

**YOUNGSTOWN
STATE
UNIVERSITY**

**UNDERGRADUATE
BULLETIN
2014-2015**

Youngstown, Ohio 44555

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General Information

General Information

Academic Calendar

Fall 2014

DATE	DAY	TIME	EVENT
Aug. 20	Wed.		Classes begin
Aug. 27	Wed.		Last day to add classes or change grading option
Sept. 1	Mon.		Legal holiday-University closed
Sept 29	Mon.		Last day to apply for fall term graduation
Oct. 25	Sat.		Last day to withdraw with a grade of 'W'
Nov. 11	Tues.		Legal holiday-University closed
Nov. 26	Wed.		No classes scheduled-University offices open
Nov. 27	Thurs.		Legal holiday-University closed
Nov. 28	Fri.		Legal holiday-University closed
Dec. 1	Mon.	0800	Thanksgiving academic break ends-Classes resume
Dec. 8	Mon.		Final examinations begin
Dec. 14	Sun.		Final examinations end
Dec. 14	Sun.	1400	Commencement

Spring 2015

DATE	DAY	TIME	EVENT
Dec. 25	Thurs.		Legal holiday-University Closed
Dec. 26	Fri.		Legal holiday-University closed
Jan. 1	Thurs.		Legal holiday-University closed
Jan. 12	Mon.		Classes begin
Jan. 19	Mon.		Legal holiday-University closed
Jan. 20	Tues.		Last day to add classes or change grading option
Feb. 20	Fri.		Last day to apply for spring term graduation

Mar. 9	Mon.		Spring Break begins
Mar. 16	Mon.	0800	Spring Break ends-Classes resume
Mar. 26	Thurs.		Last day to withdraw with a grade of 'W'
May 4	Mon.		Final examinations begin
May 10	Sun.		Final examinations end
May 16	Sat.	1000	Commencement

Summer 2015

DATE	DAY	TIME	EVENT
May 25	Mon.		Legal holiday-University closed
May 26	Tues.		Last Day to add classes or change grading option-full term, first 6-week term
June 11	Thurs.		Last day to withdraw with a grade of 'W'-first 6-week term
June 15	Mon.		Classes begin-middle 6-week term
June 18	Thurs.		Last day to add classes or change grading option-middle 6-week term
June 26	Fri.		Last day to apply for summer term graduation
June 28	Sun.		First six-week term ends (final exams are given during last class session)
June 29	Mon.		Classes begin-second 6-week term
July 2	Thurs.		Last day to add classes or change grading option-second 6-week term
July 3	Fri.		Legal holiday-University closed
July 6	Mon.		Last day to withdraw with a grade of 'W'-full summer term
July 9	Thurs.		Last day to withdraw with a grade of 'W'-middle 6-week term
July 23	Thurs.		Last day to withdraw with a grade of 'W'-second 6-week term
July 26	Sun.		Middle 6-week term ends

Aug. 9 Sun.

Full summer, second 6-week term ends (final exams are given during last class session)

Aug.
15

Sat.

1000

Commencement

University Mission

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
- 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 curricular 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.

Accreditation

Youngstown State University is accredited by the Higher Learning Commission and is a member of the North Central Association of Colleges and Schools (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

The Youngstown State University Office of Assessment coordinates and supports assessment activities across campus, including academic, co-curricular, and general education program student learning assessment. We support the accreditation standards of the Higher Learning Commission by assisting faculty and staff in systematic, comprehensive assessment and improvement of student learning. The Youngstown State University Mission and 2020 Strategic Plan guides our work in building a positive culture of assessment, using of data responsibly to improve institutional practice, and using assessment to support and promote student success. A systematic feedback loop also enables both academic and co-curricular 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 internal efforts of program improvement or accreditation, departments and the Office of Assessment abide by the Institutional Review Board guidelines at YSU.

Office of Assessment -
<http://web.ysu.edu/assessment/> -
<http://web.ysu.edu/assessment/>

Office of Diversity and Multicultural Affairs

Mission

- Educate the University and community about diversity and multicultural affairs.
- Support and encourage diversity through educational outreach programs and training.
- Cultivate an environment inclusive of, but is not limited to, differences in cultural, social, economic, racial and ethnic origin, gender, rural and urban communities, geographic origins, academic backgrounds, sexual and spiritual orientation, ability/disability, physical appearance, personality, learning style, personal experiences, multilingual abilities, and veteran status. This diversity creates a richness that enhances the campus climate.

As people interact with one another, they develop and exchange a diverse set of identities. These identities, including among others, gender, race, ethnicity, culture, sexual orientation, religion, varying physical and mental abilities, class, age, education, profession, and regional identity carry socially constructed meaning and value. Each of us brings multiple identities to the organizations and communities of which we are a part, forming a mosaic that allow us to retain our individuality while contributing to collective purposes and achievements. The health and well-being of any society depends on its members appreciating the entire mosaic of which they are a part. We need to actively oppose all discriminatory practices and support organizations that reflect and empower diverse perspectives. YSU seeks to work in collaboration with the larger community of which it is a part to provide leadership in the attainment of these goals and to foster educational, economic, and social opportunity for all citizens in our community.

The Challenge Ahead

Diversity in higher education cannot be viewed as a problem that is in need of a solution. It is apparent that engaging diversity provides an opportunity to attend to many issues which have long needed attention-teaching and learning,

curriculum, assessment, campus-community connections, climate, student success, and advising, among others. Diversity on campus impels the University to prepare students and the institution for a future in which the diversity of our communities and institutions is recognized as an important resource. Diversity on campus is multi-dimensional. Many different groups and issues fall under the umbrella of diversity, each with its own unique history and context within higher education. But diversity is not about the needs of one or another group competing for scarce resources. It is about purposeful and effective designs for supporting all students' educational achievements. It is an integral component of the mission and purpose of the institution, and is essential to whether our institution will be positioned to educate all students to live, work, and excel in a complex and pluralistic society.

Office of Diversity and Multicultural Affairs -
<http://web.ysu.edu/dma/> -
<http://web.ysu.edu/dma/>

Office of Equal Opportunity and Policy Compliance

The University is committed to a campus environment that values all individuals and groups and to non-discrimination and equal opportunity for all persons. University policy prohibits all forms of harassment based on sex, race, color, religion, national origin, age, sexual orientation, gender identity and/or expression, disability, or veteran status or any other basis protected by law. In order to enhance the quality of life and learning for students, faculty and staff, the University takes affirmative steps to attract and retain a diverse and well-qualified student body and workforce and acts in accordance with all applicable state and federal laws.

The Office of Equal Opportunity and Policy Compliance oversees the University's compliance with non-discrimination and affirmative action requirements, reviews and develops University policies, provides information and training in the area of discrimination and harassment, and investigates complaints involving discrimination or harassment. The Director of the Office of Equal Opportunity and Policy Compliance serves as the University's **Title IX Coordinator** and oversees the investigation and disposition of student complaints of sexual harassment, including complaints involving sexual violence.

While the primary responsibility of overseeing the University's compliance with non-discrimination and affirmative action requirements has been delegated to the Office of Equal Opportunity and Policy Compliance, the entire University community plays an integral part in the prevention of discrimination and the realization of

the objectives of equal opportunity and diversity by treating each other with dignity and respect at all times.

Office of Equal Opportunity and Policy Compliance

<http://web.ysu.edu/equalopportunityandpolicycompliance>

<http://web.ysu.edu/equalopportunityandpolicycompliance>

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 Creative Arts and Communication 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 Creative Arts and Communication; 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 - <http://web.ysu.edu/wcba>
- The Beeghly College of Education - <http://web.ysu.edu/bcoe>
- The College of Creative Arts and Communication - <http://web.ysu.edu/cac>
- The Bitonte College of Health and Human Services - <http://web.ysu.edu/bchhs>
- The College of Liberal Arts and Social Sciences - <http://web.ysu.edu/class>
- The College of Science, Technology, Engineering, and Mathematics - <http://web.ysu.edu/stem>

- The School of Graduate Studies and Research - <http://web.ysu.edu/gradschool>

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

YSU also offers a BS/MD program - http://web.ysu.edu/gen/ysu/Bachelor_of_Science__Medical_Degree_m156.html leading to medical studies at Northeast Ohio Medical University.

The post-baccalaureate programs of the School of Graduate Studies and Research - <http://web.ysu.edu/gradschool> are set forth in the Graduate Bulletin and Supplement - http://web.ysu.edu/gen/ysu/Graduate_Bulletin_m2656.html.

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, Gerontology, history, and Interdisciplinary Communication 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 program in Intervention Services leading to a Master of Education 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), and teaching of writing. Please refer to the latest *Graduate Bulletin* for additional program and admission information, or contact Graduate Admissions at 330-941-3091.

Degrees Granted

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; Creative Arts and Communication, CCAC;

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)
 - Integrated Language Arts
 - Integrated Mathematics
 - Integrated Sciences
 - Integrated Social Studies
 - Life Sciences
- Advertising & Public Relations (WCBA)
- Africana Studies (CLASS)
- Allied Health (BCHHS)
- Allied Health Online (BCHHS)
- American Studies (CLASS)
- Anthropology (CLASS)
- Art History (CCAC)
- Astronomy/Physics (STEM)
- Biological Sciences
 - Biology-Physical Therapy Track
- Business Administration (WCBA)
- Business Economics (WCBA)
- Chemical Engineering (STEM)
- Chemistry (STEM)
- Civil Engineering (STEM)
- Civil & Construction Engineering Technology (STEM)
- Combined Science (STEM) (BS/MD students only)
- Communication Studies (CCAC)
 - Interpersonal/Organizational Track
 - Media Track
 - Persuasion Track
 - Social Media 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 (CCAC)
- Dental Hygiene (BCHHS)
- Dietetics (BCHHS)
 - Coordinated Program in Dietetics
 - Didactic Program in Dietetics
- Early Childhood Education (BCOE)
- Economics (CLASS)
 - Accelerated MA in Economics Option (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
 - Financial Management Track
- Forensic Science (BCHHS)
 - Anthropology Track
 - Biology Track
 - Chemistry Track
- French (CLASS)
- General Studies (CLASS)
- Geography (CLASS)
- Geology (STEM)
- 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)
- Journalism (CLASS)
- Long Term Care Administration (CLASS)
- Management Information Systems (WCBA)
- Marketing Management (WCBA)
 - Business/Industrial Marketing Track
 - Consumer/Retail Marketing Track
- Mathematics (STEM)
 - Actuarial Mathematics Track
 - Applied Mathematics Track
 - Quantitative Business Track
 - Statistics Track
- Mechanical Engineering (STEM)
- Mechanical Engineering Technology (STEM)
- Medical Laboratory Science (BCHHS)
- 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 (CCAC)
 - Composition
 - History & Literature
 - Music Education-Instrumental
 - Music Education-Keyboards
 - Music Education-Vocal
 - Performance-Instrumental
 - Performance-Jazz
 - Performance-Keyboards

- Performance-Organ
- Performance-Piano
- Performance-Recording and Technology
- Performance-Voice
- Performance-Nonprofit Leadership Option
- Theory
- Nursing (BCHHS)
- Nursing (RN-BSN Completion) (BCHHS)
- Philosophy (CLASS)
 - Pre-Counseling Track
- 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 and Technical Writing (CLASS)
- Psychology (CLASS)
 - Psychology-Physical Therapy Track
- Public Health (BCHHS)
- Public Health Online (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
- Studio Art (CCAC)
 - Digital Media Option
 - Graphic + Interactive Design Option
 - Interdisciplinary Studio Arts Option
 - Painting/Printmaking Option
 - Photography Option
 - Three Dimensional Studies Option
- Telecommunication Studies (CCAC)
 - Sports Broadcasting Track
- Theater (CCAC)
 - 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)
- Computer Information Systems (STEM)
- Criminal Justice (BCHHS)
 - Corrections Track
 - Law Enforcement Track
 - Loss Prevention/Asset Protection Track
- Dietetic Technician (BCHHS)
- Drafting & 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)
- Medical Laboratory 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)
- Comparative International Studies (CLASS)
- Computer Databases (STEM)
- Computer Networking (STEM)
- Construction Management Technology (STEM)
- Electronic Commerce Technology (STEM)
- Enterprise Resource Planning (WCBA)
- Entrepreneurship (WCBA)
- Geospatial Science and Technology (CLASS)
- Information System Programming (STEM)
- Leadership Certificate (WCBA)
- Multimedia and Web Design (STEM)
- Museum Studies (CCAC)
- Nonprofit Leadership (WCBA)
- Paramedic (BCHHS)
- School Nurse Licensure (BCHHS)

Distance Education (100% online) degrees may be earned in:

Undergraduate Degrees:

- Bachelor of Science in Applied Science, Allied Health
- Bachelor of Science in Applied Science, Public Health
- Bachelor of Science in Nursing (RN-BSN Completion Program)
- Bachelor of Science in Respiratory Care, Respiratory Care Completion Track

See Office of Distance Education - <http://web.yсу.edu/de> - <http://web.yсу.edu/de> for complete list of undergraduate and graduate online degree programs.

Admission

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

YSU Web Site: www.ysu.edu

Admissions Web Site: web.ysu.edu/admissions - <http://web.ysu.edu/admissions>

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://web.ysu.edu/gen/ysu/Schedule_a_Campus_Visit_m184.html - http://web.ysu.edu/gen/ysu/Schedule_a_Campus_Visit_m184.html. 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 conditional admission for more information.

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 Ohio Residency 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 Ohio Residency of this *eBulletin* for the complete text of the Ohio Board of Regents' residency criteria.

Application Fee

A non-refundable application fee of \$45 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	4
Science	3
Social Studies	3
Foreign Language ⁺⁺	2
Arts	1
Total Units	16

⁺⁺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.

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
Total Units	16

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.

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 2014

Freshman

Application Deadline:	Aug. 1*
Credentials Deadline:	Aug. 1

Former Transfer and Transfer

Application Deadline:	Aug. 1
Credentials Deadline:	Aug. 15

Former Transient and Transient

Application Deadline:	Aug. 1
Credentials Deadline:	Aug. 15

Beginning Dates for Each Semester

Wednesday, Aug. 20, 2014

SPRING SEMESTER 2015

Freshman

Application Deadline:	Dec. 1
Credentials Deadline:	Dec. 1

Former Transfer and Transfer

Application Deadline:	Dec. 1
Credentials Deadline:	Dec. 15

Former Transient and Transient

Application Deadline:	Dec. 1
Credentials Deadline:	Dec. 15

Beginning Dates for Each Semester

Monday, Jan. 12, 2015

SUMMER SEMESTER 2015

Freshman

Application Deadline:	Apr. 15
Credentials Deadline:	Apr. 15

Former Transfer and Transfer

Application Deadline Summer I:	Apr. 15
Credentials Deadline Summer I:	May 15

Application Deadline: Summer II & III:	May 15
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Credentials Deadline: Summer II & III:	June 1
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Former Transient and Transient

Application Deadline Summer I:	Apr. 15
Credentials Deadline Summer I:	May 15

Application Deadline: Summer II & III:	May 15
Credentials Deadline: Summer II & III:	June 1

Beginning Dates for Each Semester

Session I and Full Term:	Monday, May 18, 2015
Session II:	Monday, June 15, 2015
Session III:	Monday, June 29, 2015

*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.

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.

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 (web.ysu.edu/cisp - <http://web.ysu.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.

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.**

International Application Priority 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 \$40 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 Marianas, 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
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.

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
YSU's SAT reporting code number: 1975

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
YSU's ACT reporting code number: 3368

Graduate Admission

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

Continuing Education

Information about workforce development, noncredit 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.

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-Ap Program.

Questions should be addressed to the Office of Veterans Affairs, 330-941-2503. See the Office of Veterans Affairs website - <http://web.ysu.edu/veterans> for more information.

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 for rules regarding suspension and reinstatement.

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

Prospective students seeking admission to the YSU combined BS/MD 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>.

See the Bachelor of Science/Medical Degree - http://web.ysu.edu/gen/ysu/Bachelor_of_Science_Medical_Degree_m156.html web page for more information.

New Freshman Applicants

Application Deadlines

Applicants 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 a 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.

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

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.

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 many program-specific articulation agreements with career and technical centers and high schools in the following counties: Columbiana, Mahoning, Medina, Portage, Stark, Summit, Trumbull, Tuscarawas and Wayne. Students in those articulated programs of study receive instructions from their career and technical center or high school about how to have earned credits posted to their YSU transcripts after they enroll at YSU. Students who complete career-technical programs of study may also receive specified articulated college credit. For information about College Tech Prep at YSU, see <http://www.ysu.edu/adtp> - <http://www.ysu.edu/adtp>.

CTAG/Career-Technical Credit Transfer (CT)²

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 - <http://web.ysu.edu/admissions>.

Conditional Admission

Students with a high school grade point average below 2.00 (out of 4.00) or a composite ACT below 17 (or SAT critical-reading and math composite below 820), or transfer students with a transfer GPA below 2.0 (out of 4.00), are not eligible for regular admission, but may be admitted with conditions.

If a student has not taken the ACT or SAT, or does not have a high school GPA, the student is not eligible for regular admission, but may be admitted with conditions 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. Transfer students may meet this requirement by attending a regular or transfer SOAR or by completing the online orientation module for transfer students.
3. Conditionally admitted students shall be classified as having an *undetermined* major within their college, or in the case of STEM and CCAC a *pre-major* designation, 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.
- 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.
 - Conditionally admitted students are restricted to an approved list of courses (see course listing below).
 - All conditionally admitted students are to be advised by their college's professional advisors and not by faculty or departmental advisors.
 - 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.
 - Conditionally admitted status is not to be applied to students in BCHHS's *Emergency Medical Services Certificate* and *Police Academy* programs. Students accepted in the *Police Academy* are not required to take the placement test.
 - If a Youngstown Early College (YEC) student has earned a GPA of 2.00 or above and has passed all required developmental courses, the student's ACT or SAT test score will not be considered in establishing the student's conditional admission status.
 - Students entering Distance Learning Programs will not be considered for conditional admission status.
 - Failure to fulfill the first semester guidelines and achieve good academic standing (a GPA of 2.00) shall result in the conditionally admitted student being dismissed from the university. The student may not be admitted to any other YSU college until the dismissal period has expired.

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

- Successfully completed all developmental courses into which the student has tested (RSS 1510A, RSS 1510B, ENGL 1539 or ENGL 1540).
- Successfully completed six semester hours of non-developmental courses.
- 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.
- 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:

Approved Courses

Courses		s.h.
AFST 2600 ^G	Introduction to African Studies 1	3
AFST 2601 ^G	Introduction to African Studies 2	3
COUN 1587 ^G	Introduction to Health and Wellness in Contemporary Society	3
COUN 1589	Success in Career and Life Planning	3
CSIS 1500	Computer Literacy	3
ECON 1503 ^G	Rich and Poor: Diversity and Disparity in the U.S. Workplace	3
ENGL 1539 ^D	Fundamentals of College Writing	4
ENGL 1540 ^D	Introduction to College Writing	3
ENGL 1550 ^{GT}	Writing 1	3
ENGL 1551 ^{GT}	Writing 2	3
ENST 1500 ^G	Introduction to Environmental Science	3
ENST 1500L ^G	Introduction to Environmental Science Lab	1
GEOL 1500 GEOL 1500L ^G	Environmental Geology	(4 + 0)
HAHS 1510	Investigations into Social Classes in America	3
HIST 1501 ^G	American Dreams: Introduction to U.S. History	3
HPES 1500 ^G	Physical Activity Core Concepts	1
Two HPES activity courses must be taken in addition to this course to satisfy the requirements for GER credit. Taking HPES 1500 and any two of the following activity courses counts as 3 s.h. for the SPS Domain of the GER: HPES 1502, HPES 1507, HPES 1510, HPES 1511, HPES 1512, HPES 1513, HPES 1514, HPES 1515, HPES 1519, HPES 1520, HPES 1521, HPES 1522, HPES 1523, HPES 1524, HPES 1526, HPES 1528, HPES 1529, HPES 1530, HPES 1531, HPES 1537, HPES 1544, HPES 1545, HPES 1548, HPES 1554, HPES 1555, HPES 1556, HPES 1557, HPES 1564, HPES 1565, HPES 1566, HPES 1588, and HPES 2697.		
MATH 1500 ^D	Number Concepts and Beginning Algebra	5

MATH 1501 ^D	Elementary Algebraic Models	5
MATH 1502 ^D	Beginning Algebra 1	3
MATH 1503 ^D	Beginning Algebra 2	3
MATH 1507 ^D	Intermediate Algebra	3
MATH 1513 ^R	Algebraic and Transcendental Functions	5
MATH 2623 ^T	Survey of Mathematics	3
MUHL 2621 ^C	Music Literature and Appreciation	3
MUHL 2616 ^C	Survey of Jazz	3
PHLT 1531 ^C	Fundamentals of Public Health	3
PHLT 1568 ^C	Healthy Lifestyles	3
POL 1550 ^C	Introduction to Political Science	3
RSS 1510A ^D	Advanced College Success Skills	3
RSS 1510B ^D	Basic College Success Skills	3
RSS 1510C ^D	STEM Advanced College Success Skills	4
SOC 1500 ^C	Introduction to Sociology	3
THTR 1560 ^C	Understanding Theater	3
THTR 1590 ^C	History of Motion Pictures	3
TCOM 1595 ^{CS}	Survey of American Mass Communications	3

Any college-based first-year orientation course.

