in two semesters instead of three. A detailed study of limits, derivatives, and integrals of functions of one and several variables and their applications. Prereq.: Level 90 on the Mathematics Placement Test for MATH 1585H. MATH 1585H for MATH 2686H. This sequence will be offered at most once during each academic year. 5+5 s.h.



1586H, 2687H. *Honors Calculus Laboratory 1, 2*. Introduction to mathematical modeling of topics covered in calculus. Emphasizes the use of technology such as computer algebra systems, technical document processing, and graphics software for solving problems and reporting solutions. Prereq.: MATH 1571 or concurrent with 1585H for MATH 1586H. MATH 1572 or concurrent with MATH 1586H for MATH 2687H. 1+1 s.h.

2623. *Survey of Mathematics*. Mathematics models emphasizing basic ideas in mathematics and statistics, stressing concept formation rather than manipulative skills. Prereq.: MATH 1501 or Level 20 on the Mathematics Placement Test. Credit will not be given for both MATH 2623 and 2625. 3 s.h.

2624. *Probability and Critical Reasoning*. Finite probability with supportive material from logic and set language. Connection between critical reasoning in probability and in deterministic settings. Prereq.: MATH 1507 and MATH 1508 or at least Level 40 on the Mathematics Placement Test. 3 s.h.

2625. *Mathematical Literacy and Critical Reasoning*. An introduction to contemporary mathematics and its applications. Topics include basic scientific methods and a variety of practical problems that can be modeled and solved by quantitative means. Prereq.: Math 1501 or at least Level 20 on the Mathematics Placement Test. Credit will not be given for both MATH 2623 and 2625. 4 s.h.

2651, 2652. *Mathematics for Early Childhood Teachers 1, 2*. A conceptual development of mathematics topics underlying today's Pre-K-grade 3 curriculum. Emphasis on multiple approaches, problem solving, and communication of mathematics. Incorporates classroom activities, manipulatives, technology, and activities developmentally appropriate for young children. Prereq.: MATH 1501 or Level 20 on the Mathematics Placement Test for 2651, MATH 2651 for MATH 2652. 3+3 s.h.

### Upper-Division Courses

3701. *Biomathematics Seminar*. Introduction to interdisciplinary research in biology and mathematics. Topics include current research by faculty and students, cross disciplinary communication, report writing, technical presentations, literature reading, laboratory techniques and safety. May be repeated once. Listed also as BIOL 3701. Prereq.: MATH 1571 or BIOL 2601 or BIOL 2602. 1 s.h.

3702. *Problem Solving Seminar for Secondary Mathematics*. Approaches to and practice with problem solving with examples from a broad spectrum of mathematics. Emphases include problems at the level of the Praxis II examination for mathematics and problems suitable for high school contests such as the American Mathematics Competition 10 and 12. Prereq.: MATH 1572 or consent of instructor. 3 s.h.

3705. *Differential Equations*. Methods and theory of solving differential equations with applications. Existence, uniqueness. First order equations. Higher order linear equations. Introduction to partial differential equations and boundary value problems, including Laplace's equation. Prereq.: MATH 2673. 3 s.h.

3715. *Discrete Mathematics*. A course in discrete mathematical structures to prepare students for advanced courses. Topics include set theory, functions and relations, logic and quantifiers, truth tables and Boolean expressions, induction and other techniques of proof, and graphs. Credit will not be given for both CSCI 3710 and MATH 3715. Prereq.: MATH 1572. 3 s.h.

3720. *Linear Algebra and Matrix Theory*. Matrices; matrix operations; linear transformations; applications. Prereq.: MATH 1572. 3 s.h.

3721. *Abstract Algebra 1*. Introduction to abstract algebra investigating fundamental concepts in group and ring theory. Topics include groups, subgroups, cyclic groups, permutation groups, cosets, direct products, homomorphisms, factor groups, rings, integral domains and polynomial rings. Prereq.: MATH 3715 and 3720. 4 s.h.

3750. *History of Mathematics*. A survey of the historical development of mathematics. Prereq.: MATH 2673 or 3715. 3 s.h.

3751. *Real Analysis 1*. Introduction to the properties of the real number system and metrics and metric properties, with critical analysis of limits, continuity, differentiability, integration, and other fundamental concepts underlying the calculus. Prereq.: MATH 2673 and 3715. 4 s.h.

3760. *Numerical Analysis 1*. The theory and techniques of numerical computation. The solution of a single equation, interpolation methods, numerical differentiation and integration, direct methods for solving linear systems. Prereq.: MATH 3720 and CSIS 2610. 3 s.h.

3767, 3768. *Algebra/Geometry for Middle School Teachers*. An integrated, conceptual, and function-centered approach to the foundations of algebra, geometry, and trigonometry for preservice middle childhood mathematics specialists. Emphasis on multiple approaches and representations, problem solving, and communication of mathematical reasoning. Includes inquiry-based laboratory experiences. Not applicable to the mathematics major. Prereq.: MATH 1564 for MATH 3767; MATH 2665 for MATH 3768 and either 40 on the Mathematics Placement test or MATH 1507 for both. 4+4 s.h.

3785. *Numerical Methods*. Matrices, matrix operations, and the application of numerical methods. Not applicable to the Mathematics major. Prereq.: MATH 2670 and ENTC 1505, or equivalent. 3 s.h.

3795. *Topics in Mathematics*. The study of a mathematical topic or the development of a special area of mathematics. May be repeated once. Prereq.: MATH 1549 or 1570 or 1571 or 2623 or 2651. 2-3 s.h.

4830. *Foundations of Geometry*. The development of Euclidean and non-Euclidean geometries from postulate systems. Prereq.: MATH 3715. 3 s.h.

4869. *Functions, Calculus, and Applications for Middle School Teachers*. Polynomial and exponential functions, limits, derivatives, integrals, and applications. Interpretation of slope and area in graphs of functions from applied settings. Applications of limits to the derivations of geometric formulas. Relations between tables, graphs, and the symbolic representation of functions. Prereq.: MATH 3767 or consent of instructor. 3 s.h.

4870. *Mathematics Seminar for Middle School Teachers*. Approaches to and practice with problem solving from a broad spectrum of mathematics. Equal emphasis on problems suitable for contests in the seventh or eighth grade (such as the American Mathematics Competition 8 and MathCounts) and at the level of the Praxis II examination for Middle School Mathematics. May be repeated 2 times. Prereq.: MATH 2624 or MATH 2625 or STAT 2601; MATH 3767; MATH 3768; and either MATH 4869 or concurrent registration in MATH 4869. 2 s.h.

4882. *Biomathematics Research*. Interdisciplinary and individualized study of a topic in biology and mathematics. Student project mentored jointly by faculty in biology and mathematics. May be repeated once. Grading is Traditional/PR. Listed also as BIOL 4882. Prereq.: MATH/BIOL 3701, senior status and permission of the department chairperson. 1-2 s.h.

4893. *Mathematics Internship*. A program of work and study in the public or private sector centered upon the development of a significant mathematics project, under the direction of University faculty member(s) and designated member(s) of the participating agency. This course can be substituted for MATH 4896 to fulfill the major requirements with approval from the department chairperson. See department for more details. Prereq.: 24 s.h. of mathematics applicable to the mathematics major including either MATH 3721 or 3751 and consent of the department chairperson. May be repeated twice. 2 s.h.

4896. *Senior Undergraduate Research Project*. Individualized study of a topic in mathematics culminating in a written report and an oral presentation at a national or regional meeting or a local seminar. May be repeated once. Prereq.: 24 s.h. of mathematics applicable to the mathematics major including either MATH 3721 or 3751 and permission of the department chairperson. 2 s.h.

4897H. *Thesis*. Individualized study of a topic in mathematics culminating in a written report and an oral presentation at a national or regional meeting or a local seminar. Prereq.: 24 s.h. of mathematics

applicable to the mathematics major including both MATH 3721 and 3751 and permission of the department chairperson. 2 s.h.

5821. *Topics in Abstract Algebra*. A course in abstract algebra aimed at developing a broad understanding of the subject. Credit will not be given for both MATH 3721 and 4821. Prereq.: MATH 3715 and 3720. 3 s.h.

5822. *Abstract Algebra 2*. A continuation of MATH 3721 with special emphasis of fields. Additional topics in pure or applied algebra. Prereq.: MATH 3721 or equivalent. 3 s.h.

5823. *Abstract Algebra 3*. This course introduces advanced topics in field theory. Topics may include principal ideal domains, irreducibility, quotient rings, algebraic extensions, finite fields, splitting fields, and the Galois group. Prereq.: MATH 4822. 3 s.h.

5825. *Advanced Linear Algebra*. A study of abstract vector spaces, linear transformations, duality, canonical forms, the spectral theorem, and inner product spaces. Prereq.: MATH 3721. 3 s.h.

5828. *Number Theory*. A study of congruences, Diophantine equations, quadratic residues, special number theory functions, and selected applications. Prereq.: MATH 3721. 3 s.h.

5832. *Euclidean Transformations*. General properties of functions and transformations; isometries and transformations of the Euclidean plane; the complex plane, its geometry and subfields; transformational, analytical, and vector approaches to Euclidean geometry; connections to other branches of mathematics and applications. Prereq.: MATH 3720 and 4830. 3 s.h.

5835. *Introduction to Combinatorics and Graph Theory*. The pigeonhole principle; permutations, combinations, the binomial theorem; the inclusion-exclusion principle; recurrence relations; graphs and digraphs, paths and cycles, trees, bipartite graphs and matchings. Prereq.: MATH 3715 and 3720. 3 s.h.

5843. *Theory of Probability*. The mathematical foundation of probability theory including the study of discrete and continuous distributions. Other topics selected from limit theorems, generating functions, applications. Credit will not be given for MATH 5843 and STAT 5843. Prereq.: STAT 3743 and MATH 2673. 3 s.h.

5845. *Operations Research*. An introduction to operations research with emphasis on mathematical methods. Topics may include: linear programming, sensitivity analysis, duality theory, transportation problems, assignment problems, transshipment problems, and network problems. Prereq.: MATH 3715 and 3720. 3 s.h.

5851. *Topics in Analysis*. A course in analysis aimed at developing a broad understanding of the subject. Credit will not be given for both MATH 3751 and 5851. Prereq.: MATH 2673, 3720, and 3715. 3 s.h.

5852. *Real Analysis 2*. Uniform convergence of sequences of functions and some consequences; functions on  $n$ -space: derivatives in vector spaces, mean value theorem, Taylor's formula, inverse mapping theorem, implicit mapping theorem. Prereq.: MATH 3720 and 3751 or equivalent. 3 s.h.

5855. *Ordinary Differential Equations*. A second course in differential equations with emphasis on nonlinear problems and qualitative methods or on boundary value problems. Topics are chosen from: proofs of fundamental theorems, phase plane analysis, limit cycles and the Poincaré-Bendixon theorem, biological models, stability via Liapunov functions, asymptotic methods, and boundary value problems. Prereq.: MATH 3705 and 3720. 3 s.h.

5857. *Partial Differential Equations*. Introduction to partial differential equations (PDE) including solution techniques and applications. Classifications of the basic types of PDE's (hyperbolic, parabolic and elliptic) and dependence on boundary and initial conditions. Topics include Fourier series, integral transforms (Fourier, Laplace), and applications in vibrations, electricity, heat transfer, fluids or other selected topics. Prereq.: MATH 3705 and MATH 3720. 3 s.h.

5860. *Topics in Numerical Analysis*. A course in numerical analysis aimed at developing a broad understanding of the subject. Credit will not be given for both MATH 3760 and 5860. Prereq.: MATH 3720 and CSIS 2610. 3 s.h.

5861. *Numerical Analysis 2*. Numerical methods of initial-value problems, eigenvalue problems, iterative methods for linear and nonlinear systems of equations, and methods involving least squares, orthogonal polynomials, and fast Fourier transforms. Prereq.: MATH 2673 and 3760 or equivalent. 3 s.h.

5875. *Complex Variables*. Complex numbers and their geometric representation, analytic functions of a complex variable, contour integration, Taylor and Laurent series, residues and poles, conformal mapping. Prereq.: MATH 3751 or equivalent. 3 s.h.

5880. *Introduction to Topology*. An introduction to the basic concepts of general topology: compactness, connectedness, and continuity in topological spaces. Prereq.: MATH 3721 and 3751. 3 s.h.

5884. *Mathematical Logic*. An introduction to the study of theories in formalized languages and to the theory of models. Prereq.: MATH 3721 or PHIL 3719. 3 s.h.

5895. *Selected Topics in Mathematics*. The study of a standard mathematical topic in depth or the development of a special area of mathematics. May be repeated twice. Prereq.: 24 s.h. of mathematics applicable to the mathematics major including either MATH 3721 or 3751. 2-3 s.h.

## MECHANICAL ENGINEERING—MECH

### Department of Mechanical and Industrial Engineering

#### Lower-Division Courses

1500. *Drawing Fundamentals*. Visualization of objects for engineering communication. Freehand sketching, orthographic projection, multiview drawing, auxiliary views, sectional views, and dimensioning. Prereq.: High school geometry or equivalent. 3 s.h.

1501. *Engineering Communication with CAD*. Computer-aided drawing for engineering communication. 2D multiview drawings, 3D modeling including wire frame, solid, and surface models. Final design project using these tools is required. Two hours lecture, three hours laboratory per week. Prereq.: MECH 1500 or equivalent. 3 s.h.

1560. *Engineering Communication with CAD*. Commercially available software typically used in engineering practice will be used to develop traditional 2D engineering drawings and 3D solid models representing engineering components and systems. Teams of students will complete an engineering design project. One hour lecture and three hours laboratory per week. Prereq.: ENGR 1555 or concurrent. 2 s.h.

2603. *Thermodynamics 1*. Thermodynamic properties of gases and vapors, and their relationships in energy transformations. The First and Second Laws of thermodynamics. Introduction to thermodynamic cycles and efficiencies of power and refrigeration systems. Prereq.: MATH 1572, CHEM 1515. 3 s.h.

2604. *Thermodynamics 2*. Irreversibility and exergy, mixtures and solutions; psychrometry. Introduction to phase and chemical equilibrium. Prereq.: MECH 2603. 3 s.h.

2606. *Engineering Materials*. Properties and uses of engineering materials, manufacturing processes, including heat treatments and forming operations. Introduction to mechanical testing methods. Listed also as MTEN 2606. Prereq.: MATH 1571. 3 s.h.

2641. *Dynamics*. Kinematics of particles and rigid bodies. Newton's laws of motion, work-energy, and impulse momentum techniques applied to particle and rigid body motion using a vector approach. Prereq.: CEEN 2601. 3 s.h.

#### Upper-Division Courses

3708. *Dynamic Systems Modeling*. Mathematical modeling of linear mechanical, electrical, thermal, fluid, and mixed systems. State space variables. Frequency response. Computer simulation using modern computer tools. Three hours lecture and three hours laboratory per week. Prereq.: MECH 2641, ECEN 2614, MATH 3705. 4 s.h.

3720. *Fluid Dynamics*. Study of stationary fluids, and fluid dynamics of compressible and incompressible flows; dimensional analysis; boundary layers; subsonic and supersonic flows; lift and drag on bodies immersed in incompressible flows. Prereq.: MECH 2604, MATH 3705, MECH 2641. 3 s.h.

3720L. *Fluid Dynamics Laboratory*. Experiments on incompressible and compressible fluid flows in the subsonic and supersonic regions. Three hours laboratory per week. Prereq.: MECH 3720 or concurrent. 1 s.h.

3725/L. *Heat Transfer 1*. Fundamentals of heat transfer by conduction, convection, and radiation. Heat transfer by combined modes. Prereq.: MECH 3720 or concurrent. 3+1 s.h.

3742. *Kinematics of Machines*. Position, velocity, and acceleration analysis of mechanisms. Design of link and cam mechanisms to perform desired machine functions. Graphical, analytical, and commercial software applications. Prereq.: MECH 2641, ENGR 1560 or MECH 1560. 3 s.h.

3751. *Stress and Strain Analysis 1*. Analysis of internal forces, stresses, strains, and deflections in three dimensions. Dynamic loading including impact and fatigue. Theories of failure and energy methods. Prereq.: CEEN 2602, MECH 2606. Must be taken concurrently with MECH 3751L. 3 s.h.

3751L. *Stress and Strain Analysis 1 Laboratory*. Transmission and reflection photoelasticity. State and dynamic strain gage applications using computer-aided data acquisition. Three hours laboratory per week. Concurrent with MECH 3751. 1 s.h.

3762. *Design of Machine Elements*. Application of fundamental engineering principles to the design of various elements found in machines. Elements include connections, shafts, keys, couplings, springs, gears, belts, chains, bearings, clutches, brakes, screws, etc. Prereq.: MECH 2641 and 3751. Must be taken concurrently with MECH 3762L. 3 s.h.

3762L. *Design of Machine Elements Laboratory*. Practical design problems incorporating analysis, material selection, and sizing of machine components utilizing the computer. Three hours laboratory per week. Must be taken concurrently with MECH 3762. 1 s.h.

4800. *Special Topics*. Special topics and new developments in mechanical engineering. Subject matter, credit hours, and special prerequisites are announced in advance of each offering. May be repeated to a maximum of 8 s.h. with different content. Prereq.: Junior standing in Mechanical Engineering, or consent of instructor. 3 s.h.

4808, 4809. *Mechanical Systems Design 1, 2*. Detailed design of a mechanical engineering system utilizing expertise expected of a new graduate in an industry setting. Design methodology, case studies, oral presentations, and written reports prepare the student to function as part of a design team on a capstone project. MECH 4809 must be taken at the next offer-

ing after completing 4808. Grading in MECH 4808 is Traditional/PR. Two hours lecture per week for 4808, three hours lecture for 4809. Prereq. for 4808: MECH 3708, 3725, 3742, and 3762. Prereq. for 4809: MECH 4808. 2+3 s.h.

4808L. *Mechanical Systems Design Laboratory*. Supplemental activities related to MECH 4808, such as discussion and seminars on industry practices and standards, computer software applications, experimental verification, etc. Three hours laboratory per week. Must be taken concurrently with MECH 4808. 1 s.h.

4809L. *Mechanical Systems Design Laboratory 1,2*. Supplemental activities related to MECH 4808 and MECH 4809, such as discussions and seminars on industry practices and standards, computer software applications, experimental verifications, etc. Three hours laboratory per week. MECH 4808L must be taken concurrently with MECH 4808 and MECH 4809L must be taken concurrently with MECH 4809. 1 s.h.

4823. *Heating, Ventilation, and Air Conditioning*. Design of heating and air conditioning systems for residential, commercial, and industrial complexes. Human comfort, psychometries, and environmental issues. Computer simulation of heating and cooling load for steady-state and transient conditions. Selection of controls and equipment. Prereq.: MECH 3725. 3 s.h.

4825L. *Heat Transfer and Thermodynamics Laboratory*. Experiments involving basic measurement techniques, power and refrigeration cycles, heat transfer, heat exchangers, and energy systems. Three hours laboratory per week. Prereq.: MECH 3720, 3725. 1 s.h.

4835. *Thermal Fluid Applications*. Application of the principles of thermodynamics, fluid dynamics, and heat transfer to design. Design, analysis and computer simulation of thermal fluid systems and components. Prereq.: MECH 3725. 3 s.h.

4872L. *Engineering Acoustics Laboratory*. Applications of acoustics instrumentation to problems involving room acoustics, sounds in pipes, noise barriers, and machinery noise. Taken concurrently with MECH 5872. Three hours laboratory a week. 1 s.h.

5811. *Solar Engineering*. Radiational characteristics of solar energy, glass materials and selective coatings. Analysis of flat plate collectors, concentrators, and thermal storage. System simulation and economic analysis for optimization of basic solar systems. Prereq.: PHYS 2611, MECH 3725 or consent of chairperson. 3 s.h.

5825. *Heat Transfer 2*. Advanced topics in heat transfer. Multi-dimensional conduction, free convection, phase change heat transfer and thermal radiation. Integration of analytical, numerical, and computational methods into design projects. Prereq.: MECH 3708 and 3725. 3 s.h.

5836. *Fluid Power and Control*. Theory of prime movers, turbomachinery, and control systems. Modeling of hydraulic and pneumatic systems and components. Hydraulic fluids, pumps, cylinders, valves, motors, compressors, and actuators. Hydraulic and pneumatic circuit applications and control. Prereq.: MECH 3725. 3 s.h.

5842. *Kinetics of Machines*. Three dimensional kinematics and dynamics of machines. Dynamic analysis and design; balancing of machines. Prereq.: MECH 3742. 3 s.h.

5852. *Stress and Strain Analysis 2*. Continuation of MECH 3751. Introduction to applied elasticity theory including plane stress and strain and stress functions. Plastic and creep behavior of materials. Introduction to instability. Emphasis on design applications. Prereq.: MECH 3751, MECH 3751L, MATH 3705. 3 s.h.

5872. *Engineering Acoustics*. The nature of sound and its propagation; analysis and control of sound and noise production in mechanical equipment; transmission and absorption of sound in engineering materials, ultrasonics, structural acoustics, base measurements, and equipment. Prereq.: MECH 3708. 3 s.h.

5881. *Mechanical Vibrations*. Introduction to mechanical vibrations: single and multi-degree of freedom systems, free and forced vibrations, impedance and modal analysis including applications. Prereq.: MECH 3708. 3 s.h.

5881L. *Mechanical Vibrations Laboratory*. Introduction to vibrations measurements. Experiments with mechanical systems, computer simulation of vibration systems. Experimental determination of component models and parameters. Three hours laboratory per week. Prereq.: MECH 4881. 1 s.h.

5884. *Finite Element Analysis*. Fundamental principles of finite element analysis with emphasis on applications to design in areas of stress analysis, vibrations, and heat transfer. Use of commercial software. Prereq.: MECH 3708, 3725, 3751. 3 s.h.

5885. *Computational Fluid Dynamics*. Applied numerical analysis, including solution of linear algebraic equations and ordinary and partial differential equations; modeling of physical processes, including fluid flow and heat and mass transfer; use of general purpose computer codes, including commercial computational fluid dynamics software packages. Prereq.: MECH 3720 and 3725. 3 s.h.

5892. *Control of Mechanical Systems*. Introduction to theory of feedback and control. Performance and stability of linear systems. Design of feedback control systems. Practical application and introduction to state-space methods. Two hours lecture and three hours laboratory per week. Prereq.: MECH 3708. 3 s.h.

## MECHANICAL ENGINEERING TECHNOLOGY—MET Engineering Technology

### Lower-Division Courses

1515. *Mechanics 1*. Study of forces as vector quantities; resultants of force systems; principles of mechanical equilibrium; application of principles to problems, devices and structures commonly encountered in industry. Two hours lecture, three hours lab per week. Prereq.: ENTC 1505, Prereq. or Concurrent: MATH 1513. 3 s.h.

2616. *Mechanics 2*. Continuation of MET 1515 with further application of statics, introduction to dynamics of solids, study of various types of motion, Newton's second law, work and energy, impulse and momentum. Two hours lecture, three hours lab per week. Prereq.: MET 1515, MATH 1513. 3 s.h.

2630. *Manufacturing Techniques*. The study of materials and processes used in manufacturing, including casting, heat treatment, hot and cold working, plastics processing and machining. 2 s.h.

2630L. *Manufacturing Techniques Laboratory*. Practice and procedures of machine tool operation including lathes, drill presses, shapers, and milling machines. Two hours lab per week. Concurrent with MET 2630. 1 s.h.

### Upper-Division Courses

3700. *Physical Measurements*. Use and selection of instruments for measuring pressure, temperature, strain, force and flow, including the interpretation of data and the principles of Statistical Quality Control. Two hours lecture, two hours lab per week. Prereq.: EET 3725. 3 s.h.

3705. *Thermodynamics*. Properties of ideal and real gases, first and second laws of thermodynamics, application to thermodynamic cycles involving power plants and cyclic machinery. Two hours lecture and three hours lab per week. Prereq.: MATH 1570, MET 1515 and MET 2616 or PHYS 1501. 3 s.h.

3706. *Machine Design I*. Principles of stresses and deflections, combined stresses, fatigue, and theories of failure. Application of these principles to design of machine components. Two hours lecture, three hours lab per week. Prereq.: DDT 1505 or equivalent, CCET 2604, C or better in MET 1515. 3 s.h.

3707. *Machine Design 2*. Continuation of MET 3706, progressing to the design of machine elements such as gears, belts, clutches, chains, bearings, welded and bolted joints. Two hours lecture, three hours lab per week. Prereq.: C or better in MET 3706. 3 s.h.

3710. *Tool Design*. Design and selection of cutting tools, fixtures, bending and forming dies, inspection and gauging instruments, and material feed mechanisms. Two hours lecture, two hours lab per week. Prereq.: MET 3714, C or better in MET 3705. 3 s.h.

3711. *Heat and Power Cycles*. A continuation of MET 2605, including the study of heat transfer, the Rankine cycle, the Otto cycle, the Diesel cycle, and the performance of pumps and heat exchangers. Two hours lecture, two hours lab per week. Prereq.: MET 3714, C or better in MET 3705. 3 s.h.

3714. *Fluid Mechanics*. Principles of fluid statics and fluid dynamics and their application to incompressible flow in pipes and channels; Bernoulli's equation, laminar and turbulent flow; energy and momentum in fluid flow. Prereq.: ENTC 1505, MET 1515. Prereq. or concurrent: MET 2616. 2 s.h.

3714L. *Fluid Mechanics Laboratory*. Tests and applications of concepts covered in MET 3714. Three hours lab per week. Concurrent with MET 3714. 1 s.h.

3715. *Fluid Power Systems*. Principles of hydraulic and pneumatic systems, including device selection and application. Typical industrial systems are constructed and tested. Two hours lecture, two hours lab per week. Prereq.: MET 2616. 3 s.h.

3720. *Mechanisms*. Graphical and analytical solution of problems involving displacement, velocity, and acceleration in machine mechanisms. Design of linkages to provide required motions of machine members. Two hours lecture, two hours lab per week. Prereq.: MET 2616, MATH 1570. 3 s.h.

3730. *Energy and Financial Modeling*. The analysis and evaluation of financial factors that affect alternative energy systems explored in several common systems, such as solar, fuel cells, biodiesel, and wind, along with existing fuels such as coal, oil, natural gas, and nuclear. Prereq.: MET 3705. 4 s.h.

3731. *Grant Proposal*. The field of Alternative Energy Technologies requires significant writing skills to prepare the many parts of a proposal. Students will learn about funding sources for grants, prepare all portions of a grant proposal including Statement of Need, Work Plans, Budgets, Outcomes and Periodic Reports. Prereq.: ENGL 1551 and MET 3730. 4 s.h.

3735. *Hydrogen Production and Storage*. The methods of hydrogen production are discussed, including steam reforming, coal gasification, fermentation, and electrolysis. Storage systems are presented, along with national codes for the storage equipment, and best practices. Three hours lecture and 1-1/2 lab. Prereq. or concurrent with MET 3705 and Prereq. of CHEM 1505/L or CHEM 1515/L. 4 s.h.

3736. *Design of Solar Systems 1*. Use of the sun as an energy source is explored in forms of electricity or heat. Topics include regions that are best suited for solar, solar energy capture methods, energy conversion to electricity, steam or hot water. Actual systems are evaluated, including electrical and mechanical

design, economic calculations, and related codes. Three hours lecture and 1-1/2 lab. Prereq. or concurrent with EET 1502/L and Prereq. of CHEM 1505/L or CHEM 1515/L. 4 s.h.

3737. *Design of Solar Systems 2*. This course builds upon MET 3736 Design of Solar Systems I and adds more detailed analysis to the capture and use of solar energy. The radiation spectrum is defined and integration methods presented. Further discussion of solar use in heat pumps and absorption systems is explored. Three hours lecture and 1-1/2 computational lab. Prereq. MATH 2670 and MET 3736. 4 s.h.

3739. *Geothermal Processes*. This course provides students with basic knowledge on geothermal systems, the most-favorable areas for geothermal, principles of heat pumps and geothermal steam systems, common design principles, followed by economics, code requirements and LEED contributions. Three hours lecture and 1-1/2 computational lab. Prereq.: MET 3705. 4 s.h.

3740. *Design of Wind Systems I*. Evaluation of wind energy as a low-impact alternative energy source. Topics include selection of an appropriate wind site, types of turbines, and capture efficiency of wind devices. The electrical and mechanical systems are reviewed in detail, along with economic calculations and discussion of related codes. Three hours lecture and 1-1/2 computational lab. Prereq. or concurrent with EET 1502/L. 4 s.h.

3742. *Biodiesel Processes*. Several methods of biodiesel production are surveyed, such as algae, palm, and soy. The chemical process of each method is explored and analyzed. Existing production systems and campus research projects are used in class demonstrations. Three hours lecture and 1-1/2 computational lab. Prereq. CHEM 1505/L or CHEM 1515/L, BIOL 2601/L, and MET 3705. 4 s.h.

3743. *Fuel Cell Systems*. Several methods of fuel cells are explored including Proton Exchange Membrane Fuel Cells (PEMFC), Solid Polymer Electrolyte Fuel Cells (SPEFC) and Solid Oxide Fuel Cells (SOFC). The principles of operation existing barriers for each system will be presented, along with the current reach and economical feasibility. Three hours lecture and 1-1/2 computational lab. Prereq.: MET 3705 and CHEM 1515/L or CHEM 1505/L. 4 s.h.

4810. *Manufacturing Systems Analysis*. Study of manufacturing systems including manufacturing process design, analysis, selection and sequencing; value analysis, machine tool cost and functions. Computer simulation of production systems. Prereq.: MET 2630 and 3700. 3 s.h.

4812. *Numerical Control*. A study of the programming of numerically-controlled machine tools. Students program NC machines using manual and computer-assisted techniques. Two hours lecture, two hours lab per week. Prereq.: DDT 1505, MET 2630 or consent of instructor. 3 s.h.

4820. *Machine Systems*. Analysis and design of complex machine systems incorporating hydraulic and pneumatic subsystems and electrical controls, including PLCs. Comprehensive design projects. Two hours lecture, two hours lab per week. Prereq.: MET 3715, EET 3725, C or better in MET 3707. 3 s.h.

4850. *Air Conditioning Principles and Practice*. The practical techniques used in the design of heating, ventilating, and air conditioning systems, including load calculations, unit selection, and duct system layout. The laboratory work includes the use of design charts and manufacturer's catalogs in a project. Two hours lecture, two hours lab per week. Prereq.: MET 3711. 3 s.h.

4860. *Robotics Technology*. An application-oriented course on the technology and use of industrial robots, including classification, tooling, sensors, workcell design, safety, and programming. Prereq.: MET 4820, prereq. or concurrent with MET 3720 and concurrent with MET 4860L. 2 s.h.

4860L. *Robotics Technology Laboratory*. Practice in the programming and application of industrial robots and associated equipment. Construction of simulated robotic workcells using actual industrial robots, programmable controllers, sensors, and grippers. Two hours lab per week. Concurrent with MET 4860. 1 s.h.

4870. *Applied Finite Element Method*. Principles of the finite element method and its application to the analysis of stress, strain, and heat transfer. Computer-aided solutions to two- and three-dimensional problems in structural analysis, mechanical design and heat transfer. Two hours lecture, two hours lab per week. Prereq.: C or better in either MET 3707 or CCET 3709. 3 s.h.

4890. *Special Topics in Mechanical Engineering Technology*. New developments in Mechanical Engineering Technology. Subject matter, special prerequisites, and credit hours to be announced in advance of each offering. May be repeated with different subject matter to a maximum of 8 s.h. Prereq.: Senior standing in MET or consent of the instructor. 1-4 s.h.

4895. *Capstone Design Project*. The course provides an overview of the requirements and design procedures for alternative energy projects. Systems will be designed using all the tools presented in previous course work. Actual systems that may include wind, solar, biodiesel, or geothermal components will be built, tested, and evaluated. Includes a major interdisciplinary group project. Three hours lecture and 3 hours lab. Prereq.: senior standing in MET (AET option) and permission of the instructor. 4 s.h.

## MEDICAL ASSISTING TECHNOLOGY—MATC Department of Health Professions

1501. *Medical Terminology*. Structure of medical words, pronunciation, and meaning of medical terms. 3 s.h.

1502. *Medical Law and Ethics*. Types of medical practices. Legal relationship of physician to patient, i.e., professional liability, implied and informed consent, malpractice, invasion of privacy. Emphasis on professional attitude and behavior. 3 s.h.

2600. *Medical Insurance Forms*. A study of private group and government insurance programs; Medicare, Medicaid, Worker's Compensation and Disability Insurance and the completion of required forms. Prereq.: MATC 1501. 2 s.h.

2602. *Diagnostic and Procedural Coding*. Emphasis on identifying and use of coding systems (ID-9-CM, CPT) directly related to medical practices and current government regulations. Prereq.: MATC 1501. 2 s.h.

2604. *Intermediate Diagnostic and Procedure Coding*. Higher level of ICD-9-CM and CPT/HCPCS coding, knowledge of Prospective Payment System (PPG) to confirm DRG assignment and professional fee billing. Two hours lecture. Prereq.: MATC 1501 and 2602. 2 s.h.

2605. *Introduction to Pharmacology*. Identification and interactions of drugs used in patient care including the pharmacological action and effects on the patient. Various modes of administration and patient education regarding the effects of common drugs. Prereq.: MATC 1501, BIOL 1551. 3 s.h.

2606. *Automated Coding Systems*. Integration of computer system packages that incorporate the text and logic of coding systems in an automated form. Two hours lecture and three hour lab. Prereq.: MATC 1501 and 2602. 3 s.h.

2610. *Introduction to Disease Processes*. Introduction to the disease process including diagnostic symptoms and treatment aspects. Emphasis on the physical, psychological, and environmental conditions which influence the individual's well being. Prereq.: MATC 1501. 3 s.h.

2611L. *Clinical Procedures Lab*. Techniques of patient interviewing and history taking, performance of patient assessment, application of principles of body mechanics, and instructions for examinations and diagnostic procedures. Three hours lab. Prereq.: MATC 1501 and 1502. 1 s.h.

2612. *Medical Records Management*. Includes medical record administration in order to create, maintain, protect, and preserve records. Emphasis on the development and maintenance of appropriate filing systems and the ethical and legal requirements and restrictions of medical records. Prereq.: MATC 1501 and 1502. 2 s.h.

2614. *Medical Office Procedures*. Fundamentals in patient reception, appointment scheduling, communication techniques, office management systems and preparation of an office policy manual. Three hours lecture, six hours assigned practicum per week. Prereq.: MATC 1501 and 1502. 3 s.h.

2616. *Coding Specialist Internship*. The student will be assigned to a hospital, physician's office, clinic and/or health care setting to practice coding and interface with the billing methodologies. Fourteen hours at the assigned clinical site and one-hour seminar class on campus per week. Prereq.: MATC 2604. 3 s.h.

2620. *Advanced Clinical Procedures*. Orientation to minor surgical and specialized examination techniques, physical examinations, preparation and administration of medication, performing electrocardiograms, application of physical therapy, and x-ray techniques including maintaining medical supplies and inventory. Prereq.: MATC 2610, 2611L. 3 s.h.

2620L. *Advanced Clinical Procedures Lab*. Laboratory experiences in minor surgical and specialized examination techniques, preparation and administration of medication, electrocardiograms, physical therapy, and x-ray procedure. Concurrent with MATC 2620. Three hours of lab per week. 1 s.h.

2680. *Medical Laboratory Procedures*. An introduction to diagnostic laboratory procedures performed in the physician's office. Principles and techniques of laboratory procedures. Prereq.: MATC 2610, 2611L. 1 s.h.

2680L. *Medical Laboratory Procedures Lab*. Practice in diagnostic laboratory procedures. Emphasis on collection, proper handling, and identification of specimens. Basic hematologic procedures, urinalysis, bacteriological exams, serology, and pregnancy tests. Concurrent with MATC 2680. Three hours of lab per week. 1 s.h.

2692. *Medical Assisting Externship*. A practical experience in the offices of qualified physicians, accredited hospitals, and/or clinics. This is a non-paid experience. 20 hours per week for a total of 300 hours per semester at the site. One-hour weekly seminar. Prereq.: MATC 2620, 2614, 2680. 3 s.h.

## MERCHANDISING: FASHION & INTERIORS— MRCH Department of Human Ecology

1506. *Clothing and Image Development*. Purpose and meaning of dress and adornment as a means of communication and social identity. 3 s.h.

1508. *Apparel Production*. Methods, materials and the fundamental techniques and skills required in the production of apparel. Two hours lecture, four hours lab per week. 3 s.h.

1510. *Apparel Evaluation*. Analysis and evaluation of aspects of garment construction and styling relating to making merchandising decisions. 3 s.h.

2625. *The World of Fashion*. Overview of fashion-influenced industries: Textiles, Apparel, Accessories, and Home Furnishings. 3 s.h.

2661. *Fundamentals of Interior Design*. Studio course in theory, elements and principles of interior design. An introduction to planning, materials, furnishings, work methods, and problem solving to meet human needs. Introduces architectural drawing including plans, elevations, details and basic drafting skills within the context of interior design. 3 s.h.

2662. *Computer Applications for Housing and Interiors*. Computer-aided drafting and design using the basic commands of AutoCAD to produce architectural and interior drawings, including dimensional plans, evaluations, and details. Two hours lecture and 3 hours lab per week. 3 s.h.

2663. *Materials and Methods*. Principles and functions of materials and methods used in the construction of furnishings and housing materials. Raw materials, selection, use, care, and selling points of paper, leather, fur, woods, metals, glass, ceramics, and plastics. Examines the furnishings industry with emphasis on forecasting, planning, negotiating, pricing, and recording merchandise. Prereq.: MRCH 2662. 3 s.h.

3705. *Fashion Textiles*. Study of textiles, including their characteristics, functions, purposes, and care. Fibers, yarns, construction, finishes, and textile legislation. Two hours lecture, two hours lab. Prereq.: CHEM 1500/1500L or CHEM 1505/1505L. 3 s.h.

3713. *Merchandise Buying*. Strategies and philosophies of merchandise selection. Topics examined include the organization of the buying function, determining what to buy based on customer needs, visiting the market, vendor analysis and selection, and the buyer's responsibilities in other areas of the firm. The product dimension and global sourcing are explored in depth. Prereq.: MATH 2623 or 1570; CSIS 1514 and MRCH 2625. 3 s.h.

3730. *Social Psychology of Clothing and Appearance*. Interdisciplinary study of clothing and appearance within contexts of cultural, social-psychological, physical, and aesthetic relationships. Emphasize origins and motives of dress and adornment, relationship of clothing and appearance to self, and appearance as a factor in interpersonal and collective behavior. Explicitly connects the fields of fashion and social psychology. Prereq.: ENGL 1551, PSYC 1560 and SOC 1500. 3 s.h.

3740L. *Computer Applications for Textiles & Apparel Lab*. Exploration of computer and software applications used in the fashion industry. The use of computer-aided design (CAD) to produce technical drawings, sketches, color stories and textile prints for design and merchandising presentations. Two hours lecture, three hours lab. Prereq.: MRCH 1506 or MRCH 2661. 3 s.h.



3742. *Applied Textile Design*. Use of color application and needlework processes in production of clothing and home furnishings. Exploration into the process of fabric design as a part of textile end product development. Students will design their own fabrics and textile products using dyeing, printing and needlework methods. Two hours lecture, three hours lab. Prereq.: MRCH 1506. 3 s.h.

3745. *Product Line Development*. The theory and practice of sewn products development. Includes technology applications and practical experience in product development for fashion influenced textile goods. 2 hours lecture & 3 hours lab. Prereq.: MRCH 1508 or MRCH 1506 or MRCH 2661. 3 s.h.

3760. *Visual Merchandising*. Evaluation and creation of visual displays for the purpose of selling fashion, home furnishings, and other merchandise. Independent and cooperative work in analyzing store displays in the field, making recommendations for fixtures and displays, creating class projects, and working on visual displays and plans. Two hours lecture, two hours lab. Prereq.: MRCH 1506 or MRCH 2661. 3 s.h.

3764. *Family Housing and Technology*. Planning the home environment to meet family needs and resources; consumer decisions in selection of residences, floor plans, and household technology. Prereq.: SOC 1500. 3 s.h.

3795. *Fashion Industry Tour*. Concentrated on-site study of the fashion industry including tours of laboratories, designer workrooms, showrooms, buying offices and related organizations. Pre-tour orientations and written report of experiences required. Prereq.: MRCH 1506 or MRCH 1510 or MRCH 2625. 1 s.h.

4870. *Global Fashion Economy*. Exploration of the nature of the global textile and apparel economy. Identifying the challenges of sourcing textiles and apparel products internationally. Discussion of the various countries and regions that buy and manufacture fashion goods. Prereq.: MRCH 2625. Junior standing. 3 s.h.

4877. *History of Fashion*. Chronological study of fashion from antiquity through the twentieth century. The focus will be on style identification as well as the influence of social, political, and economic conditions as well as cultural and technological changes upon fashion and appearance. Prereq.: Junior standing and any one of the following: MRCH 2625, junior standing. 3 s.h.

4879. *History of Furnishings and Interiors*. A chronological study of interiors and furnishings from antiquity to the twentieth century will be explored. The focus will be on style identification as well as the influence of social, political, and economic conditions upon furnishings and development. Prereq.: MRCH 2663 or 2625. 3 s.h.

4880. *Merchandising Management*. Principles of merchandising applied to planning, development, and presentation of product lines in both the production and marketing of apparel, soft line, and other consumer goods. Relates the role of merchandising to other business fundamentals. Prereq.: MRCH 3713, MGT 3725. 3 s.h.

## MILITARY SCIENCE—MSCI

### Department of Military Science

1510. *Introduction to ROTC*. Team and individual study and activities in basic drill, physical fitness, rappelling, leadership recreation course, first aid, making presentations, and basic marksmanship. Fundamental concepts of leadership in a profession in both classroom and outside laboratory environments. One hour lecture and Leadership Laboratory (MSCI 1530L) per week. 1 s.h.

1520. *Introduction to Leadership*. Learn/apply principles of effective leading. Reinforce self confidence through participation in physically and mentally challenging exercises. Develop communication skills to improve individual performance and group interaction. Relate organizational ethical values to the effectiveness of a leader. One hour lecture and Leadership Laboratory (MSCI 1530L) per week. 1 s.h.

1530L or 2630L. *Basic Course Leadership Laboratories*. Practical exercises with different roles for students at different levels in the program. Build self confidence, and team-building leadership skills that can be applied throughout life. Open only to (and required of) students in the respective MSCI courses. For MSCI 1510 and 1520 it is MSCI 1530L. For MSCI 2610 and 2620 it is 2630L. 0 s.h.

2610. *Self Team Development*. Apply ethics-based leadership skills that develop individual abilities and contribute to the building of effective teams. Develop skills in oral presentations, writing concisely, planning of events, coordination of group efforts, advanced first aid, land navigation, and basic military tactics. Fundamentals of ROTC's Leadership Development Program. Two hours lecture and leadership lab (MSCI 2630L) per week. 2 s.h.

2620. *Individual/Team Military Tactics*. Introduction to individual and team aspects of military tactics in small unit operations. Includes use of radio communications, safety assessments, movement techniques, planning for team safety/security and methods of pre-execution checks. Practical exercises with upper-division ROTC students. Techniques for training others. Two hours lecture and leadership lab (MSCI 2630L) per week. 2 s.h.

2640. *Basic ROTC Summer Camp Challenge*. A five-week summer camp conducted at an army post. The student receives pay. Travel, lodging, and most meal costs are defrayed by the Army. The environment is rigorous, and similar to Army Basic Training. **No military obligation is incurred.** 3 s.h.

2650. *American Military Operations*. American Military Operations teaches the development and implementation of United States Army doctrine, philosophy, strategy, tactics, logistics, leadership, and battle and campaign analysis in an historical context. Prereq.: none. 2 s.h.

3710. *Leading Small Organizations 1*. Practical opportunities to lead small groups and lead again in situations of increasing complexity. Uses small unit tactics and opportunities to plan and conduct training for lower-division students both to develop such skills and as vehicles for practicing leading. Three hours lecture and leadership lab (MSCI 3730L) per week. Prereq.: Permission of department chairperson. 3 s.h.

3720. *Leading Small Organizations 2*. Continues methodology of MSCI 3710. Analyze tasks; prepare written/oral guidance for team to accomplish tasks. Delegate tasks and supervise. Plan for the unexpected in organizations under stress. Apply lessons from leadership studies. Examine importance of ethical decision making in setting a positive climate that enhances team performance. Three hours lecture and leadership lab (MSCI 3730L) per week. Prereq.: Permission of department chairperson. 3 s.h.

3730L or 4830L. *Advanced Course Leadership Laboratories*. Practical exercises with different roles for students at different levels in the program. Involves leadership responsibilities for the planning, coordination, execution, and evaluation of training and activities. Open only to students in the respective MSCI courses. For MSCI 3710 and 3720 it is 3730L; for MSCI 4810 and 4820 it is 4830L. 0 s.h.

3740. *ROTC Advanced Camp*. A five-week camp conducted at an Army post. Student receives pay. Travel, lodging and meal costs are defrayed by the Army. The Advanced Camp environment is structured and demanding, stressing leadership at small unit levels under varying conditions. Individual leadership and basic skills performance are evaluated. 4 s.h.

3750. *Individual Study*. The individual study of a particular military problem or review of the literature relating to a specific military problem. May be repeated with a different problem for a maximum of 3 s.h. Prereq.: Six s.h. of Military Science and consent of the instructor. 1-3 s.h.

4810. *Leadership Challenges and Goal-Setting*. Plan, conduct and evaluate activities of the ROTC cadet organization. Articulate goals, put plans into action. Assess organizational cohesion and develop strategies to improve it. Develop confidence in skills to lead people and manage resources. Learn/apply various Army policies and programs. Two hours lecture and leadership lab (MSCI 4830L) per week. Prereq.: Permission of department chairperson. 3 s.h.

4820. *Transition to Lieutenant*. Continues the methodology from MSCI 4810. Identify and resolve ethical dilemmas. Refine counseling and motivation techniques. Examine aspects of tradition and law as related to leading as an officer in the Army. Prepare

for a future as a successful Army lieutenant. Two hours lecture and leadership lab (MSCI 4830L) per week. Prereq.: Permission of department chairperson. 3 s.h.

## MULTI-AGE EDUCATION— MULT Department of Teacher Education

4807. *Teaching Across the Curriculum*. An investigation of cross-curricular teaching to develop an understanding of relationships among the PreK-12 disciplines. Conceptual knowledge, skills, creativity, and aesthetics will be integrated in planning and implementing interdisciplinary units of instruction in schools. Prereq.: One of the following ART 4837 or 4838; HPES 3767, HPES 3702; MUED 4823, 4824, or 4825. 2 s.h.

## MUSIC, APPLIED CLASSES— MUAC Dana School of Music

*A series of instrumental and vocal classes at the beginning level to explore technics and approaches appropriate to school music instruction. Music education majors select varying numbers of these courses in addition to pedagogy as described in the curriculum outline section. A minimum level of performance is required. Each class meets two hours a week.*

1556. *Singer's Diction: English/Italian*.

1557. *Singer's Diction: German*.

1558. *Singer's Diction: French*.

Application of the principles of Lyric diction; utilization of the International Phonetic Alphabet in developing and reading phonetic transcriptions of English, Italian, German, and French song texts. 1 s.h. each

3732. *Brass Methods*. Designed to prepare students for instrumental music teaching relative to brass instruments. Emphasis on tone production, the harmonic series, technique development, ranges and transposition, pedagogy, troubleshooting, and arranging techniques for brass instruments. Prereq.: FOUN 1501 and MUTC 1532. Meets 2 hours per week. 1 s.h.

3733. *Woodwind Methods*. Designed to prepare students for instrumental music teaching relative to woodwind instruments (flute, clarinet, oboe, bassoon, saxophone). Components include concepts of tone production, embouchure, articulation, and technique. Study material stresses common features as well as differences. Prereq.: FOUN 1501. 1 s.h.

3734. *String Methods*. Designed to prepare students for instrumental music teaching relative to string instruments (violin, viola, cello, string bass). Components include concepts of tone production, bow-

ing, fingering as well as appropriate evaluation of pedagogy. Study material stresses common features as well as differences. Prereq.: FOUN 1501. 1 s.h.

3755. *Guitar Class*. Study of the guitar at the beginning level to explore techniques and approaches appropriate to school music instruction. A minimum level of performance is required. Prereq.: FOUN 1501. 1 s.h.

3759. *Voice Class*. A study of voice at the beginning level to explore techniques and approaches appropriate to school music instruction. A minimum level of performance is required. May be repeated. Prereq.: FOUN 1501. 1 s.h.

3763. *Percussion Methods*. Study of snare drum, marching percussion, timpani, jazz drum set, keyboard, Latin percussion, and orchestral accessories. Topics include instrument selection and maintenance techniques as well as pedagogical approaches. Designed to prepare students for instrumental music teaching careers. Prereq.: FOUN 1501. 1 s.h.

## Keyboard Musicianship Classes

1581. *Keyboard Musicianship 1*. Elements of keyboard techniques, with emphasis on sight reading, interpretation of simple music, transposition and analysis. All major and minor scales and related chords, hands together. Required of all non-keyboard majors. 1 s.h.

1582. *Keyboard Musicianship 2*. Continuation of MUAC 1581; Emphasis on sight reading, interpretation, transposition and analysis. All major and minor scales and related chords, hands together. Required of all non-keyboard majors. Prereq.: MUAC 1582. 1 s.h.

2681. *Keyboard Musicianship 3*. A continuation and intensification of studies begun in MUAC 1581 and 1582, with emphasis on accompanying, modulation, repertoire, and stylistic analysis. Prereq.: MUAC 1582 or equivalent. 1 s.h.

2682. *Keyboard Musicianship 4*. Emphasis on accompanying, modulation, more advanced repertoire, and stylistic analysis. Prereq.: MUAC 2681 or equivalent. 1 s.h.

2691, 2692. *Accompanying 1*. A study of techniques useful in playing the piano for vocalists, with supervised studio and recital experience. May be repeated for credit. 1+1 s.h.

2693, 2694. *Accompanying 2*. A study of techniques useful in playing the piano for instrumentalists, with supervised studio and recital experience. May be repeated for credit. 1+1 s.h.

## Jazz

1525. *Jazz Fundamentals*. A study of harmony and ear training in the jazz idiom: intervals, chord construction, terminology and symbols, modal scales, pentatonic and blues scales, symmetrically altered scales, thirteenth chords and harmonic substitutions

and functions, and ear training and diction. Meets two hours per week. Prereq.: MUTC 1520 with a grade of B or better or placement in MUTC 1531. 2 s.h.

2667, 2668. *Jazz Improvisation 1, 2*. Jazz techniques with emphasis on analysis of harmonic progressions, form, style, and performance requirements of the jazz idiom. Prereq.: MUAC 1525 or a grade of B or better on the Jazz Placement Test. Classes must be taken in sequence. 3+3 s.h.

3781, 3782. *Jazz Keyboard 1, 2*. (For keyboard and non-keyboard majors). Class instruction and keyboard experience in jazz chordal voicing techniques and jazz accompanying techniques. Prereq.: MUAC 1582, MUAC 1525, a grade of B or better on the Jazz Placement Test, or permission of instructor. Classes must be taken in sequence. Meets two days per week. 1+1 s.h.

4867, 4868. *Jazz Improvisation 3, 4*. Advanced jazz techniques with emphasis on analysis of harmonic progressions, form, style, and performance requirements of the jazz idiom. Prereq: MUAC 2668. Courses must be taken in sequence. 3+3 s.h.

## Applied Studio Instruction

An audition is required for placement in applied studio instruction. Applied instruction is offered in the following areas:

### Keyboard

Harpichord	HARP
Organ	ORGN
Piano	PIAN

**Voice** VOIC

### String Instruments

Cello	CELL
Guitar	GUIT
String Bass	SBSS
Viola	VIOL
Violin	VION

### Woodwind Instruments

Bassoon	BASS
Clarinet	CLAR
Flute	FLUT
Oboe	OBOE
Saxophone	SAX

### Brass Instruments

Baritone Horn/	BHRN
Euphonium	
French Horn	FHRN
Trombone	TROM
Trumpet	TRUM
Tuba	TUBA

**Percussion** PERC

Minor level applied studio instruction is intended for approved music minors who have not met the requirements for major level study and for students who need minor level applied instruction for their degree program. All minor level studio instruction must be approved by both the appropriate faculty member and the Director of the Dana School of Music. Minor level applied studio instruction carries one (1) semester hour of credit and is offered at the following levels.

1500A.	<i>Freshman level</i>
1500B.	<i>Freshman level</i>
2600A.	<i>Sophomore level</i>
2600B.	<i>Sophomore level</i>
3700A.	<i>Junior level</i>
3700B.	<i>Junior level</i>
5800A.	<i>Senior/graduate level</i>
5800B.	<i>Senior/graduate level</i>

Major level applied studio instruction is intended for a student majoring in one of the programs offered by the Dana School of Music. A student may progress to the next level in applied studio instruction by successfully completing an applied jury. Applied juries take place each semester during finals weeks. Specific requirements for each jury are available through the applied teacher in each performance area and on a syllabus for each applied course. Major level applied studio instruction courses are:

#### Music Theater

1501 T.	<i>Freshman level</i>	2 s.h.
1502 T.	<i>Freshman level</i>	2 s.h.
2601 T.	<i>Sophomore level</i>	2 s.h.
2602 T.	<i>Sophomore level</i>	2 s.h.

#### Music Education & Music Recording

1501.	<i>Freshman level</i>	2 s.h.
1502.	<i>Freshman level</i>	2 s.h.
2601.	<i>Sophomore level</i>	2 s.h.
2602.	<i>Sophomore level</i>	2 s.h.
3701.	<i>Junior level</i>	2 s.h.
3702.	<i>Junior level</i>	2 s.h.
4801.**	<i>Senior level</i>	2 s.h.
4802.**	<i>Senior level</i>	2 s.h.

#### Music Composition

1501.	<i>Freshman level</i>	2 s.h.
1502.	<i>Freshman level</i>	2 s.h.
2601.	<i>Sophomore level</i>	2 s.h.
2602.	<i>Sophomore level</i>	2 s.h.
3703.	<i>Junior level</i>	3 s.h.
3704.*	<i>Junior level</i>	3 s.h.
4803.	<i>Senior level</i>	3 s.h.
4804.**	<i>Senior level</i>	3 s.h.

#### Jazz Performance

1501.	<i>Freshman level</i>	2 s.h.
1502.	<i>Freshman level</i>	2 s.h.
2603.	<i>Sophomore level</i>	3 s.h.
2604.	<i>Sophomore level</i>	3 s.h.
3703.	<i>Junior level</i>	3 s.h.
3704.*	<i>Junior level</i>	3 s.h.
4803.	<i>Senior level</i>	3 s.h.
4804.**	<i>Senior level</i>	3 s.h.

#### Performance

1501.	<i>Freshman level</i>	2 s.h.
1502.	<i>Freshman level</i>	2 s.h.
2605.	<i>Sophomore level</i>	4 s.h.
2606.	<i>Sophomore level</i>	4 s.h.
3705.	<i>Junior level</i>	4 s.h.
3706.*	<i>Junior level</i>	4 s.h.
4805.	<i>Senior level</i>	4 s.h.
4806.**	<i>Senior level</i>	4 s.h.

\*junior recital

\*\*senior recital

## MUSIC, CONDUCTING— MUCO Dana School of Music

3715. *Choral and Instrumental Conducting*. Designed to develop skills, hone competencies, and share conceptual knowledge relative to the art and pedagogy of conducting. Students develop skills in conducting, score analysis and preparation, rehearsal techniques, and error detection, and create artistic interpretation with peer-lab ensemble. Prereq.: MUTC 2632. 3 s.h.

## MUSIC EDUCATION—MUED Dana School of Music

2611. *Computer Applications in Music Education*. An overview of computer applications as they relate to the music educator. Specific hardware and software in music education will be discussed. Project topics: administrative software, music notation, MIDI, arranging and improvisation with computers, and designing multimedia. Meets two hours per week. Prereq.: MUTC 1532. 2 s.h.

3722. *Music in Early Childhood*. Fundamental skills, repertoire, materials, and techniques for teaching music to pre-kindergarten through third grade children. For non-music majors. Prereq.: CHF M 2633. 3 s.h.

5814. *Selected Topics in Music Education*. Course title will be listed each semester in the Schedule of Classes. May be repeated for credit with different topics. Prereq.: MUED 4823 or 4825. 2 s.h.

**Topics may include:**

*Vocal Ensembles in the High School.* A study of methods and materials for small vocal groups at the high school level including madrigals, swing choirs, and other small chamber ensembles.

*Orff and Kodaly for the Classroom.* A study of the philosophies, materials, and methods of Carl Orff and Zoltan Kodaly with applications to the elementary school classroom.

*Music and the Related Arts.* Techniques and materials for teaching humanities or related-arts classes at the elementary or secondary level. Relationships among music, art, architecture, literature, drama, and film.

*Marching Band Arranging.* A study of the instrumentation, suitable instrumental ranges, and scoring procedures for attaining the sound power for outdoor performance.

*Instrument Repair.* Practical experience in the basic skills needed by the prospective instrumental teacher in repairing string, brass, woodwind, and percussion instruments.

*Jazz Ensemble in the Secondary School.* Organizing, scheduling, and rehearsing the jazz ensemble, and a study of suitable jazz materials for the secondary school with emphasis on interpretation, style characteristics, and improvisation procedures.

4823. *Music Teaching in Early Childhood (Pre-K-4).* A study of the role of music in the life of the child. An examination of principles, repertoire, and techniques of teaching music to children (ages pre-k through third grade). Prereq.: Upper-division status in the College of Education. 3 s.h.

4824. *Music Teaching in the Middle School.* Music materials and methods of instruction in middle schools with emphasis on understanding the physiological and psychological development of early adolescents in the context of the general music class. Course content includes managing the learning environment, motivating students, developing music curricula, planning musical experiences and assessing musical behaviors. Prereq.: Upper-division status in the College of Education. 2 s.h.

4825. *Music Teaching in the High School.* Methods of organizing, administering, and conducting music in the high schools; instruction methods, library organization, scheduling, curriculum, philosophy, technology, classroom management, festivals and competitive events. Includes an average of two hours of field experience or laboratory work per week. Prereq.: Upper-division status in the College of Education and MUED 3715. 2 s.h.

4826. *Instrumental Music Education.* Materials, methods and literature for teaching and administering elementary, middle school, and high school instrumental music programs. Emphasis on curriculum design, pedagogy, orchestration/arranging techniques, and learning theories related to jazz,

concert, marching band, and orchestra. Prereq.: Upper-division status in the College of Education and completion or concurrent enrollment in MUED 4823 or MUED 4824 or MUED 4825. 2 s.h.

4827. *Choral Music Education.* Materials, methods and literature for school vocal ensembles. Additional emphasis is on vocal pedagogy, show choir curriculum, and show design, including arranging/adapting literature for show choir ensemble. Prereq.: Upper-division status in the College of Education and completion or concurrent enrollment in MUED 4823 or MUED 4824 or MUED 4825. 2 s.h.

5841. *Music Workshop.* For students and teachers in service; topics may vary from year to year. Specific topics are announced each time the workshop is offered. May be repeated with different topic. 1-3 s.h.

5858. *Piano Pedagogy.* Methods and materials involved in teaching piano in private and classroom settings. Fundamentals of technique as well as repertoire. Supervised practice teaching. Prereq.: Two years of applied keyboard. 3 s.h.

5880. *Vocal Pedagogy.* A comparative study of physiological and psychological approaches to voice instruction and their application to private and class instruction. Prereq.: Two years of applied voice classes. 1 s.h.

**MUSIC ENSEMBLES—MUEN  
Dana School of Music**

**Major Ensembles**

0002. <i>Dana Chorale</i>	0-1 s.h.
0003. <i>Dana Madrigal</i>	0-1 s.h.
0004. <i>University Chorus*</i>	0-1 s.h.
0005. <i>Concert Band</i>	0-1 s.h.
0006. <i>Marching Band (fall only)*</i>	0-1 s.h.
0007. <i>Wind Ensemble</i>	0-1 s.h.
0008. <i>Symphony Orchestra</i>	0-1 s.h.
0023. <i>Jazz Ensemble</i>	0-1 s.h.
0040. <i>Symphonic Band (spring only)</i>	0-1 s.h.

**Chamber Ensembles**

0009. <i>Percussion Ensemble</i>	0-1 s.h.
0010. <i>String Ensemble</i>	0-1 s.h.
0012. <i>Opera Workshop</i>	0-3 s.h.
0013. <i>Studio Ensemble</i>	0-1 s.h.
0014. <i>Women's Chorus</i>	0-1 s.h.
0015. <i>Early Music Ensemble</i>	0-1 s.h.
0016. <i>Flute Ensemble</i>	0-1 s.h.
0017. <i>Brass Ensemble</i>	0-1 s.h.
0018. <i>Horn Choir</i>	0-1 s.h.
0019. <i>Trombone Ensemble</i>	0-1 s.h.

0020. <i>Tuba Ensemble</i>	0-1 s.h.
0021. <i>Brass Chamber Ensemble</i>	0-1 s.h.
0022. <i>Trumpet Ensemble</i>	0-1 s.h.
0024. <i>Composer's Ensemble</i>	0-1 s.h.
0026. <i>Chamber Orchestra</i>	0-1 s.h.
0028. <i>Chamber Winds</i>	0-1 s.h.
0029. <i>Guitar Ensemble</i>	0-1 s.h.
0030. <i>Jazz Combo</i>	0-1 s.h.
0035. <i>Saxophone Quartet</i>	0-1 s.h.
0036. <i>Clarinet Choir</i>	0-1 s.h.
0041. <i>Basketball Pep Band (spring only)</i>	0-1 s.h.
0051. <i>Piano Chamber Ensemble</i>	0-1 s.h.

\*Only University Chorus and Marching Band do NOT require an audition. Audition is required for all other Dana ensembles.

## MUSIC HISTORY AND LITERATURE—MUHL Dana School of Music

2616. *Survey of Jazz*. A historical survey of the origins, influences, and stylistic features of jazz from its beginnings to the present, with emphasis on performers, compositions, and innovations. 3 s.h.

2617. *Film Music*. A historical survey of the use of music in the motion picture. Examination of different styles in works by major composers. 3 s.h.

2618. *Rock n' Roll to Rock*. A historical survey of the evolution of rock n' roll into rock with emphasis on the interrelationships of the music and social and political influences and the interaction of rock with other musical styles. 3 s.h.

2619. *Music of Non-Western Societies*. A historical survey of music as it relates to the different cultures, with emphasis on the development of instruments, vocal practices and performance media within specific cultures. 3 s.h.

2621. *Music Literature and Appreciation*. The development of listening techniques applicable to Western and non-Western music through the comparison and contrast of the music of significant historical periods. For non-music majors. 3 s.h.

2622. *Popular Music in America*. The changing styles in American popular music from its origins to the present day studied through an examination of representative compositions and performers. 3 s.h.

3771. *Music History and Literature 1*. An exploration of musical style in Medieval and Renaissance Europe. Representative vocal and instrumental works are examined from historical perspectives of music theory and practice, while closely considering the social, political, and artistic contexts that produced them. Prereq.: sophomore standing and MUTC 1520 or 80% on music theory diagnostic exam. 3 s.h.

3772. *Music History and Literature 2*. An exploration of baroque musical style. Representative vocal and instrumental works are examined from historical perspectives of music theory and practice, while closely considering the social, political, and artistic contexts that produced them. Prereq.: sophomore standing and MUTC 1520 or 80% on music theory diagnostic exam. 3 s.h.

3773. *Music History and Literature 3*. An exploration of European musical style from the Classic era through the 19<sup>th</sup> century. Representative vocal and instrumental works are examined from historical perspectives of music theory and practice, while closely considering the social, political, and artistic contexts that produced them. Prereq.: sophomore standing and MUTC 1520 or 80% on music theory diagnostic exam. 3 s.h.

3774. *Music History and Literature 4*. An exploration of 20<sup>th</sup> century European and American musical styles and of selected non-Western musics. Representative vocal and instrumental works are examined from historical perspectives of music theory and practice, while closely considering the social, political, and artistic contexts that produced them. Prereq.: sophomore standing and MUTC 1520 or 80% on music theory diagnostic exam. 3 s.h.

3787. *History and Appreciation of Art and Music*. (General) Illustrated lectures on art and music to develop the cultural growth of the non-art and non-music student. Art and music forms, comparisons of compositional styles, and discussion of the developments, influences, and experiments of the important periods to date. No prior training in art or music required. Not intended for Art majors. Listed also as ART 3787. 3 s.h.

5860. *Keyboard Literature*. An investigation of the solo keyboard works of major composers from the earliest times to the present day. Prereq.: MUTC 2632. 3 s.h.

5871. *Baroque Music*. The evolution of musical styles during the period 1600-1750. A historical survey of documents and music literature of the time: opera from Monteverdi to Handel; keyboard and instrumental works; significant choral works, etc. Prereq.: MUTC 2632, MUHL 3771, MUHL 3772, MUHL 3773, and MUHL 3774. 3 s.h.

5872. *Eighteenth Century and the Viennese Classical School*. Musical developments from the decline of the baroque to the turn of the century; historical and stylistic elements contributing to the rise of classicism and culminating in the works of Mozart, Haydn, Beethoven. Prereq.: MUTC 2632, MUHL 3771, MUHL 3772, MUHL 3773 and MUHL 3774. 3 s.h.

5873. *Opera History*. A historical survey of opera: its development as an art form from its beginnings to the present. Prereq.: MUTC 2632, MUHL 3771, MUHL 3772, MUHL 3773 and MUHL 3774. 3 s.h.

5874. *Nineteenth Century*. Musical developments from Beethoven through Wagner; aesthetic, formal, technical and historical trends with special emphasis

on nationalism and the music drama. Prereq.: MUTC 2632, MUHL 3771, MUHL 3772, MUHL 3773, and MUHL 3774. 3 s.h.

5878. *Selected Topics in Music History*. A study of a specific topic to be announced each time the course is offered. May be repeated once with different topic. Prereq.: MUTC 2632, MUHL 3771, MUHL 3772, MUHL 3773, and MUHL 3774. 3 s.h.

5879. *Vocal Literature*. A study of vocal literature from all periods. Special emphasis on English language repertoire and on material especially suitable for high school students. Songs are prepared for performance in class. Prereq.: MUTC 2632, MUHL 3771, MUHL 3772, MUHL 3773, and MUHL 3774. 3 s.h.

## MUSIC RECORDING— MURC Dana School of Music

1561. *Music Recording Workshop*. Introduction to the music recording process and the recording studio. An overview of music recording grounded in History and the principles of acoustics. An exploration of analog and digital technology involved in music recording. Two hours lecture, two hours lab. 4 s.h.

3762. *Digital Sound Production*. An overview of MIDI and electronic musical instrument technology. Sequencers and mixing in the MIDI environment. Basic compositional techniques using MIDI and the computer, and the application of MIDI in the music recording environment. Prereq.: MURC 1561. 2 s.h.

3763. *Digital Recording and Editing*. A study of both linear and non-linear music recording and editing. Various hardware and software options, as well as the production of recording projects in both domains. Prereq.: MURC 1561. 2 s.h.

3764. *Advanced Microphone Techniques*. Investigation of the characteristics of different microphones, microphone design, microphone selection, and microphone placement. The accessories of various miking situations will be investigated. Experiments with different microphone techniques in both the analogue and digital domains. Prereq.: MURC 3763. 2 s.h.

3765. *Advanced Recording Techniques*. Investigates advanced elements of music recording from the recording session procedures to product manufacture. Advanced techniques in noise reduction, amplification, sound compression, and synchronization. Prereq.: 3764. 2 s.h.

4866. *Recording Internship*. Practicum in appropriate music recording environments. Addresses all aspects of the music recording industry. Students meet once a week on campus to share and discuss experiences from the intern position. A minimum of 12 hours per week will be spent in the field. Prereq.: MURC 3765 and senior standing in MURC. 6 s.h.

4867. *Senior Project*. Independent student project to showcase skills and techniques learned in the content courses. Presentation of project in a public exhibition required. Prereq.: MURC 3765 and senior standing in MURC. 4 s.h.

## MUSIC THEORY AND COMPOSITION—MUTC Dana School of Music

1501. *Applied Theory*. Applications of theory of diatonic harmony; development of independent study and research projects in such areas as analysis, aural perception, scoring, and arranging. May be repeated once. Prereq.: Permission of instructor. 2 s.h.

1520. *Materials of Music*. Musical styles, listening concepts, and harmonic technics as they relate to the literature of music. For students who do not qualify for MUTC 1531. 3 s.h.

1531. *Musicianship 1*. Materials in tonal music. Harmonic progression, voice leading, counterpoint, harmonic and formal analysis, composition and arranging. Prereq.: MUTC 1520 with a grade of B or better or a minimum score of 80% on the theory placement test. 2 s.h.