A limited number of additional college-based courses are available with consultation with, and the expressed approval of, the student's college advisor.

^DDevelopmental course

^CGeneral education course

^RTransfer students only

^SSecond semester or later only

^TOnly if tested or placed into

CTAG/Career-Technical Credit Transfer (CT)2

CTAGs are groups of technical courses that represent a commonly accepted pathway to an associate's or bachelor's degree. Courses or course sequences identified as being a part of the CTAG may be accepted at *any public higher education institution in Ohio who offers the course(s)*. Students accessing CTAG credit must complete the CTAG Validation Form obtained from the secondary institution and submit it to the secondary

institution for verification that the student is eligible for credit prior to submitting the document to YSU. Upon verification, the secondary institution will submit the original CTAG Validation Form with the institutional seal to the Office of Associate Degree and Tech Prep Programs, Youngstown State University, One University Plaza, Tod Hall 301, Youngstown, OH 44555. CTAG credits will be posted to their YSU transcripts after they enroll at YSU.

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. Students may be required, however, to meet additional general education requirements at the institution to which they transfer. For example, a student who completes the transfer module at Institution S (sending institution) and then transfers to Institution R (receiving institution) is said to have completed the transfer module portion of Institution R's general education program. Institution R, however, may 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

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 AA or AS 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.

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> - <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.

See information for Transfer Students - http://web.ysu.edu/content/easy_pages/view.php?page_id=66&sid=25&menu_id=178 for related documents.

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> - <http://www.ohiohighered.org/transfer>.

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 may 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. The Office of Degree Audit along with 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. Students must complete an approved major-specific capstone class, and non-science majors must complete MATH 2623 or 2625 in order to fulfill YSU's General Education Requirements. Students may find a list of approved capstone courses on the general education website web.yasu.edu/ger/ - <http://web.yasu.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> - <http://www.ohiohighered.org/transfer>), and the [u.s. select system](http://www.transferology.com/welcome.htm) (<http://www.transferology.com/welcome.htm> - <https://www.transferology.com/welcome.htm>) 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](http://www.ohiohighered.org/transfer) (<http://www.ohiohighered.org/transfer> - <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), MATH 1570, MATH 1571, or MATH 1572 (4 hours), Oral Communications (3 hours), Natural Science (must include one laboratory science and two different disciplines, minimum of 9 hours), Arts and Humanities (must include two different disciplines, minimum of 9 hours), Social Science (must include two different disciplines, minimum of 9 hours).

It is recommended that students take a minimum of 6 of the hours from Natural Science, Arts and Humanities, or Social Science from courses that are cross-listed as Social and Personal Awareness. In doing so, a student can still complete YSU's General Education Requirements in a timely manner should that student choose not to transfer.

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* (General Education Courses by Knowledge Domain) 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.yosu.edu/admission/transfer_appeal - http://web.yosu.edu/admission/transfer_appeal.

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.yosu.edu/cisp/> - <http://www.yosu.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; visit the ELI section of the eBulletin for more information.

Tuition, Fees, and Charges

See Tuition and Costs page for current figures.

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.

Students are expected to have their student accounts in a paid status prior to attending the first class meeting for a term. In order to have a student account in a "paid status", students must be either paid in full for the term, or officially signed up and paid the first payment on the approved payment plan. 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. Effective July 1, 2012 there is a 2.75% convenience fee for payments made by credit card. 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 period. 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, and other University services) 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 below). 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.

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.

See Students Fees and Charges. 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 Affordable Tuition Advantage area pay a lesser surcharge than do students who are legal residents of other states and/or areas. The Affordable Tuition Advantage 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. Also included Pennsylvania counties of: 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.

Transportation Fee. This fee is charged to all students each term registered for 6 or more credit hours in courses designated as on-campus. This fee will allow students to receive a parking permit (at no additional charge). Students must request the permit via MyYSU portal; the permit will give them unlimited access to shuttle service and admission into designated parking areas. The transportation fee supports the operating and

maintenance costs of campus parking facilities, roadways and sidewalks, as well as student shuttle service. The fee 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. The transportation fee is refundable only if the student has less than 6 credit hours (in courses designated as on-campus courses) by the last day of the 100% tuition refund period AND they return the permit access card and validation sticker within five days of either the withdrawal date or the last date of the 100% tuition refund period-whichever is earlier. The transportation fee is non-refundable after the 100% tuition refund period and cannot be appealed.

Optional Parking Fee. This fee is optional each term for students registered for less than 6 credit hours in courses designated as on-campus. This fee is charged, upon request of the parking permit via MyYSU portal – and will appear on students' accounts as a 'parking fee'. The 'optional' fee and parking permit, will also allow the student to have unlimited access to shuttle service. Students requesting the parking permit after the 14th day of the term will not have the permit issued or shuttle services made available until payment of the fee. The fee supports the operating and maintenance costs of campus parking facilities, roadways and sidewalks, as well as student shuttle service. The fee 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. The fee is refundable only if the student returns the permit access card, validation sticker, and has less than 6 credit hours in courses designated as on-campus within five days of either the withdrawal date or the last date of the 100% tuition refund period-whichever is earlier. This fee is non-refundable after the 100% tuition refund period and cannot be appealed.

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.

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/matriculation fee to cover costs incurred for the use of University facilities, the development of publications, and other program/registration costs. Students are able to

pay the fee by using the invoice located in their orientation packet or 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 nonrefundable 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 at www.ysu.edu/parking.

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.

Student Fees and Charges

Effective Fall 2014

TUITION

*INSTRUCTIONAL FEE

Undergraduate:

Part-time, 1 to 11 credits	\$270.00	per credit
Full-time, 12 to 16 credit	\$3,240.00	per semester
Undergraduate credits over 16	\$270.00	per credit

Graduate:

Part-time, 1 to 11 credits	\$386.43	per credit
Full-time, 12 to 16 credits	\$4,637.16	per semester
Graduate credits over 16	\$386.43	per credit

Graduate Consortial Programs

Master of Fine Arts	\$TBD	per credit
Master of Public Health	\$TBD	per credit

Graduate Workshops Special Rates

In-state Participant	\$142.69	per credit
Non-Regional Participant	\$152.69	per credit
Nurse Anesthetist Program Surcharge	\$TBD	per semester

Doctoral:

Part-time, 1 to 11 credits	\$386.43	per credit
Full-time, 12 to 16 credits	\$4,637.16	per semester
Doctoral credits over 16	\$386.43	per credit

*GENERAL FEE

(Waived for Beeghly College of Education Off-Campus Graduate Work in Professional Education)

Students registering for 1-11 credits	\$56.97	per credit
Students registering for 12-16 credits	\$683.64	per semester
Students registering for credits over 16	\$52.71	per credit

Beeghly College of Education

(only off-campus Graduate Work in Professional Education)

Regional Delivery Fees (per credit hour)

Level 1 course	\$10.00
Level 2 course	\$20.00
Level 3 course	\$35.00
Level 4 course	\$60.00

Level 5 course	\$75.00	
Level 6 course	\$100.00	
Level 7 course	\$125.00	
Level 8 course	\$160.00	
NON-RESIDENT TUITION SURCHARGE		
Affordable Tuition Advantage		
Undergraduate and Graduate:		
Students registering for 1 to 11 credits	\$10.00	per credit
Students registering for 12 to 16 credits	\$120.00	per semester
Students registering for credits over 16	\$10.00	per credit
Non-Regional Service Area:		
Undergraduate:		
Students registering for 1-11 credits	\$250.00	per credit
Students registering for 12-16 credits	\$3,000.00	per semester
Students registering for excess credits	\$250.00	per credit
Graduate:		
Graduate Students, 1-11 credits	\$133.76	per credit
Graduate Students, 12 to 16 credits	\$1,605.12	per semester
Graduate credits over 16	\$133.76	per credit
Distance Learning:		
Undergraduate and Graduate		
Level 1 12-16 credit	\$3,122.40	
Level 2 12-16 credits	\$3,194.40	
Level 3 12-16 credits	\$3,338.40	
Level 4 12-16 credits	\$3,518.40	
Level 5 12-16 credits	\$3,698.40	
Undergraduate and Graduate credits fewer than 12 and over 16		
Level 1	\$260.20	
Level 2	\$266.20	
Level 3	\$278.20	
Level 4	\$293.20	
Level 5	\$308.20	

***INFORMATION SERVICES FEE**

1-11 credits	\$10.00	per credit
12-16 credits	\$120.00	per semester
Over 16 credits	\$10.00	per credit

COLLEGE FEE (undergraduate students only)

Bitonte College of Health and Human Services Fee (Junior and above)

1-11 credits	\$12.50	per credit
12-16 credits	\$150.00	per semester
Over 16 credits	\$12.50	per credit

College of Science, Technology, Engineering, and Mathematics (Junior and above)

1-11 credits	\$25.00	per credit
12-16 credits	\$300.00	per semester
Over 16 credits	\$25.00	per credit

College of Liberal Arts and Social Sciences (Junior and above)

1-11 credits	\$ 8.50	per credit
12-16 credits	\$102.00	per semester
Over 16 credits	\$8.50	per credit

Beehly College of Education (Junior and above)

Undergraduate with Junior Standing and Above	\$8.00	per credit hour
Undergraduate with Junior Standing and Above	\$96.00 bulk rate,	12-16 hours
Over 16 credits	\$8.00	per credit hour

College of Creative Arts and Communication (All Undergraduates)

Undergraduate	\$9.00	per credit hour
Undergraduate	\$108.00 bulk rate,	12-16 hours
Over 16 credits	\$9.00	per credit hour

Williamson College of Business Administration (Junior and above)

Undergraduate with Junior Standing and Above	\$16.00	per credit hour
Undergraduate with Junior Standing and Above	\$192.00 bulk rate,	12-16 hours
Over 16 credits	\$12.00	per credit hour

*** These fees are required of all students. The non-resident tuition surcharge, college fees, and those listed below may or may not apply.**

HOUSING CHARGES

Room and Board per academic year \$8,645.00

Payable as follows: \$4,322.50 fall semester, and \$4,322.50 spring semester.

Residence Hall Security Deposit (paid first semester) \$200.00

(If a resident does not stay through spring semester, the \$200 deposit is forfeited.)

Single Room Surcharge \$875.00 per semester

Student Housing During Academic Breaks

1-3 days (no meals, per day) \$25.00

Per week (7 meals per week) \$200.00

Summer

Room and Board (10 meals per week)	\$250.00		Per day without permit	\$5.00	
Apartments (room only, per person, per week)	\$200.00		Peace Officer Training Academy Fee	\$300.00	per semester
Voluntary Board Plan (students not in University housing) call Dining Services Ext. 3391			Physical Therapy Doctoral Acceptance Deposit	\$500.00	
Weller House Apartments (room only)	\$ 7,000	per academic year	Proficiency Examination ^{****}	\$45.00	per course
SPECIAL-PURPOSE FEES			Study-Abroad Fee		
ACT Test	\$40.00		Level 1	\$45.00	per semester
College Level Examination Program	\$25.00		Level 2	\$75.00	per semester
Test Fee (CLEP)			Level 3	\$150.00	per semester
Community Counseling Clinic Client Fees (per client)			Technology/Laboratory Materials Fee		
Level 1	\$1.00		Level 1	\$35.00	per course
Level 2	\$5.00		Level 2	\$50.00	per course
Level 3	\$10.00		Level 3	\$65.00	per course
Counseling Prep Comprehensive Exam (CPCE)	\$40.00		Level 4	\$187.00	per course
Credit by Examination ^{***}	\$20.00	per credit	Level 7	\$20.00	per course
Federal Background Check	\$28.00		Level 8	\$85.00	per course
Graduation Fee	\$65.00		Level 9	\$25.00	per course
Graduate Student Application Fee	\$40.00		Level 10	\$200.00	per course
International Graduate Student Credential Evaluation Fee	\$45.00		Level 11 (Co-Op)	\$350.00	per course
Payment Plan Enrollment Fee	\$25.00		Level 12	\$300.00	per course
International Undergraduate Student Credential Evaluation Fee	\$75.00		Level 13	\$100.00	per course
Late Application for Graduation Fee (after 3rd wk. of term)	\$38.50		Transfer Matriculation Fee	\$35.00	
Late Payment Fee	\$50.00	per month	Undergraduate Application Fee (first-time applicant)	\$40.00	
Late Registration Fee	\$75.00		Former student returning	\$0.00	
Late Class Add Fee (per course to be charged for each course added after the last published date to add a class)	\$50.00	per course	Youngstown Early College (pre credit hour)	\$106.00	
MAT Test	\$75.00		Youngstown Early College (full time bulk rate, 12-16 hours)	\$1,272.00	
Processing/Matriculation Fee	\$80.00		SERVICE CHARGES		
MBA Program Fee (per credit hour)	\$40.00		Child Preschool Laboratory Fee	\$150.00	per semester
Performance Music Fee	\$75.00	per credit	Check Replacement Fee	\$25.00	
Parking Permit Students			Computer-Based Placement Re-Test	\$20.00	per test
Fall & Spring Terms assessed 6+ credit hours listed on campus courses (optional 0-5 credit hours)	\$115.00	per semester	Duplicate Diploma Fee	\$40.00	
Parking Permit Students, Summer Term	\$58.00		Finger Printing Fee (per occurrence)	\$37.00	
			Human Performance and Exercise Science Activity: Set by and paid to independent vendor. (variable to cover cost in that course)		
			Credit Card Convenience Fee (student accounts only)	2.75%	
			I.D. Replacement Charge	\$25.00	
			Library Study Carrel Rental	\$25.00	
			PC Data Recovery Service Fee	\$100.00	per occurrence

PC Remediation Service Fee (if 3 or more occurrences per academic year)	\$75.00	
Quantity Food Luncheon	\$8.50	
Quantity Food Dinner	\$10.00	
Reading Tutoring Fee	\$38.00	per semester
Returned Check or Credit Card Charge	\$30.00	
Rich Autism Center Pre-School Programs (per week)	\$125.00	
Student Health Insurance – Go To: http://healthclinic.ysu.edu		
Student Locker Rental	\$25.00	academic year
Thesis Binding	\$25.00	
Transcript Fee	\$6.00	
Transcript Rush Fee (Same day processing, US mail or in person)	\$12.00	
Transcript Rush Fee (overnight express)	\$35.00	

PARKING VIOLATIONS

Class I – Minor violations: 1st offense \$25; 2nd offense \$30; 3rd offense \$35

Class II – Major violations \$100

Class III – Legal violations \$150

For more information go to:

http://web.ysu.edu/gen/ysu/Parking_Violations_m793.html

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http://web.ysu.edu/gen/ysu/Parking_Violations_m793.html

MAAG LIBRARY & CURRICULUM RESOURCE CENTER

Fines & Fees

Overdue charges and loan periods differ by type of materials:

1. **Most Library Books, CDs, Videos:** No daily fines. At (15) days past due: \$10.00 processing fee plus the item replacement cost.*

3. **OhioLINK Materials:** Fine \$0.50 per day to a maximum of \$15.00, plus a \$35.00 processing fee and \$75.00 item replacement cost.

4. **Reserves, MMC All Other, CRC Non-Print:** \$0.55 per hour/day to a maximum of \$11.00, plus a \$10.00 processing fee and the item replacement cost.

For further Circulation policy details, visit

www.maag.ysu.edu/loanperiod -

<http://www.maag.ysu.edu/loanperiod>

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 Affordable Tuition Advantage area pay a lesser surcharge than do students who are legal residents of other states and/or areas. **The Affordable Tuition Advantage** area includes the

counties of Chautauqua, New York; and Allegheny, Armstrong, Beaver, Butler, Clarion, Crawford, Erie, Fayette, Forest, Greene, Indiana, Jefferson, Lawrence, Mercer, Venango, Warren, Washington, and Westmoreland counties in Pennsylvania; and Brooke, Hancock, Marshall, and Ohio counties in West Virginia.

⁺⁺⁺Credit by Examination-Credit awarded for courses based upon the successful completion of a test administered by an academic department at YSU. The course title appears on the transcript but no grade is listed.

⁺⁺⁺⁺Proficiency Examination-A course or courses may be waived based on the performance on an examination. No academic credit is given and the course is not listed on the transcript.

THE UNIVERSITY RESERVES THE RIGHT TO CHANGE ANY FEE WITHOUT NOTICE.

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 beginning of April. Prospective students are strongly encouraged to apply for financial aid as early as possible.

Please visit the Office of Financial Aid and Scholarships - <http://cfweb.cc.ysu.edu/finaid/> website for more information.

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.ysu.edu/finaid - <http://www.ysu.edu/finaid>.

To be considered for scholarships that are needbased, students should file the online 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 internet with free scholarship searches such as www.fastweb.com or www.finaid.org.

For an online searchable listing of all scholarships currently offered at Youngstown State University, visit www.ysu.edu/finaid - <http://www.ysu.edu/finaid>.

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.

1. 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.

2. 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 but no later than February 15 to be considered for this campus-based aid program.
3. 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.
4. 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).
5. 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.
6. 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, Summit Academy, 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.)
7. **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).

8. **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.
9. **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.
10. **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.
11. **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 currently 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://web.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."

Please visit the Office of Financial Aid and Scholarships - <http://cfweb.cc.ysu.edu/finaid/index.cfm> website

for more information.

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.

1. **Federal Perkins Loan**-This federally funded loan has a fixed interest rate of 5%, which is subsidized by the federal government during at least half-time enrollment status. Eligible undergraduate or graduate students must have exceptional financial need and must be enrolled in an eligible program. Repayment of the Perkins Loan begins nine months after graduation, separation, or enrollment of less than half-time status. Awards are subject to availability of funds and will be awarded on a first-come, first-served basis.
2. **Federal Direct Subsidized and Unsubsidized Stafford Loans**-The federally funded Subsidized Stafford Loan has a fixed interest rate, which will be 3.86% beginning July 1, 2014. The subsidized loan interest is paid by the federal government while you are enrolled at least half-time. Federal Unsubsidized Stafford Loan interest accrues from the time the loan is first disbursed. The current interest rate for the Unsubsidized Stafford Loan is a fixed 3.86%. [Note: Graduate students are eligible only for unsubsidized loans at a current 5.41% interest rate.] Repayment of both types of Stafford Loans begins six months after graduation, separation, or enrollment of less than half time. Student borrowers cannot exceed their designated annual loan limits and maximum total debt allowed by federal law.
3. **Federal Direct PLUS Loan**-This federally funded loan has a fixed interest rate, currently set at 6.41%. Parents of dependent undergraduate students are eligible to borrow based on their credit-worthiness. Repayment of the Federal PLUS Loan generally begins sixty days after the final loan disbursement for each academic year.
4. **Federal Direct PLUS Loans for Graduate and Professional Students**-This federally funded loan has a fixed interest rate, currently set at 6.41%. The loan is available to students who are enrolled in a graduate or professional program (a program that leads to a master's or doctoral degree) and who have reached their annual Stafford Loan limit. Additional requirements include minimum half-time enrollment and a good credit history; a credit check is required for approval. Repayment of the loan will begin within 60 days of the loan's reaching full disbursement.

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, tax transcript(s), 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

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 FAFSA: Apply for Aid, then select "How Aid is Calculated" for information to determine EFC. You can also call 1-800-4-FED-AID for additional information.

FAFSA (Free Application for Federal Student Aid): The online 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. To be considered in good academic standing, a student must have a 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, 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

1. **Freshmen** undergraduate students (0-31 hours earned) must complete a **minimum of 55%** of the total hours attempted each year;
2. **Sophomore** undergraduate students (32-62 hours earned) must complete a **minimum of 60%** of the total hours attempted each year;
3. **Junior** undergraduate students (63-93 hours earned) must complete a **minimum of 65%** of the total hours attempted each year;
4. **Senior** undergraduate students (94 + hours earned) must complete a **minimum of 70%** of the total hours attempted each year;
5. **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 receive a 100% refund. 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, postundergraduate, 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. The Satisfactory Academic Progress Committee may also cite and deny students who exhibit a pattern of Federal student aid abuse. 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). See Refund of Fees Upon Withdrawal.

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 \$212 million, is committed to providing this "edge of excellence" for the University, providing more than \$7.4 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 1860 and upper 15% ranking in the student's high school class. (Writing scores are not included in ACT 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 \$5,000, 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 \$4,000, 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 \$3,000, 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 \$2,000, 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://cfweb.cc.ysu.edu/finaid/scholar/est_scholar.cfm. Under "Tools to Search and Estimate," click on "Scholarship Search" for a display of over 489 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 1510A, RSS 1510B), 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 RSS 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, MATH 1501, MATH 1502, MATH 1503, and MATH 1507, will not count toward a degree. For more information regarding math coursework, visit the Department of Mathematics and Statistics' website at <http://web.ysu.edu/stem/math> - <http://web.ysu.edu/stem/math>. For a sample math placement test, visit <http://www.act.org/compass/sample/math.html> - <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.

For more information about Placement Tests please visit the following page web.ysu.edu/testing/ - <http://web.ysu.edu/testing/>.

Foreign Language Placement Test

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

Students 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.

Visit the Foreign Language Requirement - http://web.yosu.edu/gen/class/The_Foreign_Language_Requirement_m928.html page for more information.