1531L. *Musicianship 1 Laboratory*. Practice and mastery of the fundamental skills of musicianship. Sight singing with practice in score-reading transpositions, aural recognition, and functional keyboard. Prereq.: Concurrent enrollment in MUTC 1531 expected. MUTC 1520 with a grade of B or better or a minimum of 80% on the theory placement test. 2 s.h.

1532. *Musicianship 2*. Materials in tonal music. Harmonic progression, voice leading, counterpoint, harmonic and formal analysis, composition and arranging. Prereq.: MUTC 1531 and MUTC 1531L with grades of C or better. 2 s.h.

1532L. *Musicianship 2 Laboratory*. Practice and mastery of the fundamental skills of musicianship. Sight singing with practice in score-reading transpositions, aural recognition, and functional keyboard. Prereq.: MUTC 1531 and MUTC 1531L with grades of C or better. Concurrent enrollment in MUTC 1532. 2 s.h.

2631. *Musicianship 3*. Chromatic materials in tonal music. Part writing, harmonization, harmonic and formal analysis, and score-reading transpositions. Prereq.: MUTC 1532 and MUTC 1532L with grades of C or better. 2 s.h.

2631L. *Musicianship 3 Laboratory*. Practice and mastery of advanced sight singing, aural recognition and piano skills. Prereq.: MUTC 1532 and MUTC 1532L, both with grades of C or better. Concurrent enrollment in MUTC 2631. 2 s.h.

2632. *Musicianship 4*. Chromatic materials in tonal music. Part writing, harmonization, harmonic and formal analysis, and score-reading transpositions. Prereq.: MUTC 2631 and MUTC 2631L with grades of C or better. 2 s.h.

2632L. *Musicianship 4 Laboratory*. Practice and mastery of advanced sight singing, aural recognition and piano skills. Prereq.: MUTC 2631 and MUTC 2631L, both with grades of C or better. Concurrent enrollment in MUTC 2632. 2 s.h.

3712, 3713. *Jazz Arranging 1, 2*. Scoring in the jazz idiom with emphasis on harmonic concepts, voicing procedures, form, and stylistic trends developed by major jazz composer-arrangers. Detailed study of instrumental techniques with projects scored for various size ensembles. Student arrangements are performed in reading sessions and concerts. Prereq.: MUTC 1532 and MUAC 2668 or permission of instructor. Classes must be taken in sequence. 3+3 s.h.

3750. *Analytical Techniques*. Analysis of representative repertoire from the Renaissance, Baroque, Classical, Romantic, and Contemporary periods. Prereq.: MUTC 2632 and MUTC 2632L with grades of C or better. 3 s.h.

5821, 5822. *Composition for Minors*. Composition in two- and three-part forms, and other compositions of small scope, such as variation and sonatina. Works are composed both for piano alone, and in combination with other instruments or voice. May be repeated by composition majors to meet requirements for freshman and sophomore composition for majors. Prereq.: MUTC 2632 with a grade of C or better, or permission of instructor for composition majors. 2+2 s.h.

5828. *Music Technology*. An exploration of the use of computers and technology in music. Applications related to composition, performance, analysis, teaching, and research. Prereq.: MUTC 2632 with grade of C or better or permission of instructor. 3 s.h.

5830. *Materials of 20<sup>th</sup> Century Music*. Study of the various elements of 20<sup>th</sup> century compositions, including melody, harmony, rhythm, texture, and form. Prereq.: MUTC 2632 with a grade of C or better. 3 s.h.

5831. *Modal Counterpoint*. Sixteenth century contrapuntal style including introduction of species technique; analysis of liturgical and secular repertoire; writing of imitative counterpoint with stylistic rhythms and cadences. Prereq.: MUTC 2632 with a grade of C or better. 3 s.h.

5832. *Tonal Counterpoint*. Contrapuntal style of baroque music including an analysis of examples in imitative and invertible counterpoint; writing two- and three-part inventions and three- and four-part fugal expositions. Prereq.: MUTC 2632 with a grade of C or better. 3 s.h.

5833. *Theory Seminar*. Topics in music theory not covered in regular upper-division offerings. May be repeated once with different topic. Prereq.: MUTC 2632 with a grade of C or better. 3 s.h.

5834. *Electronic Music*. Techniques of analog and digital synthesis including tape composition, music concrete; advanced MIDI applications such as

sequencing and sampling; and digital audio editing. Composition in electronic and mixed media. Prereq.: For composition majors, COMP 1502 or equivalent; for non-composition majors, MUTC 2632 with a grade of C or better; for non-majors, permission of instructor. 3 s.h.

5840. *Instrumentation*. Ranges, transposition, technical characteristics, and tonal features of the instruments. Scoring for large and small ensembles which are available as laboratory reading groups. Prereq.: MUTC 2632 with a grade of C or better. 3 s.h.

## NURSING—NURS Department of Nursing

### Lower-Division Courses

2601. *Long-Term Care Agency*. Introductory course to Nursing Home Administration including functions and qualifications of personnel in providing an environment of civility and safety. 3 s.h.

2610. *Contemporary Nursing*. Concepts related to professional nursing practice including nursing as a developing profession; educational perspectives and patterns; legal and ethical accountability; economic and political aspects; health care delivery systems; and nursing management and leadership roles. Open to nursing and non-nursing majors. 3 s.h.

2643/2643L. *Health Assessment*. Development of communication and assessment skills for obtaining health data from various age groups, as well as reporting and recording findings. Three hours lecture, three hours clinical experience in a variety of settings per week. 4 s.h.+0 s.h.

2645/2645L. *Professional Nursing 1*. Applications of the nursing process for the care of clients with emphasis on health assessment, health promotion, and psychosocial and psychomotor skills. Three hours lecture, 15 hours clinical experience in a variety of settings per week. Prereq.: NURS 2643, 2610, 2646 and BIOL 1560/L. 8 s.h.+0 s.h.

2646. *Pathophysiology*. Concepts related to pathophysiologic mechanisms of illness. Emphasis on application to nursing using the nursing process. Prereq.: BIOL 1552/L and CHEM 1506/L. 4 s.h.

2650. *Pharmacology*. Concepts of pharmacology applies to major drug classes. Emphasis on application of nursing process to drug therapy across the lifespan. Prereq.: NURS 2646. 3 s.h.

### Upper-Division Courses

3705. *Ethics, Legalities, & Responsibilities for RNs*. Discourse of case study scenarios exploring legal and ethical rights, practice responsibilities, professional obligations, accessible healthcare resources, and outcomes on patients, nurses, the profession, and society. Prereq.: RN-to-BSN students only. 3 s.h.



3710/3710L. *Nursing in the Community*. Nursing in the community including families in health and illness needs; culturally competent health care; teaching and learning aspects; psychosocial concepts, spirituality, and home health concepts and skills. Three hours lecture, six hours clinical experience in a variety of settings per week. Prereq.: NURS 2645, BSN Generic Program. 5 s.h.+0 s.h.

3720. *Contemporary Nursing for RNs*. Concepts related to professional nursing practice for graduates of ADN and diploma programs. Prereq.: Valid RN Licensure. 3 s.h.

3731/3731L. *Child Bearing, Family, and Women's Health Nursing*. Family-centered nursing concentrating on health promotion and illness prevention, acute and chronic healthcare needs for parent(s) during the reproductive expanding phase of the family cycle and for women from adolescence through old age. Three hours lecture and six hours clinical experiences in a variety of settings per week. Prereq.: NURS 3741, BSN Generic Program. 5 s.h.+0 s.h.

3741/3741L. *Professional Nursing 2*. Principles and practices of health promotion and rehabilitation of clients with acute and chronic health needs. Three hours lecture, nine hours clinical experience in a variety of settings per week. Prereq.: NURS 2645, BSN Generic Program. 6 s.h.+0 s.h.

3743/3743L. *Professional Nursing 3*. Advanced principles and practices of health promotion and rehabilitation of patients with acute and chronic health needs. Three hours lecture, six hours clinical experience in a variety of settings per week. Prereq.: NURS 3741, BSN Generic Program. 5 s.h.+0 s.h.

3749. *Nursing Research*. Process of research using reasoning and scientific rigor in critical analysis of nursing research. Prereq.: MATH 2625, BSN Generic Program. 3 s.h.

3770. *Pathophysiology and Pharmacology I*. Coordinates drugs in context with therapeutic use emphasizing connection between pharmacology, pathophysiology, and nursing care. The content focuses on core concepts and neuropharmacology. Prereq.: Valid RN license. 3 s.h.

3772. *Pathophysiology and Pharmacology 2*. Coordinates drugs in context with therapeutic use emphasizing connection between pharmacology, pathophysiology, and nursing care. The content focuses on core concepts and body systems—cardiac, respiratory, immune, endocrine, renal, and integumentary. Prereq.: Valid RN license and NURS 3770. 3 s.h.

4800/4800L. *Legal Nurse Consulting*. Theory and practical components of legal nurse consulting are explained. This course fulfills requirements to sit for the American Association of Legal Nurse Consultant's Certification examination. Prereq.: Valid RN Licensure. 5 s.h.+0 s.h.

4804. *Health Assessment for RNs*. Increase clinical knowledge and skills in health assessment of clients of various age groups, and the reporting and recording of findings. (Content will be online with lab meeting 4-5 times per semester for practicing assessment skills). Prereq.: Valid RN license. 3 s.h.

4832/4832L. *Nursing Care of Children and Families*. Family-centered nursing concentrating on health promotion/illness and prevention and acute/chronic health care needs of the developing child and family. Three hours lecture and six hours clinical experience in a variety of settings per week. Prereq.: NURS 3743, BSN Generic Program. 5 s.h.+0 s.h.

4833. *Health Assessment Practices for RNs*. Knowledge and application necessary for registered nurses to conduct a comprehensive health history and physical assessment. Prereq.: RN status. 3 s.h.

4840/4840L. *Complex Care*. High acuity, restorative, and health promoting care of clients with complex health problems. Three hours lecture, six hours clinical experience in a variety of settings per week. Prereq.: NURS 3743, BSN Generic Program. 5 s.h.+0 s.h.

4842/4842L. *Mental Health Nursing*. Mental health theories and strategies as the foundation in the management of individuals, families, and groups experiencing acute and chronic mental illness. Emphasis on the promotion of optimal level functioning and mental wellness. Three hours lecture, six hours clinical experience in a variety of settings per week. Prereq.: NURS 3743, BSN Generic Program. 5 s.h.+0 s.h.

4844. *Community Health Nursing*. Synthesis of nursing and public health sciences with emphasis on promotion and maintenance of healthy communities through the assessment and analysis of at-risk population groups. Includes nursing role in health care policy. Prereq.: NURS 3743, BSN Generic Program. 3 s.h.

4846/4846L. *Community Health Nursing for RNs*. A synthesis of nursing and public health sciences emphasizing health of communities through assessment analysis of at-risk population groups. Includes nursing role in healthcare policy. Three hours of lecture and three hours clinical experience in a variety of settings per week. Prereq.: Valid RN Licensure and NURS 3720, 4804, 3770, and 3772. 4 s.h.+0 s.h.

4852. *Senior Capstone Seminar*. Provides students with opportunities to integrate and synthesize nursing knowledge through research, writing, and presentations on current topics and issues. Prereq.: Last semester in program, BSN Generic Program. 1 s.h.

4853/4853L. *Nursing Transitions*. Analysis, synthesis, and evaluation of care delivered by the healthcare team with emphasis on development of leadership and research roles. Two hours lecture and eight hours clinical experience in a variety of settings per week. Prereq.: NURS 4840 or concurrent, BSN Generic Program. 4 s.h.+0 s.h.

4854/4854L. *Nursing Transitions for Registered Nurses*. Analysis, synthesis, and evaluation of care delivered by the healthcare team with emphasis on development of leadership and research roles for the registered nurse. Three hours lecture per week and 4 hours of clinical hours experience per week, totalling 60 hours. Prereq.: Completion of all other curriculum requirements except NURS 4852. 4 s.h.+0 s.h.

4855. *Comprehensive Nursing Summary*. Identifies individual strengths and weaknesses with emphasis on improving students' understanding and demonstration of essential nursing knowledge. Must be taken concurrently with NURS 4853 and NURS 4852. Prereq.: Senior standing in nursing. 2 s.h.

### Nursing Electives

3746. *Geriatric Health*. An examination of the aging person's physical changes with implications for determining healthcare needs and for interpreting the impact of these upon the elder's life and current health practices. Prereq.: Junior status. 2 s.h.

3747. *Individual Studies*. The study of special problems or a review of the literature relating to specific problems or issues. May be repeated for a maximum of 6 s.h. with different problems. Prereq.: Admission to program or permission of department chairperson. 1-3 s.h.

4860. *Home Health Nursing*. Current trends, issues, and approaches related to caring for clients in the home environment. Emphasis on the nursing role in client transition from the acute care setting to home. Three hours lecture, three hours clinical experience in a variety of settings per week. Prereq.: NURS 3741 or permission of instructor. 4 s.h.

5870. *School Nurse Role Development*. Contemporary topics related to the professional school nurse role, including standards of practice, certification, ethical, legal, and practice issues. Prereq.: NURS 4833 or RN status. 3 s.h.

5871. *Health Problems of School-Age Children*. Concepts related to specialized skills for conducting comprehensive assessments of children in a school setting, with special attention to children with disabilities. School nurse responsibilities in management of common health problems. Prereq.: NURS 4831 or RN status. 3 s.h.

5872. *School Nurse Practicum*. Supervised clinical experience in school settings for RN students participating in the delivery of school health services. Includes one hour per week on campus. Field experience of 300 hours required for state of Ohio certification eligibility. 300 hours equals 9 s.h. May be taken in segments of 3-9 s.h. per semester. Prereq.: NURS 4870 and 5871 and RN status. 3-9 s.h.

## PHILOSOPHY—PHIL

### Department of Philosophy and Religious Studies

#### Lower-Division Courses

2600. *Introduction to Philosophy*. The nature of philosophy and its relation to science, religion, and art; study of the philosophical approach and attitude, the basic problem areas in philosophy, and some typical philosophical viewpoints. 3 s.h.

2608. *The Examined Life*. Considers the nature of happiness and well-being and their relation to social institutions. Addresses the roles that civic and personal relations, morality, aesthetics, education, and religion play in providing happiness, purpose, and meaning in one's life. Cross listed as REL 2608. 3 s.h.

2609. *Technology and Human Values*. Examination of the impact of technology and science on contemporary human values and investigations of social and political perspectives on modern technocracy, based on case studies in science, medicine, and engineering. 3 s.h.

2610. *Global Ethics*. Examination of morality and justice from a global perspective, including such topics as war, terrorism, and states; poverty and the global economy; religion, gender, and identity; globalization and the environment; and markets and intellectual property. Cross-listed as REL 2610. 3 s.h.

2616. *Character and Virtue*. Considers a variety of historical views on the nature of character and virtue, as well as their relation and development, in light of current empirical research. 3 s.h.

2619. *Introduction to Logic*. Introduction to syllogistic or classical logic, symbolic and inductive logic. Emphasis on the rules of syllogism, immediate inferences, propositional functions, classes, truth tables, Venn diagrams; the use of analogy, generalization, the verification of hypotheses, and scientific method. Prereq.: MATH 1501 or at least Level 20 on the Mathematics Placement Test. 3 s.h.

2625. *Introduction to Professional Ethics*. An examination of the ideals and virtues central to professionalism; study of selected codes of professional ethics and their roots in classical ethical traditions; and analysis of selected ethical issues and problems in a variety of professions. 3 s.h.

2626. *Engineering Ethics*. An examination of ethical problems in the major fields of engineering and an explanation of the methodology needed to address them; an analysis of the rights and duties of engineers in their relations to clients, employers, the public, and the engineering profession. Prereq.: One 2600-level PHIL course, or ENTC 1505 or ENGR 1550. 3 s.h.

2627. *Law and Criminal Justice Ethics*. Examination of major theories in philosophy of law and justice, and the study of ethical issues and professional standards in criminal justice practice. Prereq.: Any 2600-level PHIL course or CJFS 2601, 2602 or 2603. 3 s.h.

2628. *Business Ethics*. Examines ethical problems in business, ethical responsibilities of business professional, and business as a global institution. Topics include the corporation, at-will employment, unions, technology, privacy, advertising, whistle-blowing, globalization, environmental impact, human rights, just distribution, affirmative action and cultural diversity. 3 s.h.

2630. *Critical Thinking*. An examination of the logical skills needed for critical thinking in practical situations. Topics include procedures and guidelines for identifying and evaluating arguments, recognizing and eliminating informal fallacies, and writing and critiquing argumentative essays. 3 s.h.

2698. *Introductory Individual Study in Philosophy*. Introductory study of a philosophical problem, movement, thinker, or the relationship of philosophy to problems in other disciplines. Intended to be an independent study course with subject matter dependent upon approval of the faculty member and student. May be repeated up to 3 s.h. 1 s.h.

### Upper-Division Courses

3700. *Ancient and Medieval Philosophy*. An examination of philosophers and philosophical systems in Western civilization from the pre-Socrates until the Renaissance. Prereq.: One 2600-level PHIL course. 3 s.h.

3702. *History of Modern Philosophy*. Study of major Western philosophical figures and movements from the Renaissance through the 19<sup>th</sup> century. Prereq.: One 2600-level PHIL course. 3 s.h.

3705. *20<sup>th</sup> Century Philosophy*. A survey of Western philosophy in the 20<sup>th</sup> century, including American pragmatism, British analytic and scientific philosophy, ordinary language and conventionalist theories, continental movements in phenomenology and existentialism, and the emergence of cognitive science. Prereq.: One 2600-level PHIL course. 3 s.h.

3706. *Philosophy in America*. A study of philosophers and philosophical systems in America from the colonial era to the present and their relation to philosophical developments abroad. Prereq.: One 2600-level PHIL course. 3 s.h.

3708. *Social and Political Philosophy*. A study of the philosophical foundations of democracy, dictatorship, and communism, especially their views of reality, knowledge, human nature, and morality, with attention to rights, duties, freedom, authority, dissent, censorship, crime and punishment, and religion. Prereq.: PHIL 2600. 3 s.h.

3709. *Feminist Philosophy*. Examination of feminist philosophical theory and issues concerning women, including gender and socialization, sexuality and reproduction, self-image, and the dialogue among various feminist philosophical movements. Prereq.: PHIL 2600 or WMST 2601. 3 s.h.

3710. *Philosophy of Art*. Study of classical and modern philosophical theories of beauty and aesthetic judgement, how they apply in criticism of the fine arts, and the problem of the relative and the absolute in matters of taste. Prereq.: One 2600-level PHIL course. 3 s.h.

3711. *General Ethics*. Examination and evaluation of the major ethical theories in classical, dialectic, pragmatic and naturalistic, analytic and positivist, and existentialist thought. Prereq.: PHIL 2600. 3 s.h.

3712. *Philosophy of Religion*. The philosophical investigation of religious questions such as existence and nature of the divine, the problem of evil, death and immortality, religion and science, and religious experience. Prereq.: PHIL 2600 or REL 2601. 3 s.h.

3713. *Philosophy of the Family*. Examines the family from philosophical, political, and historical perspectives and considers issues of justice in familial relationships. Explores the relationship among parents, children, and the state, and reviews the evolving conceptions of childhood, child well-being, and children's rights. Prereq.: ENGL 1551. 3 s.h.

3714. *Language and Mind*. Introduction to the study of traditional philosophical problems in the analysis of linguistic structures and functions and of their implications for the nature of mind, including meaning, mental representation and causation, information processing, and psychological explanation. Prereq.: One 2600-level PHIL course. 3 s.h.

3715. *Philosophy of Science*. A philosophical consideration of some of the fundamental concepts and assumptions of the sciences: the nature of scientific knowledge; the relation of scientific to other kinds of knowledge and experience. Prereq.: PHIL 2600. 3 s.h.

3719. *Symbolic Logic*. The structure and properties of axiomatic systems; the theory of propositional and relational logic; the algebra of classes; related topics. Prereq.: PHIL 2600. 3 s.h.

3723. *Philosophy of Law*. Examination of the nature and limits of law, the justification of the legal system, the relationship between law and morality, state punishment of individuals, the justification for punishment, citizens' rights and issues of privacy, liberty, discrimination, and civil disobedience. Prereq.: One 2600-level PHIL course. 3 s.h.

3725. *Biomedical Ethics*. An examination of ethical issues posed by biomedical research and technology, including issues of informed consent, patients' rights, experimentation, genetic research and intervention, death and dying, and the allocation of scarce

resources. Prereq.: One 2600-level PHIL course or SOC 3703 or SOC 3745 or PSYC 3780 or admission to the NEOMED-YSU program or the B.S. in Nursing program. 3 s.h.

3727. *Environmental Ethics*. Application of ethical theories in evaluating human interaction with the natural environment, analysis of rights and duties regarding other species and future generations, the ethics of environmental activism, and philosophical and religious perspectives on environmental issues. Prereq.: PHIL 2600 or ENST 2600. 3 s.h.

3730. *Metaphysics*. An examination of the major metaphysical issues in Western philosophy: problems of freedom and determinism, idealism vs materialism, personal identity, space-time problems, concepts of Being and Reality and other representative issues. Prereq.: PHIL 2600. 3 s.h.

3735. *Ethics and Scientific Research*. Definition and examination of the ethical basis of scientific conduct in reporting experimental results, using human and animal subjects, adopting protocols, and pursuing research with broad impact on human rights and social welfare. Prereq.: PHIL 2600 or 2625. 3 s.h.

3760. *Ethics of War and Peace*. Examines reasons for making war, for restraint on the conduct of war, and for rejecting war as an instrument of national policy as understood within a variety of moral traditions, both secular and religious. Prereq.: PHIL 2600 or REL 2621. 3 s.h.

3780. *Theories of Knowledge*. The epistemological problem; position of the skeptic, pragmatist, empiricist, idealist, moderate realist, existentialist, and phenomenologist. Prereq.: PHIL 2600. 3 s.h.

3798. *Intensive Individual Study of Philosophy*. Intensive study of a philosophical problem, movement, thinker, or the relationship of philosophy to problems in other disciplines. Intended to be an independent study course with subject matter dependent upon approval of the faculty member and student. Prereq.: One 3700-level PHIL course. May be repeated up to 3 s.h. 1 s.h.

4805. *Direct Readings in Philosophy*. Independent study course with subject matter dependent upon approval of the faculty member in consultation with student. Prereq.: Any 3700 level PHIL course. 3 s.h.

4820. *Seminar in Philosophy*. Study in depth of a particular philosopher, topic, or area in philosophy, as determined by the instructor; may be repeated once with different course content. Prereq.: One 3700-level PHIL course. 3 s.h.

4861. *Senior Capstone Project*. Research and writing of a paper, or other committee approved project, on a philosophical topic, under the supervision of a full-time faculty member and in consultation with a committee of at least two other members of the department. Prereq.: Philosophy major with senior standing and completion of at least 21 s.h. of PHIL courses. 3 s.h.

4870. *Internship in Ethical Practice*. Students work with professionals in a local organization, thereby gaining direct access to the ethical issues involved in such an environment. Students will be supervised by an appropriate working professional and either a faculty member of the Dr. James Dale Ethics Center or another faculty member in the department selected for this purpose. The course grade shall be assigned by the YSU supervisor, based on the project journal, an evaluation of the student's on-site work by the participating professional and the YSU supervisor, and a final project paper. Registration by permit only. Prereq.: One 3700-level PHIL or REL course.

1 s.h., repeatable to a total of 1-3 s.h.

## PHYSICAL THERAPY—PHYT Department of Physical Therapy

4801. *Independent Study*. Individual study and projects under faculty supervision. Prereq.: Permission of instructor and department chair. May be repeated for a total of 6 s.h. Prereq.: Admission to MPT program. 1-6 s.h.

4802. *Research*. Research under the supervision of a graduate faculty member. Prereq.: Permission of the instructor and department chair. May be repeated for a total of 6 s.h. Prereq.: Admission to MPT program. 1-6 s.h.

5800. *Pathology*. Disease processes and trauma in humans from a structural and functional level; relationship between pathology and clinical signs and systems, etiology, differential diagnosis, prognosis, and treatment. Prereq.: Admission to MPT program. 4 s.h.

## PHYSICS—PHYS Department of Physics and Astronomy

### Lower-Division Courses

1500. *Conceptual Physics*. A conceptual treatment of selected theories and laws of classical and modern physics and their application to the understanding of natural phenomena. The evolution of these laws from hypotheses to functional relationships examined in a historical context. Not applicable to the major in Physics or to the combined major in Physics and Astronomy. 3 s.h.

1500L. *Conceptual Physics Laboratory*. Experimental work designed to supplement PHYS 1500. Three hours per week. Prereq. or concurrent: PHYS 1500. 1 s.h.

1501. *Fundamentals of Physics 1*. Topics include kinematics, forces, energy, momentum, rotational kinematics, torque, angular momentum, simple harmonic motion, and mechanical waves. Not recommended for mathematics, chemistry, physics, or

engineering majors. Prereq.: MATH 1507 and 1508 or equivalent or at least level 40 on the Mathematics Placement Test. 4 s.h.

1501L, 1502L. *Fundamentals of Physics Laboratory 1*, 2. Experimental work designed to supplement the PHYS 1501, 1502 sequence. Two hours per week. Prereq. or concurrent: PHYS 1501 for 1501L, PHYS 1502 for 1502L. 1+1 s.h.

1501R. *Fundamentals of Physics 1 Recitation*. Discussion and problem solving based on current material in PHYS 1501. Concurrent with PHYS 1501. 1 s.h.

1502. *Fundamentals of Physics 2*. Study of electricity, magnetism, and light. Topics include electric charge, electric forces and fields, electric potential, capacitance and resistance in direct current circuits, basic circuit analysis, magnetic forces and fields, induced emf, inductance, reflections, refraction, geometric optics as applied to lenses and mirrors, interference, and diffraction. Prereq.: PHYS 1501 or equivalent. 3 s.h.

1506. *Physics for Health Care*. The basic laws of physics applied to various biological and physiological problems. Designed for majors in the allied health fields, e.g., Respiratory care. Not applicable to the major in Physics or to the combined major in Physics and Astronomy. 3 s.h.

1507. *Energy and the Environment*. Broad survey of the origin and distribution of the various forms of energy found in nature. Examination of the physical laws governing society's use of energy and environmental consequences resulting therefrom. Not applicable to the major in Physics or to the combined major in Physics and Astronomy. 3 s.h.

1520H. *Perspectives in Physics*. Introduction to past and recent ideas in physics with specific emphasis on their impact on historical and contemporary thought. The treatment, largely non-mathematical, is enhanced by selected readings suitable for the beginning honors student in any field. Not applicable to the major in Physics or to the combined major in Physics and Astronomy. Prereq.: Admission to the Honors Program or permission of instructor and Director of Honors. 3 s.h.

2601. *General Physics for Applied Medical Studies 1*. Description and analysis of motion including kinematics and dynamics of translation and rotation; analysis of equilibrium, energy, and momentum of objects; gravity; mechanical oscillations and waves. This course is designed primarily for students enrolled in the NEOMED-YSU program or in pre-medical curricula. Prereq.: MATH 1507 and 1508 or equivalent. Prereq. or concurrent: MATH 1571, 1581H, or 1585H. 4 s.h.

2602. *General Physics for Applied Medical Studies 2*. Description and analysis of electrical and magnetic effects; geometric and physical optics and the wave nature of light; introduction to atomic physics, quantum mechanics, nuclear structure and radiation. Prereq.: PHYS 2601. 4 s.h.

2607. *Physical Science for Middle and Secondary Education*. Selected topics in physical science appropriate to the middle- and secondary-level curriculum. Emphasis on diverse hands-on classroom activities, and multiple approaches to communicating basic concepts in physical science. Topics include simple machines, light and sound, batteries and bulbs, physical properties of solids, liquids and gases. Prereq.: MATH 1501 or at least level 3 on the Mathematics Placement Test and admission to BCOE upper-division status. 4 s.h.

2608. *Sound*. The physical principles accounting for the production, propagation, and perception of sound waves. The relevance of these principles to phenomena ranging from hearing to the operation of various musical instruments. Introduction to auditorium acoustics. This course is designed for Music majors. Not applicable to the Physics major or to the combined Astronomy and Physics major. 3 s.h.

2610. *General Physics 1*. A course in mechanics; the kinematics and dynamics of masses in translation and rotation; Newton's Laws; gravity; the conservation laws of energy and momentum; simple harmonic motion and introduction to wave motion and sound. Prereq.: High school physics or PHYS 1501. Prereq. or concurrent: MATH 1571. 4 s.h.

2610L, 2611L. *General Physics laboratory 1, 2*. Experimental work designed to supplement the PHYS 2610, 2611 sequence. Three hours per week. Prereq. or concurrent: PHYS 2610 or 2601 for 2610L, PHYS 2611 or 2602 for 2611L. 1+1 s.h.

2611. *General Physics 2*. Study of electric and magnetic fields and their effects; introduction to electric circuits; light as an electromagnetic wave; introduction to geometrical and physical optics. Prereq.: PHYS 2610. Prereq. or concurrent: MATH 1572. 4 s.h.

### Upper-Division Courses

3701, 3702. *Intermediate Classical Mechanics 1, 2*. Kinematics and dynamics of particles and rigid bodies in inertial and non-inertial reference systems. Linear and nonlinear oscillations and oscillating systems. Gravitational and central forces. Lagrangian and Hamiltonian mechanics. Prereq.: PHYS 2611. Prereq. or concurrent: MATH 3705. Must be taken in sequence. 3+3 s.h.

3704. *Modern Physics*. Special Theory of Relativity. Quantum phenomena related to electromagnetic radiation and material particles. The Bohr model of the hydrogen atom; the Schroedinger equation; the Heisenberg Uncertainty Principle. Selected topics in atomic and nuclear physics. Prereq.: PHYS 2611 and Prereq. or concurrent MATH 2673. 3 s.h.

3704L. *Modern Physics Laboratory*. Experimental work designed to supplement PHYS 3704. Three hours per week. Prereq. or concurrent: PHYS 3704. 1 s.h.

3705. *Thermodynamics and Classical Statistical Dynamics*. Principles and theorems of thermodynamics derived from the observable macroscopic properties related to temperature, heat, and the underlying statistical origins of thermodynamic processes. Includes the laws of thermodynamics, entropy, state functions, differential equations of state, Maxwell relations, and Maxwell-Boltzmann statistics. Prereq.: PHYS 2611 and Prereq. or concurrent MATH 2673. 3 s.h.

3705L. *Thermodynamics and Classical Statistical Mechanics Laboratory*. Experimental work designed to supplement PHYS 3705. Three hours per week. Prereq. or concurrent: PHYS 3705. 1 s.h.

3722. *Advanced Optics and Light*. Sources and detection of light; intermediate geometrical and physical optics, including dispersion, scattering, absorption, polarization, coherence, interference, Fresnel and Fraunhofer diffraction. Prereq.: PHYS 2611 and MATH 2673. 3 s.h.

3722L. *Advanced Optics Laboratory*. Experimental work designed to supplement PHYS 3722. Three hours per week. Prereq. or concurrent: PHYS 3722. 1 s.h.

3730. *Electronic Instrumentation*. Laboratory-based course in digital and analog electronics. Topics include AC and DC circuit theory; digital and analog electronics including filters, op amps, counters, digital integrated logic circuits, and A/D and D/A conversion; computer interfacing. Prereq.: PHYS 2611. 3 s.h.

3741, 3742. *Electromagnetic Field Theory 1, 2*. Intermediate theory of electric and magnetic fields. Topics include electric field, scalar potential, techniques for calculating scalar potential (method of images, Laplace's and Poisson's equations, multipole expansion, Green's Function approach), dielectrics and polarization, Maxwell's equations and their application to the propagation of electromagnetic waves including reflection, refraction, transmission, and absorption; guided waves, retarded potentials, radiating systems, special relativity. Prereq.: PHYS 2611 and MATH 3705. Must be taken in sequence. 3+3 s.h.

3750. *Mathematical Physics*. The mathematics techniques required in the study of classical, statistical, and quantum mechanics, and field theory. Prereq.: PHYS 2611 and MATH 3705. 3 s.h.

4805. *Undergraduate Physics Research*. Research conducted under the direction of a faculty member. The grading is Traditional/PR. Prereq.: PHYS 3702 and 3704. 3 s.h.

5810, 5811. *Quantum Mechanics and Quantum Statistical Mechanics 1, 2*. The postulates of wave mechanics, Matrix mechanics, angular momentum coupling, scattering, perturbation theory, intrinsic spin, emission and absorption of radiation. Fermi-Dirac and Bose-Einstein statistics with applications in quantum theory. Prereq.: PHYS 3702 and 3704, MATH 3705. Must be taken in sequence. 3+3 s.h.

5823. *Laser Physics and Photonics*. Emission and absorption of radiation, including stimulated emission. Optical cavities and wave guides. Introduction to lasers. Modulation and detection of light. Applications of lasers to information processing and other technologies. Introduction to nonlinear optical and opto-electronic phenomena and nonlinear optical materials. Prereq.: PHYS 3722. 3 s.h.

5826. *Nuclear Physics*. General properties and behavior of the nucleus; nuclear models; nuclear reactions; radioactivity and decay processes; accelerators; current topics; elementary particles. Laboratory experiments. Prereq. PHYS 3704, 3704L, and MATH 3705. 3 s.h.

5830. *Condensed Matter Physics*. Selected topics in condensed matter physics: mechanical, thermal, electrical, and magnetic properties of amorphous and crystalline materials; crystal structures. Prereq.: PHYS 3704. 3 s.h.

5835. *Spectroscopy*. Treatment of atomic, molecular, and nuclear structure based on the analysis of electromagnetic and other spectra. Prereq.: PHYS 3704. 3 s.h.

5835L. *Spectroscopy Laboratory*. Experimental work designed to supplement PHYS 5835. Three hours per week. Prereq. or concurrent: PHYS 5835. 1 s.h.

5850. *Special Topics in Physics*. The study of a standard topic at greater depth, of the development of a correlated background for areas of physical knowledge, or the physical and educational experimentation necessary to develop new physics courses. Prereq.: Senior standing in Physics, Electrical Engineering, or Education. May be repeated twice. 2-4 s.h.

5890. *Physics and Astronomy for Educators*. Intensive study of selected topics of current interest in Physics education. Not applicable to the major in Physics or the combined Astronomy and Physics major. Prereq.: Admission to upper-division status in the College of Education or to the Graduate School. May be repeated for different topics. 1-4 s.h.

## POLITICAL SCIENCE—POL Department of Political Sciences

### Lower-Division Courses

1550. *Introduction to Political Science*. Study of politics, government, and societal institutions at both national and international levels. 3 s.h.

1560. *American Government*. The foundations of American democratic government with an emphasis on the responsibilities of citizenship, civil rights, and civil liberties, parties and elections, and American political institutions. Students are encouraged to understand and discuss issues of social justice, equality and freedom, and majoritarianism. Topics include the civil rights movement, campaign finance reform, federalism, and affirmative action. 3 s.h.

2640. *Contemporary World Governments*. A comparative analysis of the development of institutions, attitudes, public policy, economic, and social systems of a number of foreign political systems. Prereq.: POL 1550 or 1560. 3 s.h.

2660. *International Relations*. An examination of theoretical and practical issues in the development of modern international politics, law and organization and political economy, with special attention to contemporary global and regional issues. Prereq.: POL 1550 or 1560. 3 s.h.

2695. *Model United Nations*. A comparative study of foreign policy, contemporary global issues, international law, and international governmental organizations. Stresses interactive and role playing educational methodologies. Students are required to participate in one or more approved conference or field trips. May be repeated to a maximum of 3 s.h. Prereq.: Consent of instructor. 1 s.h.

### Upper-Division Courses

3700. *American Presidency*. An examination of the role of the chief executive officer within the governmental framework. The offices of mayor and governor are treated, but the primary emphasis is on critical evaluation of the American presidency. Prereq.: POL 1560. 3 s.h.

3701. *American Legislative Process*. An examination of the lawmaking function. Emphasis on the United States Congress, with limited consideration of state and local government legislative practices. Prereq.: POL 1560. 3 s.h.

3702. *Law and Society*. The American judicial system, its institutional development and its role in policy determination, as evidenced in leading Supreme Court decisions. Limited coverage of state judicial systems. Prereq.: POL 1560. 3 s.h.

3703. *American Constitutional Law*. An inquiry into constitutional interpretation by the Supreme Court based on examination of leading cases, with particular emphasis on questions of federalism, executive power, civil liberties, and economic regulation. Prereq.: POL 3702. 3 s.h.

3704. *American Political Parties and Elections*. A descriptive analysis of the role of political parties in a democratic society, with emphasis on development of a theory of party, an examination of the history and characteristics of the American party system, and a quantitatively structured description of the national electorate. Prereq.: POL 1560. 3 s.h.

3706. *African-American Politics*. The politics of African Americans within American society in terms of organization, behavior, objectives, relative influence and power. Prereq.: POL 1560 or AFST 2600. 3 s.h.

3707. *Moot Court 1*. An introduction to appellate advocacy through the practical application of legal analysis and synthesis. This course analyzes one or two specific constitutional issues based on pre-

determined U.S. Supreme Court cases. Students will analyze and synthesize Supreme Court decisions and present simulated oral argument as if before the U.S. Supreme Court based on those decisions. May be repeated for a maximum of 6 s.h. Prereq.: POL 3702 and consent of chairperson. 3 s.h.

3712. *Political Behavior*. An introduction to the primary research theories, perspectives and methodologies common to the study of government and global affairs, including computerize quantitative analysis. Prereq.: POL 1550 or 1560. 3 s.h.

3714. *American Public Opinion*. An introduction to the origins, uses, effects, and analysis of public opinion, including a practicum in opinion polling requiring field work and computerized quantitative analysis. Prereq.: POL 1550 or 1560. 3 s.h.

3717. *Health Care Policy*. Seminar on the politics of health care formation and alternative proposals for the organization of health care delivery, manpower, and finance systems; interviews with administrative and planning personnel. Prereq.: POL 1560, or admission to NEOMED-YSU, or junior standing in a health field. 3 s.h.

3718. *American Public Policy and Policy Analysis*. The formation, implementation, and evaluation of contemporary American public policy. Prereq.: POL 1560. 3 s.h.

3720. *Public Management*. A study of administrative organizations in American federal and state governments, with special attention to their role in the formulation and implementation of public policy as demonstrated in case studies. Prereq.: POL 1560. 3 s.h.

3721. *Urban Government*. The structure and politics of urban government, with special attention to inter-governmental relationships. Prereq.: POL 1560. 3 s.h.

3722. *State and Local Government*. The political processes and institutions of state and local governments, with special attention to Ohio government. Prereq.: POL 1560. 3 s.h.

3724. *Public Budgeting*. Study of the politics, theories, and techniques of public budgeting. Includes the process of budget preparation, adoption and execution. Topics include debt management and capital budgets. This course is cross-listed with ECON 3724. Prereq.: POL 3720. 3 s.h.

3725. *Individualized Study*. A supervised individual study of a special topic or issue in any area of contemporary politics and political science. An academic plan of study including a syllabus is required and will be placed in the student's file. May be repeated for up to 6 s.h. Prereq.: POL 1560 or 2640 or 2660, and permission of the chairperson. 1-3 s.h.

3741. *Russia and China: From Revolution to Reform*. A comparative analysis of politics in the Russian Federal Republic and the People's Republic of China, emphasizing contemporary issues of domestic gov-

ernance and regional international relations as seen in the context of revolutionary Communism and the appearance of post-Communist reform politics. Prereq.: POL 2640 or 2660. 3 s.h.

3742. *Political Development and Political Regimes*. A comparative analysis of political development of selected states, with a focus on the social and political forces that lead to the formation of democracies and dictatorships. Prereq.: POL 2640 or 2660. 3 s.h.

3744. *European Politics*. Comparative analysis of the political development, governing systems, political behavior, public policy, and interrelations of selected European states, emphasizing the role of the European Union and the formation of new democracies in Eastern Europe. Prereq.: POL 2640 or 2660. 3 s.h.

3751. *Latin American Politics*. A comparative analysis of the political development, governing systems, political behavior, public policy, and international relations of selected Latin American states. Prereq.: POL 2640 or 2660. 3 s.h.

3757. *Aging and Social Policy*. Critical examination of the social policies and social systems which affect aging and retirement. Prereq.: SOC 1500, GERO 1501, or POL 1560. 3 s.h.

3760. *International Political Economy*. Study of the relationship between global capitalism and the interstate political system, with emphasis on post-Cold War issues and American policy. Prereq.: POL 2660. 3 s.h.

3761. *U.S. Foreign Policy*. Examination of the domestic political formulation and international execution of U.S. foreign policy, emphasizing regional issues of security and political economy and the changing U.S. role in the post-Cold War world. Prereq.: POL 2640 or 2660. 3 s.h.

3763. *International Law*. Analysis of the principles and formation of international law as it has developed through customs and international agreement. Prereq.: POL 2640 or 2660. 3 s.h.

3764. *International Organizations*. Analysis of the development, organizational structure, public policy and political behavior of regional and international organizations, with focus on the United Nations. Prereq.: POL 2640 or 2660. 3 s.h.

3767. *Asian Politics*. A comparative analysis of the political development, governing systems, political behavior, public policy, and international relations of selected Asian states, with emphasis on their role in the global economy relative to the U.S. Prereq.: POL 2640 or 2660. 3 s.h.

3768. *International Conflict*. Examination of the dynamics of international political conflict, with special attention to issues of the use of force, the nature of ethnopolitical conflict, and the relative effectiveness of various approaches to negotiation, conflict management, and conflict resolution. Prereq.: POL 2660. 3 s.h.

3785. *Political Thought 1*. The development of western political thought from the time of classical Greece through the Medieval period. Among major figures treated: Plato, Aristotle, Cicero, Augustine, Aquinas, and Machiavelli. Prereq.: 9 s.h. of Political Science. 3 s.h.

3786. *Political Thought 2*. The development of western political thought from the Renaissance to the Modern period. Among the major figures treated: Hobbes, Locke, Rousseau, Burke, Smith, Publius, Tocqueville, and Mill. Prereq.: 9 s.h. of Political Science. 3 s.h.

3787. *Political Thought 3*. The development of western political thought of the 19<sup>th</sup> and 20<sup>th</sup> centuries. Among the major figures treated: Hegel, Marx, Nietzsche, Arendt, and Rawls. Prereq.: 9 s.h. of Political Science. 3 s.h.

4801. *Senior Research Seminar*. Investigation and presentation of a research project. Students explore a research topic, using appropriate political science methods, and present their results in oral and written form. Prereq.: 24 hours of political science. 3 s.h.

4805. *Public Administration and the Political Process*. Political factors which condition the structure and function of public agencies, including the public interest, agency constituencies, and political influence. Prereq.: YSU/CSU MPA or permission of chair. 4 s.h.

4850. *Sustainability, Climate Change, and Society*. Explores environmental, economic, and social aspects of sustainable development, with an emphasis on economy and society. Examines the roles of institutions, humans and policies in sustainable development as well as reconfiguring relationships between our institutions and the natural world. Listed also as ENST 5850. Prereq.: Minimum junior standing. 3 s.h.

5800. *Select Problems, American Government*. Seminar/capstone course examining topical issues of American Government. Prereq.: 15 s.h. of Political Science and consent of chairperson. 2-4 s.h.

5830. *Public Human Resource Management*. The issues and public policies that have an impact on the management of human resources in the public sector. Differences between public and private personnel administration; the American civil service system; recruitment, placement, promotion, training, and compensation; performance assessment; rights and duties of public employees. Prereq.: YSU/CSU MPA or permission of the chair. 4 s.h.

5860. *Select Problems of Global Affairs*. Seminar/capstone course examining topical issues of contemporary global affairs and international relations. This course may be repeated once. Prereq.: 15 s.h. of Political Science and consent of chairperson. 2-4 s.h.

5865. *Global Environmental Policy and Law*. An analysis of the development, foundations, and principles of international environmental policy



and law; includes consideration of the relationship between domestic and international environmental law, and the role of international organizations in the implementation of international environmental policy and law. Prereq.: POL 3760, or 3742, or ENST 3760. 3 s.h.

5880. *Select Problems, Political Thought*. Seminar/capstone course examining selected political issues and ideologies within the context of the broader traditions of political thought. Prereq.: 15 s.h. of Political Science and consent of chairperson. 2-4 s.h.

## PSYCHOLOGY—PSYC

### Department of Psychology

#### Lower-Division Courses

1502. *Workshop in Applied Psychology*. Study of selected contemporary psychology-related topics requiring no previous exposure to psychological theory. The department announces the topic and determines the credit, based on frequency and duration of workshop meetings. May be repeated for a total of 4 s.h. with change in topics. Not applicable to the psychology major nor the social studies area requirement. 1-2 s.h.

1560. *General Psychology*. An examination of scientific and clinical approaches to understanding the relationships between one's physical, mental, and emotional well-being, and quality of life, including the basic principles governing the growth and maintenance of behavior, emotion, and cognition. 3 s.h.

1560H. *Honors General Psychology*. An examination of scientific and clinical approaches to understanding the relationships between one's physical, mental, and emotional well-being, and quality of life, including the basic principles governing the growth and maintenance of behavior, emotion, and cognition. 3 s.h.

2617. *Research Methods and Statistics 1*. An introduction to psychological research methods and descriptive statistics. Students learn how to conduct ethical research and report their findings as well as to critically evaluate the research of others. Three hours of lecture, two hours of lab per week. Prereq.: C or better in PSYC 1560 and psychology major, or consent of instructor. 4 s.h.

2618. *Research Methods and Statistics 2*. Further exploration of psychological research methods and statistical analysis, with emphasis on inferential techniques. Prereq.: C or better in PSYC 2617 and psychology major, or consent of instructor. 3 s.h.

2692. *Human Sexuality*. An interdisciplinary approach to the study of human sexuality. Listed also as PHLT 2692. 3 s.h.

#### Upper-Division Courses

3700. *Social Psychology*. Examination of the influence of social interactions on the thoughts, feelings,

and behaviors of the individual and the group. Prereq.: PSYC 1560 or SOC 1500. 3 s.h.

3700H. *Honors Social Psychology*. Examination of the influence of social interactions on the thoughts, feelings, and behaviors of the individual and the group. Prereq.: PSYC 1560 or SOC 1500. 3 s.h.

3700L. *Social Psychology Laboratory*. An introduction to planning and conducting social psychological research. Topics include creating participant impact while minimizing loss of control, reducing demand characteristics and experimenter bias, and enhancing mundane and experimental realism. Two hours per week. Concurrent: PSYC 3700. 1 s.h.

3701. *Psychology of Music*. Examines psychological research and theories pertaining to music. Topics include perception of musical attributes such as pitch, musical illusions, cognitive organization of music, and music and emotion. Previous musical knowledge is not required. Prereq.: PSYC 1560. 3 s.h.

3702. *Abnormal Psychology*. Patterns of deviant behavior, including current systems of classification; classic syndromes; the nature and trend of major maladjustments; possible causative factors; and methods of prevention and treatment. Prereq.: PSYC 1560. 3 s.h.

3702L. *Abnormal Psychology Laboratory*. An introduction to conducting research on psychological disorders, to include a critical review of research literature, examination of case studies, and gathering field-based data. Two hours per week. Prereq.: PSYC 2617 with C or better; and Prereq. or Concurrent: PSYC 3702 or 3702H. 1 s.h.

3705. *Psychology of Learning*. A study of the learning process with emphasis on factors such as reinforcement, respondent conditioning, discrimination, generalization, transfer, etc.; an introduction to modern learning theory. Prereq.: PSYC 2618. 3 s.h.

3705L. *Psychology of Learning Laboratory*. Laboratory studies of learning processes. Students use observational and data-recording techniques as they apply to investigations of learning processes. Laboratory activities include investigations of classical conditioning, reinforcement, shaping, extinction, practice effects or other phenomena. Two hours per week. Concurrent: PSYC 3705. 1 s.h.

3707. *Psychology of Intimate Relationships*. Psychological principles pertaining to intimate relationships, both marital and non-marital, and family dynamics. Includes topics such as communication, problem solving, domestic violence, and sexuality. Prereq.: PSYC 1560. 3 s.h.

3709. *Psychology of Education*. Principles of psychology as applied to the educational process, including characteristics of the individual learner, the classroom, the instructor, methods and techniques, and other factors in the learning process. Prereq.: PSYC 1560. 3 s.h.

3709L. *Psychology of Education Lab.* Application of principles of psychology in a K-12 educational setting. Evaluation and synthesis of psychological principles, theories, and research. Three hours per week, one hour to be arranged. Concurrent: PSYC 3709 or consent of instructor. Prereq.: PSYC 1560. 2 s.h.

3710. *Psychophysiology.* An introduction to the relationship between the psychological and physiological basis of behavior. Response systems, such as cardiovascular, respiratory, and gastrointestinal, as well as applications of principles and theories. Prereq.: PSYC 2617, concurrent with 3710L. 3 s.h.

3710L. *Psychophysiology Laboratory.* Measurement and research techniques in basic and applied psychophysiology. Two hours laboratory-discussion. Prereq.: PSYC 2617, concurrent with 3710L. 1 s.h.

3712. *Industrial/Organizational Psychology.* Principles of psychology applied to business and industry with emphasis upon both personnel and organizational behavior. Topics include job analysis, selection, performance appraisal, organizational development, job satisfaction, motivation, and leadership. Prereq.: PSYC 2617 or equivalent. 3 s.h.

3724. *Advanced Statistical Methods in Psychology.* A continuation of inferential statistics: complex analysis of variance and nonparametric statistics; additional study of special correlational techniques and concepts of regression and prediction. Recommended for the student preparing to seek an advanced degree. Prereq.: C or better in PSYC 2618. 3 s.h.

3728. *Physiological Psychology.* The structural-functional relationships of the various divisions of the neural system, their relationship to the organism as a whole, and their contributions to human behavior. Prereq.: PSYC 2617. 3 s.h.

3728L. *Physiological Psychology Laboratory.* An introduction to experimental methods for studying effects of environmental stimuli on brain function and behavior in animals. Two hours per week. Prereq.: PSYC 3728 with C or above or concurrent. Permit required. 1 s.h.

3730. *Psychology of Women.* An exploration of psychological research and theories as they apply to girls and women. A critical examination of gender similarities and differences. Prereq.: PSYC 1560. 3 s.h.

3730L. *Psychology of Women Laboratory.* Laboratory and field-based research techniques relating to the study of women and to gender similarities and differences. Two hours per week. Prereq.: PSYC 2617 and 2618 with C or better; PSYC 3730 must be taken concurrently. 1 s.h.

3734. *ABA Principles I: Applied Behavior Analysis.* Scientific and conceptual foundations of applied behavior analysis. Basic principles of behavior analysis and application in applied settings are emphasized. The behavioral approach is contrasted with other

approaches to the understanding and treatment of behavior, with a focus on scientific criteria and methodological differences. Ethical standards are covered. Prereq.: PSYC 1560. 3 s.h.

3740. *Psychological Measurement.* Theories and principles of test construction, and an overview of psychological tests and questionnaires use in mental health, educational, and vocational settings. Prereq.: PSYC 2618. 3 s.h.

3745. *The Minority Individual.* Psychological research on the intrapersonal, interpersonal, and intergroup dynamics of being labeled a minority individual as the result of one's race, ethnicity, religion, or gender. The behavioral effects of minority group membership and its impact on the relationship between the individual and the society. Prereq.: PSYC 3700, and either 3755, 3756, or 3757. 3 s.h.

3748. *Stress: Theoretical and Clinical Models.* Theories and empirical research on the role of stress in physical and emotional illnesses, and an examination of the psychological and physiological aspects of stress. Prereq.: PSYC 3700 or 3702. 3 s.h.

3750. *Special Topics in Psychology.* Selected areas of study not covered in the mainstream curriculum. May be repeated with different topics to a maximum of 9 s.h. toward the major. Prereq.: PSYC 1560. 3 s.h.

3755. *Child Development.* Foundations of human development from conception through approximately the first decade of life. Fundamental issues of developmental processes in biological, cognitive, and social-emotional domains and their broader implications for society and later development of the individual. Prereq.: PSYC 1560. 3 s.h.

3755L. *Child Development Laboratory.* Experimental and nonexperimental research methods for gathering data on the development of children. Two hours per week. Prereq.: PSYC 2617 with C or better and 3755 (may be taken concurrently). A criminal background check is required to take the course. 1 s.h.

3756. *Adolescent Development.* Human development from preteen to young adulthood. Prereq.: PSYC 1560. 3 s.h.

3757. *Adult Development.* Human development from adulthood through old age. Prereq.: PSYC 1560. 3 s.h.

3758. *Lifespan Development.* Study of theory and research on development from conception to death. Focus upon psychological, physiological, social and cultural influences. May not be taken for credit if the student has received credit for two or more of PSYC 755, 756, 757, 3755, 3756, 3757. Prereq.: PSYC 1560. 3 s.h.

3760. *Perception.* Theories and experimental evidence on how environmental, physiological, and personal factors influence the reception, organization, and interpretation of sensory input. Concurrent: PSYC 3760L. Prereq.: PSYC 2618. 3 s.h.

3760L. *Perception Laboratory*. Laboratory demonstrations and experiments using research techniques in perception. Two hours per week. Concurrent: PSYC 3760. 1 s.h.

3761. *Cognition*. Experimental methods, research findings, and current theories concerned with human cognitive processes. The information-processing approach, focusing on how information is transformed, stored, manipulated, and retrieved. Topics include attention, pattern recognition and categorization, memory, and language. Concurrent: PSYC 3761L. Prereq.: PSYC 2618. 3 s.h.

3761L. *Cognition Laboratory*. Laboratory demonstrations and experiments using research techniques in cognition. Two hours per week. Concurrent: PSYC 3761. 1 s.h.

3763. *Comparative Psychology*. The variety of behaviors within the animal world. Prereq.: PSYC 2618. 3 s.h.

3764. *Psycholinguistics*. An overview of language production, use, and comprehension including the biological basis of speech and language development, social aspects of language, and bilingualism. Prereq.: PSYC 2618 or ENGL 3755. 3 s.h.

3764L. *Psycholinguistics Laboratory*. Research techniques in basic and applied psycholinguistics. Two hours per week. Concurrent: PSYC 3764. 1 s.h.

3765. *Experimental Social Psychology*. Problems, principles, methods and techniques of experimental social psychology including field and laboratory work culmination in the presentation of an individual project. Two hours lecture, two hours laboratory per week. Prereq.: PSYC 2618 and 3700. 3 s.h.

3770. *Individual Study*. Individual study of a special problem, or a review of the literature relating to a specific psychological problem or issue. A written report is required, one copy of which remains on file in the department. May be repeated for a maximum of 4 s.h. with different problems. Prereq.: PSYC 1560 and consent of the chairperson. 1-2 s.h.

3775. *Personality*. A critical overview of the major personality theories and theorists in the field of psychology, their application to the understanding of everyday life and a description of the pertinent research applicable to the evaluation of personality theories. Prereq.: PSYC 1560. 3 s.h.

3777. *Cross-Cultural Social Psychology*. A psychological examination of the impact of culture on individual social behavior as applied to topics such as attribution, moral reasoning, gender differences, and group dynamics. Prereq.: A minimum of 15 s.h. of Psychology including PSYC 3700. 3 s.h.

3779. *Careers in Psychology*. Overview of career preparation and professional development. Students obtain information on career preparation, job search strategies, and graduate studies. Prereq.: PSYC 1560 and PSYC 2617. 3 s.h.

3780. *Psychological Aspects of Disease and Death*. The primary factors affecting an individual's attitude toward illness, bereavement, and mortality. The psychological and physiological aspects of disease processes and death. Prereq.: PSYC 1560. 3 s.h.

3785H. *Honors Seminar in Psychology*. Study of selected topics within psychology suitable to the honors program. Prereq.: Admission to the Psychology Honors Program, permit required. 1 s.h.

3790. *Field Work in Psychology*. Exploration of different types of work and issues encountered in professional positions within the field of psychology. Supervised field work hours (approximately 4 hours per week) will be arranged. Criminal background check required. May be repeated one time. Prereq.: 9 s.h. in Psychology, junior/senior standing, and consent of chair. 3 s.h.

4800. *Introduction to Psychotherapy*. A critical overview of major psychotherapeutic approaches to mental health including an evaluation of empirical validity. Students will develop an increased sensitivity to multicultural and ethical issues. Prereq.: PSYC 3702 or 3775. 3 s.h.

4804. *Conflict and Group Dynamics*. Social psychological research and theory as applied to topics of conflict and group dynamics. Topics include: integrative bargaining, mediation, coalition formation, distributive and procedural justice, PD game, social facilitation, leadership, social dilemmas, group polarization and cohesiveness. Prereq.: PSYC 3700 or consent of chairperson. 3 s.h.

4804L. *Conflict Laboratory*. Experimental research methods used to gather data in group dynamics, bargaining, and conflict settings. Two hours per week. Prereq.: PSYC 2617 with C or better; PSYC 3700 with C or better; and PSYC 4804 (may be taken concurrently). 1 s.h.

4815. *Health Psychology*. Psychosocial factors that affect the promotion and maintenance of health, as well as the prevention and treatment of illness. Prereq.: 6 s.h. of 3700-level PSYC courses. 3 s.h.

4833. *Principles of Operant Behavior*. Experimental Analysis of behavior from an operant viewpoint, emphasizing simple and complex schedules of reinforcement and stimulus control. Concurrent: PSYC 4833L. Prereq.: PSYC 3705. 3 s.h.

4833L. *Principles of Operant Behavior Laboratory*. Experimental techniques for controlling the behavior of organisms with positive reinforcement. Laboratories include computer simulations. Two hours laboratory-discussion per week. Concurrent: PSYC 4833. 1 s.h.

4835. *Special Topics in Developmental Psychology*. Advanced and specialized topics in developmental psychology. Topics vary over semesters, and may include the study of infancy, the development of exceptional children, cross-cultural developmental

psychology, among others. May be repeated with different topics to a maximum of 6 s.h. toward the major. Prereq.: PSYC 3755 or 3756 or 3757 or 3758.

3 s.h.

4836. *ABA Principles 2: Behavioral Assessment and Methodology*. Behavior analytic techniques of functional analysis and descriptive analysis, demonstrating functional relationships and basic ABA research designs. Appropriate measurement, display, and interpretation of data with focus on research and evaluation methodology to evaluate interventions with single systems, including individuals, families, organizations, or other social systems. Prereq.: PSYC 3734.

3 s.h.

4837. *ABA Principles 3: Behavior Change Procedures*. Behavior analytic techniques of functional analysis, functional assessment, descriptive analysis, establishing, strengthening, and weakening behaviors in applied settings. Guidelines on the selection of target behaviors, outcomes, the selection of effective procedures, management of emergency situations, and methods of maintenance and generalization of successful behavior change. Emphasis on ethical conduct. Prereq.: PSYC 4834.

3 s.h.

4841. *History of Psychology*. The development of scientific psychology, with major emphasis on trends since the mid-19th century. Prereq.: 9 s.h. of psychology.

3 s.h.

4850. *Seminar*. Major topics in psychology not covered in listed courses. Two s.h. may be applied to the psychology major. Prereq.: Senior standing in psychology, or consent of instructor.

2 s.h.

4857. *Biopsychological Aspects of Health and Aging*. Broad overview of development and change across the adult lifespan, focusing on an examination and understanding of biological aging and how they affect functioning, adjustment, and wellness. Distinction between primary aging (normal, universal biological changes) and secondary aging (disease, lifestyle-determined changes) will be made. Prereq.: PSYC 3757 or 3758.

3 s.h.

4860. *Motivation*. Classical and contemporary theories of motivation. Overview of research and theory on the interactive role of biological, learned, and cognitive components in motivation of human behavior, including emotion, need for achievement, affiliation, and power. Prereq.: PSYC 3705.

3 s.h.

4890. *Senior Thesis*. Data collection and a research paper on a topic approved by the thesis advisor. This project takes two semesters to complete. Must be repeated for a maximum of 2 s.h. Prereq.: 16 s.h. in psychology, including a C or better in PSYC 2618, and consent of thesis advisor and departmental chairperson.

1 s.h.

4891H. *Honors Thesis*. The student prepares an empirical research paper on a topic approved by an honors thesis advisor and honors thesis committee. May be repeated for a maximum of 4 s.h. Prereq.: Admission to the Psychology Honors Program.

1 s.h.

4895. *Senior Psychology Capstone Experience*. A capstone experience for the major in psychology. Prereq.: Senior status in psychology, PSYC 2618, and completion in one psychology laboratory course.

2 s.h.

## PUBLIC HEALTH—PHLT

### Department of Health Professions

1531. *Fundamentals of Public Health*. Provides an introduction to public health concepts and practice by examining the philosophy, purpose, history, organization, functions, tools, activities, and results of public health at the national, state, and community levels. Introduces the core disciplines of public health, and current events and issues in the field.

3 s.h.

1568. *Healthy Lifestyles*. Personal and consumer health issues and prevention of premature death analyzed from physical, emotional, social and spiritual perspectives. Plans for disease prevention and healthful living. Importance of health promotion to the individual, region, nation and world.

3 s.h.

2692. *Human Sexuality*. An interdisciplinary approach to the study of human sexuality. Cross listed with PSYC 2692. Prereq.: PHLT 1568.

3 s.h.

3701. *Pre-Professional Field Experience*. Students participate in an approved community health education program under faculty supervision. Students observe and assist in the organization and/or delivery of programs. Prereq.: PHLT 1568.

1 s.h.

3702. *Health Education Theory and Methods*. Overview of health education theory, history, ethics, and methods for the community, school, workplace and health care setting. Provides a foundation in teaching methods. Prereq.: PHLT 1568. Also listed as HPES 3702.

3 s.h.

3703. *Health Education for Grades PreK-3*. Comprehensive School Health Education curricula, methods and materials for teaching pre-kindergarten through third grade students. Prereq.: PHLT 1568, 3702 and BIOL 1545 or AHLT 1500 and 1501.

3 s.h.

3704. *Health Education for Grades 4-6*. Comprehensive School Health Education curricula, methods and materials for teaching fourth through sixth grade students. Prereq.: PHLT 1568, 3702 and BIOL 1545 or AHLT 1500 and 1501.

3 s.h.

3705. *Health Education for Grades 7-12*. Comprehensive School Health Education curricula, methods and materials for teaching seventh through twelfth grade students. Prereq.: PHLT 1568, 3702 and BIOL 1545 or AHLT 1500 and 1501.

3 s.h.

3709. *Elements of Urban Environmental Health Practices*. Focus on development and implementation issues of environmental and public health programs necessary for urban and rural communities to meet acceptable public health standards at the local health department level with emphasis on resources and staffing. AHLT 3708, or permission of instructor. Also listed as AHLT 3709.

3 s.h.

3715. *Health Education for Grades PreK-6*. Comprehensive School Health Education curricula, methods and materials for teaching pre-kindergarten through sixth grade students. Prereq.: PHLT 1568, 3702 and BIOL 1545 or AHLT 1500 and 1501. Also listed as HPES 3715. 3 s.h.

3716. *Health Education for Grades 7-12*. Comprehensive School Health Education curricula, methods and materials for teaching seventh through twelfth grade students. Prereq.: PHLT 1568, 3702 and BIOL 1545 or AHLT 1500 and 1501. 3 s.h.

3725. *Topics in Public Health*. Examines topics of relevance to public health. Specific topics include current issues and emerging research findings, with a focus on health behavior and health promotion, epidemiology, public health administration, environmental health, biostatistics, through analysis of public health problems, and application of principles and practices of public health. Prereq.: PHLT 1531. 1 s.h.

3731. *Drug Use and Abuse*. Alcohol, tobacco, and other drug use and their relationship to behavior and society. Emphasis on prevention, early intervention, and treatment in the behavioral medicine, health care, educational and criminal justice systems. Prereq.: PHLT 1568. 3 s.h.

3757. *Health and Disease*. Study of the major chronic and communicable diseases affecting humans. Emphasis on etiology, prevention through health education and health promotion methods, and materials. Prereq.: PHLT 1568, BIOL 1545 or AHLT 1500 and 1501. 4 s.h.

3791. *Community Health*. Study of the need for organized community health efforts: problems of chronic and communicable diseases, environmental health, world health, and the public and private agencies involved in their solutions. Prereq.: PHLT 1568. 3 s.h.

4801. *Field Work in Health Education*. Provides the health education major with a supervised teaching or agency experience. Three hours per week. Prereq.: PHLT 3701L and 3791. 1 s.h.

4826. *Community Health Planning and Promotion*. Fundamental techniques for assessing needs, planning, marketing and implementing health promotion programs in the workplace and community. Prereq.: PHLT 3791 and AHLT 5807. 4 s.h.

4827. *Evaluation of Health Promotion Programs*. Theories and methods of program evaluation for assessing the quality of health promotion programs. Prereq.: PHLT 4826. 3 s.h.

4828. *Grant Writing*. Methods and techniques for writing grant proposals related to health. Emphasis on competence in development of narrative, program plan, evaluation design, time line, identifying grant sources and managing funded projects. Prereq.: PHLT 4826 and PHLT 4827. 3 s.h.

4891. *Community Health Internship*. Supervised experience designed to provide an opportunity to plan, implement and evaluate a program in an approved community health setting. Approximately 35 hours per week. Prereq.: PHLT 4828. 8 s.h.

4899. *Senior Seminar*. Capstone course for synthesis of professional course work. Development of resume and professional portfolio; preparation for internship; administration of outcome assessment instruments for the community health majors and school health majors; preparation for the CHES and PRAXIS certification exams. Prereq.: Senior standing and consent of instructor. 3 s.h.

5893. *Workshop in Health Education*. Concentrated study of a selected topic related to health education. The department will select and announce the topic and determine the credit hours based on the frequency and duration of workshop meetings. May be repeated for a maximum of 6 s.h. with change in topic. Prereq.: PHLT 3701, 3791 or permission of instructor. 1-3 s.h.

## PUBLIC RELATIONS—PREL Department of Marketing

3710. *Basic Public Relations*. Study of the management function which investigates and evaluates public attitudes, policies, means, and techniques used in the field to earn public understanding and acceptance. Prereq.: ENGL 1551 and GPA of 2.5. 3 s.h.

## READING AND STUDY SKILLS—RSS Department of Counseling

1510A. *Advanced College Success Skills*. A course designed to develop students' skills essential for college studying. The primary focus is improving the comprehension and retention of college textbooks. Major topics include reading rate flexibility, vocabulary growth, learning style preferences, and critical reading skills. Students meet for classroom instruction, computer-aided instruction, and small group tutoring sessions to discuss and practice strategies. Open to students based on Composition and Reading Placement Test (CRPT). Grading is A, B, C, NC. *Does not count toward a degree*. 3 s.h.

1510B. *Basic College Success Skills*. A course designed to acquaint and assist students in their transition to studying at the college level. Course content stresses development of skills in word recognition, vocabulary, and reading to find main ideas, supporting evidence and conclusions in college textbooks. Students meet for classroom instruction and small group tutoring sessions to discuss and practice various thinking, listening, and reading strategies to improve college performance. Open to students based on Composition and Reading Placement Test (CRPT). Grading is A, B, C, NC. *Does not count toward a degree*. 3 s.h.

1510C. *STEM Advanced College Success Skills*. Develops study skills in STEM disciplines by improving comprehension and retention of textbook and lecture materials. Covers reading rate flexibility, vocabulary growth, learning style preferences, critical reading, and problem solving. Uses classroom instruction, computer-aided instruction, and small-group tutoring sessions to apply strategies, including STEM-based lecture applications. Prerequisites: placement into MATH 1501 and ENGL 1540 and RSS 1510A. Grading: A, B, C, N/C. Does not count toward a degree. 4 s.h.

1570. *Approaches to Professional Assessments*. A course designed to assist students in preparation for graduate and professional-level standardized tests. Students will critically analyze the basic components of such tests. Emphasis will be placed on test requirements, test formats, guidelines for answering and scoring, and test-taking strategies. 2 s.h.

1571. *Approaches to Professional Assessments—Applications*. A course designed to prepare students for graduate and professional-level standardized tests. In study groups, students will critically analyze the basic components of the test for which they are preparing, including requirements, test formats, guideline for answering and scoring, and test-taking strategies, in conjunction with effective pedagogical procedures. 1 s.h.

## RELIGIOUS STUDIES—REL

### Department of Philosophy and Religious Studies

#### Lower-Division Courses

2601. *Introduction to World Religions*. A survey of the major world religions exploring their distinctive features and common threads. A study of their founders, systems of thought, symbols, and sacred literatures. 3 s.h.

2605. *Myth, Symbol, and Ritual*. An introduction to the nature and function of myth, symbol, and ritual. Myth interpretation, the relationship between societies and their myths, and the cultural use of myths, symbols, and rituals in religious and spiritual contexts. 3 s.h.

2608. *The Examined Life*. Considers the nature of happiness and well-being, their relation to social institutions, and the roles that civic and personal relations, morality, aesthetics, education, and religion play in providing happiness, purpose, and meaning in one's life. Cross listed as PHIL 2608. 3 s.h.