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. 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 the Registrar 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.

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.

For more information check the Office of the Registrar - <http://web.yosu.edu/registrar> Website.

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. The last day to add a class is also the last day to change credit hours.

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 major 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.

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 BS 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, visit the Center for International Studies and Programs website web.ysu.edu/cisp - <http://web.ysu.edu/cisp>.

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 5800 or higher level graduate courses, provided such enrollment does not cause the total schedule for the term to exceed 15 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 Admissions.

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^{as} 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.

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.

^{as} 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*.

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 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>).

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 - <http://web.ysu.edu/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.

The faculty believes that classroom activities are essential to learning. The student is responsible for knowing and meeting all course requirements, including tests, assignments, and class participation, as indicated by the course instructor.

The responsibility for work missed during absence rests with the student. The instructor has no obligation to give make-up graded coursework or to review other class work missed by a student as a result of absence except under those specific conditions cited below:

1. Participation in University-sponsored activities. University-sponsored activities are those that are scheduled by academic, student affairs, and athletic units. They include, but are not limited to: intercollegiate athletic competitions; activities approved by academic units, including artistic performances; R.O.T.C. functions; academic field trips; professional conferences; and special events connected with coursework.
2. Government-required activities, such as military assignments, jury duty, or court appearances.
3. Religious observances that prevent the student from attending class.
4. Death of an immediate family member, including father, mother, sister, brother, spouse, children, step-children, step-parent, parent-in-laws, sons-in-law, daughters-in-law, brothers-in-law, sisters-in-law, grandparents, foster parents, foster children, legal guardians, any person who stands in the place of a parent (*loco parentis*), or a domestic partner.
5. Documented personal illness.

Procedure

The following guidelines describe procedures for students, sponsors of appropriate activities, and instructors.

Students shall:

- Provide all scheduled activity dates to their instructors at the start of the semester. For unforeseen absences, notify the instructor as early as possible in the semester of the upcoming

activity.

- In the case of a University-sponsored event, provide the sponsor of the activity with a list of classes that conflict with the proposed activity.
- In the event the absence was due to illness or injury, verification from a health center or medical professional should be presented to the instructor. If the illness was not severe enough to warrant a medical visit, instructors should use their best judgment in determining if it should be excused.
- Be responsible for all material covered in class during their absence. Students are responsible for completing any work resulting from their absence. In no case is an excuse from class to be interpreted as a release from class responsibility.
- Out of courtesy, remind the instructor of the absence approximately one week prior to the absence.

Sponsors of University-sponsored activities shall:

- Provide each participating student with a signed letter for each of the student's affected classes, to be given to their instructors, including time, date, and location of the event. This letter should be provided at the beginning of the semester, or as early as possible in the semester.
- Address any concerns a faculty member might have related to the scheduled activity.

Instructors shall:

- Inform the student about graded coursework that will be or was missed.
- Determine an alternative due date for graded coursework missed.

Last updated November 6, 2014

Grade Requirements

Four categories of academic standing are established: Good Standing, Warning, Probation, and Suspension. These categories 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.

Academic standing is based upon 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+	2.0

To be considered in good academic standing, a student must have a 2.0 grade point average.

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

Students on academic warning are required to establish an action plan for academic success and have a letter of support from a supervisor as per the existing student employment policy.

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.

Policy Effective Spring 2015

Last modified November 6, 2014

Transcripts

The official transcript is a record of all coursework taken at Youngstown State University. Transcripts may be ordered online at the YSU website -

http://web.ysu.edu/gen/ysu/Transcript_Request_m1573.html 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 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 - <http://ysu.edu/thecode.pdf> is available online at the YSU homepage - <http://wwwdev.ysu.local/> 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 - <http://ysu.edu/thecode.pdf>, which is available online at the YSU homepage - <http://wwwdev.ysu.local/> 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 web.ysu.edu/registrar - <http://web.ysu.edu/registrar>). Legal documentation (marriage license, passport, divorce document, court order, naturalization papers) must accompany the form. This documentation may also be presented to the Office of the Registrar.

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. An 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.

Also, the requirement for consent does not apply to the following:

- Requests by officials of another institution where the student seeks to enroll or is already enrolled for purposes related to enrollment or transfer.
- Requests in compliance with a lawful subpoena or judicial order.
- Requests in connection with a student's application for or receipt of financial aid.
- Requests by state authorities and agencies specifically exempted from the prior consent requirements by the Act, conducting studies on behalf of the University, if such studies do not permit the personal identification of students to any persons other than to representatives of such organizations and if the personal identification data is destroyed when no longer needed.
- Information submitted to accrediting organizations.
- Requests by parents of a dependent student, when claimed by a parent on one's Federal Income Tax Return.
- In the case of a health or safety emergency, the University may release information from education records to appropriate persons in connection with an emergency, if the knowledge of such information is necessary to protect the health or safety of a student or other persons.
- To authorized federal officials who have need to

audit and evaluate federally-supported programs.

- The results of any disciplinary proceeding conducted by the University against an alleged perpetrator of a crime of violence or non-forcible sex offense to the alleged victim of that crime.
- Disclosure to a parent of an underage student in violation of University policy governing the use or possession of alcohol or drugs.

(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:

1. name;
2. address (local, home, and email);
3. telephone listing (campus and home);
4. enrollment status (e.g., full-time, part-time, withdrawn);
5. field of study (including college of enrollment, major and campus);
6. participation in officially recognized activities and sports;
7. weight and height of members of athletic teams;
8. dates of attendance and graduation;
9. degrees, honors, and awards received;
10. previous educational institutions or agencies attended; and
11. 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.

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

Family Policy Compliance Office
U.S. Department of Education

Any questions about this notification should be directed to the Registrar - <http://web.ysu.edu/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. The application is available on the student's YSU Portal.

If the student does not graduate for the term which the application has been filed, the student must reapply. 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 below.

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 Minors offered by College.

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.

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.

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.

See the **Baccalaureate Degree General Education Requirements** for more information.

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, Survey of Mathematics and MATH 2625, Statistical Literacy and Critical Reasoning. The substitute courses include:

- MATH 1510, College Algebra*
- MATH 1513, Algebraic and Transcendental Function
- MATH 1552, Applied Mathematics for Management
- MATH 1570, Applied Calculus 2
- MATH 1571, Calculus 1*
- MATH 1572, Calculus 2*
- MATH 1581H, Biomathematics 2
- MATH 1585H, Calculus 1 Honors
- MATH 2652, Mathematics for Early Childhood Teachers 2
- MATH 2665, Foundations of Middle School Mathematics 2
- MATH 2670, Applied Calculus 2
- MATH 2686H, Calculus 2 Honors
- PHIL 2619, Introduction to Logic
- STAT 2601, Introductory Statistics*

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

Total 14 courses

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 ENGL 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.

Students seeking an Associate of Arts degree should take only OTM approved courses.

Courses with an * are part of the Ohio Transfer Module and are guaranteed to transfer to any of Ohio's public institutions of higher education as a subject area general education credit. See web.ysu.edu/degreeaudit - <http://web.ysu.edu/degreeaudit> for an up-to-date list of OTM approved courses.

Arts and Humanities

- *AFST 2601: Introduction to Africana Studies 2**
- *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 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 2603: Journalism Ethics and Social Responsibilities* (also listed as ENGL 2603)
- JOUR 2605: Journalism as Literature (also listed as ENGL 2605)
- MUHL 2616: Survey of Jazz*
- MUHL 2617: Film Music*
- MUHL 2618: Rock 'n Roll to Rock*
- *MUHL 2621: Musical Literature and Appreciation**
- MUHL 2622: 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 1560: Introduction to Philosophy
- PHIL 1561: Technology and Human Values
- PHIL 1565: Critical Thinking
- PHIL 2608: The Examined Life
- PHIL 2610: Global Ethics (also listed as REL 2610)
- PHIL 2625: Introduction to Professional Ethics*â
- PHIL 2626: Engineering Ethics*â
- PHIL 2627 (formerly 3723): Law and Criminal Justice Ethics*â
- PHIL 2628: Business Ethics*â
- PHIL 2635: Ethics of War and Peace
- PHIL 3711: General Ethics
- *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 Asian 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*

⌚ 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 1*
- BIOL 1552: Anatomy & Physiology 2*
- BIOL 2601: General Biology: Molecules and Cells*
- BIOL 2602: General Biology: Organisms and Ecology*
- CHEM 1505: Allied Health Chemistry 1*
- CHEM 1506: Allied Health Chemistry 2*
- CHEM 1515: General Chemistry 1*
- CHEM 1516: General Chemistry 2*
- GEOL 2611: Geology for Engineers
- PHYS 1501: Fundamentals of Physics 1*
- PHYS 1502: Fundamentals of Physics 2*
- PHYS 2601: General Physics for Applied Medical Studies 1*
- PHYS 2602: General Physics for Applied Medical Studies 2*
- PHYS 2607: Physical Science for Middle and Secondary Education
- PHYS 2610: General Physics 1*
- PHYS 2611: General Physics 2*

Labs that are not associated with courses used to fulfill the Natural Science requirement do not fulfill the Natural Science lab requirement.

Social Science

- AFST 2600: *Introduction to Africana Studies 1*
- 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 2* (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*
- CMST 2600: *Communication Theory*
- 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*
- FNLG 2660: *Women in the Ancient World*
- 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: Introduction to United State History*
- HIST 1511: *World Civilizations to 1500**
- HIST 1512: *World Civilizations from 1500**
- HIST 2605: *Turning points in U.S. History 1* (also listed as AMER 2605)*
- HIST 2606: *Turning Points in U.S. History 2* (also listed as AMER 2606)*
- PHLT 1531: *Fundamentals of Public Health*
- POL 1550: *Introduction to Political Science**
- POL 1560: *American Government**
- POL 2640: *Contemporary World Governments**
- 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 Communications**
- 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.

Social and Personal Awareness

Domestic Diversity

- AFST 2600: *Introduction to Africana Studies 1**
- AFST 2601: *Introduction to Africana Studies 2*
- AMER 2601: *American Identity*
- AMER 2606: *Turning Points in U.S. History 2* (also listed as HIST 2606)
- CMST 2610: *Intercultural Communication*
- ECON 1503: *Rich and Poor: Diversity and Disparity in the U.S. Workplace**
- ENGL 2617: *Women in Literature**
- ENGL 2618: *American Literature and Diversity**
- ENGL 2651: *Introduction to Language*

- HIST 2606: *Turning Points in U.S. History 2* (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 2631: *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 Civilization from 1500**
- MUHL 2621: *Music Literature and Appreciation**
- POL 1550: *Introduction to Political Science**
- POL 2640: *Contemporary World Governments**
- REL 2601: *Introduction to World Religions**
- REL 2617: *Introduction to Asian 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 Healthcare* (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. See web.ysu.edu/degreeaudit - <http://web.ysu.edu/degreeaudit> for an up-to-date list.

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.

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 offers several services and programs and can be found on the web at web.ysu.edu/csp - <http://web.ysu.edu/csp>.

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
- Starfish Early Alert 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.ysu.edu/gen/ysu/Adult_Learner_Services_m692.html - http://web.ysu.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 as amended 2008 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.ysu.edu/gen/ysu/Disability_Services_m695.html - http://web.ysu.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 Mentors, 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, the mechanics of 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 mentoring
- Starfish Early Alert 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
- Starfish Early Alert 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> - <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.

For additional information, see the CSP/Supplemental Instruction website - http://web.ysu.edu/gen/ysu/Supplemental_Instruction_Services_m696.html or call 330-941-7253.

Career Services

Your connection to careers and employment opportunities begins with the Office of Career 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 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 career exploration; job postings from hundreds of local, regional, and national employers; a comprehensive career resource information center; career planning programs and workshops offered each semester; an on-campus recruiting program which annually brings employers to the YSU campus to interview students for employment after graduation; and annual career fairs.

Central to the operation of the Office of Career Services is *PenguinLink* (software by Symplicity), a totally web-based software system that makes it possible for currently enrolled students and YSU alumni to connect with hiring employers 24-hours-a-day/7-days-a-week. Through *PenguinLink*, students and alumni registered with Career 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, receive notification of recruiting events and sign up for interviews with employers recruiting on campus.

For more information visit Career Services - <http://web.ysu.edu/careerservices/>.

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 <http://web.ysu.edu/counselingservices> -

<http://web.ysu.edu/counselingservices>.

Office of Veterans Affairs

Located in Room 309, Tod Hall, the Office of Veterans Affairs (OVA) serves as a central location to discuss issues, questions, or concerns current and prospective military and veteran students may have regarding their enrollment. The university recognizes the sacrifice of military service and waives the undergraduate application and new student orientation fees for all veterans and currently serving military members. 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 military and veteran students are then qualified for the following veteran benefits at YSU:

- Priority registration
- Enrollment into select "Veterans Only" GER courses
- Voluntary membership into the "Armed Forces Student Association" (YSU's Student Veteran Organization)
- Advocacy and counseling services
- Access to the OVA E-Newsletter
- Special recognition at graduation

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.

Youngstown State University and the OVA are proud to announce the construction of a brand new Veterans Resource Center (VRC) on campus at 631 Wick Ave. The 6000 square foot, fully handicap accessible center will be the first of its kind at any university in Ohio. The VRC will feature lounge space, a computer lab, meeting rooms, a community/class room, ample office space for outside veteran-related organizations and much more. The VRC is projected to be fully functional and open to all veteran and military students by Fall 2014.

Students and all interested parties can contact the OVA by visiting our web site at web.ysu.edu/veterans - <http://web.ysu.edu/veterans> - veterans@ysu.edu, or calling the office at 330-941-2503/2525. Individual person-to-person meetings are available and 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 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 machines, 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.

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 with all your favorites; Jamba Juice (smoothies, juices, and steel cut oatmeal); the KC Food Court-which includes Denny's Fresh Express (bold breakfasts, grilled burgers, hot sandwiches, and fresh salads); Chop'd & Wrap'd (made to order salads and wraps); 2.Mato (classic Italian favorites including specialty pizzas); the Candy Counter, and the HUB's Dunkin' Donuts and Mondo Subs (made to order gourmet subs and flatbread sandwiches). On the upper level of Kilcawley is Pete's Place Restaurant which will reopen fall semester as a Chick-fil-A Restaurant. Visit www.dineoncampus.com/ysu - <http://www.dineoncampus.com/ysu> for meal plans, catering, campus places to eat, and today's menus including sustainability and nutritional

information.

The Kilcawley Candy Counter is a popular place for quick snacks and beverages, along with U.S. postage stamps and single-dose healthcare items. A campus tradition for 40 years, students visit the Kilcawley Candy Counter to choose delicious chocolates and candy favorites from the large window display of classic glass candy jars.

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. 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 YSU meal plan brochure is available at <http://mealplans.ysu.edu>. For answers to frequently asked meal plan questions or to purchase a meal plan, visit the YSU Chartwells webpage at www.dineoncampus.com/ysu - <http://www.dineoncampus.com/ysu> or stop in the Card Office located in the Kilcawley Center Staff Office. Cash, credit card, or check is accepted.

Chartwells Dining Services Office is located on the upper level of Kilcawley Center near the Student Government offices. Contact them at 330.941.3391. Chartwells provides a full catering menu for small group functions to large dinner buffets. Once you have secured a room reservation in Kilcawley Center, or a site location on or off campus, Chartwells catering directors will help you coordinate every detail to ensure your event is a success-whether you are planning a quick box lunch or an elaborate buffet. Contact the Chartwell Catering Department at 330.941.1979 or visit www.dineoncampus.com/ysu - <http://www.dineoncampus.com/ysu>.

The YSU Bookstore is located on the upper level of Kilcawley Center; along with the convenience store (C-store), and the offices of Student Government, Student Diversity Programs, and Student Activities/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 Student 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 Office of Upward Bound in Jones Hall, the ombudsperson serves as an advocate, a confidant, a mediator, a helper, and a listener. Visit <http://ombuds.ysu.edu/> - <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 - <http://cc.ysu.edu/student-services/health/index.shtm> 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 web

page at <http://healthclinic.ysu.edu/> - <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.

For more information click on the link to go to the main Day Care - <http://www.weecareohio.com/partners.html>page.

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 WCOOnline 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. Appointments outside regular hours, online advice for distancelearning 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. For more information visit the Mathematics Assistance Center - http://web.ysu.edu/gen/stem/Math_Assistance_Center_m1303.htmlwebsite.

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, RSS 1510B and RSS 1510C—courses students may be mandated to take based on the COMPASS® Reading Test (CRT). RSS 1570, *Approaches to Professional Assessments*, is currently designed to assist students preparing for the CORE. Only student who are taking or completed their college level English and math requirements may register for this course. Additional services offered by the Reading and Study Skills Center include individual tutoring, college success workshops, and assistance with preparation for standardized tests such as APK, 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 workshops and individualized tutoring are free of charge to all registered YSU students. The Center is located in the lower level of Maag Library. For more information contact the Reading and Study Skills Center, telephone 330-941-3099, e-mail rdgstudyskillsctr@ysu.edu, or visit the website: web.ysu.edu/rdgstudyskills - <http://web.ysu.edu/rdgstudyskills>.

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, providing constant access from home or office.

Maag Library is a member of OhioLINK, a statewide 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 Information Technology Services (ITS) mission is to provide services to meet the technology needs of students, faculty, and staff. ITS includes Computer Services, Media and

Academic Computing, ITS Operations, Website Management, and Network Telecommunications and Security.

The ITS Tech Desk is the primary point of contact for technology customer support needs and is located on the fourth floor of Maag Library. Support is provided by phone and in person. The Tech Desk provides first-level technical support of all the YSU computer systems and assists faculty, staff, and students with password-related problems, helps students with installing "academic-related" software, and configuring their devices to connect to the YSU wired and wireless networks. More information is available at: <http://web.ysu.edu/techdesk/> - <http://web.ysu.edu/techdesk/>.

Overall, ITS provides:

- Administrative and Student systems including registration and finance
- Desktop technology support in labs and offices
- Classroom technology support
- Wired and Wireless networking and security
- Telephony technology support (desktop and cellular)
- Data Center Operations
- Website technology support
- Academic graphic support
- Electronics repair
- Academic technology support including training

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.ysu.edu/~maclabs> - <http://www.as.ysu.edu/~maclabs>. Selected classrooms are equipped to facilitate broadcast quality, full-motion video distribution, and distance-learning opportunities. The YSU Network provides faculty, staff, and students the opportunity to access networks and current-generation computer hardware and software via a high-speed state-of-the-art network infrastructure. A Virtual Private Network (VPN) is provided for remote access to campus. A campus-wide wireless network provides mobility for students and employees. AT&T Wi-Fi services are also available for visitors.

For detailed information on technology support and services provided by ITS, see: <http://web.ysu.edu/technology/> - <http://web.ysu.edu/technology/>.

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 and technical writing 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, a Financial Service Lab, and Professional Sales Lab. 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,

respiratory care, human ecology, medical laboratory technology and science, clothing and textiles, medical assisting, emergency medical services, and polysomnography.

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

Campus Computer Labs -
www.as.ysu.edu/~maclabs/ -
<http://www.as.ysu.edu/~maclabs/>

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, 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. This program as well as through other buying, makes thousands of used books available to YSU students for a savings of up to 90% off new book prices.

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. For more information visit our site at <http://web.ysu.edu/testing/> - <http://web.ysu.edu/testing/>.

Center for International Studies and Programs (CISP)

The Center for International Studies and Programs (CISP) - <http://web.ysu.edu/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://web.ysu.edu/eli/> - <http://web.ysu.edu/eli/>.

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 (located under the Credit Hours/Class Standing/Majors section of the *Bulletin*).

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 and 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.

Housing & Residence Life website:
<http://web.ysu.edu/housing> -
<http://web.ysu.edu/housing>.

Kilcawley House

Kilcawley House was constructed in 1965 and has recently undergone a complete renovation. This seven-story building can accommodate 224 students. Kilcawley residents live in double-occupancy rooms, complete with loft-style furniture, wall-to-wall carpeting, cable TV, Internet access, and plenty of flexible 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, 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, 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, lofted, 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 is coed, housing 274 students. The facility, which opened fall 1995, houses participants in the University Scholars Program, BSMD program, and Honors Program.

Enclosed suites rather than traditional rooms accommodate 4-18 residents, with individual rooms branching off each suite area to house two residents. One traditional hallway is located on the first floor. 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 21 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, highspeed 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 33 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 serves students with an on-campus resident meal plan 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> - <http://web.yosu.edu/housing>. 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 Creative Arts and Communication. 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 University Housing, 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 housekeeping 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 department is maintained by Youngstown State University. The department is located in Clingan Waddell Hall at the corner of Fifth Ave. and Wood St.

The staff consists of 28 sworn full time police officers, 88 intermittent sworn police officers, and 6 civilian support staff. All sworn police officers are trained and certified by the Ohio Peace Officer Training Academy and have full police powers. 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 police vehicles, and a computer based record keeping system.

The training of the departmental personnel is ongoing and crime prevention is a departmental priority. During the academic year, various University organizations sponsor educational programs that feature YSU police officers speaking to students and employees about personal safety, awareness, security, rape/acquaintance rape and sexual-assault prevention, as well as the prevention of burglary and vandalism.