2610. *Global Ethics*. Examination of morality and justice from a global perspective, including such topics as war, terrorism, and states; poverty and the global economy; religion, gender, and identity; globalization and the environment; and markets and intellectual property. Cross-listed as PHIL 2610. 3 s.h.

2617. *Introduction to Eastern Religions*. A survey of the religions of India, China, and Japan, their systems of thought, moral values, and methods of personal transformation. 3 s.h.

2621. *Religion and Moral Issues*. The relation of specific religious and moral issues to questions of personal conduct and social policy. 3 s.h.

2631. *Religion and the Earth*. A cross-cultural survey of the religious beliefs and values that have shaped our thinking about the earth. An exploration of the shifts in religious thought called for by the ecological crisis of sustainability. 3 s.h.

2699. *Introductory Individual Study in Religious Studies*. Introductory study of a religious studies problem, movement, thinker, or the relationship of religious studies to problems in other disciplines. Intended to be an independent study course with subject matter dependent upon approval of the faculty member and student. May be repeated up to 3 s.h. 1 s.h.

#### Upper-Division Courses

3708. *African-American Religion*. Development of African-American religion and theology from the days of slavery to the present. Prereq.: One 2600-level REL or AFST course. 3 s.h.

3710. *African and Neo-African Religion*. A study of African religious traditions and their pivotal role in the formation of African civilizations and communities in the African diaspora, including their adaptations of Islam and Christianity. Prereq.: REL 2601 or PHIL 2600 or AFST 2600. 3 s.h.

3720. *Islam*. The study of the origins and development of classical and modern Islam, including the Prophet Muhammad, the Qur'an, and Muslims in America. Prereq.: REL 2601. 3 s.h.

3722. *Christianity*. The origin and development of Christianity; examination of the life and teachings of Jesus; Christian theology, liturgy, and symbolism; discussion of divisions of contemporary Christianity. Prereq.: REL 2601 or PHIL 2600. 3 s.h.

3724. *Judaism*. The study of the origin and development of Judaism, including scriptural legacy, the Talmudic period, and the transformations of the classical tradition in modern times. Prereq.: REL 2601. 3 s.h.

3726. *Buddhism*. A study of the origin of Buddhism in India and its development through East Asia and Tibet, its systems of thought, institutions, and meditative practices; and Buddhists in America. Prereq.: REL 2601 or 2617. 3 s.h.

3731. *Hebrew Scriptures*. A critical analysis of the Hebrew scriptures in terms of historical background, textual development, and religious and ethical themes. Prereq.: One 2600-level REL or PHIL course. 3 s.h.

3732. *Jesus and the Gospels*. The life and teachings of Jesus in their historical context. Examination of the ways in which Jesus is interpreted within the synoptic gospels. Prereq.: One 2600-level REL or PHIL course. 3 s.h.

3733. *Women And the Bible*. A study of Biblical interpretation utilizing narratives that portray women in Hebrew and Christian Scriptures. Students will learn analytical skills required for narrative interpretation and exegetical analysis. Prereq.: One 2600-level REL course. 3 s.h.

3740. *Muslim Thinkers*. Examination of the theological, philosophical, legal, and political writings and ideas of major Muslim thinkers from the classical through the modern period, covering the continuities and differences. Prereq.: any 2600-level REL course. 3 s.h.

3742. *Islamic Intellectual History*. Introduction to the multi-faceted nature of Islamic intellectual activity in history. Topics include Qur'anic exegesis, the Prophetic Tradition, law, theology, philosophy, and historiography. Prereq.: any 2600-level REL course. 3 s.h.

3744. *Islamic Culture and Literature*. Introduction to the diversity of Muslim culture and literature across the world. Emphasis on classical and premodern literature, art and architecture. Prereq.: any 2600-level REL course. 3 s.h.

3746. *Sufism*. Examination of Sufism: basic structure, social significance, and placement within the larger contexts of other major mystical traditions and Islam. Prereq.: any 2600-level REL course. 3 s.h.

3748. *Islam and the West*. Examination of the historical relationship between the and Islamic and Western worlds, as well as their interaction in modern contexts. Prereq.: any 2600-level REL course. 3 s.h.

3751. *Liberation Theologies and Revolutionary Change*. Study of liberation theologies in the Third World and in minority communities in the West, in relation to questions of underdevelopment, poverty, and oppression. Prereq.: REL 2601. 3 s.h.

3754. *Feminism, Ecology and Religion*. Investigation of religious perspectives related to women and nature, the relationship of the sacred to the natural world, scriptural and theological influences, and deep ecology and other environmental movements from a feminist perspective. Prereq.: REL 2601 or 2631 or WMST 2601. 3 s.h.

3756. *Psychology of Religion*. Survey of developments in depth psychology that have shaped our understanding of religious experience and spirituality. Prereq.: PSYC 1560 or one 2600-level REL course. 3 s.h.

3758. *Transpersonal Studies*. A critical study of contemporary developments in consciousness research including such topics as near-death episodes, reincarnation, nonordinary states of consciousness,

and the implications of quantum theory. Prereq.: REL 2601 or 2617. 3 s.h.

3799. *Intensive Individual Study in Religious Studies*. Intensive study of a religious studies problem, movement, thinker, or the relationship of religious studies to problems in other disciplines. Intended to be an independent study course with subject matter dependent upon approval of the faculty member and student. Prereq.: One 3700 level REL course. May be repeated up to 3 s.h. 1 s.h.

4810. *Directed Readings in Religious Studies*. Independent study course with subject matter dependent upon approval of the faculty member in consultation with student. Prereq.: Any 3700 level REL course. 3 s.h.

4850. *Seminar in Religious Studies*. Study in depth of a particular figure, topic or area in religious studies, as determined by the instructor; may be repeated once with different course content. Prereq.: One 3700-level REL course. 3 s.h.

4860. *On-Site Studies in Religion*. An on-site investigation of the beliefs and practices of a particular religion or sect through readings, lectures, interviews, and travel to locations vital to its origin or development. Prereq.: Two 3700-level REL courses. 3-9 s.h.

4871. *Senior Capstone Project*. Research and writing of a paper, or other committee approved project, on a topic in religious studies, under the supervision of a full-time faculty member and in consultation with a committee of at least two other members of the department. Prereq.: Religious Studies major with senior standing and completion of at least 21 s.h. of REL courses. 3 s.h.

## RESPIRATORY CARE—RESC Department of Health Professions

### Lower-Division Courses

1503. *Respiratory Procedures 1*. Appropriate use of selected respiratory care procedures. Two hours lecture, three hours lab. Prereq.: RESC 1530. 3 s.h.

1520. *Respiratory Care Assessment 1*. Diagnostic techniques used in evaluating patients with cardiopulmonary disorders. Two hour lecture, two hours lab. Prereq.: RESC 1530. 3 s.h.

1529. *Respiratory Care Orientation*. Scope of profession including key organizations, role within health-care system and career options. Includes applied anatomy and physiology of respiratory system and basic assessment and therapeutic procedures. Hospital experiences included. One hour lecture and two hours lab. 2 s.h.

1531. *Respiratory Care Essentials*. Application of basic scientific principles to the respiratory-care profession. Includes coverage of basic equipment, assessment techniques, and therapeutic procedures. Two hours lecture and two hours lab. 3 s.h.

2620. *Respiratory Assessment 2*. Advanced techniques in the assessment of cardiopulmonary disorders. Two hours lecture, two hours lab. Prereq.: RESC 1520. 3 s.h.

2621. *Cardiopulmonary Disease*. Comprehensive overview of cardiopulmonary disorders encountered by respiratory therapists. Includes applications to clinical protocols. Prereq.: RESC 2620. 4 s.h.

2699. *Clinical Practice 1*. Orientation to hospital and department policies, including exposure to and practice with basic respiratory care procedures. Five hours a week in clinics. Prereq.: RESC 2621. 1 s.h.

3706. *Respiratory Procedures 2*. Airway management techniques and other critical care procedures. Two hours lecture, three hours lab. Prereq.: RESC 2620. 3 s.h.

3708. *Respiratory Clinical Specialties*. Fundamentals of hemodynamic monitoring, management of burn patients, and assessment of neurotrauma. Two hours lecture, three hours lab. Prereq.: RESC 3706. 3 s.h.

3709. *Neonatal/Pediatric Respiratory Care*. Respiratory care applications in neonatal/pediatric settings. Three hours lecture, three hours lab. Prereq.: RESC 3706. 4 s.h.

3720. *Mechanical Ventilation 1*. Basic theory and application of mechanical ventilation in critical care areas. Two hours lecture, three hours lab. Prereq.: RESC 3708. 3 s.h.

3725. *Mechanical Ventilation 2*. Advanced theory and application of mechanical ventilation. Includes home care ventilators. Two hours lecture, three hours lab. Prereq.: RESC 3720. 3 s.h.

3731. *Respiratory Care Management*. A study of the basic managerial process, organizational concepts, budgeting, quantitative planning, decision-making, and issues of control as they relate to the manager of a hospital-based respiratory care department. Prereq.: RESC 3725. 2 s.h.

3740. *Clinical Practice 2*. Application of basic and advanced respiratory care modalities. Three hour lab, twenty clinical hours per week. Prereq.: RESC 2699. 4 s.h.

3741. *Clinical Practice 3*. Application of basic and advanced respiratory care modalities for pediatric and adult patients. Twenty hours a week. Prereq.: RESC 3740. 3 s.h.

3750. *Pulmonary Rehabilitation*. Demonstration of the multidisciplinary nature of a pulmonary rehabilitation program. The role of the respiratory care practitioner in preventive care activities. Prereq.: RESC 3706. 2 s.h.

3765. *Advanced R.C. Diagnostics*. RCPs role in EKG, EEG, and Holter monitoring. Clinical significance of various stress testing regimens. One hour lecture, two hours lab. Prereq.: RESC 3708 or permission of instructor. 2 s.h.

4831. *Pulmonary Care Management*. Pathology as it relates to care of patients with pulmonary-related disorders. Prereq.: RESC 3725. 3 s.h.

4835. *Clinical Practice 4*. Application of advanced respiratory modalities and diagnostics for pediatric and adult patients. Capstone course for RC program. Fifteen hours a week. Prereq.: RESC 3741. 3 s.h.

4838. *Respiratory Seminar 1*. Review of current aspects of clinical respiratory care. A content analysis of the updated NBRC Entry-Level exam will be included. Prereq.: RESC 3741. 1 s.h.

4842. *Respiratory Seminar 2*. Review of current aspects of clinical respiratory care. A content analysis of the updated NBRC Advanced Practitioner exam will be included. Prereq.: RESC 4838. 1 s.h.

4846, 4848. *Sleep Diagnostics 1, 2*. Scientific theory and clinical techniques needed to perform polysomnography. Two hours lecture, two hours lab. Prereq.: Senior standing and RESC 3740 for 4846, RESC 4846 for 4848. 3+3 s.h.

4847, 4849. *Sleep Clinics 1, 2*. Polysomnographic techniques in the clinical setting. Approximately 100 contact hours for each course. Prereq.: Senior standing and RESC 4846 for 4847, RESC 4848 and 4847 for 4849. 1+1 s.h.

## SCIENCE, TECHNOLOGY, ENGINEERING, AND MATH—STEM College of Science, Technology, Engineering, and Math

1510. *STEM Advanced College Success Skills*. Develops study skills in STEM disciplines by improving comprehension and retention of textbook and lecture materials. Covers reading rate flexibility, vocabulary growth, learning style preferences, critical reading, and problem solving. Uses classroom instruction, computer-aided instruction, and small-group tutoring sessions to apply strategies, including STEM-based lecture applications. Also listed as RSS 1510C. Prereq.: placement into MATH 1501 and ENGL 1540 or above and either RSS 1510A or no reading placement. Grading: A, B, C, N/C. 4 s.h.

1511. *STEM Preparation Skills 2*. Targets success in first year STEM courses in engineering, basic science, and mathematics. Scientific and mathematical ideas important in STEM disciplines are studied in their scientific and engineering contexts to promote success in CHEM 1515-1516, ENGR 1550-1560, PHYS 1501, with special focus on transitioning from intermediate algebra and trigonometry to precalculus to foster success in MATH 1513. Prereq.: Completion of RSS 1510C or STEM 1510C or STEM 1510 and MATH 1501 or MATH 1503 with C or better. Grading: A, B, C, N/C. 5 s.h.



1513. *Studies in STEM Connectivity*. Develops and studies connections between mathematical concepts and the empirical sciences, and applies these connections to engineering and technology. Prereq.: placement out of RSS 1510A and RSS 1510B (no reading placement) and concurrent registration in MATH 1501 or MATH 1507/1508. 3 s.h.

1550. *Introduction to STEM*. Introduction to STEM fundamentals including problem solving, data management, modeling of physical systems, and scientific communication skills. One hour lecture and 3 hours lab per week. Prereq.: Eligible to take Math 1513 or higher-level math course. 2 s.h.

1551. *STEM Careers*. An introduction to the career opportunities available in the different STEM majors. Designed to help students choose a STEM major field of study and understand the relationship between science and technology. To enhance student success. One hour lecture per week. Grading is ABC/NC. 1 s.h.

1599. *Medical Professions Seminar*. Introduction to the doctoral medical professions. Review of careers including allopathic medicine, osteopathic medicine, dentistry, optometry, podiatric medicine, chiropractic medicine, veterinary medicine, and pharmacy; also entrance requirements for medical programs and advising resources at YSU. Grading is CR/NC. 1 s.h.

2600. *Explorations in the Sciences*. Student investigations in the natural sciences using a variety of laboratory approaches focused on a single theme or concept; a multidisciplinary study from two of the following science areas (biology, chemistry, physical geography, geology, physics, astronomy, environmental science) segmented in three five-week units (6 hrs/wk including 2 to 3 hours of instruction). 4 s.h.

2601H. *BSMD Honors Seminar*. An interdisciplinary course dealing with topics appropriate to students in the BSMD program. The subjects include, but are not limited to, MCAT preparation, study skills appropriate for the accelerated curriculum, the organization and function of the university, critical thinking, current events, etc. Prereq.: Acceptance into BSMD program. 2 s.h.

2625. *Natural Gas and Water Resources Seminar*. Guest lecture forum course designed to provide students with exposure to a broad range of topics and current research relevant to the petroleum industry and water resource issues. Course may be repeated. Prereq.: GEOL 2620 (or concurrent). 1 s.h.

3700. *Human Values in Medicine*. A behavioral science and humanities perspective on individual and social issues which affect medical care delivery. In addition to classes, seminars, and workshops, it may include field projects, participation in health-related investigations and presentations, and personal development programs. Credit toward fulfillment of the area requirement will be determined by the dean of the College of Arts and Sciences and will be based upon the selection of courses. May be repeated once. Prereq.: PSYC 1560 and PHIL 2600 or consent of dean. For current students. 1-7 s.h.

3789. *STEM Professional Practice*. Apply theory in professional practice experience overseen by appropriate working professional for employment at approved employer. Students see faculty advisor, submit professional practice proposal for approval and write final project paper. Prereq.: at least sophomore standing, 2.00 GPA in STEM program, and special approval of the STEM Professional Practice Director in consultation with student's department chair. May be repeated for a maximum of 8 s.h. 1-4 s.h.

4890. *STEM Internship*. Integrate theory and practice jointly supervised by appropriate working professional and College of STEM faculty mentor for part-time employment at approved employer. Students see faculty advisor, participate in orientation / professional practice training, submit internship proposal, receive internship offer from approved employer, maintain journal of their experiences, and submit final project paper. Prereq.: junior or senior standing, 3.00 GPA in STEM program, 2.75 GPA overall, and special approval of the STEM Professional Practice Director in consultation with student's department chair. May be repeated for maximum of 8 s.h. 1-4 s.h.

4891. *STEM Cooperative Education Assignment*. Integrate theory and practice jointly supervised by appropriate working professional and College of STEM faculty mentor for 40 hours per week of full-time employment at approved employer. Students see faculty advisor, participate in orientation/professional practice training, submit co-op proposal, receive co-op offer from approved employer, maintain journal of their experiences and submit final project paper. Prereq.: junior or senior standing, 3.00 GPA in a STEM program, 2.75 GPA overall, and special approval of the STEM Professional Practice Director in consultation with student's department chair. May be repeated twice. 0 s.h.

4895. *Senior Thesis*. Faculty-directed research for students pursuing practical research experience in a STEM-related discipline. Prereq.: Junior status; submission of an approved thesis proposal; permission of the STEM dean. May be repeated for up to 3 s.h. 1-3 s.h.

## SECONDARY EDUCATION— SED Department of Teacher Education

3706. *Principles of Teaching Adolescents*. Lesson/unit planning using instructional strategies that motivate diverse students. Integrates content knowledge, pedagogy, technology, and cross-disciplinary curriculum exploration. Critical reflection and analysis of teaching experiences through peer teaching and classroom teaching in local secondary schools. Prereq.: BCOE upper-division status and approval of chairperson. Coreq.: TERG 3711, FOUN 3710 and one of SED 4800B, 4800C, 4800E, 4800, 4800M, 4800S or HMEC 4800 or FNLG 4801 or PHLT 3703, 3704 and 3705. 3-5 s.h.

4800B. *Special Methods: Integrated Business*. Techniques used in teaching integrated business subjects. Observation of teaching in a vocational setting, presentation of a lesson in a secondary or vocational school, unit development, reflective writing, Organization, administration, implementation, and evaluation of vocational business education programs at the secondary and adult education levels. Prereq.: BCOE upper-division status and approval of chairperson. Coreq.: SED 3706, TERG 3711 and FOUN 3710.

3 s.h.

4800C. *Special Methods: Science*. Using NSTA/NCATE and Ohio content standards, candidates establish and maintain learning environments that provide diverse students with a holistic, interdisciplinary understanding of science. Background for teaching science, instructional strategies, classroom management, planning instruction, assessment, professional development, integration of content with inquiry emphasized. Field experience combining pedagogy/methodology in a middle grades or adolescent classroom required. Prereq.: BCOE upper-division status, 24 s.h. science, and approval of chairperson.

3 s.h.

4800E. *Special Methods: English*. Exploring and demonstrating reflective teaching methods for adolescent learning of English: planning instruction, execution of teaching/learning activities, representations of English concepts, authentic assessment, English communication, purposeful use of instructional technology, classroom management for effective teaching. Prereq.: BCOE upper-division status and approval of chairperson. Coreq.: SED 3706 and FOUN 3710.

3 s.h.

4800M. *Special Methods: Mathematics*. Exploring and demonstrating reflective teaching methods for adolescent learning of mathematics: planning instruction, execution of teaching/learning activities, multiple representations of mathematical concepts, problem-solving strategies, authentic assessment, manipulative materials, mathematical communication, purposeful use of instructional technology, classroom management for effective teaching. Prereq.: BCOE upper-division status and approval of chairperson. Coreq.: SED 3706, TERG 3711 and FOUN 3710.

3 s.h.

4800S. *Special Methods: Social Studies*. Theory and practice in learning how to plan, execute, and evaluate social studies lessons that are empowering, interesting, and reflective. Topics include: creating thematic unit plans; interpreting academic standards; writing instructional objectives; creating authentic learning activities; authentic assessment; classroom management and democratic discipline. Prereq.: BCOE upper-division status and approval of chairperson. Coreq.: SED 3706, TERG 3711 and FOUN 3710.

3 s.h.

4827. *Supervised Student Teaching: Language (K-12)*. Grading is CR/NC. See requirements for student teaching under COE. Prereq.: BCOE upper-division

status, passing scores on PRAXIS II content and PLT tests, criminal background check, and completion of foreign language program excluding student teaching and student teaching seminar. Coreq.: SED 4842A.

1-10 s.h.

4842. *Supervised Student Teaching: High School*. Full-time 16-week student teaching in grades 7-12 supervised by University faculty and experienced AYA practitioners licensed in the teaching subject of the candidate. To be taken concurrently with SED 4842A. Grading is CR/NC. Prereq.: BCOE upper-division status, passing scores on PRAXIS II content and PLT tests, criminal background check, and completion of adolescent/young adult or career/technical program excluding student teaching and student teaching seminar. Coreq.: SED 4842A.

1-10 s.h.

4842A. *Student Teaching Seminar for Secondary Education*. Seminar topics are based on pedagogy, knowledge and application of professional practice and standards, critical theory, and knowledge of the adolescent and young adult learner. Completion of the Teacher Work Sample is required. Coreq.: One of SED 4827, 4842, 4843, 4844, 4845, or 4846.

1-2 s.h.

4843. *Supervised Student Teaching: Visual Art (K-12)*. Grading is CR/NC. See requirements for student teaching under COE. Prereq.: BCOE upper-division status, passing scores on PRAXIS II content and PLT tests, criminal background check, and completion of visual art program excluding student teaching and student teaching seminar. Coreq.: SED 4842A.

1-10 s.h.

4844. *Supervised Student Teaching: Music (K-12)*. Grading is CR/NC. See requirements for student teaching under COE. Prereq.: BCOE upper-division status, passing scores on PRAXIS II content and PLT tests, criminal background check, and completion of music program excluding student teaching and student teaching seminar. Coreq.: SED 4842A.

1-10 s.h.

4845. *Supervised Student Teaching: Health (K-12)*. Grading is CR/NC. See requirements for student teaching under COE. Prereq.: BCOE upper-division status, passing scores on PRAXIS II content and PLT tests, criminal background check, and completion of health program excluding student teaching and student teaching seminar. Coreq.: SED 4842A.

1-10 s.h.

4846. *Supervised Student Teaching: Physical Education (K-12)*. Grading is CR/NC. See requirements for student teaching under COE. Prereq.: BCOE upper-division status, passing scores on PRAXIS II content and PLT tests, criminal background check, and completion of physical education program excluding student teaching and student teaching seminar. Coreq.: SED 4842A.

1-10 s.h.

4850. *Supervised Student Teaching: Career/Technical*. Full-time 16 week student teaching in grades 4-adult supervised by University faculty and experienced career/technical practitioners licensed in the teaching subject of the candidate. Grading is CR/NC. Prereq.: BCOE upper-division status, passing scores on

PRAXIS II content and PLT test, criminal background check, and completion of adolescent/young adult or career/technical program excluding student teaching and student teaching seminar. Coreq: SED 4842A.  
1-10 s.h.

## SOCIAL WORK—SCWK

### Department of Social Work

#### Lower-Division Courses

1510. *Introduction to Social Work*. An overview of the values, systems, policy, theories and concepts central to the profession of social work. This course will also review roles, licensure requirements and history of the social work profession. This is the first course orienting students to the social work profession. Prereq: SOC 1500. 3 s.h.

2600. *Health Issues for Social Work Practice*. Explores impact of physical and biological forces on client issues/needs and importance of understanding these factors for professional social work practice. Emphasis given to biological development across the human lifespan, ecological issues, genetic influences, health concerns. Prereq.: ENGL 1550 and SCWK 1510. 3 s.h.

2622. *Social Work Processes*. Addresses the full range of communication skills in systems of all sizes for professional social work practice. Includes principles of effective communication, functions and purposes of communication, and the roles of social workers. Thirty clock hours of volunteer engagement required. Three hours lecture. Prereq.: SCWK 1510. 3 s.h.

2641. *American Social Welfare*. Overview of the history and evolution of social welfare programs and services in America. Emphasis on the identification and interrelationships of social values and structures, political factors, and economic conditions on resource allocation, including meeting the needs of special populations. Prereq.: SCWK 1510. 3 s.h.

2642. *Human Behavior and the Social Environment for Social Workers 1*. A general social systems approach as a conceptual framework to the understanding of culture and society, communities, organizations, groups, families, and individuals as they develop over the lifespan. Application of theory and research to social work. Prereq.: SCWK 1510, PSYC 1560. 3s.h.

2644. *Human Behavior and the Social Environment for Social Workers 2*. An ecosystems perspective in understanding families, groups, organizations and communities. Focus on individuals and their transactions with each other and their environment. Application of theory and research to social work. Prereq.: SCWK 2642. 3 s.h.

2695. *Applied Social Work*. A practicum in human service agencies for the Social Services Technology major. The student must spend 225 hours in an agency for a total of 6 s.h. credit. Prereq.: Completion of all courses for admission to the two-year Social Services Technology Internship. 6 s.h.

#### Upper-Division Courses

3726. *Child Welfare and Case Planning*. This course provides the knowledge, concepts, and skills needed for beginning level social work practice in public and child welfare settings. Major focus is on protecting at-risk children by strengthening, supporting and empowering families. Prereq.: SCWK 1510. 3 s.h.

3727. *Child Welfare Permanency Planning*. Provides the knowledge, concepts, and skills needed for beginning level social work practice in public child welfare settings. Major focus is on the developmental needs and permanency planning associated with at-risk children served by the child welfare system. Prereq.: SCWK 1510. 3 s.h.

3728. *Social Services for Children*. Social welfare agencies and services developed by communities for the care and training of children. Development of a conceptual framework for understanding the issues, problems, and policies in children's services. Prereq.: SCWK 2622. 3 s.h.

3730. *Social Services and the Aged*. An empirical and analytical base for understanding the policies, problems, and trends in services for the aged. Prereq.: SCWK 2622. 3 s.h.

3731. *Social Services and the Disabled*. Problems arising from or related to illness and disability; adjustment of disabled persons. General interventive techniques for working with the disabled; recent research and treatment innovations. Prereq.: SCWK 2622. 3 s.h.

3736. *Social Work Methods with Individuals*. Overview of generalist practice methods with client systems of varying sizes. In-depth analysis of problem solving strategies and skills in working with individuals. Theory and research relating to practice. Social work purposes, functions, and values are addressed from the systems perspective. Prereq.: Admission to SCWK Program. 3 s.h.

3737. *Social Work Methods with Groups*. In-depth analysis of problem-solving strategies and skills in working with small groups. Theory and research relating to practice. Social work purpose, functions, and values are addressed for the systems perspective. Prereq.: SCWK 3736. 3 s.h.

3738. *Social Work Methods with Families*. In-depth analysis of problem-solving strategies and skills in working with families. Theory and research relating to practice. Social work purposes, functions, and values are addressed from the systems perspective. Prereq.: SCWK 3736. 3 s.h.

3750. *Analysis of Social Work Practice Data*. Techniques of data description and introduction to analytical methods used to evaluate service delivery at all levels of social work practice. Prereq.: SCWK 2641 and 2644. 3 s.h.

3760. *Research Methods for Social Workers*. Quantitative and Qualitative research methodologies for building knowledge for social work practice.

Systematic evaluation of outcomes, theoretical bases, relevant technological advances, and ethical standards. Prereq.: SCWK 3750. 3 s.h.

4825. *Field Work in Social Services*. Professionally supervised practice in an approved social agency. The student must complete 225 hours per semester in an agency for each 6 s.h. of credit. Must be taken two consecutive semesters for a total of 12 s.h. Credit/no credit grade option only. Prereq.: Admission to Social Work Internship. 6 s.h.

4826. *Integrated Field Work Seminar*. Integration and evaluation of conceptual, affective, and experiential learning achieved from previous social work courses and field-based assignments. Concurrent: SCWK 4825 first enrollment. Prereq.: Completion of courses required to enter field work. 3 s.h.

4827. *Integrated Capstone Seminar*. Provides opportunities to synthesize and integrate all the previous coursework from social work education. Includes both theoretical and experiential assignments to assist students with increased self awareness and to prepare them for the transition from college to entry-level generalist practice. Concurrent: SCWK 4825 second enrollment; Prereq.: Completion of courses required to enter field work and SCWK 4826. 3 s.h.

4860. *Seminar Special Topics in Social Work*. Study of selected topics in social work theory, methods and research. May be repeated with different topics. Prereq.: Junior standing or permission of instructor. 1-3 s.h.

5820. *Social Policy*. Review of the programs, structure, and functions of social services including historical development and social, political, and economic issues. Application of scientific method to analyze and develop social work policies designed to achieve social work goals and purposes. Prereq.: SCWK 2641, POL 1560. 3 s.h.

5822. *Social Work Methods with Organizations and Communities*. In-depth analysis of problem-solving strategies and skills in working with organizations and communities. Theory and research relating to practice. Social work purpose, functions, and values are addressed from the systems perspective. Prereq.: SCWK 3736. 3 s.h.

5823. *Cultural Diversity in Practice*. Emphasis on understanding the experiences, beliefs, and inherent problems of racial and ethnic minority groups. Focuses also on populations distinguished by socioeconomic status, gender, age, sexual orientation, religion, and physical or mental disability. Application of theories, differential assessment, and intervention skills necessary for effective social work practice. Prereq.: SCWK 3736 or permission of instructor. 3 s.h.

## SOCIOLOGY—SOC

### Department of Sociology and Anthropology

#### Lower-Division Courses

1500. *Introduction to Sociology*. An introduction to the science of human societies and groups: analysis of the structures, functions, and processes that bring about changes in societies, groups, communities, classes, and institutions. 3 s.h.

2601. *Social Problems*. A sociological overview of various contemporary social issues, analyzing significant discrepancies between standards of expectation and actual social behavior, attempting to ascertain possible causes, and discussing trends and possible changes. 3 s.h.

2630. *Criminology*. Study of the social context of crime in America. Review of historical theories offered in explanation of criminal behavior. 3 s.h.

2640. *Women in Society*. Attention to cross-cultural and historical issues. Major focus on the contemporary status of women in the U.S. Effects of the political and economic institutions upon women, particularly the effect of stratification, gender roles, and the socialization process. Prereq.: SOC 1500. 3 s.h.

2690. *Identities and Differences*. A study of personal and social issues that shape the understanding and development of identity and diversity. 3 s.h.

#### Upper-Division Courses

3700. *Minority Groups*. Survey of the origins and characteristics of ethnic and racial minority groups, with emphasis on the significance of membership in such a group for in-group, out-group, and community solidarity. Cross-listed with AMER 3700. Prereq.: SOC 1500. 3 s.h.

3701. *Social Statistics*. Measurement and interpretation of social data by use of descriptive techniques. Examines methods of probability theory as a basis for statistical inference, hypothesis testing, correlation, chi-square, and variance analysis. Prereq.: SOC 1500 or ANTH 2602, successful completion of ENGL 1551 and MATH 1501 or a level 3 or higher on the math placement exam. Listed also as ANTH 3701. 4 s.h.

3703. *Aging and Society*. An interdisciplinary introduction to studies in aging. Examines the impact of population aging and its effect on the society at large. Also examines individual aging processes and social significance of aging. Prereq.: SOC 1500 or GERO 1501. Listed also as GERO 3703. 3 s.h.

3705. *The Family*. Family and kinship systems as major institutions; their development, functions, and relation to other basic institutions found in different cultures and social strata. Prereq.: SOC 1500 or ANTH 1500. 3 s.h.

3707. *Urban Sociology*. A comparative study of cities of pre-industrial and industrial societies, historical and contemporary. The process of urbanization and changing urban structure and functions. Prereq.: SOC 1500. 3 s.h.

3708. *Political Sociology*. The social conditions that affect government and politics and that may help to determine political order and regulate struggles for power; associations and movements leading to stability or change. Prereq.: SOC 1500. 3 s.h.

3720. *Applied Sociology*. Uses of sociology in practical affairs, providing theory and data for public policy, institutional reform, social action programs, and social inventions. Contributions to architectural design, industrial engineering, community planning, and innovative legislation. Cross-listed with AMER 3720. Prereq.: SOC 1500. 3 s.h.

3735. *Juvenile Delinquency*. Social and psychological factors underlying delinquency; the juvenile court and probation; treatment and preventive measures. Prereq.: SOC 1500. 3 s.h.

3740. *Complex Organizations*. Structures and processes of large-scale organizations: leadership, control techniques, tensions, bureaucratic pathologies, organizational change. Prereq.: SOC 1500. 3 s.h.

3741. *Social Movements*. Analysis of the role of social movements, intellectual criticism, and socioeconomic trends; study of the dynamics of change initiated outside of regular and institutionalized channels, including mobs and crowds. Prereq.: SOC 1500. 3 s.h.

3742. *Small Group Processes*. A study of small group behavior; influence, attitudes, and values of social microsystems. Prereq.: SOC 1500. 3 s.h.

3743. *Social Stratification and Inequality*. Comparative analysis of social stratification systems with major emphasis on modern Western societies. Prereq.: SOC 1500. 3 s.h.

3744. *Social Deviance*. Problems of drug abuse, sexual deviation, crime, and other forms of deviance. Theoretical approaches to deviant behavior; etiologies and methods of social control. Prereq.: SOC 1500. 3 s.h.

3745. *Sociology of Health, Illness, and Healthcare*. Social attitudes toward illness. Cultural and social factors in disease definition of illness, and organization of the health professions and health facilities. Prereq.: SOC 1500, GERO 1501, or admission to NEOMED-YSU program. Listed also as GERO 3745. 3 s.h.

3749. *Sociological Theory*. The major theoretical traditions in Sociology emerging from the enlightenment period and evolving to the present. Prereq.: SOC 1500 or ANTH 2602. 3 s.h.

3752. *Evaluation Research*. Introduction to the field of evaluation research of social policy and programs. Current procedures, concepts, and techniques. Social and ethical issues of research. Prereq.: SOC 3701. 3 s.h.

3755. *Theories of Gerontology*. Review and critical analysis of current theories of the social aspects of aging, and their use in research. Prereq.: SOC 1500 or GERO 1501. Listed also as GERO 3755. 3 s.h.

3756. *Aging and Ethnicity*. Aging in American sub-cultures, noting differences in status/role systems, demographic distributions, life styles, methods of dealing with the elderly, and related problems. Listed also as GERO 3756. Prereq.: SOC 1500 or GERO 1501. 3 s.h.

3757. *Aging and Social Policy*. Critical examination of social policies and social systems which affect aging and retirement. Prereq.: SOC 1500, GERO 1501, or POL 1560. Listed also as GERO 3757 and POL 3757. 3 s.h.

3758. *Long-Term Care*. Examines critical issues in long-term care systems, services, and programs. Impacts of social demographic and economic changes on long-term care needs, demands, and supplies. Contemporary trends and future outlooks of long-term care. Prereq.: SOC 1500 or GERO 1501. Listed also as GERO 3758. 3 s.h.

3759. *Sociology of Dementia*. The understanding of the nature, causes, symptoms, and social consequences of dementia. Attention to the status of aging, and to the status of those who suffer from dementia in contemporary society. Prereq.: SOC 1500. 3 s.h.

3760. *Sociology of Death and Dying*. Analysis of the social aspects of human death, dying, and bereavement using various sociological approaches. Explores data from secondary sources, surveys, and field investigations that relate to the institutional contexts of dying and grieving processes. Includes practical application of sociological analysis of dying and death. Prereq.: SOC 1500. 3 s.h.

3789. *Technology and Society*. A critical exploration of how societal needs affect the creation of technologies and how technology affects society. An interdisciplinary approach in examining the complex interactions between humans and their tools. Prereq.: BIOL 2601 or ENGR 1550 or SOC 1500, and junior standing. Listed also as BIOL 3789 and CEEN 3789. 3 s.h.

3790. *Aging in Cross-Cultural Perspectives*. Examines the phenomenon of aging from cross-cultural perspectives with an emphasis on cultural evolution and its impact upon the status, roles, and cultural values associated with aging and the aged. Listed also as ANTH 3790 and GERO 3790. Prereq.: SOC 1500 or ANTH 1500 or GERO 1501. 3 s.h.

3798. *Select Topics in Sociology*. In-depth examination of various sociological topics and issues of both current and long-standing interest. May be taken twice with different topics. Prereq.: 3 s.h. in Sociology. 3 s.h.

4800. *Undergraduate Research*. Research participation under the direction of a faculty member. Designed to acquaint the advanced student with special research problems associated with various aspects of

the discipline. May be repeated for a maximum of 4 s.h. Prereq.: Permission of chairperson and 20 s.h. in Sociology. 1-2 s.h.

4801. *Later Life Issues*. An examination of contemporary issues and concerns among the elderly. Topics include family relations, finances, entitlements, Social Security, quality of life, and euthanasia. Prereq.: SOC 3703. 3 s.h.

4804. *Family, Health, and Aging*. Examines family and health related aspects of aging. Positive and negative interactions among family members and caregivers, and their impact on mental and physical quality of life of the elderly. Listed also as GERO 4804. Prereq.: SOC 3703 or GERO 3703. 3 s.h.

4821. *Internship in Sociology*. Application of sociological knowledge in settings such as social agencies, government offices, hospitals, nursing homes, correctional facilities, and industry. Maximum of 6 s.h. may be applied to the Sociology major. Prereq.: Junior standing and at least 9 s.h. of Sociology, and permission of chairperson. 3-9 s.h.

4850. *Research Methods*. An introduction to methods employed in social research. Attention is given to (1) the logic of scientific inquiry and the relationship between theory and methods; (2) the various qualitative and quantitative methods; (3) research design, data collection, organization, analysis, interpretation and application; (4) the social, cultural, political, and ethical context of social research; and (5) computer skills employed in data analysis. Prereq.: SOC 3701, ANTH 3701, or GERO 3701. Listed also as ANTH 4850 or GERO 4850. 3 s.h.

4851. *Social Research*. A seminar in social research wherein participants apply research methods in the theoretical and/or empirical investigation of a social issue and/or problem. Participants are involved in all phases of the research process. Prereq.: SOC 4850. Listed also as ANTH 4851. 3 s.h.

4898. *Selected Problems in Sociology and Anthropology*. Readings in sociology and anthropology dealing with current problems in theory and methods. Credit is given according to the nature and extent of the problems and the readings. For students planning to enter graduate school. Prereq.: Departmental major in senior year. 1-3 s.h.

## SPECIAL EDUCATION— SPED

### Department of Counseling and Special Education

2630. *Individuals with Exceptionalities in Society*. Characteristics, adjustment problems, special needs with emphasis on educational solutions, co-teaching, and inclusionary practices. The laws and implementation; placement, programming, due process, resources recommended for accommodation of exceptional learners in diverse settings. 3 s.h.

2631. *Intervention Strategies with Special Needs Children in Early Childhood*. Development of teaching skills of the regular early childhood educator in meeting the intervention needs of young children with special needs (disabilities, at-risk, and/or gifted) in inclusive classrooms and programs. Emphasis on classroom support for IEP/IFSP goals and objectives. Prereq.: PSYC 3755. 3 s.h.

3715. *Characteristics and Needs of Children and Youth with Mild/Moderate Disabilities*. Description, classification, development, and academic and social adjustment of children with learning disabilities. Relates the contributions of diverse disciplines to theory and practice. Developmental approach to motor, perceptual, cognitive, language and social-emotional functioning within an educational context. Prereq.: SPED 2630 or 2631. 3 s.h.

4831. *Assessment and Referral in Early Childhood*. Development of skills in referral and assessment techniques for the regular early childhood educator with emphasis on both formal and informal methods such as observation, authentic assessment, standardized measures and interviewing. Attention to children with disabilities and/or gifts and talents. Prereq.: Upper-division status. 3 s.h.

4839. *Supervised Student Teaching: Moderate/Intensive Intervention Specialist*. Concurrent with SPED 4869. Grading is CR/NC. Prereq.: FOUN 1501, 3708; PSYC 3709; EDTC 3771; SPED 2630 or 2631, 5828, 5833, 5835, 5851, 5853, 5863, 5864, 5866, 5867; senior status and approval of the chair. 4-12 s.h.

4849. *Supervised Student Teaching: Mild Moderate/Disabilities*. Concurrent with SPED 4869. Grading is CR/NC. Prereq.: FOUN 3708, completion of the reading block (TERG 2601, 3701, 3702, 3703) & STEP block (SPED 4854, 5835, 5864, TERG 3703) SPED 2630 or 2631, 5853, 5863, 5866, senior status, and approval of the chairperson; see requirements for student teaching under BCOE. 4-12 s.h.

4854. *Cross-Curricular Interventions*. Field application of principles of reading in the content areas, organization and implementation of cross-curricular content areas across grade levels. Includes management of special education/inclusionary classrooms; part of a ten-week intensive field experience entitled STEP (Special Teacher Education Program). Prereq.: SPED 5828, 5834, or 5868. 4 s.h.

4857. *Applied Technology in the Education of Children and Youth with Disabilities*. Explores various concepts related to the use of applied technology for children and youth with disabilities. Includes assistive technology and alternative modes of communication as well as the use of appropriate software. Prereq.: Admission to upper-division COE status. 4 s.h.

4869. *Student Teaching Seminar for Special Education*. Applied behavior management and classroom environment, reflective teaching techniques. Daily lessons, the student teacher's interactions with children and youth, teachers and administrators. Concurrent with student teaching. Grading is CR/NC. Prereq.: Concurrent with SPED 4839 or 4849. 2 s.h.

5810. *Introduction to Sign Language*. Deaf Culture, ASL, and English Sign Language differences will be discussed. Students will acquire basic proficiency in sign language. Prereq.: Special approval. 3 s.h.

5828. *Education of Seriously Emotionally Disturbed Children and Youth*. Instruction, curriculum and program development for youth in serious conflict. Advanced behavior change interventions. Practicum consisting of work in the field with emotionally disturbed youth required. Prereq.: Upper-division status in COE. 4 s.h.

5833. *Characteristics and Needs of Exceptional Children and Youth with Moderate/Intensive Disabilities*. Identification and intervention in critical areas of development for individuals with moderate/intensive disabilities including autism. Developing objectives, planning and implementing adapted curriculum in consultation with interdisciplinary specialists. Prereq.: Upper-division status in COE, SPED 3715. 3 s.h.

5834. *Educational Strategies and Methods for Children and Youth with Moderate/Intensive Disabilities*. Curriculum planning, teaching methods, habilitation and rehabilitation for persons with multiple and/or severe developmental disabilities. Practicum included. Prereq.: Upper-division status in COE, SPED 5833. 4 s.h.

5835. *Classroom Management for Exceptional Children and Youth*. Management of the exceptional person's behavior; adaptations of the classroom environment to facilitate learning and personal social adjustment. Communicating effective management programs to parents. Prereq.: Upper-division status in COE. 4 s.h.

5851. *Transition Planning, Social Skill Development and Health-Related Issues*. Emphasis on lifelong career orientation and the development and implementation of a K-12 prevocational/vocational curriculum. Effective teaching of interpersonal communication and social skills. Classroom climate, self-esteem, health-related issues. Integration of practical experiences in the classroom, home, and community. Prereq.: Upper-division status in COE. 3 s.h.

5853. *Diagnosis and Intervention in Mathematics for Special Education*. Principles, practices, materials and aids for teaching mathematics in special education. Diagnostic and evaluation procedures; individualized instructional techniques; observation, tutoring, and participation. Field experience required. Prereq.: Upper-division status in COE. 3 s.h.

5858. *Intervention Concepts and Strategies in Early Childhood Special Education*. Review and analysis of the methods by which young children construct knowledge about their physical, social and intellectual worlds. Study of patterns of normal and atypical development from birth through age eight, as well as the development of appropriate models for effective intervention. Prereq.: PSYC 3755. 2 s.h.

5864. *Service Coordination, Collaboration, and Consultation for Students with Special Needs*. Enables teachers of exceptional individuals to gain cooperation and involvement of professionals, parents, and children. Communication skills and sensitivity to individual and cultural differences. Prereq.: Upper-division status in COE. 3 s.h.

5865. *Workshop in Special Education*. Intensive study and related activities in one or more of the following special education curriculum areas: trainable mentally retarded, educable mentally retarded, learning disability/behavior disorder, multi-handicapped. May be repeated if content is different. Prereq.: Admission to upper-division COE status. 1-4 s.h.

5866. *Assessment and Referral of Exceptional Children and Youth for the Intervention Specialist*. Development of skills in referral and assessment techniques in the areas of mild/moderate and moderate/intensive disabilities. Informal and formal methods including observation, authentic assessments, standardized measures, interviewing. Referral, initial and subsequent evaluation, annual review concerns. Prereq.: Upper-division status in COE. 3 s.h.

5867. *Intervention and Remediation of Receptive/Expressive Language Dysfunction*. Theory and practice of intervention and remediation of basic cognitive processes especially in the areas of receptive and expressive language and cognitive skills for the intervention specialist. Prereq.: Upper-division status in COE. 3 s.h.

5868. *Mild/Moderate Disabilities Practicum*. Diagnostic procedures used to develop a comprehensive assessment of a child's current functioning. Individualized education program/case study developed and partially implemented. Prereq.: Upper-division status in COE, SPED 5866 and 5867. 4 s.h.

5870. *Independent Study in Special Education*. Individual work under special education staff guidance; curriculum development or special education areas; individual problems in community agencies or school. Prereq.: Admission to upper-division COE status. 1-4 s.h.

5871. *Characteristics and Needs of Gifted Children*. Introduction to gifted education. Overview of the theoretical and research base for gifted education, including appropriate classroom environments, teacher qualifications, and support services to meet the diverse social, emotional, and intellectual needs of gifted children. Current program standards. Prereq.: Admission to COE upper-division status. 3 s.h.

5878. *Teaching Gifted and Talented Students*. Theory and organization of curriculum with design and integration of content subjects into varying models. Wide range of strategies and identification of resources and materials as well as investigations in educational technology and appropriate applications for gifted children. Prereq.: Upper division status in COE; SPED 5871 and permission of instructor. 4 s.h.

## STATISTICS—STAT

### Department of Mathematics and Statistics

#### Lower-Division Courses

260L. *Introductory Statistics*. Designed for students from different disciplines who desire an introduction to statistical reasoning. Topics include collecting and summarizing data, concepts of randomness and sampling, statistical inference and reasoning, correlation and regression. Prereq.: MATH 1507 or level 40 on the Math Placement Test. 3 s.h.

#### Upper-Division Courses

3717. *Statistical Methods*. Probability and statistics designed for students majoring in the natural sciences. Topics include descriptive statistics, probability, estimation, testing hypotheses, analysis of variance, regression and nonparametric statistics. Use of personal computers with computer software will be required. Credit will not be given for both STAT 3717 and 3743. Prereq.: Math 1549 or 1570 or 1571 or 1585H or equivalent. 4 s.h.

3743. *Probability and Statistics*. A calculus-based probability and statistics course. Topics include descriptive statistics, probability models and related concepts and applications, statistical estimation, and hypothesis testing. Prereq.: MATH 1572 or 1585H. Credit will not be given for both STAT 3717 and 3743. 4 s.h.

3781H. *Biostatistics*. Descriptive statistics, testing hypotheses, analysis of count data, correlation, regression, nonparametric statistics, and analysis of variance with applications relating to biological and health sciences. Prereq.: MATH 1580H and 1581H, or equivalent. 3 s.h.

4804. *Actuarial Models 1*. The statistical foundation of actuarial contingency models including the study of survival and severity distributions. Other topics selected from life insurance and annuities, benefit premiums, reserves, and applications. Prereq.: STAT 3743 or consent of department chairperson. 3 s.h.

4805. *Actuarial Models 2*. The statistical foundation of actuarial contingency models including the analysis of benefit reserves. Other topics selected from multiple life functions and decrement models, insurance models, and applications. Prereq.: STAT 3743 or consent of department chairperson. 3 s.h.

4820. *Modern Decision Making*. Introduction to the mathematics and statistics of decision making with application to contemporary problems. Topics include: decision trees, influence diagrams, the analytic hierarchy process, risk analysis, and applications. Prereq.: STAT 3717 or 3743 or equivalent. 3 s.h.

4845. *Stochastic Process Models*. Introduction to the mathematical foundations of the theory and application of stochastic processes. Topics include Markov processes, Poisson processes, queueing theory, and

simulation. Other topics selected from limit theorems, Brownian Motion, and stationary processes. Prereq.: STAT/MATH 5843. 3 s.h.

4888. *Actuarial Models in Financial Economics*. An introduction to actuarial models in financial economics. Topics include the Black-Scholes framework for pricing derivatives, the binomial pricing model, and interest rate models. Prereq.: STAT 5843. 3 s.h.

4893. *Statistical Internship*. A program of work and study in the public or private sector centered upon the development of a significant statistics project, under the direction of University faculty member(s) and designated member(s) of the participating agency. May be repeated twice. Prereq.: STAT 5817. 2 s.h.

4896. *Statistical Project*. Individualized study of a topic in statistics culminating in a written report and an oral presentation. May be repeated once. Prereq.: STAT 5817 and permission of chairperson. 2 s.h.

5800. *Mathematical Foundations of Actuarial Science*. A survey of probability theory and an introduction to risk management. Emphasis of the course will be on problem solving with applications in actuarial science. Prereq.: MATH/STAT 5843 or consent of instructor. 3 s.h.

5802. *Theory of Interest*. Mathematical theory and techniques in analysis of interest. Topics include measurement of interest, force of interest, annuities, amortization, pricing of investment products, and applications to actuarial sciences. Prereq.: MATH 1572 and any 3700 level MATH, STAT, ECON, or FIN course. 3 s.h.

5806. *Seminar in Actuarial Science*. Approaches to and practice with problem solving in actuarial science. Topics may include financial mathematics, financial economics, or actuarial modeling. May be repeated once. Not applicable to the mathematics major. Prereq.: MATH/STAT 5843 or consent of the instructor. 2-3 s.h.

5814. *Statistical Data Mining*. A systematic introduction to data mining with emphasis on various data mining problems and their solutions. Topics include data mining processes and issues, exploratory data analysis, supervised and unsupervised learning, classification, and prediction methods. Prereq.: STAT 3717 or 3743, or consent of department chairperson. 3 s.h.

5817. *Applied Statistics*. Application of regression, survey sampling, analysis of variance, design and analysis of experiments, and related topics. Prereq.: STAT 3717 or 3743 or equivalent. 3 s.h.

5840. *Statistical Computing*. Computational methods used in statistics. Topics include generation and testing of random numbers, computer intensive methods, and simulation studies. Prereq.: STAT 3717 or 3743. 3 s.h.

5843. *Theory of Probability*. The mathematical foundation of probability theory including the study of discrete and continuous distributions. Other topics



selected from limit theorems, generating functions, stochastic processes, and applications. Listed also as MATH 5843. Credit for STAT 5843 will not be given to students with MATH 5843. Prereq.: STAT 3743 and MATH 2673 or consent of department chairperson.

3 s.h.

5844. *Theory of Statistics*. The mathematical theory of statistical inferences including likelihood principle, sufficient statistics, theory of statistical estimation, hypothesis testing and related topics. Credit will not be given for MATH 5844 and STAT 5844. Prereq.: MATH 5843.

3 s.h.

5846. *Categorical Data Analysis*. Discrete distributions, contingency table analysis, odds ratios, relative risk, logistic regression, hierarchical models. Prereq.: STAT 5817 or 5844, or MATH 5844.

3 s.h.

5847. *Nonparametric Statistics*. Nonparametric statistical inference including tests of hypotheses for one sample, two or more related independent samples, dependence, goodness-of-fit, trend, and related topics. Prereq.: STAT 3717 or 3743 or equivalent.

3 s.h.

5848. *Applied Regression and Time Series*. Statistical methods for regression and time series analysis. Topics include applied linear regression with model fitting and diagnostics, data analysis, and forecasting with time series models. Prereq.: STAT 3717 or STAT 3743.

3 s.h.

5849. *Multivariate Statistical Analysis*. The statistical analysis of multivariate observations. Topics include multivariate probability distribution theory, regression, analysis of variance, and techniques in data analysis. Prereq.: MATH 3720 and MATH 5844 or STAT 5844 or equivalent.

3 s.h.

5895. *Special Topics in Statistics*. The study of a standard statistical topic in depth or the development of a special area of statistics. May be repeated twice. Prereq.: STAT 3717 or 3743.

2-3 s.h.

## TEACHER EDUCATION—

### TCED

#### Department of Teacher Education

4830. *Senior Seminar*. In place of student teaching, requiring career/field placement and reflection of self in field. Placement(s) are negotiated and secured by candidates. CR/NC. Prereq.: Education as a major, at least junior status.

3 s.h.

## TEACHER EDUCATION

### MIDDLE CHILDHOOD—

### TEMC

#### Department of Teacher Education

3702. *Teaching & Learning in Middle Schools*. Physical, social, emotional, intellectual, and moral development within social and cultural contexts to uncover implications for developmentally and culturally responsive curriculum and instruction. Prereq.: BCOE upper-division status.

3 s.h.

3703. *Thematic Instruction and Assessment Methods in Social Studies*. Investigation and application of principles from history, geography, civics, economics, and related fields to create appropriate learning experiences for early adolescents. Exploration of middle grade level group and individual assessment, thematic, problem-solving instructional approaches, and reflective evaluation of learning in a field-based setting. Prereq.: TEMC 3702, BCOE upper-division status, and approval of chairperson. Coreq.: TEMC 4801 and one of TEMC 3704, 3705, or 3706.

4 s.h.

3704. *Teaching Mathematics in the Middle School*. Prereq.: Admission to upper-division COE status. 3 s.h. with a mathematics concentration focus on identifying and modeling strategies used for problem solving, communicating, and reasoning in mathematics. Learning to use mathematical connections to stimulate diverse students' development of math concepts and skills and creating learning environments in which students feel free to take risks. Field experience combining mathematics pedagogy/methodology in a middle grade classroom. Prereq.: TEMC 3702, BCOE upper-division status and approval of chairperson. Coreq.: TEMC 4801 and one of TEMC 3703, 3705, or 3706.

4 s.h.

3705. *The Teaching of Science in the Middle School*. Using NSTA/NCATE and Ohio Model guidelines as a framework, students focus on establishing and maintaining learning environments that provide diverse students with a holistic, interdisciplinary understanding of science. Topics include goals formation, planning instruction, instructional strategies, resource selection, assessment procedures. Promotion of the use of science processes and problem-solving skills for life-long learning, the integration of science/technology/society. Field experience combining science pedagogy/methodology in a middle grades classroom. Prereq.: TEMC 3702, 12 s.h. science, BCOE upper-division status, and approval of chairperson. Coreq.: TEMC 4801 and one of TEMC 3703, 3704, or 3706.

4 s.h.

3706. *Teaching Language Arts in the Middle School*. Integrated strategies for enabling diverse students to participate successfully in the activities of a literate society through listening, viewing, and communicating orally and in writing. Emphasis on integration of the language arts, higher order thinking skills, flexibility in applying the language arts in meaningful contexts across the curriculum. Prereq.: TEMC 3702, BCOE upper-division status, and approval of chairperson. Coreq.: TEMC 4801 and one of TEMC 3703, 3704, or 3705.

4 s.h.

3707. *Science/Technology/Society*. In-depth exploration of science/technology/society connections. A subject matter-problem-solving-learning environment triad provides opportunities for study of real-life, personal, and societal science and technology problems. Field experience in which students assess STS problems, devise solutions, apply and evaluate knowledge for community improvement. Prereq.: BCOE upper-division status, 12 s.h. science.

3 s.h.

4801. *The Middle School Learning Community*. History, philosophy, and concepts of middle level education, including interdisciplinary instruction, collaborative teams, cooperative learning, classroom management, teacher-based advisory programs, flexible scheduling, cross-age grouping, departmentalized/core curriculum, adapting curriculum to the needs of culturally diverse populations, and working with families, resource persons, and community groups. Concurrent with TEMC 4803. Prereq.: TEMC 3702, BCOE upper-division status, and approval of chairperson. Coreq.: Two of TEMC 3703, 3704, 3705, or 3706. 4 s.h.

4802. *Student Teaching: Middle Childhood*. Demonstration of ability to integrate knowledge of early adolescents, learning theory, best-practice and content information in diverse teaching/learning settings. Full-time 16 week student teaching in grades 4-9 supervised by University faculty and experienced middle-level practitioners. CR/NC. Concurrent with TEMC 4803. Prereq.: BCOE Upper Division status, passing scores on PRAXIS II content and PLT tests, criminal background check, and completion of middle childhood program excluding student teaching and student teaching seminar. Coreq.: TEMC 4803. 5-10 s.h.

4803. *Student Teaching Seminar for Middle Childhood Education*. Seminar topics are based on pedagogy, knowledge, and application of professional practice and standards, critical theory, and knowledge of the children/adolescent learners. Completion of the Teacher Work Sample is required. CR/NC. Coreq.: Concurrent registration in student teaching: two of TEMC 4802C, 4802E, 4802M, or 4802S. 1-2 s.h.

## TEACHER EDUCATION READING—TERG Department of Teacher Education

2601. *Reading Application in Content Areas, Early Years*. Study of the Ohio Academic Content Area Standards, comprehension skills, word attack skills, pre-reading strategies, and writing development as they relate to early years reading in the content area. The role of early childhood language development and literature in the early childhood content-area classroom. 3 s.h.

3701. *Phonics in Reading Instruction*. PreK-9. Phonics subject matter, instructional strategies and applications, and planning for intensive, phonic-based word analysis in the early and middle stages of literary acquisition. Prereq.: Admission to BCOE upper-division status. 3 s.h.

3702. *Developmental Reading Instruction and Literature Strategies PreK-9*. Theories and related models of reading, various approaches to teaching reading, and creative integrative literature strategies to meet the needs of diverse learners. Prereq.: Admission to COE upper-division status. 3 s.h.

3703. *Assessment and Instruction in Reading Internship, PreK-9*. Application of selected formal and informal assessment tools in the context of reading instruction to identify individual strengths and needs. Strategies for continuing diverse students' growth in reading and the related language arts including home/school connections, integration of reading and writing, self-monitoring strategies, and ongoing assessment. Prereq.: TERG 3701, 3702. 3 s.h.

3704. *Assessment and Instruction in Reading Internship*. Required of students seeking licensure in Reading and Language Arts. Practicum experience involving assessment of reading needs of the middle school student, planning and carrying out a program of remedial assistance, reporting results. Concurrent with TERG 3703. Prereq.: TERG 3701 and 3702. 1 s.h.

3705. *Advanced Literature Strategies*. Advanced reading and language arts, holistic teaching strategies with emphasis on non-textbook approaches. Field experience. Prereq.: TERG 3703. 3 s.h.

3706. *Reading Practicum*. Supervised experiences in reading assessment and instruction in the elementary, middle, or secondary school setting. Six hours per week in a designated school, two hour seminar. Prereq.: TERG 3705. 3 s.h.

3710. *Reading Application in Content Areas, Middle Years*. Study of the Ohio Academic Content Area Standards, comprehension skills, word attack skills, pre-reading strategies, and writing development as they relate to middle years, multi-age and special education reading in the content area. The role of literature in the content-area classroom. Prereq.: Admission to BCOE upper-division status. 3 s.h.

3711. *Reading Application in Content Areas, Secondary Years*. Study of the Ohio Academic Content Area Standards, comprehension skills, word attack skills, pre-reading strategies, and writing development as they relate to secondary and career/technical reading in the content area. The role of literature in the content-area classroom. Prereq.: Admission to BCOE upper-division status. 3 s.h.

## TELECOMMUNICATION STUDIES—TCOM Department of Communication

### Lower-Division Courses

1500. *Orientation to Telecommunication Studies*. Survey of University and Department programs, policies, practices and facilities with particular emphasis on needs of telecommunication studies majors. Creation of telecommunication studies portfolio materials and other aspects of the Telecommunication Studies program. To be taken prior to TCOM 2682 and 2683. 1 s.h.

1510. *Media Production Staff 1*. Assignment to one or more production crew, such as YSU Sports TV, Homework Express, or Light the Wick. Student responsibilities will be determined in light of the student's skills and interests, as well as the production need. May be repeated. 1 s.h.

1570. *Elements of Media and Production*. A study of electronic Media as business and social forces, as well as an overview of studio production. 3 s.h.

1580. *Introduction to Telecommunication Studies*. A survey course designed to familiarize students with the principles and practices involved in radio and television broadcasting, cable, and other electronic communication systems. 3 s.h.

1581. *Telecommunication Technologies*. Operational principles of audio, data, and video telecommunication technologies. One hour lecture and two hours lab per week. 2 s.h.

1595. *Survey of American Mass Communications*. A rhetorical examination of the development, operation, and function of radio, television, film, and print media in America. Television documentaries and films illustrate the implication of mass communication. Students examine how a person may be individually affected by mass communication. 3 s.h.

2610. *Media Production Staff 2*. Assignment to one or more production crew, such as YSU Sports TV, Homework Express, or Light the Wick. Student responsibilities will be determined in light of the student's skills, interests, and production experience, as well as the production need. May be repeated. Prereq.: TCOM 1510. 1 s.h.

2682. *Scriptwriting for Electronic Media*. Fundamentals of telecommunication media writing with emphasis on the theory, analysis, and practices in the preparation of continuity, news, and documentaries. Prereq.: TCOM 1580, 1581, and ENGL 1550 with a grade of C or better in all. 3 s.h.

2683. *Media Operations and Performance*. An introduction to practices and procedures basic to media production facilities. The equivalent of three hours lecture and two hours lab per week. Prereq.: TCOM 1580 and ENGL 1550 with a grade of C or better in both. 3 s.h.

2684. *Broadcast News Practices*. Organization, preparation, and presentation of radio and television news programs. Includes study of journalistic requirements of broadcast media and broadcast newsroom operation. The equivalent of three hours lecture and two hours lab per week. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both. 3 s.h.

2685. *Studio Operations 1*. A supervised application of operations and performance skills to audio and/or video programming. Repeatable to a maximum of 2 s.h. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both. 1 s.h.

### Upper-Division Courses

3710. *Media Production Staff 3*. Assignment to one or more production crew, such as YSU Sports TV, Homework Express, or Light the Wick. Student responsibilities will be determined in light of the student's skills, interests, and production leadership experience, as well as the production need. May be repeated. Prereq.: TCOM 2610. 1 s.h.

3780. *Principles and Practices of Media Announcing*. A study of the announcer's role in electronic mass media. Examination of theories, techniques, and major styles of media announcing. Three hours lecture, two or more hours of individualized lab per week. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both; major in Telecommunication Studies. 3 s.h.

3781. *Audio Production*. Study of the concepts of audio production, including student production of various types of programs. The equivalent of three hours lecture and two hours lab per week. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both; major in Telecommunication Studies. 3 s.h.

3782. *Video Production 1*. Study of studio production elements such as equipment, lighting, scene design, graphics, and special effects. The equivalent of three hours lecture and two hours lab per week. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both; major in Telecommunication Studies. 3 s.h.

3783. *Telecommunications Regulation*. Responsibilities of electronic media communicators as prescribed by law and administrative agency policies, and court decisions. Analysis of the regulatory environment of broadcasters, common carriers, and cable. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both; major or minor in Telecommunication Studies. 3 s.h.

3784. *Telecommunication Programming*. A study of contemporary broadcast and cable programming, including development, scheduling, and competitive strategies. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both; major or minor in Telecommunication Studies. 3 s.h.

3785. *Studio Operations 2*. Individual projects or assignments in planning, coordinating and assessing production and programming related to studio procedures. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both; acceptance of project Proposal Form by coordinating faculty member and department chairperson. 1 s.h.

3786. *Video Production 2*. Study and application of television production elements. Production values of composition, transition, and sequence explored from a communication perspective. Students produce, videotape, and critique several field-based productions. Three hours lecture, two hours lab. Prereq.: TCOM 3782. 3 s.h.

3787. *Practicum in Telecommunication*. Individual study and practical application of communication principles to various telecommunication problems. Repeatable to a maximum of 6 s.h. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both. 1-3 s.h.

3788. *Professional Residency*. Professional telecommunication-related experience under direction of University faculty members and employees of firms participating in the residency program. The student is responsible for securing the professional residency with assistance of Telecommunication Studies program faculty. Prereq.: TCOM major, junior standing. 2 s.h.

3789. *Electronic Media Interviewing*. A study and application of interviewing and reporting techniques, emphasizing the local news interview and public affairs reporting. The equivalent of three hours lecture and two hours lab per week. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both. 3 s.h.

3791. *Electronic Media Sales and Promotion*. An examination of the principles and practices of selling electronic media. Analysis of rating-based sales and promotion strategies, as well as relations with agencies and station representatives. The equivalent of three hours lecture and two hours lab per week. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both. 3 s.h.

4850. *Advanced Audio/Video Production*. Advanced techniques and procedures in audio/video production. Techniques include digital editing and video post-production procedures. Recognize current video and audio technology and how to troubleshoot problems associated with such technology. Prereq.: TCOM 3781 or 3782 with a grade of C or better. 3 s.h.

4881. *Telecommunication Management*. A study of the relationships of communication management with government, networks, ownership and other groups. Organization and procedures of typical units; common planning models. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both; major or minor in Telecommunication Studies. 3 s.h.

4882. *Studio Operations Management 3*. Advanced individual projects or assignments in planning, coordinating and assessing production and programming related to studio procedures. Repeatable for a maximum of 4 s.h.. Prereq.: TCOM 3785; acceptance of Project Proposal Form by coordinating faculty member and department chairperson. 2 s.h.

4884. *Video Production Direction*. A study and application of the communication roles and skills associated with video directing. Emphasis on audience analysis. The equivalent of three hours lecture and two hours lab per week. Prereq.: TCOM 3782. 3 s.h.

4885. *Developments in Telecommunication Media*. Study and application of uses of telecommunication media apart from commercial broadcasting. Study of new technologies and their potential. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both. 3 s.h.

4886. *Audience and Market Measure*. Methods of collecting, analyzing, and using information about media markets. Includes quantitative and non-quantitative techniques. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both. 3 s.h.

4887. *Theories and Criticisms of Telecommunication*. Study of contemporary theories and research in telecommunication. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both; major or minor in Telecommunication Studies. 3 s.h.

4888. *Internship in Telecommunication*. An application of telecommunication theory and practices within organizations primarily concerned with telecommunication. Students are selected on the basis of special qualifications, including GPA, courses taken, and competitive interview. Enrollment is contingent on the availability of internship positions. Twenty hours a week. Prereq.: Junior standing in telecommunication and permission of internship coordinator. 6 s.h.

4897. *Seminar in Telecommunication*. Designed to investigate contemporary aspects of telecommunications. May be repeated for credit if topic is different. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both; major in Telecommunication Studies. 3 s.h.

4899. *Capstone*. Students demonstrate mastery of knowledge in a variety of degree assessment areas. Students prepare and present a portfolio of their work. The course assists students in assembling and presenting the portfolio to department faculty and other interested parties. To be taken after achieving senior status as a Telecommunications Studies major. Prereq.: senior status in Telecommunication Studies. 2 s.h.

## THEATER — THTR

### Department of Theater and Dance

#### Lower-Division Courses

1500. *Auditions and Portfolios*. Survey of the department programs, policies, practices, and facilities, with particular emphasis on the needs of theater majors. Various aspects of theater study which may increase chances for success in the field. Creation of production records, portfolios, and vitae pertinent to the theater artist. To be taken within the first 30 hours of coursework. 1 s.h.

1512. *Survey of Musical Theater*. The history and development of the musical theater genre, including an in-depth study of significant works and individual practitioners. 3 s.h.

1559. *Play Production*. An introduction to the processes of analyzing, directing, staging, and producing plays; demonstration and practice. 3 s.h.

1560. *Understanding Theater*. The theory, history, cultural role, and physical characteristics of the theater as an institution in human society. 3 s.h.

1561. *Stagecraft*. The technical elements of play production, with emphasis on stage mechanics, set construction, and scene painting. 3 s.h.

1563. *Costume Construction and Craft*. Introduction to stage costuming through the study and application of costume construction techniques and costume crafts, the use of appropriate equipment, and costume maintenance through various projects involving the special techniques used for stage costuming. 3 s.h.

1590. *History of Motion Pictures*. The history of the motion picture from its beginnings to the present, with emphasis on the milestones of film as a performing art. Viewing of significant films from various periods and countries. 3 s.h.

2600. *Theater Participation*. Expected involvement in the main stage productions of the department. Students will audition for all main stage productions, or accept a significant assignment in stage management, costume, scenery, lighting or other technical element of production. Must be taken once each semester during the time that a student is in residence as a theater major, for a minimum of 3, or its equivalent. Prereq.: a declared major in theater, and faculty permission. 1 s.h.

2607. *Puppetry*. An overview of the history of puppets in world drama, combined with practical exercises in making inanimate objects come to "life" for the purpose of creating works of theater. Includes puppet construction and performance. Prereq.: Sophomore standing. 3 s.h.

2661. *Stage Management*. Basic principles and techniques of stage management including job functions and responsibilities, production organization, problem solving and specialized paperwork. Stage management of a production and one hour lecture per week. Stage management of a production is a requirement of the class. Prereq.: THTR 1559. Grade: Traditional/P. 1 s.h.

2662. *Practicum in Theater and Dance*. Practical application of theater or dance skills through participation in special programming of the department, or specified studio/laboratory activities. Expected participation should amount to a minimum of thirty hours per semester. May be repeated for a maximum of 5 s.h. Prereq.: THTR 1561 or 1559 or special permission. CROSS LISTED WITH DNCE 2662. 1 s.h.

2664. *Musical Theater Lab*. Applied skills course dealing with styles and techniques of performing for the musical theater. Covers auditioning, rehearsal

process, and expressive delivery and gesture through song. Culminates in public recital. Prereq. or concurrent with THTR 2668 and VOIC 1501T or other evidence of vocal training; and sophomore standing. 1 s.h.