The Youngstown State University Police Department has mutual aid agreements with the Youngstown City Police Department, the Mahoning County Sheriff's Department, and a majority of other police Departments in Mahoning County and with other state universities in Ohio. The agreements provide for the Youngstown State University Police Department to exercise the same law enforcement authority when engaged in law enforcement functions as their partners in the various mutual aid agreements, in order to provide a safe and secure environment for the Youngstown State University Community. Certain officers from the department are also members of the Mahoning Valley Law Enforcement Task Force as well as the Mahoning County OVI Task Force. These task forces make available additional resources to the YSU Police Department.

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 dialed through any campus extension. Campus emergency telephones are located throughout campus that will connect you

directly to the YSU Police Department in the event of an emergency. 911 calls made from cell phones are answered by the City of Youngstown Communications Center. If a 911 call is made on a cell phone, it is important for the person to tell the call taker they are calling from the YSU Campus. 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. Statistics collected by the department on crimes occurring on or near campus are submitted to the U.S. Department of Education annually in compliance with the The Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act.

Campus Crime Alerts, as well as other information regarding campus safety, can be viewed at the department website:
<http://www.ysu.edu/police> -
<http://www.ysu.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.ysu.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 8:00 a.m. to 2:00 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 Services

Parking for students is available close to all major campus buildings. Students assessed a transportation fee may order a semester parking permit at no additional charge. Students with the transportation fee must order their parking permit online through the *MyYSU* Portal. Students registered for under six credit hours may opt into the transportation fee by ordering a semester parking permit through the *MyYSU* Portal or purchase a daily parking permit. Valid YSU parking permits are required at all times in all YSU parking lots and decks.

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 can be found on the YSU Parking web page, www.ysu.edu/parking - <http://www.ysu.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 toward enriching and expanding the student experience beyond the

classroom. Participating in student government, intramurals, student publications, art and music groups, and student organizations gives 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.

For more information visit the Student Activities - <http://web.ysu.edu/studentactivities> page.

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 330-941-3580.

Student Organizations

There are over 165 student organizations ranging from academic and social awareness to cultural, Greek, and Student Government. Students are invited to take the first step and discover something that engages their interests. Student organization mailboxes are located in the Student Activities Office, Room 2082, 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/> - <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)
 Black Student Union
 Campus Crusade for Christ
 Catholic Student Association
 Chi Alpha
 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
 Iota Phi Theta Fraternity
 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
 Urban Gaming Club
 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, National Pan Hellenic Council, and Panhellenic groups from which to choose.

For more information visit the Greek Life - <http://web.ysu.edu/greeklife/> page.

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 Association

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.

For more information visit the Student Government - <https://swwww.yсу.edu/sga/> page.

The Jambar

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), a newspaper published twice a week, and *The Penguin Review*, a literary annual, are recognized student publications on campus.

Theater and Dance

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 Creative Arts and Communication, the University Theater presents multiple productions during each academic year, plus a dance recital and numerous student-driven performances.

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 both contemporary 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 both 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 Theater. Besides accommodating major productions, the Spotlight Theater also serves as a laboratory for student directed plays 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.

For more information visit the Theater and Dance - <http://web.yсу.edu/fpa/theater> page.

Music

Many campus musical ensembles are open to all students of the University. For these, see the Dana School of Music in the College of Creative Arts and Communication section of this *Bulletin*.

For more information visit Dana School of Music - <http://web.yсу.edu/fpa/music/>.

Art

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 - <http://www.butlerart.com/>, 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 2nd floor of the College of Creative Arts and Communication's Bliss Hall, is used throughout the year for various student and faculty exhibitions, in addition to exhibitions of visiting artists. The Student Project Gallery located in the lower addition of Bliss Hall, is a space dedicated to give students opportunities to exhibit their artwork.

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 - <http://mcdonoughmuseum.yсу.edu/index2.php> 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.

For more information visit the Department of Art - <http://www.yсу.edu/art/>.

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 Beehly Center or Stambaugh Stadium.

See the **YSU Athletics** website www.ysusports.com for more information.

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 - <http://web.yсу.edu/studentactivities>, second floor, Kilcawley Center - <http://www.cc.yсу.edu/student-services/kc/index.shtml>.

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
National Society of Collegiate Scholars
Omega Chi Epsilon-Chemical Engineering
Omicron Delta Kappa-Leadership
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
Phi Sigma Tau-Philosophy
Pi Mu Epsilon-Mathematics Honorary
Pi Sigma Alpha-Political Science
Psi Chi-Honorary Psychology
Sigma Alpha Lambda-National Leadership and Honors Organization
Sigma Pi Alpha-Human Resource Management
Sigma Pi Sigma-Physics
Sigma Tau Delta-English
Sigma Theta Tau-Nursing
Society for Collegiate Journalists
Tau Beta Pi-Engineering Honor Society
Theta Alpha Kappa-Religious Studies & Theology
Upsilon Pi Epsilon-Computing & Information Disciplines
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.

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.

Nova Award-Outstanding New Student Organization

Recognizes a newly registered student organization exhibiting initiative in organizational development and strong potential to contribute to the quality of life as a recognized student organization at Youngstown State University.

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.

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.

Sirius Award-Student Employee of the Year

This award recognizes student employees who have made outstanding contributions to their employers and demonstrated skills and commitment above and beyond expectations.

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

AVI Leadership Scholarship

The AVI Leadership Scholarship, established in 2013, recognizes outstanding students for their contribution to and leadership in campus activities. Each year up to seven students are awarded \$600 for Fall tuition and fees.

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.

For more information visit the Alumni & Events Management - <http://web.ysu.edu/alumni/page>.

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.

Stambaugh Stadium

The long-time home of the YSU Football program, the Arnold D. Stambaugh Stadium complex is one of the top FCS facilities in the country. The Penguins play all their home games on Beede Field, which features a state-of-the-art artificial-turf surface. The Stadium itself has a seating capacity of 20,630 and has a loge complex that houses 26 individual suites. The building is the location of the Jermaine Hopkins Academic Center, the Athletics Strength and Conditioning Complex, Athletic Training Room, Athletic Ticket Office, ROTC, a travel agency, racquetball courts, three full-length basketball courts and numerous athletics offices. The locker rooms for the softball, soccer, baseball and football programs are also housed in the building.

Atop the stadium and overlooking the city of Youngstown is the DeBartolo Stadium Club. The club provides meeting and dinner/party seating for more than 200 guests and is available to campus and community organizations or individuals. For reservation information, please contact the Athletic Department at 330-941-2385.

Beeghly Physical Education Center

The longest-standing on-campus athletics facility is the Beeghly Physical Education Center. The facility, which was first used in 1972, is home to the basketball, volleyball, and swimming and diving programs. The Department of Human Performance and Exercise Science, the basketball programs offices and many YSU athletic teams are

located in the building. The Beeghly Center court is named after long-time basketball coach Dom Rosselli. The arena has a seating capacity of more than 6,000 and serves as the home court for the volleyball and basketball teams. The Natatorium features four diving platforms and two impressive swimming pools. Also in the new-look building is the Coaches Court, a room used by the YSU Penguin Club. Additionally, Beeghly has faculty offices; 10 classrooms including laboratories for research and kinesiology; physical education for handicapped; dance studio, a rifle range and a fitness center.

YSU Softball Complex

The Youngstown State Softball Complex opened in the spring of 2014 and provides a full-time on-campus home for the Penguins. The facility is located on the west side of campus west of Stambaugh Stadium and just south of Farmers National Bank Field. The lighted complex has access to concessions and restrooms and has seating for more than 200 spectators.

WATTS

The Watson and Tressel Training Site opened in the fall of 2011. One of the more eye-popping buildings on campus, the WATTS is an indoor athletic facility containing a 300-meter competition track, a full-length football field, batting cages, a putting green, protective netting and locker room facilities. At a cost of nearly \$14 million, this facility allows for year-round training for all athletic programs, as well as a competition site for the track and field teams. Students are permitted in the facility at most times and in the winter, the WATTS is open for public use in the evening.

Farmers National Bank Field

YSU's soccer and track and field programs call the brand new Farmers National Bank Field, located on the west end of campus across from Stambaugh Stadium, home. The full-length soccer field and eight-lane 400-meter NCAA regulated track is one of the best in the region. The facility opened in the fall of 2013 and is utilized by the campus recreation department for intramurals throughout the year.

YSU Tennis Courts

The area between Stambaugh Stadium and the WATTS is the location of the YSU Tennis Courts. The tennis facility features 10 lighted hard-surfaced courts that are used for practice and competition.

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/>.

Off-Campus Athletics Facilities

While Youngstown State has some impressive on-campus facilities, programs still utilize areas off campus for events and competition. The baseball program plays all home games at Eastwood Field in Niles. Eastwood Field, a 6,000-plus seat stadium, is home to the Cleveland Indians' short-season Class A affiliate. The golf programs call Mill Creek Park's course its official home, but practice at various courses throughout the area. During the winter portion of its campaign, the tennis programs utilize the Boardman Tennis Center. The BTC features 10 indoor courts for all-year use.

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 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

Bliss Hall

Housing the College of Creative Arts and Communication, 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 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 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. In summer of 2013, the building underwent a \$2.2 million renovation.

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, and special varied laboratories for the Department of Psychology. Building renovations took place summer of 2013 and 2014.

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 Services, Student Life, Payroll, Accounting, Human Resources, Enrollment Management, Records, and the Center for International Studies and Programs.

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 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 is the Center for Student Progress.

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

Various medical artifacts are displayed throughout Cushwa Hall. In the future, a space will be created for the Rose Melnick Medical Museum.

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 University Bursar, 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, 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, Printing Services and Mail Room.
- **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 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 - <http://web.yсу.edu/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, Office of Marketing Communications, the ASECU Credit Union; Office of Equal Opportunity and Policy Compliance; Office of Diversity and Multicultural Affairs; 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 caf   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.

Please see the Public Service Institute - <http://web.ysu.edu/psi> website for more information.

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. For more information visit the Center for Urban and Regional Studies - http://web.ysu.edu/contentm/easy_pages/view.php?sid=25&page_id=913 page.

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, providing training for agency directors, boards and staff members.
3. Conducting community-wide needs assessments and sharing information.
4. Helping organizations to develop strategic plans.
5. Identifying and obtaining grants for community organizations who are working collaboratively to address community needs.

The Center is housed in the Phelps Building. Please visit the Center for Human Services Development - http://web.ysu.edu/contentm/easy_pages/view.php?sid=25&page_id=914 web page for more information. The Center's phone number is 330-941-3469.

Metropolitan Workforce Development (Metro College)

- 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 Metropolitan 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 visit their website at <http://web.ysu.edu/metro> - <http://web.ysu.edu/metro> or 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.

Edutravel

- 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.

For more information visit University/Community Outreach - http://web.ysu.edu/gen/ysu/Programs__Courses_For_Retirees_m846.html.

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://bcoe.ysu.edu/gen/coe/Counseling_Clinic_m70.html - http://bcoe.ysu.edu/gen/coe/Counseling_Clinic_m70.html.

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.

For more information visit The Ohio Small Business Development Center - http://web.ysu.edu/contentm/easy_pages/view.php?page_id=58&sid=20&menu_id=344 page.

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 Cushwa 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 (Northeastern 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. 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 the Honors Program section of the *Bulletin* for more information .

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.ysu.edu/class/icp> - <http://web.ysu.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 - <http://web.ysu.edu/admissions> or on the web at <http://www.neomed.edu>.

Students interested in the NEOMED College of Pharmacy should consult with an 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.

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.

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 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) and the Institute of International Education (IIE). 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://web.yzu.edu/eli/> - <http://web.yzu.edu/eli/>.

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.

For more information visit this link http://ysu.edu/associate_degree/techprep - http://ysu.edu/associate_degree/techprep.

Youngstown Early College

Youngstown Early College - <http://64.18.34.22/schoolsites/yec/index.html>, 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 via 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 campuses of Lorain County Community College (LCCC) and Lakeland Community College (LCC). Students in this program are registered at YSU and attend classes at the LCCC or LCC. Courses are taught by YSU faculty members, using interactive video conferencing systems. LCCC and LCC campuses provide 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 offers Bachelor of Social Work degree completion programs at the following off-campus sites:

- Butler Community College (Butler, Pennsylvania)
- Lakeland Community College (Kirtland, Ohio)
- Loraine Community College (Elyria, Ohio)
- Stark State College (North Canton, Ohio)

Students in these programs take course work at the host community college and combine credits earned with YSU social work courses taught on the site of the respective community college to fulfill requirements for the BSW degree. All YSU instruction is provided by YSU faculty members through face-to-face meetings, telephone, or video conferencing. Students have access to Ohio LINK online research services and student support available on the community college campus.

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 <http://web.ysu.edu/metrocredit> - <http://web.ysu.edu/metrocredit>.

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.

Metro Credit Education Outreach

College in High School

The YSU College in High School program (CHS) offers 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 (web.ysu.edu/chs - <http://web.ysu.edu/chs>) 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 the Early Admissions Option Program (EAOP). Details may be obtained from local high school guidance offices or the Metro Credit Education Outreach Office.

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 Metro Credit Education Outreach Office 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 Metro Credit Education Outreach Office.

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:

1. All Leslie H. Cochran University Scholars are enrolled in the Honors Program.
2. 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.
3. 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.
2. 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.
3. 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.
4. 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.
5. 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:
 1. a minimum of six semester hours of honors work within their first 30 undergraduate hours;
 2. at least 12 total hours of honors work within their first 60 hours;
 3. 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:

1. Of the 24 hours, at least twelve hours of honors general education courses distributed as follows:
 - (a) At least one honors course from three of the five general education requirements (GER) knowledge domains or basic skills (visit www.ysu.edu/ebulletin/general-information/general-education-requirements for more information).
2. At least six hours of honors work must be upper-division courses.
3. At least six hours of honors course work shall be taken from actual honors classes (opposed to contract honors credit).
4. At least one full credit hour of Honors Seminars or University Honors Seminars.
5. 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 completed 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 or essential skills 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" - http://web.ysu.edu/gen/ysu/Forms_m4477.html available in the Honors Office and on the Honors homepage - <http://web.ysu.edu/honors/>.

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.

University Administration

Ohio Board of Regents

The Ohio Board of Regents - <https://www.ohiohighered.org/board>, a nine-member advisory board to the chancellor with two ex-officio representatives from the state legislature, was created in 1963 by the general assembly. Members of the Board of Regents are appointed by the governor with the advice and consent of the senate.

Responsibilities of the board include, developing an independent annual report on the Condition of

Higher Education in the Ohio, and issuing an annual performance review of the chancellor. The board is also responsible for advising the chancellor on issues of statewide importance affecting higher education.

<u>MEMBER</u>	<u>TERM EXPIRES</u>
Chancellor John Carey - https://www.ohiohighered.org/chancellor-john-carey	
Timothy M. Burke - https://www.ohiohighered.org/node/159 , Secretary	2014
Vinod K. Gupta - http://www.ohiohighered.org/node/470 , Chair	2017
Lana Z. Moresky - https://www.ohiohighered.org/node/160 , Vice Chair	2014
Patricia A. Ackerman - https://www.ohiohighered.org/node/158	2014
Thomas Humphries - https://www.ohiohighered.org/node/2185	2018
Kurt Kaufman - https://www.ohiohighered.org/node/2319	2018
Elizabeth Kessler - https://www.ohiohighered.org/node/2469	2016
Virginia M. Lindseth, Ph.D - https://www.ohiohighered.org/node/918	2018
James M. Tuschman - https://www.ohiohighered.org/node/155	2014
Sen. Peggy Lehner - http://www.ohiohighered.org/node/161 (ex-officio)	
Rep. Gerald L. Stebelton - http://www.ohiohighered.org/node/162 (ex-officio)	

University Administration

<u>University Board of Trustees</u>	<u>Term Expires</u>
Sudershan K. Garg, M.D	2015
Harry Meshel	2016
Carole S. Weimer., Chair	2017
Leonard Schiavone, Vice Chair	2018
Delores E. Crawford	2019
David C. Deibel	2020
James B. Greene	2021
James "Ted" Roberts	2022
John R. Jakubek	2023
Franklin S. Bennett Jr., Secretary	Not a Trustee

<u>Executive Level</u>	<u>Position</u>
James P. Tressel, M.A.	President
Neal P. McNally, M.P.A.	Interim Vice President for Finance and Administration
Teri Riley, Ph.D.	Interim Provost and Vice President of Academic Affairs
Vacant	Vice President for University Advancement

Jack P. Fahey, M.A. Vice President for Student Affairs

<u>Office of the President</u>	<u>Position</u>
James P. Tressel, M.A.	President
Holly A. Jacobs, J.D.	General Counsel
Shannon Tirone, A.B.	Chief of Staff
Ronald A. Strollo, B.S.	Executive Director, Intercollegiate Athletics

<u>Division of Academic Affairs</u>	<u>Position</u>
Teri Riley, Ph.D.	Interim Provost and Vice President of Academic Affairs
Kevin Ball, Ph.D.	Associate Provost, Academic Programs and Planning
Martin Abraham, Ph.D.	Dean, STEM College of Science, Technology, Engineering and Mathematics
Bryan DePoy, D.M.	Dean, College of Creative Arts and Communication
Charles L. Howell, Ph.D.	Dean, Beeghly College of Education
Sal Sanders, Ph.D.	Associate Dean, School of Graduate Studies and Research
Betty Jo Licata, Ph.D.	Dean, Williamson College of Business Administration
Joseph L. Mosca, Ph.D.	Dean, Bitonte College of Health and Human Services
Ana Torres, B.B.A.	Interim Co-Director, Maag Library
Jeffrey A. Trimble, M.L.S.	Interim Co-Director, Maag Library
Jane Kestner, Ph.D.	Interim Dean, CLASS College of Liberal Arts and Social Sciences

<u>Division of Finance and Administration</u>	<u>Position</u>
Neal McNally, M.P.A.	Interim Vice President for Finance and Administration
Katrena S. Davidson, CPA, MBA	Controller
John Hyden, B.C.T.	Executive Director, University Facilities

<u>Division of University Advancement</u>	<u>Position</u>
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<u>Division of University Advancement</u>	<u>Position</u>
Vacant	Vice President for University Advancement
Vacant	Chief Development Officer, University Development
Jacquelyn LeViseur	Director of Alumni and Events Management
Gary Sexton, M.M.	Director of WYSU-FM
Mark Van Tilburg, M.F.A.	Executive Director, Marketing and Communications

<u>Division of Student Affairs</u>	<u>Position</u>
Jack P. Fahey, M.A.	Vice President for Student Affairs
Gary D. Swegan, M.A.	Associate Vice President for Enrollment Planning and Management
Jeanne Herman, B.S. in B.A.	University Registrar
Jonelle Beatrice, M.Ed.	Executive Director, Student Life
Matthew Novotny, B.A.	Executive Director, Student Services

<u>Information Technology Services</u>	<u>Position</u>
Ken Schindler, M.B.A.	Associate Vice President/Chief Technology Officer
Richard Marsico, B.S.	Director, Computer Services
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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

THOMAS MARAFFA
Faculty Emeritus
Retired 2014

PATRICIA D. MARTIN
Administrator Emeritus
Retired 1995

SCOTT MARTIN
Faculty Emeritus
Retired 2014

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 McDougal
Faculty Emeritus
Retired 2011

RICHARD McEWING
Faculty Emeritus
Retired 2013

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

ROCCO A. Mediate
Director Emeritus
Retired 1996

JAGDISH C. MEHRA
Faculty Emeritus
Retired 2003

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

DARYL MINCEY
Faculty Emeritus
Retired 2014

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

MICHAEL MOSELEY
Faculty Emeritus
Retired 2012

LOYAL B. MOULD
Professor Emeritus of Music
Retired 1985

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

JAMES OLIVE
Administrator Emeritus
Retired 2013

WENDELL E. ORR
Professor Emeritus
Retired 1992

BARBARA C. ORTON
Administrator Emeritus
Retired 2003

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

ZBIGNIEW PIOTROWSKI
Faculty Emeritus
Retired 2013

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

JAMES PUSCH
Faculty Emeritus
Retired 2013

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

ROBERT ROLLIN
Faculty Emeritus
Retired 2014

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

JOHN RUSSO
Faculty Emeritus
Retired 2013

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

PAULINE V. SATERNOW
Administrator Emeritus
Retired 2006

LOWELL J. SATRE
Faculty Emeritus
Retired 2003

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. SCHAIPIER
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 Emeritu
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

JANE SHANABARGER
Faculty Emeritus
Retired 2013

MICHAEL A. SHEPHERD
Administrator Emeritus
Retired 2007

NANCIE M. SHILLINGTON
Faculty Emeritus
Retired 2000

THOMAS A. SHIPKA
Faculty Emeritus
Retired 2006

SHARON P. SHIPTON
Faculty Emeritus
Retired 2010

VAN J. SIATRAS
Administrator Emeritus
Retired 1996

MATTHEW SIMAN
Professor and Chairperson Emeritus
Retired 1992

CHARLES R. SINGLER
Faculty Emeritus
Retired 2005

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

GARY STANEK
Faculty Emeritus
Retired 2014

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

LINDA TESSIER
Faculty Emeritus
Retired 2014

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

JAMES R. TOEPFER
Faculty Emeritus
Retired 2007

EDWARD B. TOKAR
Faculty Emeritus
Retired 2006

MARK TONCAR
Faculty Emeritus (posthumously)
Deceased 2014

GLORIA D. TRIBBLE
Professor Emeritus
Retired 1998

CAROL TRUBE
Administrator Emeritus

Retired 2014

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

RICHARD WALKER
Faculty Emeritus
Retired 2014

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

MARY LOU WEDEKIND
Professor Emeritus of Health and Physical
Education
Retired 1988

TINA WEINTZ
Administrator Emeritus
Retired 2014

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 WILCOX
Faculty Emeritus
Retired 2014

JOHN WILKINSON
Professor Emeritus
Retired 1996

JUDITH B. WILKINSON
Faculty Emeritus
Retired 2002

JANET WILLIAMS
Faculty Emeritus
Retired 2013

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 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. Dobbelstein
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. Dobbelstein
Chemistry

1993-1994
Madeleine Haggerty
Allied Health

Ikram Khawaja
Geology

1994-1995
James C. Morrison
Psychology

Susan Russo
Art

1995-1996
John J. Buoni
Mathematics and Statistics

Joseph Edwards
Dana School of Music

1996-1997
Thomas A. Shipka
Philosophy & Religious Studies

Sandra W. Stephan
English

1997-1998
Warren Young
Physics and Astronomy

1998-1999
Daryl W. Mincey
Chemistry

1999-2000
Philip Ginnetti
Teacher Education

Ikram Khawaja
Geology

2000-2001

Paul C. Peterson
Biological Sciences

Richard L. Walker
Human Performance and Exercise Science

2001-2002

Tod Porter
Economics

Nathan P. Ritchey
Mathematics and Statistics

2002-2003

Karen Duda
Computer Science and Information Systems

2003-2004

Robert Beebe
Educational Administration, Research and Foundations

Tammy King
Criminal Justice

2004-2005

Daniel J. O'Neill
Communication and Theater

Charles R. Singler
Geological and Environmental Sciences

2005-2006

Joseph Mosca
Social Work

2006-2007

Susan Russo
Art

Joseph Mistovich
Health Professions

2007-2008

Gary M. Salvner
English

Jalal Jalali
Electrical and Computer Engineering

2008-2009

Nancy C. Landgraft
Physical Therapy

2009-2010

Dora L. Bailey
Teacher Education

Vernon Haynes
Psychology

2010-2011

Daniel Suchora
Mechanical and Industrial Engineering

2011-2012

Qi Jiang
Sociology, Anthropology, and Gerontology

Nathan Ritchey
Mathematics and Statistics

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
Music

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 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 Kilcawley 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 Faires
Professor of Mathematics

2012 Heritage Award

Glorianne M. Leck
Professor of Education

Charles McBriarty

Vice President for Student Affairs

2013 Heritage Award

Leslie Domonkos
Professor of History

Saul Friedman

Professor of History

2014 Heritage Award

Alfred Bright
Professor of Art

John R. White

Chair and Professor of Sociology and Anthropology

Ohio Residency

Ohio student residency for state subsidy and tuition surcharge purposes

1. 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.