2667. *Acting 2: Voice for the Actor*. Technical elements of voice for the stage. Physical exercises designed to improve stage speech, vocal projection, articulation and clarity. Application of principles and skills to a variety of texts from a performer's perspective. Prereq.: THTR 2668. 3 s.h.

2668. *Acting 1: Fundamentals*. The fundamental theories and techniques of acting. Major emphasis on theater acting, but consideration is given to radio and television acting. Prereq.: THTR 1559 or permission of instructor. 3 s.h.

2670. *Oral Interpretation*. The development of skills necessary for the oral interpretation of various types of literature: prose, poetry, and drama. The thorough analysis of each work and communication of the work to an audience. 3 s.h.

2690. *The Art of Motion Pictures*. Analysis of the structure of the motion picture, the development of the script, the function of editing, the approach to acting in film production, and the problems faced by a director in film production. Criteria of artistic film making. Examples from motion pictures are screened and discussed. Prereq.: Sophomore standing. 3 s.h.

### Upper-Division Courses

3700. *Theater Participation 2*. Advanced involvement in the main stage productions of the department. Students will audition for all main stage productions, or accept a significant assignment in stage management, costume, scenery, lighting or other technical element of production. Must be taken each semester during the time that a student is in junior/senior residence as a theater major, for a minimum of 4 or its equivalent. Prereq.: 3 s.h. of THTR 2600 or permission of the instructor. 1 s.h.

3761. *Stage Makeup*. Design and application of makeup for the stage including techniques for character and age makeup, making and applying facial hair, and other specialized makeup procedures. Prereq.: THTR 1559 or permission of instructor. 3 s.h.

3762. *Directing 1*. An intensive study of the process of directing plays. Whenever possible, students direct the equivalent of a one-act play for public presentation. Lab hours by arrangement. Prereq.: THTR 1559 and THTR 3768 or concurrently or permission of instructor. 3 s.h.

3763. *Scene Design*. The history of design in terms of stage scenery; an investigation of current trends, techniques, and media; practical execution of models and sketches by the student. Prereq.: THTR 1559 and 1561 or consent of the instructor. 3 s.h.

3764. *History of Stage Costume*. A survey of stage costumes based on western styles from the ancient Egyptians to the present with emphasis on periods in which the theater flourished. Prereq.: THTR 1559 or permission of instructor. 3 s.h.

3765. *Lighting Design*. A study of historical development, basic electrical theory, switch boards and lighting instruments; color theory, principles and practices in stage lighting. Lab hours to be arranged. Prereq.: THTR 1559 and 1561 or consent of instructor. 3 s.h.

3766. *Stage Combat*. Applied skills class specializing in armed and unarmed combat for the stage. Safety factors in stage fighting, including safe use of rapier and dagger. Performance in public required. Prereq.: THTR 2668 or MUEN 0012 or HPES 1514 or permission of instructor. 3 s.h.

3768. *Script Analysis*. Critical approaches to dramatic literature. Analysis of dramatic works for production values. Prereq.: THTR 1559 and 2668. 3 s.h.

3769. *Costume Design*. Costume design for the stage through a study of script analysis, design concepts and principles, and costume rendering techniques. Prereq.: THTR 1559 or permission of instructor. 3 s.h.

3791. *Rehearsal and Performance*. Faculty-supervised study and practical demonstration of a theater or dance performance. Credit given for significant acting or dancing roles, assistant directing, or stage management assignments in Department of Theater and Dance programming. For students with appropriate experience. May be taken twice. Prereq.: THTR 2668 or DNCE 1542 and faculty approval. 3 s.h.

3792. *Projects in Production*. Faculty-supervised study resulting in the design and/or execution of scenery, lighting, or costumes for public performance. For students with appropriate experience. May be taken twice. Prereq.: THTR 3763 or 3765 or 3769 and theater faculty committee approval. 3 s.h.

4860. *Theater History after 1700*. History of the physical theater and representative dramatic texts from 1700 to the modern era. Prereq.: 9 s.h. of THTR coursework, 3 of which must be upper division. 3 s.h.

4863. *Acting 3: Styles*. A study of specific theories, techniques, and approaches to creating the various styles of acting. Emphasis on scene study featuring important historical styles of performance. Prereq.: THTR 1559 and 2668. 3 s.h.

4866. *Summer Theater Workshop*. Participation in the summer theater program involving all aspects of theatrical production. Positions of significant responsibility. Prereq.: Junior standing in Theater, or permission of instructor. 1-3 s.h.

4868. *Children's Theater*. A study of the process of theater production by and for elementary school children, including theory, objectives, and methods. Prereq.: THTR 3762 or senior standing in Elementary Education with permission of instructor. 3 s.h.

4869. *Creative Dramatics*. Basic elements of play-making, improvisation, story dramatization, pantomime, dialogue, and characterization. Experience with area school children provided when possible. Intended for elementary education majors and drama certification. Prereq.: Junior standing with 9 s.h. of theater courses (including 1559 and 2668) or junior standing in Elementary Education with permission of instructor. 3 s.h.

4870. *Acting 4: Acting on Camera*. A exploration of the theory and technique of film and video performance, and the special demands they make upon an actor. Prereq.: THTR 2668 and 2667 and junior standing, or consent of instructor. 3 s.h.

4891. *Theater History before 1700*. History of the physical theater and representative dramatic texts from the Classical period through the Renaissance. Prereq.: 9 s.h. of THTR coursework, 3 of which must be upper division. 3 s.h.

4893. *Independent Study in Theater*. Independent work in theater production under faculty/staff guidance. Intended as a continuation of individualized creative work beyond THTR 3791 or THTR 3792. Project dependent upon approval of the evaluating faculty member and the student. May be repeated with different topics for a total of 9 s.h. Prereq.: THTR 3791 or 3792. 1-3 s.h.

4895. *Arts in Education Internship: Theater*. A practical application of drama/theater in education theories and skills in a field-based lab experience in the schools. Students submit project proposals geared either to the elementary or secondary level. Proposals must be approved by a theater faculty committee. Repeatable for a total of 6 s.h. Prereq.: THTR 1561, 1559 and 3762; or THTR 1559, 3761 and 4868. 1-3 s.h.

4898. *Senior Project*. Capstone experience expected of all seniors in the degree programs of the department. Significant demonstration of practical or scholarly ability in one of the sub-disciplines comprising the disciplines of theater or dance, and showing evidence of solid writing, speaking, and critical thinking skills. Prereq.: Senior standing with the expectation of graduating by the end of the following semester. Grading is A,B,C,NC/PR. 3 s.h.

4899. *Topics in Theater*. In-depth study of selected aspects in theater scholarship, theory or practice. May be repeated if the topic changes. Prereq.: Junior standing or permission of instructor. 3 s.h.

5864. *Directing 2*. A study of specific theories, techniques, and various important styles in play directing. Prereq.: THTR 1559 and 3762. 3 s.h.

## WOMEN'S STUDIES—WMST Interdisciplinary

2601. *Introduction to Women's Studies*. Introduces key concepts, theoretical frameworks, and interdisciplinary research drawn from current scholarship about women. Concentrates on major issues relevant to the status and roles of contemporary women, including examination of effects of sexism, racism, ethnicity, and class distinction. 3 s.h.

3750. *Special Topics in Women's Studies*. May be repeated for a maximum of 6 s.h. with different topics. Prereq.: WMST 2601 3 s.h.

4850. *Senior Research Project*. Research and writing of a paper on a topic in women's studies, under the supervision of full-time faculty. Prereq.: Senior standing and completion of a minimum of 15 s.h. in Women's Studies. Grading is Traditional/PR. 1-3 s.h.

## COURSE AREA ABBREVIATIONS

Accounting.....	ACCT	Hospitality Management .....	HMGT
Advertising .....	ADV	Human Performance and Exercise Science .....	HPES
Aerospace Studies.....	AERO	Human Ecology.....	HMEC
Africana Studies.....	AFST	Industrial and Systems Engineering .....	ISEN
Allied Health.....	AHLT	Information Technology.....	INFO
American Sign Language.....	ASL	Italian .....	ITAL
American Studies.....	AMER	Journalism .....	JOUR
Anthropology .....	ANTH	Latin .....	LATN
Arabic.....	ARBC	Liberal Arts & Social Sciences .....	LASS
Art.....	ART	Management .....	MGT
Astronomy .....	ASTR	Marketing.....	MKTG
Baritone Horn/Euphonium.....	BHRN	Master in Public Health.....	MPH
Bassoon.....	BASS	Materials Engineering .....	MTEN
Biology.....	BIOL	Materials Science.....	MATL
Business Administration.....	BUS	Mathematics.....	MATH
Cello .....	CELL	Mechanical Engineering.....	MECH
Chemical Engineering .....	CHEN	Mechanical Engineering Technology .....	MET
Chemistry.....	CHEM	Medical Assisting Technology.....	MATC
Child and Family.....	CHFM	Merchandising: Fashion & Interiors.....	MRCH
Chinese .....	CHIN	Military Science .....	MSCI
Civil and Construction Engineering Technology.....	CCET	Multi-Age Education.....	MULT
Civil and Environmental Engineering.....	CEEN	Music—Applied Classes.....	MUAC
Clarinet.....	CLAR	Music—Composition.....	MCMP
Clinical Laboratory Technology.....	CLTC	Music—Conducting.....	MUCO
Communication Studies.....	CMST	Music Education.....	MUED
Computer Information Systems.....	CIS	Music—Ensembles.....	MUEN
Computer Science .....	CSCI	Music—History and Literature.....	MUHL
Computer Science and Information Systems.....	CSIS	Music Recording .....	MURC
Conducting.....	CNDC	Music—Theory.....	THRY
Counseling.....	COUN	Music—Theory and Composition .....	MUTC
Criminal Justice and Forensic Science.....	CJFS	Nursing.....	NURS
Dance .....	DNCE	Oboe.....	OBOE
Dental Hygiene.....	DHYG	Organ .....	ORGN
Drafting and Design Technology.....	DDT	Percussion.....	PERC
Early and Middle Childhood Education .....	EMCE	Philosophy .....	PHIL
Early Childhood Education.....	ECE	Physical Therapy.....	PHYT
Economics .....	ECON	Physics .....	PHYS
Educational Administration.....	EDAD	Piano .....	PIAN
Educational Technology.....	EDTC	Political Science .....	POL
Electrical Engineering Technology.....	EET	Psychology .....	PSYC
Electrical and Computer Engineering.....	ECEN	Public Health .....	PHLT
Electric Utility Technology .....	EUT	Public Relations.....	PREL
Emergency Medical Services.....	EMS	Reading & Study Skills.....	RSS
Emergency Medical Technology.....	EMTC	Religious Studies.....	REL
Engineering.....	ENGR	Respiratory Care .....	RESC
Engineering Technology .....	ENTC	Russian.....	RUSS
English.....	ENGL	Saxophone.....	SAX
Entrepreneurship.....	ENT	Science, Technology, Engineering, Mathematics .....	STEM
Environmental Studies.....	ENST	School Psychology .....	SPSY
Finance.....	FIN	Secondary Education.....	SED
Fine and Performing Arts .....	FPA	Social Work .....	SCWK
Flute.....	FLUT	Sociology .....	SOC
Foreign Language.....	FNLG	Spanish.....	SPAN
Food and Nutrition.....	FNUT	String Bass.....	SBSS
Foundations of Education.....	FOUN	Special Education.....	SPED
French .....	FRNC	Statistics.....	STAT
French Horn.....	FHRN	Swahili .....	SWAH
Geography.....	GEOG	Teacher Education, Department of .....	TCED
Geology.....	GEOL	Teacher Education, Middle Child.....	TEMC
German.....	GRMN	Teacher Education, Reading.....	TERG
Gerontology .....	GERO	Telecommunication Studies.....	TCOM
Greek.....	GRK	Theater.....	THTR
Guitar.....	GUIT	Trombone .....	TROM
Harpsichord.....	HARP	Trumpet.....	TRUM
Health and Human Services, College of.....	HAHS	Tuba.....	TUBA
Health and Human Services.....	HHS	Viola.....	VIOL
Hebrew .....	HBRW	Violin.....	VION
History.....	HIST	Voice.....	VOIC
History and Literature of Music.....	MUHL	Women’s Studies .....	WMST
Honors Program.....	HONR		



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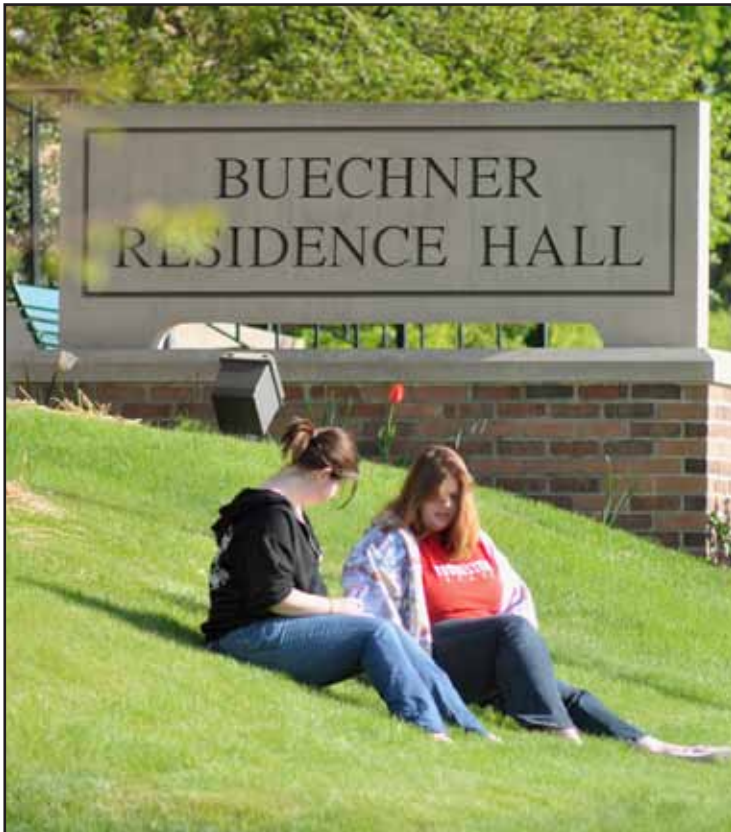
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LAWRENCE A. DAVIS

Professor Emeritus  
Retired 1997

E. TERRY DEIDERICK

Faculty Emeritus  
Retired 1999

JANET DELBENE

Faculty Emeritus  
Retired 1999

RICHARD A. DELISIO

Administrator Emeritus  
Retired 2007

LAWRENCE A. DIRUSSO

Professor Emeritus  
Retired 1996

THEODISIUS L. DEMEN

Professor Emeritus  
Retired 1990

JOYCE FEIST-WILLIS

Faculty Emeritus  
Retired 2012

THADDEUS M. DILLON

Professor Emeritus  
Retired 1995

EDWARD DiGREGORIO

Administrator Emeritus  
Retired 2003

MARY LOU DIMARCO

Director Emeritus  
Retired 1992

FRANK A. D'ISA

Professor and Chairperson Emeritus  
Retired 1992

THOMAS N. DOBBLESTEIN

Professor and Chairperson Emeritus  
Retired 1995

THOMAS W. DOCTOR

Administrator Emeritus  
Retired 2005

LESLIE S. DOMONKOS

Faculty Emeritus  
Retired 2002

JAMES E. DOUGLASS

Faculty Emeritus  
Retired 1999

VIRGINIA DRAA

Faculty Emeritus  
Retired 2011

WADE C. DRISCOLL

Faculty Emeritus  
Retired 2006

CAROL E. DUCEY

Administrator Emeritus  
Retired 1990

KAREN L. DUDA

Faculty Emeritus (posthumously)  
Retired 2007

JACK D. DUNSING

Professor and Chairperson Emeritus  
Retired 1992

HUGH G. EARNHART

Professor Emeritus  
Retired 1996

GUNAPALA EDIRISOORIYA

Faculty Emeritus (posthumously)  
Retired 2010

JOSEPH C. EDWARDS

Administrator Emeritus  
Retired 2008

C. WILLIAM EICHENBERGER

Faculty Emeritus  
Retired 2002

STEVE ELLYSON

Faculty Emeritus  
Retired 2011

BARBARA G. ENGLEHARDT

Professor Emeritus  
Retired 1993

DONNA J. ESTERLY

Administrator Emeritus  
Retired 2008

J. DOUGLAS FAIRES

Faculty Emeritus  
Retired 2006

JOYCE FEIST-WILLIS

Faculty Emeritus  
Retired 2012

KATHRYN LYNN FELD

Faculty Emeritus  
Retired 2011

KATHLEEN A. FERGUSON

Administrator Emeritus  
Retired 2007

WILDA S. FERRIS

Professor Emeritus  
Retired 1996

MICHAEL FINNEY

Faculty Emeritus  
Retired 2012

- DALE W. FISHBECK  
Professor Emeritus  
Retired 1998
- MASON L. FISHER  
Professor Emeritus  
Retired 1996
- DORCAS FITZGERALD  
Faculty Emeritus  
Retired 2011
- ROBERT E. FLEMING  
Professor Emeritus of Music  
Retired 1984
- SUZANNE FLEMING  
Administrator Emeritus  
Retired 2008
- ELMER FOLDVARY  
Professor Emeritus  
Retired 1996
- ROBERT H. FOULKES JR.  
Faculty Emeritus  
Retired 2006
- RANDOLPH N. FOSTER  
Administrator Emeritus  
Retired 1983
- GERALD FOX  
Director Emeritus  
Retired 1996
- JACK FRANKENBURG  
Administrator Emeritus  
Retired 1995
- TERRY A. FULLUM  
Administrator Emeritus  
Retired 2007
- DARLA FUNK  
Faculty Emeritus  
Retired 2011
- JOANNE GALLAGHER  
Administrator Emeritus  
Retired 2011
- DEBORAH GARCHAR  
Administrator Emeritus  
Retired 2012
- STEVEN R. GARDNER  
Professor Emeritus  
Retired 1996
- BEVERLY L. GARTLAND  
Faculty Emeritus  
Retired 2006
- DAVID C. GENAWAY  
Director Emeritus  
Retired 1996
- BERNARD T. GILLIS  
Vice President Emeritus  
Retired 1993
- PATRICIA GILMARTIN  
Faculty Emeritus  
Retired 2011
- PHILIP GINNETTI  
Faculty Emeritus  
Retired 2011
- MARGARET GITTIS  
Faculty Emeritus  
Retired 2011
- RICHARD L. GLUNT  
Director Emeritus  
Retired 1996
- JOHN GOCALA  
Administrator Emeritus  
Retired 2012
- CARMEN GODOY  
Administrator Emeritus  
Retired 1996
- EMILY K. GOLDSTEIN  
Assistant Professor Emerita of Mathematics  
and Computer Science  
Retired 1980
- ADORACION F. GONZALEZ  
Professor Emeritus  
Retired 1996
- RONALD L. GOULD  
Faculty Emeritus  
Retired 2003
- STEPHEN A. GRAF  
Faculty Emeritus  
Retired 2005
- A. JAMES GRANITO  
Faculty Emeritus  
Retired 2003
- EILEEN GREAF  
Administrator Emeritus  
Retired 2012
- KAREN S. GREEN  
Administrator Emeritus  
Retired 2005
- ALICE GUERRA  
Faculty Emeritus  
Retired 2011
- GREGORY GULAS  
Administrator Emeritus  
Retired 2012
- MADELEINE HAGGERTY  
Professor and Chairperson Emeritus  
Retired 1996
- PHILIP J. HAHN  
Professor Emeritus of Economics  
Retired 1984
- LAWRENCE J. HAIMS  
Professor Emeritus  
Retired 1996
- AILI J. HAKOJARVI  
Professor Emeritus of Home Economics  
Retired 1982
- WILBERT M. HAMMACK  
Associate Professor Emeritus of Education  
Retired 1980
- FRANK A. HANKEY  
Professor Emeritus  
Retired 1997
- KENNETH P. HANKINS  
Professor Emeritus  
Retired 1996
- WILLIAM W. HANKS  
Associate Professor Emeritus of Marketing  
Retired 1978



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Faculty Emeritus  
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ANN G. HARRIS

Professor Emeritus of Geology  
Retired 2000

C. EARL HARRIS

Professor Emeritus  
Retired 1992

LARRY F. HARRIS

Professor Emeritus  
Retired 1996

LOUIS N. HARRIS

Faculty Emeritus  
Retired 2008

JEAN T. HASSELL

Faculty Emeritus  
Retired 2007

CAROL HAWKINS

Faculty Emeritus  
Retired 2011

INEZ G. HEAL

Faculty Emeritus  
Retired 2003

LYN HEMMINGER

Faculty Emeritus  
Retired 2011

JAMES T. HENKE

Professor Emeritus  
Retired 1994

DENNIS HENNEMAN

Faculty Emeritus  
Retired 2011

PHILIP HIRSCH

Administrator Emeritus  
Retired 2003

ROBERT HOGUE

Faculty Emeritus  
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LOIS M. HOPKINS

Professor Emeritus  
Retired 1992

MARGARET C. HORVATH

Professor Emeritus  
Retired 1995

DONALD E. HOVEY

Professor Emeritus  
Retired 1995

PEI HUANG

Professor Emeritus  
Retired 1996

BILL G. HULSOPPLE

Professor Emeritus  
Retired 1992

PATRICIA HUMBERTSON

Faculty Emeritus  
Retired 1999

NEIL D. HUMPHREY

President Emeritus  
Retired 1992

RICHARD F. HUNTLEY

Administrator Emeritus  
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RAYMOND W. HURD

Professor Emeritus  
Retired 1990

SILVIA JIMENEZ HYRE

Administrator Emeritus  
Retired 2008

ARLENE B. IVAN

Administrator Emeritus  
Retired 2003

FLOYD E. JACKSON

Administrator Emeritus  
Retired 2003

SUSAN D. JACOBSON

Administrator Emeritus  
Retired 2005

EDWARD A. JAMES

Director Emeritus  
Retired 1996

MADALYN JANOSIK

Faculty Emeritus  
Retired 2012

WILLIAM D. JENKINS, JR.

Faculty Emeritus  
Retired 2007

BARBARA JONES

Administrator Emeritus  
Retired 2012

RICHARD W. JONES

Professor Emeritus  
Retired 1996

THOMAS J. KANE

Director Emeritus  
Retired 1996

JAMES G. KARAS

Professor Emeritus  
Retired 1996

JOHN L. KEARNS

Professor Emeritus of Industrial Engineering  
Retired 1984

GEORGE W. KELLEY JR.

Professor Emeritus of Biological Sciences  
Retired 1983

DOROTHY M. KENNEDY

Professor Emeritus  
Retired 1995

TAGHI T. KERMANI

Professor Emeritus  
Retired 1998

IRFAN A. KHAN

Faculty Emeritus  
Retired 2008

IKRAM KHAWAJA

Faculty Emeritus  
Retired 2003

SUSAN H. KHAWAJA

Administrator Emeritus  
Retired 2002

HONG YUNG KIM

Faculty Emeritus  
Retired 2012

JAMES W. KIRIAZIS

Professor and Chairperson Emeritus  
Retired 1991

- JOSEPH KIRSCHNER  
Professor Emeritus  
Retired 1992
- BARRENT A. KITTLE  
Faculty Emeritus (posthumously)  
Deceased 2009
- MICHAEL KLASOVSKY  
Professor Emeritus  
Retired 1983
- ALBERT J. KLEIN  
Professor Emeritus  
Retired 1995
- JANET S. KNAPP  
Professor Emeritus  
Retired 1992
- LELAND W. KNAUF  
Professor Emeritus  
Retired 1992
- MERVIN KOHN  
Professor Emeritus of Management  
Retired 1987
- FRIEDRICH KOKNAT  
Faculty Emeritus  
Retired 2010
- KATHLEEN M. KOUGL  
Faculty Emeritus  
Retired 2005
- CAROLYN A. KORDUPEL  
Administrator Emeritus  
Retired 2008
- STEPHEN KOZARICH  
Professor Emeritus  
Retired 1992
- RICHARD D. KREUTZER  
Professor Emeritus  
Retired 1996
- RAMA KRISHNAN  
Professor Emeritus  
Retired 1996
- AHALYA KRISHNAN  
Professor Emeritus  
Retired 1996
- FRANCIS R. KRYGOWSKI  
Faculty Emeritus  
Retired 2006
- GEORGE P. KULCHYTSKY  
Faculty Emeritus  
Retired 2004
- GLENDA G. KUNAR  
Faculty Emeritus  
Retired 2003
- BETH KUSHNER  
Administrator Emeritus  
Retired 2011
- LEON LAITMAN  
Associate Professor Emeritus of Geography  
Retired 1980
- MARIA G. LAME  
Administrator Emeritus  
Retired 2006
- EDWARD J. LARGENT, JR.  
Faculty Emeritus  
Retired 2001
- A. BARI LATEEF  
Professor Emeritus  
Retired 1996
- GLORIANNE M. LECK  
Faculty Emeritus  
Retired 2000
- NICK J. LEONELLI  
Director Emeritus  
Retired 1982
- JAMES J. LEPORE  
Professor Emeritus  
Retired 1995
- GEORGE E. LETCHWORTH  
Director Emeritus  
Retired 1996
- KAI C. LEUNG  
Administrator Emeritus  
Retired 1996
- RENEE LINKHORN  
Professor Emeritus  
Retired 1991
- LORETTA M. LIPTAK  
Professor and Chairperson Emeritus  
Retired 1996
- MARY ANN P. LISKO  
Administrator Emeritus  
Retired 2008
- YIH WU LIU  
Faculty Emeritus  
Retired 2004
- WILLIAM LIVOSKY  
Director Emeritus  
Retired 1990
- JOHN R. LOCH  
Administrator Emeritus  
Retired 2005
- GORDON E. LONGMUIR  
Faculty Emeritus  
Retired 2002
- LAWRENCE E. LOOBY  
Vice President Emeritus  
Retired 1992
- MARY BETH LOUD  
Professor Emeritus  
Retired 1996
- JAMES G. LUCAS  
Professor Emeritus  
Retired 1996
- JOSEPH R. LUCAS  
Professor Emeritus of Philosophy and  
Religious Studies  
Retired 1983
- MARVIN LUKIN  
Professor Emeritus  
Retired 1996
- DAVID B. MACLEAN  
Professor Emeritus  
Retired 1998
- RUSSELL MADDICK  
Faculty Emeritus  
Retired 1999
- RICHARD MAGNER  
Professor Emeritus  
Retired 1992

- JOSEPH F. MALMISUR  
Director Emeritus  
Retired 1996
- MARTIN MANNING (posthumously)  
Administrator Emeritus  
Retired 2011
- PATRICIA D. MARTIN  
Administrator Emeritus  
Retired 1995
- CAROLYN MARTINDALE  
Professor Emeritus  
Retired 1996
- TOM H. MARTINDALE  
Director Emeritus  
Retired 1993
- SHERRI D. MARTZ  
Administrator Emeritus  
Retired 2005
- MARK A. MASAKI  
Faculty Emeritus  
Retired 2006
- DONALD H. MATHEWS, JR.  
Professor and Chairperson Emeritus  
Retired 1992
- GUS MAVRIGIAN  
Professor Emeritus  
Retired 1992
- WALTER S. MAYHALL  
Professor Emeritus  
Retired 1992
- CHARLES McBRIARTY  
Administrator Emeritus  
Retired 2000
- PATRICIA McCARTHY  
Faculty Emeritus  
Retired 2011
- ROBERT A. McCOY  
Faculty Emeritus  
Retired 2007
- H. THOMAS McCracken  
Faculty Emeritus  
Retired 2001
- DIANE McDUGAL  
Faculty Emeritus  
Retired 2011
- DONALD E. McLENNAN  
Professor Emeritus  
Retired 1990
- ANNE McMAHON  
Faculty Emeritus  
Retired 2011
- DONNA MCNIERNEY  
Faculty Emeritus  
Retired 2012
- G. L. MEARS  
Administrator Emeritus  
Retired 2002
- VIRGINIA L. MEARS  
Administrator Emeritus  
Retired 2003
- JAGDISH C. MEHRA  
Faculty Emeritus  
Retired 2003
- ROCCO A. MEDIATE  
Director Emeritus  
Retired 1996
- MARGARITA W. METZGER  
Professor Emeritus of Foreign Languages  
Retired 1986
- CAROLYN MIKANOWICZ  
Faculty Emeritus  
Retired 2011
- JAMES D. MILLER  
Director Emeritus  
Retired 1996
- DONALD J. MILLEY  
Faculty Emeritus  
Retired 2004
- JAMES MINEO  
Director Emeritus  
Retired 1996
- THELMA S. MINER  
Professor Emeritus of English  
Retired 1976
- WARD L. MINER  
Professor Emeritus of English  
Retired 1976
- HELEN S. MINES  
Faculty Emeritus  
Retired 2000
- BRENDAN MINOGUE  
Faculty Emeritus  
Retired 2009
- RICHARD C. MITCHELL  
Faculty Emeritus  
Retired 2006
- LINDA J. MOHN  
Administrator Emeritus  
Retired 2007
- VIRGINIA MONSEAU  
Faculty Emeritus  
Retired 2005
- EDWARD MOONEY, JR.  
Professor Emeritus  
Retired 1996
- MARGARET C. MOORE  
Professor Emeritus of Sociology, Anthropology,  
and Social Work  
Retired 1982
- CLYDE D. MORRIS  
Faculty Emeritus  
Retired 2002
- JAMES C. MORRISON  
Faculty Emeritus  
Retired 2005
- JAMES W. MORRISON  
Administrator Emeritus  
Retired 1996
- NANCY MOSCA  
Faculty Emeritus  
Retired 2012

LOYAL B. MOULD  
Professor Emeritus of Music  
Retired 1985

MICHAEL MOSELEY  
Faculty Emeritus  
Retired 2012

ANGELA K. MUDRAK  
Administrator Emeritus  
Retired 2005

JON N. NABEREZNY  
Professor and Chairperson Emeritus  
Retired 1992

CHARLES NELSON  
Faculty Emeritus  
Retired 2011

BERNADETTE J. NOLFI  
Administrator Emeritus  
Retired 1992

GAIL OKAWA  
Faculty Emeritus  
Retired 2011

BARBARA C. ORTON  
Administrator Emeritus  
Retired 2003

WENDELL E. ORR  
Professor Emeritus  
Retired 1992

PAMELA A. PALUMBO  
Administrator Emeritus  
Retired 2008

JOSEPH PARLINK  
Professor Emeritus  
Retired 1996

PIETRO J. PASCALE  
Professor Emeritus  
Retired 1996

HARRY "JODY" E. PATRICK  
Administrator Emeritus  
Retired 2008

LOUISE PAVIA  
Faculty Emeritus  
Retired 2012

TED PEDAS  
Administrator Emeritus  
Retired 1993

ESOTTO PELLEGRINI  
Professor Emeritus of Music  
Retired 1987

LEONARD A. PERRY  
Administrator Emeritus  
Retired 2003

GILBERT A. PETERSON  
Administrator Emeritus  
Retired 2000

PAUL C. PETERSON  
Faculty Emeritus  
Retired 2003

JOAN PHILLIP  
Professor Emeritus  
Retired 1992

VIRGINIA PHILLIPS  
Faculty Emeritus  
Retired 2006

C. ALLEN PIERCE  
Faculty Emeritus  
Retired 2011

JAMES P. POGGIONE  
Faculty Emeritus  
Retired 2000

WEALTHIE PRINCE  
Administrator Emeritus  
Retired 1992

CLEMENT PSENICKA  
Faculty Emeritus  
Retired 2012

HOWARD W. PULLMAN  
Faculty Emeritus  
Retired 2010

SUSAN E. PULLMAN  
Administrator Emeritus  
Retired 2000

DAVID L. QUINBY  
Professor Emeritus  
Retired 1992

JOYCELYN L. RAMSEY  
Professor Emeritus  
Retired 1996

C. WADE RARIDON  
Faculty Emeritus  
Retired 1999

ANN W. RASOR  
Administrator Emeritus  
Retired 1996

CHARLES L. REID  
Professor Emeritus of Philosophy and  
Religious Studies  
Retired 1988

JANE M. REID  
Faculty Emeritus  
Retired 2010

JUDY RICHARDS  
Administrator Emeritus  
Retired 2008

RONALD J. RICHARDS  
Professor Emeritus  
Retired 1996

VICTOR A. RICHLEY  
Dean Emeritus  
Retired 1991

JOHN RIGNEY  
Administrator Emeritus  
Retired 2012

LEWIS B. RINGER  
Professor Emeritus  
Retired 1996

JOHN F. RITTER  
Professor Emeritus  
Retired 1996

SIDNEY I. ROBERTS  
Professor Emeritus  
Retired 1992

JUANITA A. RODERICK  
Professor Emeritus of Elementary Education  
and Reading  
Retired 1987

- STAMAN F. RODFONG  
Professor Emeritus  
Retired 1995
- JEAN ROMEO  
Administrator Emeritus  
Retired 2008
- HASSAN A. RONAGHY  
Professor Emeritus  
Retired 1992
- RAY L. ROSS  
Faculty Emeritus  
Retired 2002
- DOMINIC L. ROSSELLI  
Administrator Emeritus  
Retired 1982
- DUANE F. ROST  
Professor Emeritus of Electrical Engineering  
Retired 2000
- DEAN ROUSSOS  
Faculty Emeritus  
Retired 1998
- SHEILA J. ROUTH  
Administrator Emeritus  
Retired 1993
- ROMAN RUDNYTSKY  
Faculty Emeritus  
Retired 2011
- CHESTER E. RUFH  
Professor Emeritus  
Retired 1996
- DAVID P. RUGGLES  
Faculty Emeritus  
Retired 2000
- SUSAN C. RUSSO  
Faculty Emeritus  
Retired 2008
- GARY SALVNER  
Faculty Emeritus  
Retired 2012
- A. DUANE SAMPLE  
Professor Emeritus  
Retired 1990
- EUGENE S. SANTOS  
Faculty Emeritus  
Retired 2004
- LOWELL J. SATRE  
Faculty Emeritus  
Retired 2003
- PAULINE V. SATERNOW  
Administrator Emeritus  
Retired 2006
- K.J. SATRUM  
Administrator Emeritus  
Retired 2006
- HELEN M. SAVAGE  
Faculty Emeritus  
Retired 2005
- JAIN A. SAVAGE  
Administrator Emeritus  
Retired 2007
- DIANE AMENT SCACCHETTI  
Administrator Emeritus  
Retired 2006
- JOSEPH S. SCARNECCHIA  
Administrator Emeritus  
Retired 2007
- LEONARD L. SCHAIPER  
Faculty Emeritus  
Retired 2006
- STEVEN M. SCHILDCROUT  
Faculty Emeritus  
Retired 2005
- JANICE W. SCHNALL  
Administrator Emeritus  
Retired 2008
- JAMES SCHRAMER  
Faculty Emeritus  
Retired 2012
- LAUREN A. SCHROEDER  
Professor Emeritus  
Retired 1996
- CAROL F. SCHULTZ  
Director Emeritus  
Retired 1983
- WERNER W. SCHULTZ  
Assistant Professor Emeritus of English  
Retired 1981
- JOHN J. SCOTT  
Administrator Emeritus  
Retired 1985
- MARION R. SCOTT  
Faculty Emeritus  
Retired 2000
- JAMES A. SCRIVEN  
Administrator Emeritus  
Retired 1988
- PATRICIA SEACHMAN  
Administrator Emeritus  
Retired 2012
- AURORA M. SEBASTIANI  
Professor Emeritus  
Retired 1996
- FRANK J. SEIBOLD  
Professor and Chair Emeritus of Marketing  
Retired 1988
- C. LOUISE SELLARO  
Faculty Emeritus  
Retired 2007
- BARBARA ROMEO SHADE  
Administrator Emeritus  
Retired 2007
- RICHARD SHALE  
Faculty Emeritus  
Retired 2011
- MICHAEL A. SHEPHERD  
Administrator Emeritus  
Retired 2007
- THOMAS A. SHIPKA  
Faculty Emeritus  
Retired 2006
- NANCIE M. SHILLINGTON  
Faculty Emeritus  
Retired 2000
- SHARON P. SHIPTON  
Faculty Emeritus  
Retired 2010