2. 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:

1. VISTA, Americorps, city year, the peace corps, or any similar program as determined by the chancellor of the Ohio board of regents; or
2. An elected or appointed public official for a period of time not exceeding twenty-four consecutive months.

3. 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:
 1. 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.
 2. 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.

4. Additional criteria which may be considered in determining residency may include but are not limited to the following:

1. Criteria evidencing residency:

1. If a person is subject to tax liability under section 5747.02 of the Revised Code;
2. If a person qualifies to vote in Ohio;
3. If a person is eligible to receive Ohio public assistance;
4. If a person has an Ohio's driver's license and/or motor vehicle registration.

2. Criteria evidencing lack of residency

1. 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);
2. 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.

5. 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.

6. 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 nonresident 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

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 2012-2013 Academic Year January 31, 2014						
Institution Name: Youngstown State University						
Institution Code: 1975						
State	Ohio			Statewide		
Group	Number Taking Assessment ¹	Number Passing Assessment ²	Institutional Pass Rate	Number Taking Assessment ¹	Number Passing Assessment ²	Statewide Pass Rate
All program completers, 2012-13	183	179	98%	5868	5675	97%
All program completers, 2011-12	206	206	100%	6217	6005	97%
All program completers, 2010-11	181	181	100%	6016	5856	97%

Note: In cases where there are less than ten students taking the assessment or license/certificate, the number of passing and pass rate are not reported.

- ¹Number of completers taking one or more assessments within their area of specialization.
- ²Summary level "Number Taking Assessment" may differ from assessment level "Number Taking Assessment" because each student is counted once at the summary level but may be counted in multiple assessments at the assessment level.

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.

Colleges & Programs

Colleges & Programs

**The Warren P.
Williamson, Jr. College
of Business
Administration**

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: Financial Management Track, Finance: Financial Planning Track
- The Department of Management Majors:
Business Administration, Human Resource Management, and Management Information Systems
- The Department of Marketing Majors:
Advertising/Public Relations, Marketing Management

Though the Department of Economics is housed in the College of Liberal Arts and Social Sciences a BSBA in Business Economics is available in the Williamson College of Business Administration.

Students interested in careers in international business may pursue the BSBA degree with a major in international business through an Individualized Curriculum program.

WCBA also houses the Center for Undergraduate Student Services, which includes the director, two professional academic advisors, the Coordinator of Professional Practice and the Internship Advisor. 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: Financial Management Track
- Finance: Financial Planning Track
- Business Administration
- Human Resource Management
- International Business
- Management Information Systems
- Marketing Management

The WCBA also offers an Associate in Labor Studies, Associate in Arts in Business Administration, and Associate in Technical 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.

The Warren P. Williamson, Jr. College of Business Administration -
<http://web.ysu.edu/wcba> -
<http://web.ysu.edu/wcba>

Bachelor's Degree Program-BSBA

New Applicants (Freshman)

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, business administration, human resource management, international business, management information systems, or marketing management.

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/Change of Major

Students with fewer than 32 semester hours will be admitted as pre-business if they have completed ENGL 1550 (C), are eligible for MATH 1507 and have a minimum college GPA of 2.5.

Students with 32 or more semester hours will be admitted as pre-business if they have a minimum college GPA of 2.5 or higher.

Pre-Business Requirements

Most students enter WCBA as a pre-business major. In order to move from pre-business to a degree bearing major and enroll in upper-level business courses a student must have a minimum 2.5 cumulative GPA and successfully complete the following requirements:

REQUIRED GENERAL EDUCATION COURSES

Course	s.h.
ENGL 1550 Writing I (C)	3
ENGL 1551 Writing II (C)	3
PHIL 2628 Business Ethics	3
CMST 1545 Communication Foundations	3
PSYC 1560 General Psychology	3

BUSINESS TOOL COURSES

Course	s.h.
(These courses MUST be completed with the grade of a C or higher)	
MATH 1552 Applied Math for Management	4
ECON 2610 Principles 1: Microeconomics	3
ECON 2630 Principles 2: Macroeconomics	3
ECON 3790 Statistics for Business & Economics	5
BUS 1500 Exploring Business	3
MGT 2604 Legal Environment of Business I	3
ACCT 2602 Financial Accounting	3
ACCT 2603 Managerial Accounting	3
ACCT 2603L Managerial Accounting Spreadsheet Lab	1

Beginning Fall 2014 upon completing these requirements a student must complete an application for admission into the BSBA program AND consult a WCBA Academic Advisor to ensure an official change of major form has been processed. Students who meet the criteria for admission to the BSBA program but fail to complete an application for admission and a change of major form will not be permitted to enroll and/or maintain enrollment in upper-level business classes.

Suggested Sequence of Classes for Business Majors (first two years)**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: Microeconomics	3
ECON 2630 Principles II: Macroeconomics	3
CMST 1545 Communication Foundations	3
PHIL 2628 Business Ethics	3

PSYC 1560 General Psychology	3
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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 Statistics for Business and Economics	5
General Education Requirements - http://web.ysu.edu/ger/	10
MKTG 3702 Business Professionalism	1

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:

- A minimum of 124 semester hours. This degree may be earned in eight semesters if students average 16 hours per semester.
- Completion of all General Education and BSBA requirements.
- The grade of a C or higher in ENGL 1551, MATH 1552, Business Tool courses and Upper-Level Business courses.
- Minimum cumulative GPA of 2.5.
- 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.

A graduation evaluation request must be submitted no later than two semesters prior to a student's intended graduation. It is a student's responsibility to request the evaluation through the student portal system. Once a student has made their request, an evaluation has been processed, and a student has been notified additional minors and certificates cannot be added. Students who exhibit difficulty completing a declared major may have the opportunity to switch majors at the discretion of the Director of Undergraduate Student Services.

ROTC students are permitted specific modifications of the requirement as explained in the Academic Policies and Procedures section. 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.

BSBA (International Business)

330-941-1894

Dr. Bruce Keillor, Director, Williamson Center for International Business.

Students interested in careers in international business may pursue the BSBA degree with a major in international business through an Individualized Curriculum program. 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 under the BSBA Degree Requirements.
- 3. Five courses from the International Business Core which includes:

Course	s.h.
MGT 4854 Managing in Emerging Economies	3
FIN 4838 Financial Plan Development	4
MKTG 4845 International Marketing	3
BUS 4888 International Business Consulting	3
ECON 5811 International Trade	3
BUS 4875 International Business Field Study Tour	1-3
BUS 4860 International Business Internship	1-3

- 4. Functional Core: Completion of a minimum of an additional twelve hours of coursework in accounting, economics, finance, management or marketing.

Business Minor (for non-business major)

COURSE REQUIREMENTS	
Course	s.h.
ACCT 2602 Financial Accounting	3
ACCT 2603 Managerial Accounting	3
FIN 3720 Business Finance	3
MKTG 3703 Marketing Concepts and Practice	3

MGT 3725 Fundamentals of Management	3
MGT 3761 Information Systems for Management	3
MGT 3771 Social Media and E-Commerce	3
or MGT 3789 Operations Management	3
Total Number of Semester Hours	21

**If any of the courses noted previously on this document are part of the students' major, the student must substitute an alternate course from the following list:*

ACCT 3711 Cost Accounting	3
MGT 3750 Managing Individuals in Organizations	3
MKTG 3740 Professional Selling	3

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.

Center of Excellence in International Business

http://web.ysu.edu/gen/wcba/WCBA_Center_of_Excellence_m100.html
http://web.ysu.edu/gen/wcba/WCBA_Center_of_Excellence_m100.html

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.

The Monus Entrepreneurship Center -
<http://web.ysu.edu/monus>
<http://web.ysu.edu/monus>

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.

Center for Nonprofit Leadership -
http://web.ysu.edu/contentm/easy_pages/view.php?page_id=19&sid=20&menu_id=114
http://web.ysu.edu/contentm/easy_pages/view.php?page_id=19&sid=20&menu_id=114

The Ohio Small Business Development Center at Youngstown State University

The Ohio Small Business Development Center (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.

The Ohio Small Business Development Center at Youngstown State University -
http://web.ysu.edu/contentm/easy_pages/view.php?page_id=58&sid=20&menu_id=344
http://web.ysu.edu/contentm/easy_pages/view.php?page_id=58&sid=20&menu_id=344

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.

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.

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 while earning upper-level business academic credit.

Through internships and cooperative education, students can earn academic credit toward their degrees and, will 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.

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.

Other WCBA Minors and Certificates

In addition to the minors in accounting, finance, human resource management, management information systems, marketing, and advertising/public relations already described, the WCBA offers minors in business, entrepreneurship, international business and nonprofit leadership and certificates in enterprise resource planning, entrepreneurship, and

nonprofit leadership.

International Business Minor

COURSE REQUIREMENTS

Course	s.h.
REL 2601 Introduction to World Religions	3
BUS 3715 Principles of International Business	3
MKTG 4845 International Marketing	3
MGT 4890 International Business	3
FIN 4839 International Accounting and Finance	3
<i>Select one:</i>	
MKTG 4842J Special Topics: Exporting	3
or BUS 4875 International Business Field Study Tour	3
or MGT 4880 Special Topics in Management	3
or BUS 4888 The International Business Consulting Practicum	3
Total Number of Semester Hours	18

Lariccia School of Accounting and Finance

330-941-3084

Professors Law, Shaffer (Director), Stout, Tackett, Wolf, Woodlock; Associate Professors Chen, Huber, Petruska, Yang; Assistant Professors Counts, McCullough, Mumaw, Schwartz.

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 an 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.

Lariccia School of Accounting and Finance - http://web.ysu.edu/gen/wcba/Lariccia_School_of_Accounting__Finance_m10.html - http://web.ysu.edu/gen/wcba/Lariccia_School_of_Accounting__Finance_m10.html

Accounting Major

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 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

Beta Alpha Psi, founded in 1919, is an international honor organization for financial information students and professionals. There are over 300 chapters on college and university campuses with over 300,000 members initiated since Beta Alpha Psi's formation.

The primary objective of Beta Alpha Psi is to encourage and give recognition to scholastic and professional excellence in the business information field. This includes promoting the study and practice of accounting, finance and information systems, providing opportunities for self-development, service and association among members and practicing professionals, and encouraging a sense of ethical, social, and public responsibility. 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. The Student Chapter of the IMA is open to all accounting and finance majors. Both organizations host speakers and take tours of local and regional companies and firms.

Accounting students are encouraged to gain real-world experience by participating in internships and/or becoming actively involved in public service such as the Volunteer Income Tax Assistance (VITA). In the VITA program, students prepare actual tax returns for local residents and 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 BS 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.

Accounting Major

(124 Hours for Degree)
Suggested Sequence Major
JUNIOR YEAR:

FALL	
Course	s.h.
FALL ACCT 3701 Intermediate Accounting I	4
ACCT 3711 Cost Accounting	3
MKTG 3703 Marketing Concepts and Practice	3
MGT 3725 Fundamentals of Management	3
Electives	3
Total	16

SPRING	
Course	s.h.
ACCT 3702 Intermediate Accounting II	4
ACCT 3709 Accounting Information Systems	3
FIN 3720 Business Finance	3
BUS 3715 Principles of International Business	3
Business upper-division elective	3
Total	16

SENIOR YEAR: FALL	
Course	s.h.
ACCT 4801 Advanced Accounting	4
ACCT 4813 Federal Tax I	4
MGT 3789 Operations Management	3
Business upper-division electives	6
Total	17

SPRING	
Course	s.h.

ACCT 4808 Auditing	4
MGT 3714 Legal Environment of Business	3
MGT 4850 Strategic Management	3
Business upper-division electives	3
Non-business elective	3
Total	16

Accounting Minor

COURSE REQUIREMENTS

Course	s.h.
ACCT 2602 Financial Accounting	3
ACCT 2603 Managerial Accounting	3
ACCT 3701 Intermediate Accounting	4
ACCT 3702 Intermediate Accounting 2	4
ACCT 3711 Cost Accounting	3
Accounting electives	1-3
Total Number of Semester Hours	18-20

Finance Major

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 analysis 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. In addition, the aging of the "Baby Boom" generation together with changing pension regulations increases the demand for professionals specializing in

retirement planning and investments. 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 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*.

Student Organizations

In addition to Beta Alpha Psi and the student chapter of Institute of Management Accountants, students interested in learning more about the stock market and investing can participate in the Student Investment Fund, a student managed fund that exceeds \$800,000. Through the SIF, students work with faculty members to develop investment strategies, conduct research and make all investment decisions for the fund.

Finance Tracks

There are two tracks in the finance major:

The *Financial Management Track* is the traditional finance track concentrating in financial analysis, investments, insurance, banking, credit, and cash management, leading to careers in corporations, banks and investment firms. The second track is the *Certified Financial Planner™ (CFP®) 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.

Finance Major

(124 Hours for Degree)

FINANCIAL MANAGEMENT TRACK

Suggested Course Sequence

JUNIOR YEAR:

FALL	
Course	s.h.
FIN 2615 Planning Your Financial Future	3
FIN 3720 Business Finance	3
MKTG 3703 Marketing Concepts and Practices	3
MGT 3725 Fundamentals of Management	3
Business upper-division elective	3
Total	15
SPRING	
Course	s.h.

FIN 3730 Investment Planning	4
FIN 4835 Advanced Business Finance	4
MGT 3761 Information Systems for Management	3
BUS 3715 Principles of International Business	3
Business upper-division electives	3
Total	17

**SENIOR YEAR:
FALL**

Course	s.h.
FIN 4853 Financial Analysis	4
Finance upper-division elective	3
MGT 3789 Operations Management	3
Finance upper-division elective	3
Business upper-division elective	3
Non-business elective	3
Total	16

SPRING

Course	s.h.
ACCT 3701 Intermediate Accounting 1 <i>or</i> ACCT 4813 Federal Tax 1	4
MGT 4850 Strategic Management and Leadership	3
Business upper-division electives	3
Non-business elective	3
Finance upper-division elective	3
Total	16

**CERTIFIED FINANCIAL PLANNING TRACK
Suggested Course Sequence
JUNIOR YEAR:**

FALL

Courses	s.h.
FIN 2615 Planning Your Financial Future	3
FIN 3720 Business Finance	3
MKTG 3703 Marketing Concepts and Practice	3
MGT 3725 Fundamentals of Management	3
Business upper-division elective	3
Total	16

SPRING

Course	s.h.
FIN 3726 Risk Management	3
FIN 3730 Investment Planning	4
MGT 3761 Information Systems for Management	3

BUS 3715 Principles of International Business	3
ACCT 4813 Federal tax 1	4
Total	17

**SENIOR YEAR:
FALL**

Courses	s.h.
ACCT 4815 Estate Planning	3
FIN 4833 Retirement Plans and Employee Benefits	4
Finance upper-division elective	4
MGT 3789 Operations Management	3
Business upper-division elective	3
Total	17

SPRING

Course	s.h.
MGT 4850 Strategic Management and Leadership	3
Business upper-division electives	3
FIN 4838 Financial Plan Development	4
Business upper-division elective	3
Non-business elective	3
Total	16

Finance Minor

COURSE REQUIREMENTS

Course	s.h.
FIN 2615 Planning Your Financial Future	3
FIN 3720 Business Finance	3
FIN 3730 Investment Planning	4
FIN 4835 Advanced Business Finance	4
FIN 4836 Financial Markets <i>or</i>	4
FIN 4853 Financial Analysis	4
Finance elective	
Total Number of Semester Hours	18

Department of Management

330-941-3071

*Professors Eunni (Chair), Guzell, Karpak, Katz;
Associate Professors Kos, Peng, Rakestraw, Vendemia;
Assistant Professors Bateman, Dangol, Han, Sole.*

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. 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).

Department of Management - http://web.ysu.edu/gen/wcba/Department_of_Management_m14.html - http://web.ysu.edu/gen/wcba/Department_of_Management_m14.html

Human Resource Minor

COURSE REQUIREMENTS

Course	s.h.
MGT 3725 Fundamentals of Management	3
MGT 3750 Managing Individuals in Organizations	3
<i>*12 credit hours from the following:</i>	
MGT 3705 Fundamentals of Occupational Safety	3
MGT 3715 Labor Law and Negotiations	4
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
MGT 4844 Strategic Human Resource Management	3
Total Number of Semester Hours	18

*If any of the above courses are part of the student's major, an alternate course needs to be substituted. Consult a WCBA Academic Advisor.

Management Information Systems Minor

COURSE REQUIREMENTS

Course	s.h.
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MGT 3725 Fundamentals of Management	3
MGT 3761 Information Systems for Management	3
MGT 5835 Systems Analysis and Design	3
<i>9 credit hours from the following:</i>	
MGT 3771 Social Media & E Commerce	3
MGT 3789 Operations Management	3
MGT 4820 Supply Chain Management	3
MGT 4821 Business Process Integration	3
MGT 4881 Project Management	3
MGT 5865 Database Management Systems	3
Total Number of Semester Hours	18

Management Information Systems Major

(124 Hours for Degree)

Suggested Course Sequence JUNIOR YEAR

FALL	
Course	s.h.
MGT 3761 Information Systems for Management	3
MGT 3725 Fundamentals of Management	3
CSIS 2610 Program & Problem Solving	4
MKTG 3703 Marketing Concepts and Practice	3
Non-business elective	3
Total Number of Semester Hours	16

SPRING	
Course	s.h.
MGT 4881 Project Management	3
Business upper-division elective	3
CSIS 3720 System Configuration & Maintenance	3
FIN 3720 Business Finance	3
MGT 3750 Managing Individuals in Organizations	3
Total Number of Semester Hours	15

SENIOR YEAR FALL	
Course	s.h.
MGT 5835 Systems Analysis & Design	3
MGT 3771 Social Media and E-commerce	3

BUS 3715 Principles of International Business	3
MGT 3789 Operations Management	3
MIS Specialization elective	4
Total Number of Semester Hours	16

SPRING

Course	s.h.
MGT 5865 Database Management Systems	3
MGT 4850 Strategic Management and Leadership	3
MIS Specialization elective	4
Business upper-division elective	3
Non-business elective	3
Total Number of Semester Hours	16

MANAGEMENT INFORMATION SYSTEMS SPECIALIZATION LIST

Course	s.h.
CSIS 3700 Data Structures and Objects	4
CSIS 3701 Advanced Object-Oriented Programming	3
CSIS 3722 Development of Databases	3
CSIS 3723 Networking Concepts and Administration	3
CSIS 3726 Visual/Object-Oriented Programming	4
CSIS 3732 Intranet Database Implementation	3
CSIS 3782 Cisco Networking Academy I	4
CSIS 3783 Cisco Networking Academy II	4
CSIS 4822 Database Applications	3
INFO 3774 Multimedia Technology	4
INFO 3775 Multimedia Authoring	4
INFO 3776 Web Site Development	4
INFO 3777 Computer Technology for Digital Image Processing	4

Enterprise Resource Planning (ERP) Certificate

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.

COURSE REQUIREMENTS

Course	s.h.
MGT 3761 Information Systems for Management	3
MGT 3789 Operations Management	3
MGT 4821 Business Process Integration	3
MGT 4820 Supply Chain Management	3
Total Number of Semester Hours	12

Nonprofit Leadership Minor and Certificate

The Nonprofit Leadership minor and certificate 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.

Nonprofit Leadership Minor

COURSE REQUIREMENTS

Course	s.h.
BUS 3720 Nonprofit Leadership	3
BUS 3780 Financial Management and Fundraising for Nonprofit Organizations (spring only)	3
PREL 3710 Basic Public Relations	3
MGT 3755 Managing Diversity	3
MGT 3725 Fundamentals of Management	3
BUS 3740 Nonprofit Leadership Community Service	1
BUS 4840 Nonprofit Leadership Internship	3
BUS 4841 Nonprofit Leadership Seminar	1
Total Number of Semester Hours	20

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.

Nonprofit Leadership Certificate

The Certificate in Nonprofit Leadership prepares students for entry-level positions in nonprofit organizations. The following courses are required:

COURSE REQUIREMENTS

Course	s.h.
BUS 3720 Nonprofit Leadership	3
BUS 3780 Financial Management and Fundraising for Nonprofit Organizations (spring only)	3
PREL 3710 Basic Public Relations	3
MGT 3725 Fundamentals of Management	3
BUS 3740 Nonprofit Leadership Community Service	1
Total Number of Semester Hours	13

Entrepreneurship Minor and Certificate

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 are interested in starting 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.

Entrepreneurship Certificate (12 s.h.)

COURSE REQUIREMENTS	
Course	s.h.
ENT 3700 Entrepreneurship-New Venture Creation	3
ENT 3750 Entrepreneurship-Small Business Financial Management	3
ENT 4800 Entrepreneurship-Business Plan Development	3
ENT 4850 Entrepreneurship Internship	3
Total Number of Semester Hours	12

Entrepreneurship Minor (18 s.h.)

COURSE REQUIREMENTS	
Course	s.h.
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
<i>Plus two of the following courses (6 s.h.):</i>	
ENT 4850 Entrepreneurship Internship	3
ENT 4851 Field Studies in Entrepreneurship	3
ACCT 1503 Elementary Accounting <i>or</i> 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 Number of Semester Hours	18

Business Administration Major

(124 Hours for Degree)

Suggested Course Sequence JUNIOR YEAR

FALL	
Course	s.h.
MKTG 3703 Marketing Concepts and Practice	3
MGT 3725 Fundamentals of Management	3
FIN 3720 Business Finance	3
BUS 3715 Principles of International Business	3
MGT 3750 Managing Individuals in Organizations	3
Total Number of Semester Hours	15

SPRING	
Course	s.h.
MGT 3761 Information Systems for Management	3
Business upper-division elective	3
Business upper-division elective	3
Business upper-division elective	3
Business upper-division elective	3
Total Number of Semester Hours	15

SENIOR YEAR

FALL	
Course	s.h.
MGT 3789 Operations Management	3

Business upper-division elective	3	Total Number of Semester Hours	16
Business upper-division elective	3		
Business upper-division elective	3		
Business upper-division elective	3		
Total Number of Semester Hours	15		

SENIOR YEAR
FALL

		Course	s.h.	
SPRING Course s.h.		MGT 3789 Operations Management	3	
		MGT 3715 Labor Law & Negotiations	4	
		MGT 4819 Selection, Training & Development	4	
	MGT 4850 Strategic Management and Leadership	3	Human Resources upper-division elective	3
	Business upper-division elective	3	Management upper-division elective	3
	Non-business elective	10	Total Number of Semester Hours	17
	Total Number of Semester Hours	16	SPRING	1

Human Resource Management Major

(124 Hours for Degree)

Suggested Course Sequence

JUNIOR YEAR

FALL	
Course	s.h.
FIN 3720 Business Finance	3
MKTG 3703 Marketing Concepts and Practice	3
MGT 3725 Fundamentals of Management	3
MGT 3750 Managing Individuals in Organizations	3
Business upper-division elective	3
Total Number of Semester Hours	15

SPRING	
Course	s.h.
MGT 3761 Information Systems for Management	3
MGT 4810 Compensation and Performance Appraisal	4
BUS 3715 Principles of International Business	3
Non-business elective	3
Management upper-division elective	3

Course	s.h.
MGT 4850 Strategic Management and Leadership	3
MGT 4844 Strategic Human Resource Management	3
MGT 4845 Projects in Human Resource Management	1
Business upper-division elective	3
Non-business elective	6
Total Number of Semester Hours	16

Department of Marketing

330-941-3080

Professors Keillor (Chair); Associate Professors Reday, Wang-Ying; Assistant Professors Fowler, Song, Ulusoy.

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 concentrate in specific areas of marketing by selecting courses in one of three tracks:

- Marketing: Business Industrial
- Marketing: Consumer Retail
- Marketing: Management

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.

Department of Marketing -
http://web.yzu.edu/gen/wcba/Department_of_Marketing_m15.html
-
http://web.yzu.edu/gen/wcba/Department_of_Marketing_m15.html

Advertising and Public Relations Major

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 pre-business course requirements.

Advertising/Public Relations Major

(124 Hours for Degree)

**Suggested Course Sequence
JUNIOR YEAR**

FALL	
Course	s.h.
MKTG 3703 Marketing Concepts and Practice	3
MGT 3725 Fundamentals of Management	3
FIN 3720 Business Finance	3
ADV 3711 Marketing Communications	3
PREL 3710 Basic Public Relations	3
Total Number of Semester Hours	15

SPRING	
Course	s.h.
MKTG 3726 Consumer Behavior	3
MKTG 4815 Marketing Research	3
MGT 3761 Information Systems for Management	3
BUS 3715 Principles of International Business	3

Business upper-division elective	3
Total Number of Semester Hours	15

SENIOR YEAR FALL	
Course	s.h.
ADV 3712 Creative Strategies in IMC	3
ADV 3717 Media Planning and Buying	3
MGT 3789 Operations Management	3
Business upper-division elective	3
Advertising upper-division elective	3
Total Number of Semester Hours	15

SPRING	
Course	s.h.
ADV 4855 IMC Campaigns	3
MGT 4850 Strategic Management and Leadership	3
Advertising upper-division elective	3
Non-business elective	6
Total Number of Semester Hours	15

Advertising and Public Relations Minor

COURSE REQUIREMENTS	
Course	s.h.
ADV 3711 Marketing Communications	3
ADV 3712 Creative Strategies in IMC	3
ADV 4855 IMC Campaigns	3
PREL 3710 Basic Public Relations	3
<i>Choose two electives (6 s.h.) from the following:</i>	
ADV 3717 Media Planning and Buying	3
ADV 4811 Direct Marketing	3
MKTG 3740 Professional Selling	3
Total Number of Semester Hours	18

Marketing: Management Track

(124 Hours for Degree)

**Suggested Course Sequence
JUNIOR YEAR**

FALL	
Course	s.h.
MKTG 3703 Marketing Concepts and Practice	3

MGT 3725 Fundamentals of Management	3
FIN 3720 Business Finance	3
BUS 3715 Principles of International Business	3
Non-business electives	3
Total Number of Semester Hours	15

SPRING

Course	s.h.
MKTG 3726 Consumer Behavior	3
MKTG 4815 Marketing Research	3
MGT 3761 Information Systems for Management	3
Marketing upper-division elective	3
Business upper-division elective	3
Total Number of Semester Hours	15

SENIOR YEAR FALL

Course	s.h.
MGT 3789 Operations Management	3
MKTG 4825 Marketing Management	3
Marketing upper-division elective	3
Marketing upper-division elective	3
Business upper-division elective	3
Total Number of Semester Hours	15

SPRING

Course	s.h.
MGT 4850 Strategic Management and Leadership	3
Marketing upper-division elective	3
Marketing upper-division elective	3
Business upper-division elective	3
Non-business elective	3
Total Number of Semester Hours	15

Marketing Minor

COURSE REQUIREMENTS

Course	s.h.
BUS 1500 Exploring Business	3
MGT 2604 Legal Environment of Business 1	3
MKTG 3702 Business Professionalism	1
MKTG 3703 Marketing Concepts and Practice	3
MKTG 3740 Professional Selling	3

Marketing upper-division elective	3
Marketing upper-division elective	3
Total Number of Semester Hours	19

Marketing: Business Industrial Track

(124 Hours for Degree)

Suggested Course Sequence JUNIOR YEAR

FALL

Course	s.h.
BUS 3715 Principles of International Business	3
FIN 3720 Business Finance	3
MKTG 3703 Marketing Concepts and Practice	3
MGT 3725 Fundamentals of Management	3
Business upper-division elective	3
Total Number of Semester Hours	15

SPRING

Course	s.h.
MKTG 3726 Consumer Behavior	3
MKTG 4815 Marketing Research	3
MGT 3761 Information Systems for Management	3
MKTG 3740 Professional Selling	3
MKTG 4846 Marketing Channels and Logistics	3
Total Number of Semester Hours	15

SENIOR YEAR FALL

Course	s.h.
MGT 3789 Operations Management	3
MKTG 4825 Marketing Management	3
MKTG 3720 Industrial Marketing	3
Business upper-division elective	3
Non-business elective	3

Total Number of Semester Hours	15
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SPRING

Course	s.h.
MGT 4850 Strategic Management and Leadership	3
Business upper-division elective	3
Business upper-division elective	3

Business upper-division elective	3
Non-business elective	3
Total Number of Semester Hours	15

Non-business elective	3
Non-business elective	3
Total Number of Semester Hours	15

Marketing: Consumer Retail Track

(124 Hours for Degree)

Suggested Course Sequence JUNIOR YEAR

FALL	
Course	s.h.
BUS 3715 Principles of International Business	3
FIN 3720 Business Finance	3
MKTG 3703 Marketing Concepts and Practice	3
MGT 3725 Fundamentals of Management	3
Business upper-division elective	3
Total Number of Semester Hours	15

SPRING	
Course	s.h.
MKTG 3726 Consumer Behavior	3
MKTG 4815 Marketing Research	3
MGT 3761 Information Systems for Management	3
MKTG 3750 Product Management	3
MKTG 3709 Retail Marketing	3
Total Number of Semester Hours	15

SENIOR YEAR FALL	
Course	s.h.
MGT 3789 Operations Management	3
MKTG 4825 Marketing Management	3
MKTG 4851 Services Marketing	3
Business upper-division elective	3
Business upper-division elective	3
Total Number of Semester Hours	15

SPRING	
Course	s.h.
MGT 4850 Strategic Management and Leadership	3
Business upper-division elective	3
Business upper-division elective	3

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.

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 documents 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.

Business Economics -
http://web.yosu.edu/gen/wcba/Department_of_Economics_m12.html -
http://web.yosu.edu/gen/wcba/Department_of_Economics_m12.html

Actuarial Science Minor

Course	s.h.
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

Business Economics Major

(124 Hours for Degree)

Suggested Course Sequence
Junior Year

FALL	
Courses	s.h.
ECON 3712 Macroeconomic Theory	3
MKTG 3703 Marketing Concepts and Practice	3
MGT 3725 Fundamentals of Management	3
BUS 3715 Principles of International Business	3
Non-business elective	3
Total Number of Semester Hours	15

SPRING	
Courses	s.h.
ECON 3710 Intermediate Microeconomic Theory	3
FIN 3720 Business Finance	3
MGT 3761 Information Systems for Management	3
Business upper-division elective	3
Economics upper-division elective	3
Total Number of Semester Hours	15

SENIOR YEAR FALL	
Courses	s.h.
ECON 4880 Analysis of Economic Problems	3
MGT 3789 Operations Management	3
Economics upper-division elective	6
Business upper-division elective	3
Total Number of Semester Hours	15

SPRING	
Courses	s.h.
MGT 4850 Strategic Management and Leadership	3
Economics upper-division elective	3
Business upper-division elective	3
Non-business elective	7
Total Number of Semester Hours	16

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

Courses	s.h.
ECON 2610 Principles 1 Microeconomics	3
ECON 2630 Principles 2 Macroeconomics	3
ECON 3790 Business and Economics Statistics	5
9 semester hours of electives in economics, at the 3700 level or higher. Courses at the 1500 level do not count toward the minor.	9

Economics

ECON 3790 cannot be counted as an elective in this track.

Courses	s.h.
ECON 2610 (Principles 1, Microeconomics)	3
ECON 2630 (Principles 2, Macroeconomics)	3
12 semester hours of upper-division economics electives other than ECON 3790	12

WCBA Associate Degrees

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 1115 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 Mathematics for Management	4
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[†] ECON 2610 Principles I: Microeconomics	3
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[†] ECON 2630 Principles II: Macroeconomics	3
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PSYC 1560 General Psychology	3
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CMST 1545 Communication Foundations	3
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General Education Requirements	6
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SECOND YEAR

Course	s.h.
[†] MGT 2604 Legal Environment of Business I	3
[†] ACCT 2602 Financial Accounting	3
[†] ACCT 2603 Managerial Accounting	3
[†] ECON 3790 Statistics for Business and Economics	5
PHIL 2628 Business Ethics	3
[†] ACCT 2603L Managerial Accounting Spreadsheet Lab	1

WCBA CORE COURSES

Course	s.h.
[†] MGT 3725 Fundamentals of Management	3
[†] MKTG 3702 Business Professionalism	1
[†] MKTG 3703 Marketing Concepts and Practice	3
[†] FIN 3720 Business Finance	3
[†] MGT 3750 Managing Individuals in Organizations	3
[†] MKTG 3740 Professional Selling	3
General Education Requirements	7

[†]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.

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 StudyâBusiness
Technology Requirements-ATS Degree**

FIRST YEAR	
Course	s.h.
*ENGL 1550 Writing 1	3
*ENGL 1551 Writing 2	3
*BUS 1500 Exploring Business	3
*MATH 1552 Applied Mathematics for Management	4
*ECON 2610 Principles 1: Microeconomics	3
CMST 1545 Communication Foundations	3

SECOND YEAR	
Course	s.h.
*MGT 2604 Legal Environment of Business I	3
*ACCT 2602 Financial Accounting	3
*ACCT 2603 Managerial Accounting	3

English Literature Elective	3
**Elective	3
YSU Semester Hours	34
Credit for technical studies	30
Total Hours	64

*Select from the following: ECON 2630, ECON 3790, MGT 3725 or PHIL 2625. Refer to the eBulletin 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

The Beeghly College of Education

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 Creative Arts and Communication 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 Creative Arts and Communication, 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:

1. Candidates use research, theory, and wisdom of practice to inform their pedagogy.
2. Candidates apply the appropriate knowledge of assessment and evaluation to their practice.
3. Candidates utilize evaluation results for evidence based decision-making.
4. 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:

1. Candidates apply ethical and legal practices in performing their professional responsibilities.
2. Candidates demonstrate knowledge of education policies at the local, state and national level for instructional decision-making.
3. 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:

1. Candidates demonstrate professional, collaborative, and inclusive dispositions both in their field placements and within their courses.
2. Candidates foster inclusive environments, and respect the backgrounds of and beliefs held by their students or clients.
3. Candidates strive to meet the educational needs of all students or clients in a caring, non-discriminatory, and equitable manner.
4. 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:

1. Candidates think systematically and analytically about professional practice and professional decision-making.
2. 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:

1. Candidates are proficient in the procedures, techniques, and methods of their respective fields.
2. 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:

1. Candidates evaluate their own effectiveness by giving attentive consideration to the positive growth of their students/clients.
2. 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:

1. Candidates effectively and appropriately integrate various technologies into their work as teachers, counselors and administrators to maximize P-12 student learning.
2. 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 2.75 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) Integrated Sciences Educ.; c) Integrated Language Arts Educ.; d) Integrated Mathematics Educ.; e) 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 50 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:

- Minimum completion of 50 semester hours
- Minimum 2.75 overall GPA
- Competency in Reading, Writing, and Math:

Overall GPA 3.4 or

ACT - Reading 21, English 18, Music 22

SAT - Reading 450, Writing 430, Math 520

Praxis Core - Reading 156, Writing 162, Math 150

- ENGL 1550 and ENGL 1551 "B" average or better OR ENGL 2601 "B" or better
- FOUN 1501, CMST 1545, SPED 2630 and a content course (see curriculum sheet for content area course) "B" average or above
- Completion of Good Moral Character Statement
- Current BCI/FBI check (taken within the last year)
- Dispositional assessment

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 BS in Ed candidates are enrolled in the College of Education and must meet these requirements for admission.

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 2.75; 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 Ohio Assessment for Educators (OAE) tests and/or the equivalent as required by the Ohio Department of Education; 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 and pass the Teacher Performance Assessment (TPA). The Ohio Department of Education's determination of the TPA pass rate, and as a licensure requirement is pending. 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 2.75 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) Ohio Assessments for Educators, ACTFL (foreign language) 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

Please click here for the Institutional Report on the Quality of Teacher Preparation, Title II, Higher Education Act.

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.

Disclaimer: Educator Licensure tests and qualifying scores listed in the ODE charts and on the ODE website are subject to change by the Ohio State Board of Education.

The Beeghly College of Education - <http://web.ysu.edu/bcoe> - <http://web.ysu.edu/bcoe>

Department of Counseling, Special Education, and School Psychology

330-941-3257

Professors Kress, Martin, Miller; Associate Professors Ellenwood, Gongola, Protivnak (Chair), Unger; Assistant Professors Briley, Choi, Franks, Lewis, Paylo, VanVoorhis, Wolford.

Counseling

The counseling program offers an MS 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 BS and MS 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, Special Education, and School Psychology in the Beeghly College of Education provides individualized and group instruction in improving reading rate and comprehension as well as college level study strategies. The Center maintains a laboratory component for RSS 1510A, RSS 1510B and RSS 1510C-courses mandated for students based on the COMPASS® Reading Test (CRT). Additional services offered by the R&SS Center include individual tutoring in study strategies, reading rate and reading comprehension, college success workshops and assistance with preparation for standardized tests such as APK, 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 we offer).

The services offered by the Reading and Study Skills Center are free of charge to all registered YSU students. The Reading and Study Skills Center is located in the lower level of Maag Library in Room 154. For further information, contact the Reading and Study Skills Center at 330-941-3099; visit the website at <http://web.ysu.edu/rdgstudyskills> - <http://web.ysu.edu/rdgstudyskills>; or e-mail the Center at rdgstudyskillsctr@ysu.edu.

Department of Counseling, Special Education, and School Psychology - http://bcoe.ysu.edu/contentm/easy_pages/easy_page_view.php?page_id=22&sid=23 - http://bcoe.ysu.edu/contentm/easy_pages/easy_page_view.php?page_id=22&sid=23

Special Education Requirements

Intervention Specialist License (K-12)

Mild/Moderate Disabilities program requires a minimum of 124 s.h.

The BS in Ed degree requires the courses listed below. Licensure also requires passing the Ohio Assessments for Educators Exams, prior to student teaching.

All courses meeting requirements specified on this page require a minimum "C" grade. Exceptions are ENGL 1550 and ENGL 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		
Course		s.h.
ENGL 1550 Writing 1		3
ENGL 1551 Writing 2		3
ENGL 2651 Intro to Language		3
SPEAKING		
Course		s.h.
CMST 1545 Communication Foundations		3
MATHEMATICS		
Courses		s.h.
MATH 1564 Foundations of Middle School Math 1		4
MATH 2665 Foundations of Middle School Math 2		4
NATURAL SCIENCE		
Courses		s.h.
Natural Science with a lab		4
Natural Sciences Course		3
SOCIAL SCIENCE		
Courses		s.h.
HIST 2605 or HIST 2606		3

PSYC 1560 General Psychology	3
ENGL 2651 Intro to Language	3

ARTS AND HUMANITIES

Courses	s.h.
MUHL 2621 Music Literature and Appreciation	3
Arts and Humanities	3

SOCIAL AND PERSONAL AWARENESS

Courses	s.h.
COUN 1587 Intro to Health and Wellness in Contemporary Society	3
PSYC 3758 Lifespan Development	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:

Courses	s.h.
FOUN 1501 Intro to Education	3
FOUN 3708 Education & Society	3
PSYC 3709 Psychology of Education	3
EDTC 3771 Tech for Teaching	3

READING COURSE REQUIREMENTS IN SPECIAL EDUCATION

The specific coursework required in reading is as follows:

Courses	s.h.
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

Courses	s.h.
SPED 5835 Clsrm Mgmt Except Children & Youth	4
SPED 4854 Cross-Curricular Interventions	4
SPED 5864 Serv Coord, Coll & Consult Student w/ Special Needs	3
TERG 3703 Assess & Inst in Reading Internship, P-9	3

STUDENT TEACHING

Courses	s.h.
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SPED 4849 Supervised Student Teaching: Disabilities M/M	5-10
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SPED 4869 Student Teaching Seminar for Special Education (GER Capstone course)	2
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CURRICULUM CONTENT REQUIREMENTS IN SPECIAL EDUCATION

Courses	s.h.
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 for Children and Youth w/ Emotional and Behavior Needs	4
SPED 5866 Assess & Ref Except. Childn/Youth for Intervention Specialist	3
SPED 5853 Diagnosis & Intervention Math SpEd	3
SPED 5851 Trns Pln Social Skills Dev & Hlth Rel Issues	*3

CURRICULUM CONTENT REQUIREMENTS FOR TEACHING STUDENTS WITH MILD/MODERATE DISABILITIES

Courses	s.h.
ENGL 3703 Lit for Young Children	3
-OR ENGL 3704 Lit for Middle School Readers	
-OR ENGL 3705 Young Adult Lit	
SPED 5868 M/M Disabilities 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

Associate Dean DiPillo (Acting Chair), Professors Beebe, Sutton, Vergon; Associate Professors deBlois, Eggers; Assistant Professors Beese, Jeffords, Larwin, Spearman.