- VAN J. SIATRAS  
Administrator Emeritus  
Retired 1996
- CHARLES R. SINGLER  
Faculty Emeritus  
Retired 2005
- MATTHEW SIMAN  
Professor and Chairperson Emeritus
- ANTHONY C. SIRACUSE  
Administrator Emeritus  
Retired 2007
- ALVIN W. SKARDON  
Professor Emeritus of History  
Retired 1983
- SAMUEL J. SKAROTE  
Professor Emeritus  
Retired 1996
- MICHAEL SKURICH  
Administrator Emeritus  
Retired 2007
- DONALD SLANINA  
Faculty Emeritus  
Retired 2004
- LEE SLIVINSKE  
Faculty Emeritus  
Retired 2011
- WILLIAM SLOCUM  
Faculty Emeritus  
Retired 2012
- JEROME SMALL  
Faculty Emeritus  
Retired 2011
- AGNES M. SMITH  
Professor Emeritus of History  
Retired 1984
- CHARLES L. SMITH  
Professor Emeritus of Special Education  
Retired 1986
- JOHN-CHRISTIAN SMITH  
Faculty Emeritus (posthumously)  
Retired 2007
- MELISSA SMITH  
Faculty Emeritus  
Retired 2012
- ROBERT K. SMITH  
Professor Emeritus  
Retired 1995
- STEPHEN M. SNIDERMAN  
Faculty Emeritus  
Retired 2005
- PHILIP A. SNYDER  
Director Emeritus  
Retired 1992
- WILLIAM A. SNYDER  
Administrator Emeritus  
Retired 1996
- ANTHONY E. SOBOTA  
Faculty Emeritus  
Retired 1999
- ROBERT J. SOROKACH  
Professor Emeritus  
Retired 1996
- WILLIAM A. SPERLAZZA  
Administrator Emeritus  
Retired 2008
- LEONARD B. SPIEGEL  
Professor Emeritus  
Retired 1995
- ARTHUR G. SPIRO  
Professor Emeritus  
Retired 1992
- SANDRA J. STANHOPE  
Administrator Emeritus  
Retired 2006
- DAVID E. STARKEY  
Professor Emeritus  
Retired 1996
- JAMES D. STEELE  
Professor Emeritus of Elementary Education  
Retired 1984
- SANDRA W. STEPHAN  
Faculty Emeritus  
Retired 2006
- DAVID T. STEPHENS  
Faculty Emeritus  
Retired 2006
- CHARLES A. STEVENS  
Administrator Emeritus  
Retired 2002
- ANTHONY H. STOCKS  
Professor and Chairperson Emeritus  
Retired 1996
- NICHOLAS STURM  
Professor Emeritus  
Retired 1995
- DANIEL SUCHORA  
Faculty Emeritus  
Retired 2012
- GEORGE E. SUTTON  
Dean Emeritus  
Retired 1994
- WILLIAM O. SWAN  
Professor Emeritus  
Retired 1992
- CALVIN J. SWANK  
Professor Emeritus  
Retired 1995
- CHRISTOPHER J. SWEENEY  
Faculty Emeritus  
Retired 2007
- NANCY S. SWEENEY  
Faculty Emeritus  
Retired 2006
- DAVID C. SWEET  
President Emeritus  
Retired 2010
- DAVID SWEETKIND  
Dean Emeritus  
Retired 1997
- PIERSON R. SYRING  
Administrator Emeritus  
Retired 1992
- LESLIE V. SZIRMAY  
Professor Emeritus  
Retired 1997

- RONALD TABAK  
Faculty Emeritus  
Retired 2012
- FRANK TARANTINE  
Professor and Chairperson Emeritus  
Retired 1996
- MICHAEL THEALL  
Faculty Emeritus  
Retired 2012
- MARGUERITE J. THOMAS  
Administrator Emeritus  
Retired 2005
- MARY PLACE THOMAS  
Administrator Emeritus  
Retired 1993
- WILMA A. THOMPSON  
Professor Emeritus of Health and  
Physical Education  
Retired 1982
- SARA THROOP  
Professor Emeritus  
Retired 1989
- GLORIA D. TRIBBLE  
Professor Emeritus  
Retired 1998
- JAMES R. TOEPFER  
Faculty Emeritus  
Retired 2007
- EDWARD B. TOKAR  
Faculty Emeritus  
Retired 2006
- JOHN R. TURK  
Faculty Emeritus  
Retired 2005
- RICHARD A. ULRICH  
Professor Emeritus  
Retired 1996
- CLYDE V. VANAMAN  
Professor Emeritus of Administration &  
Secondary Education  
Retired 1986
- PAUL D. VAN ZANDT  
Professor and Chairperson Emeritus  
Retired 1992
- RAJ N. VARMA  
Faculty Emeritus  
Retired 2000
- PATRICIA VEISZ  
Administrator Emeritus  
Retired 2012
- L. ALLEN VIEHMEYER  
Faculty Emeritus  
Retired 2006
- RONALD VOLPE  
Faculty Emeritus  
Retired 2011
- PETER W. VON OSTWALDEN  
Professor Emeritus  
Retired 1992
- DONNA WAINIO  
Administrator Emeritus  
Retired 2011
- JEAN R. WAINIO  
Administrator Emeritus  
Retired 2002
- CAROL WALL  
Administrator Emeritus  
Retired 1993
- MARTHA Z. WALTON  
Professor Emeritus of Business Education  
and Technology  
Retired 1985
- SHERRY A. GALLAGHER WARDEN  
Faculty Emeritus  
Retired 2005
- HOMER WARREN  
Faculty Emeritus  
Retired 2012
- NORMAN DAN WATHAN  
Administrator Emeritus  
Retired 2008
- RICHARD G. WEBER  
Administrator Emeritus  
Retired 1990
- RICHARD G. WEBER  
Administrator Emeritus  
Retired 1990
- MARY LOU WEDEKIND  
Professor Emeritus of Health and  
Physical Education  
Retired 1988
- NELL G. WHIPKEY  
Professor Emeritus of Mathematical  
and Computer Sciences  
Retired 1986
- JOHN R. WHITE  
Faculty Emeritus  
Retired 2005
- NANCY WHITE  
Faculty Emeritus  
Retired 2011
- CHARLES H. WHITMAN  
Administrator Emeritus  
Retired 1993
- L. ANTHONY WHITNEY  
Professor Emeritus  
Retired 1996
- JOHN WILKINSON  
Professor Emeritus  
Retired 1996
- JUDITH B. WILKINSON  
Faculty Emeritus  
Retired 2002
- ROBERT J. WOLANIN  
Professor Emeritus  
Retired 1995
- WILLIAM A. WOOD (posthumously)  
Faculty Emeritus  
Deceased 2008
- BARBARA L. WRIGHT  
Professor and Chairperson Emeritus  
Retired 1996
- JOHN YEMMA  
Administrator Emeritus  
Retired 2008

HAROLD YIANNAKI  
Administrator Emeritus  
Retired 2002

RALPH E. YINGST  
Professor Emeritus  
Retired 1992

WARREN YOUNG  
Faculty Emeritus  
Retired 2005

BERNARD J. YOZWIAK  
Dean Emeritus  
Retired 1992

STANLEY ZAGER  
Professor Emeritus  
Retired 1996

PEARL E. ZEHR  
Faculty Emeritus  
Retired 2000

JEROME E. ZETTS  
Faculty Emeritus  
Retired 1999

LOUIS ZONA  
Faculty Emeritus  
Retired 2011

JAMES C. ZUPANIC  
Faculty Emeritus  
Retired 2005

## THE WALTER E. AND CAROLINE H. WATSON FOUNDATION DISTINGUISHED PROFESSOR AWARDS

### 1959-1960

Karl H. Benkne ..... Mechanical Engineering  
Karl Washburn Dykema ..... English  
Jay Rodkey ..... Accounting  
George Milo Wilcox ..... Education

### 1960-1961

Mary Wagstaff Jones ..... Communication  
Margarita Mills ..... Spanish  
Eugene Dodd Scudder ..... Chemistry  
Bernard James Yozwiak ..... Mathematics

### 1961-1962

Gus Mavrigian ..... Mathematics  
Alvin Myerovich ..... Music  
Edward Thomas Reilly ..... Business Organization  
Clair L. Worley ..... Biology

### 1962-1963

Pauline Esterhay Botty ..... Sociology  
Frank Angelo D'Isa ..... Mechanical Engineering  
Francis Kravec ..... Biology  
Willard L. Webster ..... Biology

### 1963-1964

David Marion Behen ..... History  
Irwin Cohen ..... Chemistry  
Thaddeus Michael Dillon ..... Mathematics  
George Henry Schoenhard ..... Education

### 1964-1965

Christine Rhoades Dykema ..... French  
Anthony Michael Land .... Philosophy and Religion  
Victor Anthony Richley ..... Electrical Engineering  
Myron James Wisler ..... Music

### 1965-1966

Thomas D.Y. Fok ..... Civil Engineering  
Philip Jerome Hahn ..... Economics  
Vera Jenkins ..... Accounting and Business  
Theodore T. Macejko ..... Business Administration

### 1966-1967

Jack Donald Foster ..... Sociology  
Jon Michael Naberezny ..... Art  
Paul C. Luginbill ..... Chemical Engineering  
Lois M. Hopkins ..... Music

### 1967-1968

Catherine M. Bridgham ..... Chemistry  
Frank M. Ellis ..... Physics  
James W. Kiriazis ..... Sociology  
Bernard J. Vojtko ..... Electrical Engineering

### 1968-1969

Ivis Boyer ..... Political Science  
Marvin W. Chrisp ..... Education  
Esther P. Niemi ..... Economics  
William Petrych ..... Accounting

### 1969-1970

Leslie S. Domonkos ..... History  
Joseph R. Lucas.. Philosophy and Religious Studies  
Matthew Siman ..... Electrical Engineering  
Paul D. Van Zandt ..... Biology

### 1970-1971

Margaret A. Braden ..... Education  
Alfred L. Bright ..... Art  
Raymond W. Hurd ..... Mathematics  
Inally Mahadeviah ..... Chemistry

### 1971-1972

Frederick J. Blue ..... History  
Frank A. Fortunato ..... Management  
Thelma S. Miner ..... English  
Duane Sample ..... Music

### 1972-1973

Dwight V. Beede ..... Biology  
Ronald L. Gould ..... Music  
Renee D. Linkhorn ..... Foreign Languages  
Margaret I. Pfau ..... English

### 1973-1974

Barbara H. Brothers ..... English  
E. Terry Deiderick ..... Marketing

### 1974-1975

Esotto Pellegrini ..... Music  
James P. Rhonda ..... History

### 1975-1976

Larry E. Esterly ..... Political Science



**THE WALTER E. AND CAROLINE  
H. WATSON FOUNDATION MERIT  
AWARDS**

**1977-1978**

Donald W. Byo.....Music  
Frank A. D'Isa.....Mechanical Engineering

**1978-1979**

Gilda M. Decapita.....Nursing  
Victor A. Richley.....Engineering Technology

**1979-1980**

Barbara H. Brothers.....English  
Frank J. Seibold... Advertising and Public Relations  
John H. Yemma.....Allied Health

**1980-1981**

Thomas N. Dobbstein.....Chemistry  
James C. Morrison.....Psychology  
Virginia K. Phillips.....Business Education  
and Technology

**1981-1982**

George D. Beelen.....History  
Lewis B. Ringer.....Health and Physical Education

**1982-1983**

Jack D. Bakos.....Civil Engineering  
Warren M. Young.....Physics and Astronomy

**1983-1984**

Mary J. Beaubien.....Home Economics  
Barbara H. Brothers.....English

**1984-1985**

Frank A. D'Isa.....Mechanical Engineering  
Richard C. Mitchell.....Art

**1985-1986**

Barbara Brothers.....English  
John Yemma.....Allied Health

**1986-1987**

Richard L. Burden.....Mathematics

**1987-1988**

Barbara H. Brothers.....English  
Lawrence E. Cummings.....Criminal Justice

**1988-1989**

William O. Barsch.....Engineering Technology

**1989-1990**

Alfred W. Owens II.....Speech Communication  
and Theatre  
L. Allen Viehmeyer.....Foreign Languages

**1990-1991**

Thomas A. Shipka.....Philosophy and  
Religious Studies

**1991-1992**

Peter A. Baldino, Jr.....Foundations of Education

**1992-1993**

Robert J. Beebe.....Educational Administration  
Thomas N. Dobbstein.....Chemistry

**1993-94**

Madeleine Haggerty.....Allied Health  
Ikram Khawaja.....Geology

**1994-95**

James C. Morrison.....Psychology  
Susan Russo.....Art

**1995-1996**

John J. Buoni.....Mathematics and Statistics  
Joseph Edwards.....Dana School of Music

**1996-97**

Thomas A. Shipka.....Philosophy &  
Religious Studies  
Sandra W. Stephan.....English

**1997-98**

Warren Young.....Physics and Astronomy

**1998-99**

Daryl W. Mincey.....Chemistry

**1999-00**

Philip Ginnetti.....Teacher Education  
Ikram Khawaja.....Geology

**2000-01**

Paul C. Peterson.....Biological Sciences  
Richard L. Walker.....Human Performance  
and Exercise Science

**2001-02**

Tod Porter.....Economics  
Nathan P. Ritchey.....Mathematics and Statistics

**2002-03**

Karen Duda.....Computer Science  
and Information Systems

**2003-04**

Robert Beebe.....Educational Administration,  
Research and Foundations  
Tammy King.....Criminal Justice

**2004-05**

Daniel J. O'Neill.....Communication and Theater  
Charles R. Singler.....Geological and  
Environmental Sciences

**2005-06**

Joseph Mosca.....Social Work

**2006-07**

Susan Russo.....Art  
Joseph Mistovich.....Health Professions

**2007-08**

Gary M. Salvner.....English  
Jalal Jalali.....Electrical and Computer Engineering

**2008-09**

Nancy C. Landgraff.....Physical Therapy

**2009-10**

Dora L. Bailey.....Teacher Education  
Vernon Haynes.....Psychology

**2010-11**

Daniel Suchora.....Mechanical and Industrial  
Engineering

**2011-12**

Qi Jiang.....Sociology, Anthropology,  
and Gerontology  
Nathan Ritchey.....Mathematics and Statistics

**THE HERITAGE AWARD**

*The Heritage Award is given each year to a former faculty or administrative staff member who has given exemplary service to the University.*

**1982 Heritage Award**

Louis A. Deesz

*First Dean of the School of Engineering*

Nellie G. Dehnbostel

*Assistant Dean of the Dana School and Associate Professor of Biology*

Karl W. Dykema

*Dean of the College of Arts and Sciences*

Vera R. Jenkins

*Professor of Accounting and Finance*

Joseph E. Smith

*Dean of the University*

**1983 Heritage Award**

Mary B. Smith

*Registrar and Director of Career Planning and Placement*

George M. Wilcox

*Chair of the Department of Education and Dean of Youngstown College*

Clair L. Worley

*Chair of the Department of Biology*

**1984 Heritage Award**

David M. Behen

*Chair of the Department of History*

Pauline E. Botty

*Dean of Women, Chair and founder of the Department of Sociology*

Christine R. Dykema

*Chair of the Department of Foreign Languages and founding member of the University Senate*

**1985 Heritage Award**

Frank M. Ellis

*First Chair of the Physics Department*

Edward T. Rielly

*Professor and Chair of the Department of Business Administration*

Willard L. Webster

*Chair of the Department of Biology, University Athletic Director*

**1986 Heritage Award**

P.C. Pickard

*Business Manager*

**1987 Heritage Award**

Paul C. Luginbill

*Founder and first Chair of the Department of Chemical Engineering*

**1988 Heritage Award**

R. Donald Elser

*First Chair of the Department of Speech and Drama; instrumental in founding WYSU-FM*

Morris Slavin

*Professor of History*

**1989 Heritage Award**

Robert L. Miller

*First Dean of the School of Business Administration*

**1990 Heritage Award**

Earl E. Edgar

*First Dean of the Graduate School and Vice President for Academic Affairs*

Eugene D. Scudder

*Chair of the Department of Chemistry*

**1991 Heritage Award**

George H.G. Jones

*University Librarian*

**1992 Heritage Award**

Philip C. Buchanan

*Registrar*

Carol J. Gay

*Director of Graduate Studies in English; co-founder of the YSU English Festival*

**1993 Heritage Award**

Mae D. Turner

*Chair of Business Education and Secretarial Studies*

**1994 Heritage Award**

Edna K. McDonald

*Founder and coordinator of the International Educational Programs; instrumental in establishing YSU's nursing program*

Joseph F. Swartz, Jr.

*First Dean of the School of Education*

**1995 Heritage Award**

Frank A. D'Isa

*Chair of the Mechanical Engineering Department and instrumental in developing the Master of Science in Engineering*

Dominic L. Roselli

*Head Coach of basketball and baseball*

**1996 Heritage Award**

Nicholas Paraska

*Founding Dean of the College of Applied Science and Technology*

Hildegard Schnuttgen

*Head Reference Librarian*

**1997 Heritage Award**

Gratia Murphy

*Professor of English, leader of YSU English Festival and Early English Composition Assessment Program of Ohio Board of Regents*

Bernard Yozwiak

*Dean of the College of Arts and Sciences*

**1998 Heritage Award**

Robert L. Dove

*Assistant Football Coach; academic advisor and instructor in the Department of Health and Physical Education*

Sally M. Hotchkiss  
*Provost and Dean of Graduate Studies*

**1999 Heritage Award**

Irwin Cohen  
*Professor of Chemistry*  
Martin A. Greenman  
*Chair of the Department of Philosophy and Religious Studies*

**2000 Heritage Award**

James E. Dale  
*Professor of Philosophy and Religious Studies*  
Richard G. Weber  
*Superintendent of Buildings and Grounds*

**2001 Heritage Award**

Hugh G. Earnhart  
*Professor of History*  
Thomas Gay  
*Professor of English*

**2002 Heritage Award**

Jon N. Naberezny  
*Professor of Art*  
Robert W. Peterson  
*Director of WYSU-FM*

**2003 Heritage Award**

Janet E. DelBene  
*Professor of Chemistry*  
Joseph F. Malmisur  
*Executive Director of Intercollegiate Athletics*

**2004 Heritage Award**

Donald W. Byo  
*Professor and Director of The Dana School of Music*  
Frank J. Tarantine  
*Professor of Mechanical Engineering*

**2005 Heritage Award**

Mary Alice Budge  
*Professor of English*  
Thomas J. Kane  
*Director of Payroll and Fringe Benefits*

**2006 Heritage Award**

George D. Beelen  
*Professor of History*  
John P. Gillespie  
*Dean of Men and Assistant Professor of Marketing*

**2007 Heritage Award**

Philip Hirsch  
*Director of Kilcauley Center*  
Philip A. Snyder  
*Director of Public Relations*

**2008 Heritage Award**

Anthony S. Leonardi  
*Professor of Jazz*  
James P. Tressel  
*Head Football Coach*

**2009 Heritage Award**

Edward DiGregorio  
*Head of Women's Basketball*  
Thomas Shipka  
*Professor of Philosophy & Religious Studies*

**2010 Heritage Award**

Ann Harris  
*Professor of Geology*  
Harold Yiannaki  
*Executive Director of External Relations*

**2011 Heritage Award**

Mary J. Beaubien  
*Professor and Chair of the Department of Human Ecology*  
J. Douglas Faïres  
*Professor of Mathematics*

**2012 Heritage Award**

Glorianne M. Leck  
*Professor of Education*  
Charles McBriarty  
*Vice President for Student Affairs*

## APPENDIX A—Ohio Residency

### Ohio student residency for state subsidy and tuition surcharge purposes

#### A. Intent and authority

1. It is the intent of the chancellor 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 chancellor of the Ohio board of regents by section 3333.31 of the Revised Code.

#### B. Definitions

1. "Resident" 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 public assistance, 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 which are not related to the recipient.
3. An "institution of higher education" shall have the same meaning as "state institution of higher education" as that term is defined in section 3345.011 of the Revised Code, and shall also include private medical and dental colleges which receive direct subsidy from the state of Ohio.
4. "Domicile" as used in this rule is a person's permanent place of abode, so long as the person has the legal ability under federal and state law to reside permanently at that abode. For the purpose of this rule, only one domicile may be maintained at a given time.
5. "Dependent" shall mean a student who was claimed by at least one parent or guardian as a dependent on that person's internal revenue service tax filing for the previous tax year.

6. "Residency Officer" means the person or persons at an institution of higher education that has the responsibility for determining residency of students under this rule.

7. "Community Service Position" shall mean a position volunteering or working for:

- a. VISTA, Americorps, city year, the peace corps, or any similar program as determined by the chancellor of the Ohio board of regents; or
- b. An elected or appointed public official for a period of time not exceeding twenty-four consecutive months.

#### 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 student whose spouse, or 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 from persons or entities who are not residents of Ohio for all other legal purposes.
3. A dependent student 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 of 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, legal guardian or spouse of the student is employed full-time in Ohio.

- b. A copy of the lease under which the parent, legal guardian 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, legal guardian or spouse is the owner and occupant; or if the parent, legal guardian 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, legal guardian or spouse resides at that residence.

**(D) Additional criteria which may be considered in determining residency 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 Ohio public assistance;
  - 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 public assistance, 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 public assistance (see paragraph (D)(2)(a) of this rule).
3. 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.

**(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 at 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.
4. A person who is transferred by his 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.
5. 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.
6. A person who was considered a resident under this rule at the time the person started a community service position as defined under this rule, and his or her spouse and dependents, shall be considered a resident of Ohio while in service and upon completion of service in the community service position.
7. A person who graduated from an Ohio high school, left the state, and returns to enroll in an Ohio public institution of higher education and establishes domicile in the state.
8. A person who returns to the state of Ohio due to marital hardship, takes or has taken legal steps to end a marriage, and reestablishes financial dependence upon a parent or legal guardian (receives greater than fifty percent of his or her support from the parent or legal guardian), and his or her dependents shall be considered residents of Ohio.

9. A person who is a member of the Ohio National Guard and who is domiciled in Ohio, and his or her spouse and dependents, shall be considered residents of Ohio while the person is in Ohio national guard service.
10. A person who is eligible, or whose benefits have been exhausted or have expired, for benefits under the Post 9/11 Veterans Educational Assistance Act of 2008 or any prior federal act establishing veterans' education benefits, who has been honorably discharged or released from service, who, as of the first day of a term of enrollment, is domiciled in Ohio, and his or her spouse and dependents, shall be considered residents of Ohio for these purposes as long as Ohio remains the state of such person's domicile.

Documentation determined to be acceptable by the institution: (1) DD214 or other military document showing honorable discharge. (2) Documentation of domicile shall include a copy of the lease under which the person 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 person or spouse is the owner and occupant; or if the person 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 person or spouse resides at that residence.

#### F. Procedures

1. 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.
2. 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.
3. For students who qualify for residency status under paragraph (C)(3) of this rule, residency status is lost immediately 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.

4. Any person once classified as a non-resident 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. It is the student's responsibility to initiate contact. 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.
5. 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.
6. Any institution of higher education charged with reporting student enrollment to the chancellor of 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.

Revised 8/18/11

## APPENDIX B—Title II, Teacher Education

### Institutional Report on the Quality of Teacher Preparation: Title II, Higher Education Act Academic Year

Summary Institution-Level Pass-Rate Data: Traditional Teacher Preparation Program Within IHE

HEOA—Title II  
2010-2011 Academic Year

Institution Name	Youngstown State University					
Institution Code	1975			<i>April 9, 2012</i>		
State	Ohio			Statewide		
Group	Number Taking Assessment <sup>1</sup>	Number Passing Assessment <sup>2</sup>	Institutional Pass Rate	Number Taking Assessment <sup>1</sup>	Number Passing Assessment <sup>2</sup>	Statewide Pass Rate
All program completers, 2010-11	180	180	100%	5818	5561	96%
All program completers, 2009-10	208	208	100%	5852	5718	98%
All program completers, 2008-09	214	212	99%	6392	6272	98%

<sup>1</sup>Number of completers taking one or more assessments within their area of specialization.

<sup>2</sup>Number who passed all assessments taken within their area of specialization.

All institutions that offer teacher-preparation programs are required to make annual public reports under Title II of the Higher Education Act.

Information is provided about the statewide pass rate on these tests, as well as other basic information about the institution's teacher preparation programs. Pass rates are reported in programs with ten or more students who completed the teacher education program within the reporting period; PRAXIS II is the test currently required for students to gain licensure to teach. Foreign language teacher candidates are required to pass a Praxis II Professional-Education Knowledge Test and The American Council on the Teaching of Foreign Language (ACTFL) oral and written tests to gain licensure to teach.

PRAXIS II is a standardized test developed and administered by the Educational Testing Service. Teacher candidates in Ohio take one or more of these tests, depending upon the content area and age level they seek to teach. There are 36 different PRAXIS II tests in use in Ohio: most of the tests are in arts and sciences or fine and applied arts content areas (e.g. music, mathematics, science, art, etc.), while some are in professional education. There are also some fields for which tests are still being developed. These tests represent the performance of teacher preparation candidates on paper and pencil or computer-based tests of either content-area knowledge or professional-education knowledge.

The institution will report scores for all teacher candidates who completed their programs in a specific academic year. If those students subsequently re-took a test, their scores will not be reported in that April's data but in later years. Also, if for any given test there were fewer than 10 test takers from an institution, the scores for that test will not be reported. Delaying the reporting of these small numbers prevents conclusions being drawn from insufficient numbers of teacher candidates and preserves student

confidentiality. In later years when the numbers of test takers for a test reach 10 or more, the institution will report the scores.

The scores can be compared to the expectations for passing as set by the Ohio Department of Education. When passing scores were established for PRAXIS II tests, the board set them high, among the highest in the nation, as a way to communicate its high standards for those who enter the profession. The scores can also be compared to the anticipated pass rates across the nation and the average score for Ohio test-takers. These comparisons provide indicators of the expectations of the Ohio Department of Education for Ohio test takers as well as comparisons of the success rate of Youngstown State University students to the average in the state.

The State of Ohio reports the scores from all teacher education institutions. All institutions are grouped into quartiles to reflect their passing rates. Because some institutions require passage of PRAXIS II as a component of completing a program and other programs may differ in the kinds of students they recruit into teaching (undergraduate or graduate), comparisons among institutions, to be meaningful, must take into account the program designs at the institutions and their impact on students' likelihood of passing the tests prior to completing the program. Youngstown State University does require passing of PRAXIS II and ACTFL (if applicable) for student teaching eligibility and program completion.

Teacher candidates must pass the appropriate licensure test to receive a license to teach from the state of Ohio. Employers prefer—and are often obligated by law—to hire licensed teachers. For the institution, the passing score provides one measure of quality of the institution as it prepares teachers. If an institution is determined to be low-performing as defined by the state of Ohio, it and its students can lose certain forms of federal aid.

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Computer Services, MESH 437 .....	3036	Human Performance & Exercise Science, Dept. of, BEEG 307 .....	3654
Computer Science & Information Systems, Dept. of, MESH, 3rd Floor .....	3134	Human Resources, JONE 3025 .....	3122
Continuing Education, Office of, METS, Ste. 200 .....	965-5800	Information Center, KILC 2nd Floor .....	3516
Counseling Community, BEGH 3101 .....	3056	Institutional Research, Office of, TODA 314 .....	3053
Counseling, Dept. of, BEGH 3305 .....	3257	International Business, Williamson Center for, WCBA .....	3064
Credit Union, YSU Federal, TODA B106 .....	3204/3781	International Studies and Programs, Center for, JONE 1042 .....	2336
Criminal Justice and Forensic Sciences, Dept. of, CUSH 2087 .....	3279	Intramural Recreation, ARWC .....	3488
Dale, Dr. James, Ethics Center, DEBH 420 .....	1464	Islamic Studies, DEBH 406 .....	1625
Dana School of Music, BLSS 3000 .....	3636	<i>Jambar</i> , FDRH 0013 .....	3094
Dental Hygiene Clinic, CUSH 1114 .....	3342		
Disability Services, 275 FIFTH AVE. ....	1372		
Drafting and Design Technology, MOSH 4120 .....	3288		

Kilcawley Center .....	3571	Professional Practice, Office of, WCBA 408 .....	1405
Kilcawley House .....	3547	Provost, Office of the, TODA 222 .....	3103
Labor Studies, WCBA 630 .....	1783	Psychology, Dept. of, DEBH B319 .....	3401
Language Learning & Resource Center, DEBH 561 .....	3465	Reading and Study Skills Program, MAAG 154 .....	3099
Liberal Arts and Social Sciences, College of, DEBH 104 .....	3409	Records Office, JONE 1013.....	3182
Lyden House .....	1981	Registration, MESH 242 .....	3178
Maag Library .....		Social Work, Dept. of, CUSH 3030 .....	1598
Library Hours .....	3677	Sociology, Anthropology and Gerontology, Dept. of, DEBH 418 .....	3442
Circulation .....	3678	Student Accounts, MESH 201.....	3133
Management, Dept. of, WCBA 649 .....	3071	Student Affairs, Vice President for, TODA 141 .....	3532
Marketing & Communications, Office of, TODA 133.....	3519	Student Diversity Programs, KILC 2113.....	2086
Marketing Dept. of, WCBA 534 .....	3080	Student Government, KILC 2099 .....	3591
Mathematics Assistance Center, CUSH 3090 .....	3274	Student Health Services, KILH 1st Floor .....	3489
Mathematics and Statistics, Dept. of, CUSH 1055.....	3302	Student Life, Office of, KILCWEST .....	4703
McDonough Museum of Art .....	1400	Student Programming, KILC 2100 .....	3575
Mechanical and Industrial Engineering, Dept. of MOSH 2510.....	3016	Student Progress, Ctr. for, KILCWest.....	3538
Mechanical Engineering Technology, CUSH 3065 .....	3287	Student Security Service, KILC 1st Floor.....	1515
Metro Credit Education, JONE 1027 .....	2449	Student Tutorial Services, KILCWest .....	7253
Metropolitan College, METS.....	965-5800	Teacher Education, Dept. of, BEGH 2405 .....	3251
Military Science, Dept. of, STAM 1112.....	3205	Testing Office, MESH 242.....	3175
Multicultural Student Services, KILCWest.....	7175	Testing, National Standardized .....	3175
Northeast Ohio Medical University (NEOMED) Local Number .....	747-2247	Testing, YSU Placement .....	1343
Nursing, Dept. of, CUSH 2042 .....	3293	Ticket Office, Athletics, STAM 2036 .....	3482
Parking Services, SMTH .....	3546	Ticket Office, University Theater, BLSS 1008 .....	3105
Peace and Conflict Studies, DEBH 429 .....	3437	Transcript Office, JONE 1013 .....	3184
<i>Penguin Review</i> , KILCWest.....	3169	Undergraduate Admissions, SWEC.....	2000
Penguin Shuttle, SMTH.....	3546	University Courtyard Apartments .....	1999
Philosophy and Religious Studies, Dept. of, DEBH 401 .....	3448	University Outreach, METS, Suite 200.....	3221
Physical Therapy, Dept. of, CUSH B080 .....	2558	University Scholars Program, CAFH .....	2772
Physics and Astronomy, Dept. of, WBSH 2014 .....	3616	University Theater, BLSS 1008 .....	3105
Planetarium, WBSH 2001 .....	3616	Veterans Office, TODA 310 .....	2503
Police, University, POLC .....	3527	Website, University, TODA 133 .....	3519/www.ysu.edu
Political Science, Dept. of, DEBH 444 .....	3436	Weller House/Wick House .....	1974/ 1982
President, Office of the, TODA 215.....	3101	Women's Studies, DEBH 121-122.....	3408
		Working Class Studies, Center for, SMTH 1042 .....	1783
		Writing Center, MAAG 171 .....	3055
		WYSU-FM Radio Station, CUSH B066 .....	3363
		YSU Federal Credit Union, TODA B106 .....	3204/3781

## BUILDING KEY

ALUM .....	Alumni House	MELN .....	Melnick Hall
ARWC .....	Andrews Student Recreation and Wellness Center	MESH .....	Meshel Hall
BEEG .....	Beeghly Health & Physical Education Center	METS .....	Metro College, 100 DeBartolo Place, Youngstown (Southwoods Commons)
BEGH .....	Beeghly Hall	MOSH .....	Moser Engineering Science Building
BLSS .....	Bliss Hall	PHLP .....	Phelps Building
COFF .....	Coffelt Hall	POLC .....	YSU Police
CUSH .....	Cushwa Hall	SMTH .....	Smith Hall
DEBH .....	DeBartolo Hall	STAM .....	Stambaugh Stadium
FDRH .....	Fedor Hall	SWEC .....	Sweeney Welcome Center
JONE .....	Jones Hall	TODA .....	Tod Hall
KILC .....	Kilcawley Center	WBSH .....	Ward Beecher Science Hall
KILH .....	Kilcawley House	WELL .....	Weller House
MAAG .....	Maag Library	WICK .....	Wick House
McDO .....	McDonough Museum	WCBA .....	Williamson Hall