The Department of Educational Foundations, Research, Technology, and Leadership, through its foundations and technology courses, provides undergraduate 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 Educational Foundations, Research, Technology, and Leadership - <http://web.ysu.edu/bcoe/efrtl/> - <http://web.ysu.edu/bcoe/efrtl/>

Department of Teacher Education

330-941-3251

Professor Matanin (Chair); Associate Professor Cummins; Assistant Professors Cripe, Graham, LaVine, Ojose, Saunders-Smith; Instructor Greene.

IMPORTANT NOTICE: Some teacher education programs, course, and credit information provided 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.

Department of Teacher Education - <http://web.ysu.edu/bcoe/teachered/> - <http://web.ysu.edu/bcoe/teachered/>

Early Childhood 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 Beeghly College of Education academic advisors for minimum TEC prerequisites.

Early Childhood License (P-3)

The BS in Ed degree requires the courses listed below to total 127 s.h. This teaching field also requires passage of the Ohio Assessments for Educators 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 ENGL 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		
Courses		s.h.
ENGL 1550 Writing 1		3

ENGL 1551 Writing 2 3

SPEAKING

Courses s.h.

CMST 1545 Communication Foundations 3

MATHEMATICS

Courses s.h.

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:

Courses s.h.

ASTR 1504 Descriptive Astronomy 3

ASTR 1504L Astronomy Laboratory 1

*BIOL 1505 Biology and Modern World 3

BIOL 1505L Biology and Modern World Lab 1

CHEM 1500 Chemistry in Modern Living 3

CHEM 1500L Chemistry in Modern Living lab 1

*ENST 1500 Intro to Environmental Science 3

ENST 1500L Intro to Environmental Science Lab 1

GEOG 2630 Weather 3

GEOL 1504 The Dynamic Earth 3

*PHYS 1500 Conceptual Physics 3

PHYS 1500L Conceptual Physics Lab 1

SOCIAL SCIENCE

Courses s.h.

PSYC 1560 General Psychology 3

PSYC 3755 Child Development 3

ARTS AND HUMANITIES

Courses s.h.

MUHL 2621 Music Literature and Appreciation 3

ART 1541 or ART 1542 or ART 1540 3

SOCIAL AND PERSONAL AWARENESS

Courses s.h.

One from:

HIST 1500 Discovering World History 3

HIST 1512 World Civilization from 1500 3

HIST 2606 Turning Points in US History 2 3

And one from:

AFST 2600 Introduction to Africana Studies 1 3

CMST 2610 Intercultural Communication 3

COUN 1587 Introduction to Health and Wellness in Contemporary Society 3

ENGL 2651 Intro to Language 3

SOC 2690 Identities and Differences 3

GENERAL EDUCATION ELECTIVE

One course from any of the four knowledge domains.

Curriculum Content Requirements in Early Childhood Education (33 s.h.)

Courses 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 During the Early Childhood Years 3

[†]CHFM 3733L Pract in Preprimary Set 3

ECE 2629 Teaching Young Children: Best Practices in ECE 3

ENGL 3703 Literature for Young Children 3

HEPE 2624 PE for Child in Early Childhood Settings 3

MATH 2651 Math for Early Childhood Teachers 1 3

MUED 3722 Music in Early Childhood 3

[†]SPED 4831 Assessment and Referral in Early Childhood 3

[†]ECE 3760 Cross Curr Applications and Classroom Management/Guidance 3

[†] Indicates upper-division status

Professional Education Requirements in Early Childhood Education (51 s.h.)

The specific coursework required in professional education is as follows:

Courses s.h.

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:

Courses	s.h.
TERG 2601 Rdg Appl in Content Areas, Early Years	3
[†] TERG 3701 Phonics in Rdg Instruction	3
[†] TERG 3702 Dev Rdg Inst & Lit Strat P-9	3

TEC BLOCK

Courses	s.h.
[†] ECE 3713 Teaching of Math: Early Years	3
[†] ECE 3715 Tchng Science: Early Years	3
[†] ECE 3780 Social Studies for Young Children	3
[†] ECE 4814 Lang Arts Methods in the Early Years (3-8)	3
<i>plus</i>	
[†] TERG 3703 Assess & Inst in Reading Internship, P-9	3

STUDENT TEACHING BLOCK

Courses	s.h.
[†] ECE 4841 Supervised Student Teaching: Early Childhood Education	10
ECE 4842 Student Teaching Seminar in Early Childhood Education	2

[†] 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 BS 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 Ohio Assessments for Educators exams.

All courses meeting requirements specified on this page require a minimum "C" grade. Exceptions are ENGL 1550 and ENGL 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

Courses	s.h.
ENGL 1550 Writing 1	3
ENGL 1551 Writing 2	3

SPEAKING

Courses	s.h.
CMST 1545 Communication Foundations	3

MATHEMATICS

If math is one of the concentrations see the concentration area.

Courses	s.h.
MATH 2623 Survey of Mathematics	3

NATURAL SCIENCE

If science is one of the concentrations see the concentration area.

Courses	s.h.
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.

Courses	s.h.
Course from Arts and Humanities	3

Course from Arts and Humanities	3
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SOCIAL SCIENCE

If social science is one of the concentrations see the concentration area for the additional SS course required.

Courses	s.h.
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PSYC 1560 General Psychology	3
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Course from Social Science	3
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SOCIAL AND PERSONAL AWARENESS

Courses	s.h.
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Course from Social and Personal Awareness	3
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Course from Social and Personal Awareness	3
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GENERAL EDUCATION ELECTIVE

Choose one course from any of the four domains.

Courses	s.h.
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(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:

Courses	s.h.
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FOUN 1501 Intro to Education	3
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[†] FOUN 3708 Education & Society	3
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SPED 2630 Individuals w/Except in Society	3
---	---

[†] TEMC 3702 Teaching and Learning in Middle Schools	3
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EDTC 3771 Tech for Teaching	3
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For science concentration area candidates only:

[†] TEMC 3707 Science/Technology/Society	3
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[†] Indicates upper-division status

READING COURSE REQUIREMENTS IN MIDDLE CHILDHOOD EDUCATION

The specific coursework required in reading is as follows:

Courses	s.h.
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[†] TERG 3710 Rdg Appl in Content Areas, Middle Years	3
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[†] TERG 3701 Phonics in Reading Instruction	3
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[†] TERG 3702 Dev Rdg Instr & Lit Strat P-9	3
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[†] TERG 3703 Assessment & Inst in Reading Internship, P-9	3
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MIDDLE CHILDHOOD INTERNSHIP

Courses	s.h.
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[†] TEMC 4801 Middle School Learning Comm	3
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TEMC 4804 Middle Level Instructional Design and Student Outcomes	3
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Depending on the student's teaching concentrations, Two or more of the following:

[†] TEMC 3703 Thematic Instruc & Assess Methods in Social Studies	3
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TEMC 3704 Tchng Math in the Mid Sch	3
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[†] TEMC 3705 Tchng Sci in the Mid Sch	3
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[†] TEMC 3706 Teaching Lang Arts in the Middle School	3
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STUDENT TEACHING

Student teaching candidates will register for the following student teaching courses:

Courses	s.h.
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[†] TEMC 4802 Stud Teaching: Middle Child Ed	5-10
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[†] TEMC 4803 Student Teaching Seminar MCE	2
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[†] 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)

Courses	s.h.
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Two of the following (Artistic & Literary):

ENGL 2610 World Literature*	3
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ENGL 2617 Women in Literature*	3
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ENGL 2618 American Literature and Diversity*	3
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ENGL 2631 Mythology in Literature*	3
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All of the following:

JOUR 2602 Media Writing	3
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ENGL 2651 Introduction to Language	3
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ENGL 3700 Literary Study	3
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ENGL 3704 Literature for Middle School Readers	3
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ENGL 3739 Writing for Middle School Teachers	3
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CMST 2656 Interpersonal Communication 3

**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).

Courses	s.h.
MATH 1564 Foundations of Middle School Math 1 (Fall)	4
MATH 2665 Foundations of Middle School Math 2 (Spring)	4
MATH 3767 Alg/Geom for Mid Sch Teachers 1 (Fall)	4
MATH 3768 Alg/Geom for Mid Sch Teachers 2 (Spring)	4
MATH 4869 Functions, Calculus, & Applications for Middle School Teachers	3
MATH 4870 Mathematics Seminar for Middle School Teachers	2
STAT 2601 Introductory Statistics	3
<i>Or</i>	
MATH 2624 Probability and Critical Reasoning	3

C. SCIENCE, 28 s.h. REQUIRED

(See notes in Science GER)

A passing score of 144 on the Middle Childhood Science Test (439).

Courses	s.h.
BIOL 1505 Biology & the Modern World (section for Education Majors)	3
CHEM 1500 Chemistry in Modern Living (section for Education Majors)	3
GEOL 1505 Physical Geology	4
GEOL 1505L Physical Geology Lab	0
PHYS 2607 Physical Science for Middle and Secondary Education	4

ELECTIVES 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.

Courses	s.h.
ASTR 1504 Descriptive Astronomy	3
ENST 2600 Foundations of Environmental Studies	3
ENST 2600L Foundations of Environmental Studies Lab	1
GEOG 2630 Weather	3
GEOL 2602 Introduction to Oceanography	3

GEOL 2605 Historical Geology 4

GEOL 3720 Field Investigations in Geology 4

D. SOCIAL STUDIES, 33 s.h. REQUIRED

A passing score of 151 on the Middle Childhood Social Studies Test (089).

Courses	s.h.
HIST 1511 World Civilization to 1500	3
HIST 1512 World Civilization from 1500	3
HIST 2605 Turning Points in United States History 1	3
HIST 3748 History of Ohio	3
LASS 4805 Integrated Social Studies Seminar	3

Eighteen semester hours electives: each discipline must be selected once; two discipline areas must be selected twice:

GEOGRAPHY

Courses	s.h.
GEOG 2640 Human Geography	3
GEOG 2650 Global Economic Landscapes	3
GEOG 3715 Geography of Middle America	3
GEOG 3717 Geography of Europe	3
GEOG 3719 Geography of US	3
GEOG 3721 Geography of Ohio	3
GEOG 3741 Transportation Geography	3
GEOG 3745 Auto in American Culture	3
GEOG 3775 Field Methods in Geography	3
GEOG 5850 International Area Study	3

POLITICAL SCIENCE

Courses	s.h.
POL 1560 American Government	3
<i>One course from the following:</i>	
POL 2640 Contemporary World Governments	3
POL 2660 International Relations	3
POL 3700 American Presidency	3
POL 3704 American Political Parties and Elections	3
POL 3706 African-American Politics	3
POL 3722 State and Local Government	3

ECONOMICS

Courses	s.h.
ECON 2610 Principles 1: Microeconomics	3
ECON 2630 Principles 2: Macroeconomics	3

SOCIOLOGY/ANTHROPOLOGY

Courses	s.h.
ANTH 1500 Introduction to Anthropology	3
SOC 1500 Introduction to Sociology	3

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 BS 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 BS 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 Assessments for Educators Exams.

All courses meeting requirements specified on this page require a minimum "C" grade. Exceptions are ENGL 1550 and ENGL 1551 which require a "B" average.

- General Education Requirements in Adolescent, Multi-Age, and Career/Technical Education (40 s.h.)
- Professional Education Requirements in Secondary, Multi-Age, and Career/Technical Education

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
- FRENCH (P-12) - Multi-Age License
- HEALTH EDUCATION (P-12) - Multi-Age License
- FAMILY AND CONSUMER SCIENCE (4-Adult) - Career/Technical License
- INTEGRATED LANGUAGE ARTS (7-12) - Adolescent License
- INTEGRATED MATHEMATICS (7-12) - Adolescent License
- INTEGRATED SCIENCES (7-12) - Adolescent License
- INTEGRATED SOCIAL STUDIES (7-12) - Adolescent License
- ITALIAN (P-12) - Multi-Age License

- LIFE SCIENCES (7-12) - Adolescent License
- PHYSICAL EDUCATION (P-12) - Multi-Age License
- SPANISH (P-12) - Multi-Age License

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:

- Adapted Physical Education
- 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.

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

Courses	s.h.
ENGL 1550 Writing 1	3
ENGL 1551 Writing 2	3

SPEAKING

Courses	s.h.
CMST 1545 Communication Foundations	3

MATHEMATICS

See appropriate concentration sheet for Math requirement.

NATURAL SCIENCE

Courses	s.h.
Natural Science with a Lab	4
Natural Science	3

ARTS AND HUMANITIES

Courses	s.h.
Course from Arts and Humanities	3
Course from Arts and Humanities	3

SOCIAL SCIENCE

Courses	s.h.
PSYC 1560 General Psychology	3
Course from Social Science	3

SOCIAL AND PERSONAL AWARENESS

Courses	s.h.
Course from Social and Personal Awareness	3
Course from Social and Personal Awareness	3

GENERAL EDUCATION ELECTIVE

Courses	s.h.
Choose one course from any of the four domains (NS, AH, SS, or SPA)	3

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:

Courses	s.h.
FOUN 1501 Introduction to Education	3
[†] FOUN 3708 Education and Society	3
[†] FOUN 3710 Educational Assessment	3
PSYC 3709 Psychology of Education	3
*EDTC 3771 Technology for Teaching	3
[†] 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 4800C Special Methods: Science	3
or	
[†] *SED 4800M Special Methods: Mathematics	3

or

*SED 4800S Special Methods: Social Studies	3
*SED 4842 Supervised Student Teaching: High School	10
*SED 4842A Student Teaching Seminar for Secondary Education	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.

HEALTH EDUCATION (P-12) - Multi-Age License

Courses	s.h.
PHLT 1568 Healthy Lifestyles	3
MATC 1501 Medical Terminology	3
FNUT 1551 Normal Nutrition	3
PHLT 2692 Human Sexuality	3
HEPE 3702 Health Ed. Theory & Methods	3
HEPE 3715 Health Ed. For Grades P-6	3
HEPE 3716 Health Ed. For Grades 7-12	3
PHLT 3731 Drug Use and Abuse	3
PHLT 3757 Health and Disease	4
PHLT 3791 Community Health	3
HEPE 4808 Assessment Instruments and Strategies in Health & PE	3
HPES 4888 Selected Topics in HPES	1-3
HPES 4899 Physiology of Ex. for PE	2
HPES 4899L Physiology of Ex. for PE Lab	1

AHLT 5807 Epidemiology	3
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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 take HEPE 3702/HEPE 3715/HEPE 3716 instead of SED 3706. In addition, they do not take SED 4800.

FAMILY AND CONSUMER SCIENCE (4-Adult) - Career/Technical License

Courses	s.h.
HMEC 1550 Human Ecology Professions	1
FNUT 1512 Food Safety and Sanitation	1
MRCH 1506 Clothing and Image Development	3
PHLT 2692 Human Sexuality	3
FNUT 1551 Normal Nutrition	3
FNUT 1553 Food Science & Management Principles	3
FNUT 1553L Food Science & Management Principles Lab	1
CHFM 3731 Individual & Family Development	3
CHFM 3750 Parent & Professional Relationships	3
PSYC 3755 Child Development	3
PSYC 3756 Adolescent Development	3
PSYC 3758 Lifespan Development	3
MRCH 3764 Family Housing & Technology	3
HMEC 3780 Consumer Economics	3
HMEC 4800 Teaching in Family & Consumer Sciences	3
HMEC 4890 Communication of Contemporary Issues	3
HMEC 4852 Family Resource Management	3
HMEC 5893 Work & Family	3

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:

Courses	s.h.
ENGL 2651 Introduction to Language	3
ENGL 3700 Literary Study	3
ENGL 3705 Young Adult Literature	3
ENGL 3710 British Literature 1	3
ENGL 3711 British Literature 2	3
ENGL 3712 American Literature 1	3
ENGL 3713 American Literature 2	3
ENGL 3741 Advanced Writing for Teachers	3
ENGL 4881 Shakespeare and His World	3

All of the following (Journalism):

Courses	s.h.
ENGL 2622 News Reporting 1	3
ENGL 4821 Advising Student Media	3

Two of the following (Communications):

Courses	s.h.
CMST 2653 Group Communication	3
CMST 2656 Interpersonal Communication***	3
THTR 2670 Oral Interpretation	3

One of the following (World/Multicultural Lit):

Courses	s.h.
ENGL 2610 World Literature*	3
ENGL 2617 Women in Literature*	3
ENGL 2618 American Literature and Diversity*	3
ENGL 2620 African Literature	3
ENGL 3732 Images of Women	3
ENGL 3738 Selected Topics in World Literature	3
ENGL 3790 Selected Topics in Multicultural Studies	3

One of the following (Linguistics):

Courses	s.h.
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ENGL 3750 Language and Culture	3
ENGL 3757 Development of the English Language	3
ENGL 4850 Sociolinguistics	3
ENGL 4851 Language Acquisition	3
ENGL 4855 Advanced Linguistics	3
ENGL 4856 TESOL Methods	3
ENGL 4858 English Grammar	3

One of the following (Media Literacy):

Courses	s.h.
TCOM 1595 Survey of American Mass Communications**	3
THTR 1590 History of Motion Pictures*	3
ENGL 2665 Intro to Film Study*	3
ENGL 3743 Prof & Tech Communication	3

One of the following (Upper Division American Lit):

Courses	s.h.
ENGL 3770 American Literature in Historical Perspective	3
ENGL 3780 American Genres	3
ENGL 4862 Themes in American Literature	3
ENGL 4864 American Literary Conversations	3
ENGL 4871 The Black Experience in American Literature	3

One of the following (Upper Division British Lit):

Courses	s.h.
ENGL 4830 Major Figures in British Literature	3
ENGL 4831 British Genres, Circles, and Movements	3
ENGL 4860 The Medieval World	3
ENGL 4882 The English Renaissance	3
ENGL 4886 Restoration and 18th Century British Literature	3
ENGL 4887 The Romantic Period	3
ENGL 4892 19th Century British Literature Studies	3
ENGL 4895 Early 20th Century British Studies	3
ENGL 4896 British Literature from WWII to Present	3

One of the following (Advanced English Studies):

Courses	s.h.
ENGL 3706 Introduction to Literary Theory	3

ENGL 4890 Senior Seminar 3
 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):

Courses	s.h.
ENGL 4860 The Medieval World	3
ENGL 4882 The English Renaissance	3
ENGL 4886 Restoration and 18th Century Brit Lit	3
ENGL 4830 Major Figures in Brit Lit	3
ENGL 4831 British Genres, Circles, and Movements	3

One of the following (Later British Literature):

Courses	s.h.
ENGL 4887 The Romantic Period	3
ENGL 4892 19th Century British Literature Studies	3
ENGL 4895 Early 20th Century British Studies	3
ENGL 4896 British Literature from WWII to Present	3
ENGL 4830 Major Figures in British Literature	3
ENGL 4831 British Genres, Circles, and Movements	3

One of the following (World/Multicultural Literature):

Courses	s.h.
ENGL 2610* World Literature	3
ENGL 2617* Woman in Literature	3
ENGL 2620 African Literature	3
ENGL 2631* Mythology in Literature	3
ENGL 3732* Images of Women	3
ENGL 3738* Selected Topics World Literature	3
ENGL 3790 Selected Topics in Multicultural Studies	3

LINGUISTICS--(REQUIRED)

Courses	s.h.
ENGL 2651 Intro to Language	3

One of the following:

Courses	s.h.
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ENGL 3750 Language & Culture	3
ENGL 3757 Development of the English Language	3
ENGL 4850 Sociolinguistics	3
ENGL 4851 Language Acquisition	3
ENGL 4855 Advanced Linguistics	3
ENGL 4856 TESOL Methods	3
ENGL 4858 English Grammar	3

WRITING

Courses	s.h.
ENGL 3741 Advanced Writing for Teachers	3

(SPECIAL NOTE: TERG 3711 and ENGL 3741 are taken together the semester before taking the SED cluster.)

ORAL COMMUNICATION

Select two of the following:

Courses	s.h.
CMST 2653 Group Communication	3
CMST 2656 Interpersonal Communication	3
THTR 2670 Oral Interpretation	3

JOURNALISM

Courses	s.h.
ENGL/JOUR 2622 News Reporting 1	3
ENGL/JOUR 4821 Advising Student Media	3

One of the following:

Courses	s.h.
ENGL 2665* Intro to Film Study	3
ENGL 3743 Professional and Technical Communication	3
ENGL 3765 Film Genres	3
ENGL 4865 Selected Topics in Film	3
TCOM 1595 Survey of American Mass Communications	3
THTR 1590* History of Motion Pictures	3
JOUR 3723 Advanced Journalism Editing and Design	3

Note: This licensure area has specific GER requirements. Please refer to the curriculum advisement sheet in the College of Education academic advising office.

*These courses satisfy the Artistic & Literary Perspectives General Requirements (GER).

INTEGRATED MATHEMATICS (7-12) - Adolescent License

All of the following:

Courses	s.h.
MATH 1571 Calculus 1	4
MATH 1572 Calculus 2	4
MATH 2673 Calculus 3	4
MATH 3715 Discrete Mathematics	3
MATH 3720 Linear Algebra and Matrix Theory	3
MATH 3721 Abstract Algebra 1	4
STAT 3743 Probability & Statistics	4
MATH 3750 History of Mathematics	3
MATH 3751 Real Analysis 1	4
MATH 4830 Foundations of Geometry	3
MATH 4896 Senior Undergraduate Research Project	2
MATH 5832 Euclidian Transformations	3
CSIS 2610 Programming and Problem Solving	4
Elective from: MATH 3705, MATH 5822, MATH 5828, MATH 5835, MATH 5845 or MATH 5895	3

INTEGRATED SCIENCES (7-12) - Adolescent License

All of the following:

Courses	s.h.
MATH 1571 Calculus 1	4
MATH 1572 Calculus 2	4

A course in computer science is recommended, but not required.

Choose one of the following course sequences as a primary science concentration:

1. BIOLOGY

Courses	s.h.
BIOL 2601 General Biology: Molecules and Cells	4
BIOL 2601L General Biology: Molecules and Cells Lab	0
BIOL 2602 General Biology: Organisms and Ecology	4

BIOL 2602L General Biology: Organisms and Ecology	0
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Select 14 s.h. from the following:

BIOL 3741 Animal Diversity	4
BIOL 3702 Microbiology	4
BIOL 3721 Genetics	3
BIOL 3762 Field Botany	4
BIOL 3780 General Ecology	5
BIOL 4890 Molecular Genetics	3
BIOL 4890L Molecular Genetics Lab	1
BIOL 3730 Human Physiology	4

2. CHEMISTRY

All of the following:

Courses	s.h.
CHEM 1515 General Chemistry 1	4
CHEM 1516 General Chemistry 2	4
CHEM 2604 Quantitative Analysis	5
CHEM 3719 Organic Chemistry 1	4
CHEM 3720 Organic Chemistry 2	4
Any 3000 or 4000 level chemistry course	3

3. PHYSICS

All of the following:

Courses	s.h.
PHYS 2608 Sound	3
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

Select a minimum of 11 s.h. in Physics from the following:

Courses	s.h.
PHYS 2607 Physical Science for Middle and Secondary Education	4
PHYS 3703 Class Mech and Dyn	4
PHYS 3704 Modern Physics	4
PHYS 3704L Modern Physics Lab	1
PHYS 3705 Thermo/Class Stat Dynamics	3
PHYS 3705L Thermo/Class Stat Mech Lab	1
PHYS 3722 Advanced Optics and Light	3
PHYS 3722L Advanced Optics Lab	1
PHYS 4805 Undergrad Physics Research	3
PHYS 5890 Physics & Astronomy for Educators	1-4

4. EARTH/SPACE SCIENCE

All of the following:

Courses	s.h.	CHEM 1516 General Chemistry 2	4
GEOL 1505 Physical Geology	4	CHEM 3719 Organic Chemistry 1	4
GEOL 2605 Historical Geology	4	<i>Select one course from the following:</i>	
GEOL 2602 Introduction to Oceanography	3	Courses	s.h.
GEOG 2630 Weather	3	CHEM 2604 Quantitative Analysis	5
ASTR 1504 Descriptive Astronomy	3	CHEM 3720 Organic Chemistry 2	4
ASTR 2609 Moon & Planets	3	CHEM 3785 Biochemistry 1	3
<i>Select one from the following:</i>		c. PHYSICS	
Courses	s.h.	<i>All of the following:</i>	
GEOL 3720 Field Investigations in Geology	1-4	Courses	s.h.
GEOL 2615 Geol and the Environment 1	3	PHYS 2608 Sound	3
ENST 2600 Foundation of Environmental Studies	3	PHYS 2610 General Physics 1	4
<i>Select one of the following:</i>		PHYS 2610L General Physics Lab 1	1
Courses	s.h.	PHYS 2611 General Physics 2	4
GEOG 3703 Human Impacts on the Environment	3	PHYS 2611L General Physics Lab 2	1
GEOG 3730 Global Climates	3	<i>Select a minimum of 3 s.h. in Physics from the following:</i>	
GEOG 3737 Soils and Land Use	3	Courses	s.h.
<i>Then take three (3) remaining science fields of the following course sequences as secondary concentrations:</i>		PHYS 3703 Classical Mech and Dyn	4
a. BIOLOGY		PHYS 3704 Modern Physics	4
Courses	s.h.	PHYS 3704L Modern Physics Lab	1
BIOL 2601 General Biology: Molecules and Cells	4	PHYS 3705 Thermo/Class Stat Dynamics	3
BIOL 2601L General Biology: Molecules and Cells Lab	0	PHYS 3705L Thermo/Class Stat Mech Lab	1
BIOL 2602 General Biology: Organisms and Ecology	4	PHYS 3722 Advanced Optics and Light	3
BIOL 2602L General Biology: Organisms and Ecology Lab	0	PHYS 3722L Advanced Optics Lab	1
<i>Select 5 s.h. from the following:</i>		PHYS 4805 Undergrad Physics Research	3
Courses	s.h.	PHYS 5890 Physics & Astronomy for Educators	1-4
BIOL 3741 Animal Diversity	4	PHYS 2607 Physical Science for Middle and Secondary Education	4
BIOL 3702 Microbiology	4	d. EARTH/SPACE SCIENCE	
BIOL 3721 Genetics	3	Courses	s.h.
BIOL 3762 Field Botany	4	GEOL 1505 Physical Geology	4
BIOL 3780 Evolutionary Ecology	5	GEOL 2602 Introduction to Oceanography	3
BIOL 4890 Molecular Genetics	3	GEOG 2630 Weather	3
BIOL 4890L Molecular Genetics Lab	1	ASTR 1504 Descriptive Astronomy	3
BIOL 3730 Human Physiology	4	<i>Select one of the following:</i>	
b. CHEMISTRY		Courses	s.h.
Courses	s.h.	ENST 2600 Foundations of Environmental Study	3
CHEM 1515 General Chemistry 1	4	GEOL 2615 Geol in the Environment 1	3
		GEOG 3703 Human Impacts on the Environment	3
		GEOL 3720 Field Investigations in Geology	1-4
		GEOG 3730 Global Climates	3

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:

Courses	s.h.
HIST 1511 World Civilization to 1500	3
HIST 1512 World Civilization from 1500	3
HIST 2605 Turning Points in US History 1	3
HIST 2606 Turning Points in US History 2	3
HIST 3748 History of Ohio	3
History Upper Division Elective	3
History Upper Division Elective	3
GEOG 2640 Human Geography	3
POL 1560 American Government	3
LASS 4805 Intr Social Science Seminar	3
ECON 2610 Principles 1: Microeconomics	3

Select one of the following:

Courses	s.h.
SOC 1500 Introduction to Sociology	3
ANTH 1500 Intro to Anthropology	3

****Four courses (12 s.h.) in two of the following disciplines total (24 s.h.):**

Political Science
Economics (ECON 2630)
Sociology/Anthropology
Geography

****One course (3 s.h.) in two remaining (not taken in the above) disciplines (6 s.h.):**

Political Science
Economics (ECON 2630)
Sociology/Anthropology
Geography

****must include 12 s.h. of courses at upper division level. In Geography, a physical geography course may be selected.**

LIFE SCIENCES (7-12) - Adolescent License

All of the following:

Courses	s.h.
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BIOL 2601 General Biology: Molecules and Cells	4
BIOL 2601L General Biology: Molecules and Cells Lab	0
BIOL 2602 General Biology: Organisms and Ecology	4
BIOL 2602L General Biology: Organisms and Ecology Lab	0
BIOL 3741 Animal Diversity	4
BIOL 3702 Microbiology	4
BIOL 3721 Genetics	3
BIOL 3762 Field Botany	4
BIOL 3780 General Ecology	5
BIOL 4890 Molecular Genetics	3
BIOL 4890L Molecular Genetics Lab	1
BIOL 3730 Human Physiology	4

Choose from the following:

Courses	s.h.
MATH 1552 Applied Math for Management	4
or	
MATH 1570 Applied Calculus 2	4
or	
MATH 1571 Calculus 1	4

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

Courses	s.h.
HEPE 1567 Perf. and Anlys. of Invasion Games	3
HEPE 1574 Perf. and Anlys. of Target and Fielding Games	3
HEPE 1575 Perf. and Anlys. of Net/Wall Games	2

HEPE 1577 Perf. and Anlys. of Aquatic Activities	1
HEPE 1579 Rhythmic Movement for Children	1
HEPE 2610 Intro. to Outdoor Pursuits	2
HEPE 2661 Games Analysis	3
HEPE 2672 Mechanical Principles of Movement	3
HEPE 2689 Scientific Basis of Fitness	3
HEPE 3766 Princ. and Analysis of Motor Dev	3
HEPE 3767 Pedagogy in P-12 Physical Education	4
HEPE 3768 Advocacy & Best Practices in Health & PE	2
HEPE 3780 Methods of Teaching Dance	2
HEPE 4808 Assessment Instruments and Strategies in Health and Physical Education	3
HEPE 4851 Cultural Aspects of PE & Sport	3
HEPE 4876 Teaching of Elementary PE	3
HEPE 4878 Teaching of Middle/Secondary PE	3
HEPE 4895 Introduction to Adapted Physical Education	4
HEPE 4899 Physiology of Ex. for PE	2
HEPE 4899L Physiology of Ex. for PE Lab	1

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 Teacher Education 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 HEPE 3767/HEPE 4876/HEPE 4878 instead of SED 3706. In addition, they do not take SED 4800.

SPANISH (P-12) - Multi-Age License

Courses	s.h.
SPAN 1550 Elementary Spanish	4

SPAN 2600 Intermediate Spanish
SPAN 2600 Intermediate is waived if student starts with SPAN 2605 Advanced Intermediate Spanish or a SPAN 3700 or SPAN 4800 level course must be substituted.

All nine (9) courses listed below are required:

Courses	s.h.
SPAN 2605 Advanced Intermediate Spanish (required for Admission to Teacher Education Program)	3
SPAN 3702 Intensive Spanish Review	3
SPAN 3724 Spanish Pronunciation	3
SPAN 3735 Adv. Spanish Gram. & Comp.	3
SPAN 3736 Intro. to Spanish Linguistics	3
SPAN 3755 Advanced Spanish Conversation	3
ENGL 4851 Language Acquisition	3
FNLG 4801 Methods of Foreign Lang. Teaching	3
FNLG 4899 Professional Development for Teachers	1

Select four (4) of the following:

Courses	s.h.
SPAN 3758 Cult./Lit. Sp. Spkg. Gps. in US	3
SPAN 3762 Culture: Spain	3
SPAN 3763 Intro. to Lit.: Spain	3
SPAN 3766 Culture: Spanish-America	3
SPAN 3767 Intro. to Lit.: Spanish-America	3

Select one (1) of the following:

Courses	s.h.
SPAN 5855 Topics in Sp. Lang. and Ling.	3
SPAN 5870 Topics in Span. Lit.: Spain	3
SPAN 5885 Topics in Hisp. Lit. and Film	3
SPAN 5890 Topics in Span. Lit: Spanish-America	3

Professional education exception: 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.

VISUAL ARTS (P-12) - Multi-Age License

All of the following:

Course	s.h.
ART 1521 Foundation Drawing	3
ART 1522 Intermed Drawing	3
ART 1501 Fund of 2-D Des	3
ART 1502 Fund of 3-D Des	3
â° ART 1503 Foundation Portfolio Review	1
ART 3721 Expressive Drawing	3
ART 2691 Intro to Digital Media	3
ART 2661 Intro to Graph Design	3
ART 2631 Intro to Ceramics	3
ART 2611 Intro to Sculpture	3
ART 2674 Intro to Photo	3
ART 2650 Intro to Painting	3
ART 2653 Watercolor Painting	3
ART 2615 Intro to Metals	3
ART 1541 Sur of Art History 1	3
ART 1542 Sur of Art History 2	3
ART 3788 Theory of Art	3
ART 5882, 20th Cent. Art from 1960	3
ART 37xx, Art History Elective	3

Courses

One of the following:

ART 2625 Introduction to Printmaking: Intaglio and Relief	3
ART 2626 Introduction to Printmaking: Lithography and Screenprinting	3

*All of the following Art Methods:
These courses replace SED 4800 Methods*

Courses	s.h.
ART 3737 Pre-K-4, Visual Arts Ed	3
ART 4837 Prof Prac/Middle School	3
ART 4838 Prof Prac/Sec School	3
*ART 4839 Seminar in Art Education	1

Professional education exception: Candidates in this major take MULT 4807 (Teaching Across Curriculum) instead of SED 3706 (Principles of Teaching Adolescents).

â° 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.

Physical Education-BS 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 BS 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:

HEPE 1567, HEPE 1573L, HEPE 1574, HEPE 1575, HEPE 1577, HEPE 1579, HPES 1589, HPES 1595, HPES 2605, HEPE 2610, HEPE 2628, HEPE 2661, HEPE 3767, HEPE 3780, HEPE 4808, HEPE 4851, HEPE 4876, HEPE 4878, HEPE 4895, HPES 4899, HPES 4899L.

BCOE: FOUN 1501, SPED 2630, PSYC 3709, EDTC 3771, TERG 3710, FOUN 3708, MULT 4807, SED 4846, SED 4842A.

Health Education-BS 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 BS 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, HEPE 3702, HEPE 3715, HEPE 3716, HEPE 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, FOUN 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.

The College of Creative Arts and Communication

The College of Creative Arts and Communication

Bryan DePoy, Dean

The College of Creative Arts and Communication consists of the Department of Art, the Department of Communication, the Dana School of Music, and the Department of Theater and Dance.

The Department of Art 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 (BA), Bachelor of Fine Arts (BFA), Bachelor of Music (BM). 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 Creative Arts and Communication 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, the Beecher 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 Creative Arts and Communication 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 creative arts.

*For the Institutional Report on the Quality of

Teacher Preparation, Title II, Higher Education Act, please see Title II, Teacher Education 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 BFA, BM, AND BA DEGREES

Basic Skill Courses (See "General Education Requirements" under "Academic Policies and Procedures" in the front section of this Bulletin)	BFA	BM	BA
	s.h.	s.h.	s.h.
ENGL 1550, ENGL 1551, Writing 1, 2	6	6	6
MATH 2623	3	3	3
CMST 1545	3	3	3
Domain Courses (See "General Education Requirements" under "Academic Policies and Procedures" in the front section of this Bulletin)			
Arts & Humanities	6	6	6
Social Sciences	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.

Creative Arts and Communication students pursuing the BS 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*.

The College of Creative Arts and Communication
- <http://web.ysu.edu/ccac> - <http://web.ysu.edu/ccac>

Department of Art

330-941-3627

Professors Moring, Sarro, Smith; Associate Professors Adu-Poku, Christiansen Erb, Crnjak, McCullough, Nelson; Assistant Professors Berlinski, Chalmers, 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 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 BFA degree. Most BFA 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, BFA 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.†

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.

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.

Department of Art - <http://www.ysu.edu/art/> - <http://www.ysu.edu/art/>

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).

EDUCATION VISUAL ARTS PRE-K-12*

Course	s.h.
ART 1521: Foundation Drawing	3
ART 1522: Intermed Drawing	3
ART 1501: Fund. of 2-D Des	3
ART 1502: Fund. of 3-D Des	3
ART 1503: Foundation Portfolio Review	1
ART 3721: Expressive Drawing	3
ART 2691: Intro. to Digital Imaging	3
ART 2625: Intro. to Printmaking: Intaglio and Relief or ART 2626 Intro to Printmaking: Lithography and Screenprinting	3
ART 2661: Intro. to Graphic Design	3
ART 2631: Intro. to Ceramics	3
ART 2611: Intro. to Sculpture	3
ART 2674: Intro. to Photography	3
ART 2650: Intro. to Painting	3
ART 2653: Watercolor	3
ART 2615: Intro. to Metals	3
Art Education Requirements	
ART 3737: Pre-K-4, Vis. Arts Ed.	3
ART 4837: Prof. Prac./Middle Sch.	3
ART 4838: Prof. Prac./Sec. Sch.	3
ART 4839: Art Education Seminar	1
Education Requirements	
FOUN 1501: Intro. to Education	3
MULT 4807: Tchg. Across Curriculum	2
EDTC 3771: Technology for Tchg.	3
TERG 3710: Reading Applications in Content Areas	3

PSYC 3709: Psych of Education	3
FOUN 3708: Educ. & Society	3
SPED 2630: Individuals with Exceptionalities in Society	3
SED 4842: Student Tchg.	10
SED 4842A: Stu. Tchg. Sem.	2
Art History and Theory	
ART 1541: Sur. of Art Hist.	3
ART 1542: Sur. of Art Hist.	3
ART 3788: Theory of Art	3
ART 5882: 20 th C from 1960	3
ART 37XX Art History Elective	3

*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.

Bachelor of Fine Arts Curricula

The areas of studio art emphasis for the BFA 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 Creative Arts and Communication 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

Course	s.h.
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ART 1521: Foundation Drawing	3	ART 2625: Introduction to Printmaking: Intaglio and Relief or ART 2626: Introduction to Printmaking: Lithography and Screenprinting	3
ART 1522: Intermediate Drawing	3	ART 2631: Introduction to Ceramics	3
ART 1501: Fundamentals of 2D Design	3	ART 2611: Introduction to Sculpture	3
ART 1502: Fundamentals of 3D Design	3	ART 2661: Introduction to Graphic Design	3
ART 1503: Foundation Portfolio Review	1	ART 2662: Introduction to Typography	3
ART 3721: Expressive Drawing	3	ART 2669: Introduction to Interactive Design	3
ART 2691: Introduction to Digital Media	3	ART 3761: Intermediate Graphic Design	3
ART 2621: Life Drawing	3	ART 3703: Junior Portfolio Review	1
ART 2625: Introduction to Printmaking: Intaglio and Relief or ART 2626 Introduction to Printmaking: Lithography and Screenprinting	3	ART 3763: Illustration	3
ART 2631: Introduction to Ceramics	3	ART 3762: Advanced Typography	3
ART 2611: Introduction to Sculpture	3	ART 4863: Corporate Identity Systems	3
ART 2674: Introduction to Photography	3	ART 3765: Motion for Interactive Design	3
ART 2650: Introduction to Painting	3	ART 2674: Introduction to Photography	3
ART 2653: Watercolor Painting	3	ART 4802: Senior Project or ART 4867: Graphic Design Internship	3
ART 2615: Introduction to Metals	3	ART 3764: Typeface Design	3
ART 37XX/48XX Studio Art Elective	24	ART 3768: Pre-Press Production	3
ART 3703: Junior Portfolio Review	1	ART 3769: Intermediate Interactive Design	3
ART 4803: Senior Seminar	3	ART 4864: Package Design	3
ART 4802: Senior Project	3	ART 4861: Publication Design	3

ART HISTORY AND THEORY

Course	s.h.
ART 1541: Survey of Art History 1	3
ART 1542: Survey of Art History 2	3
ART 3788: Theory of Art	3
ART 5882: 20 th Century from 1960	3
ART 37XX Art History Electives	6

Studio Art Graphic and Interactive Design Emphasis

Course	s.h.
ART 1521: Foundation Drawing	3
ART 1522: Intermediate Drawing	3
ART 1501: Fundamentals of 2D Design	3
ART 1502: Fundamentals of 3D Design	3
ART 1503: Foundation Portfolio Review	1
ART 2650: Introduction to Painting	3
ART 2691: Introduction to Digital Media	3

ART HISTORY AND THEORY

Course	s.h.
ART 1541: Survey of Art History 1	3
ART 1542: Survey of Art History 2	3
ART 3788: Theory of Art	3
ART 3783: History of Graphic Design	3
ART 37XX Art History Elective	6
ART 5881: 20 th Century to 1960 or ART 5882: 20 th Century from 1960	3

Studio Art Painting / Printmaking Emphasis

Course	s.h.
ART 1501: Fundamentals of 2D Design	3

ART 1503: Foundation Portfolio Review	1
ART 3721: Expressive Drawing	3
ART 2691: Introduction to Digital Media	3
ART 2621: Life Drawing	3
ART 2625: Introduction to Printmaking: Intaglio and Relief or ART 2626: Introduction to Printmaking: Lithography and Screenprinting	3
ART 2650: Introduction to Painting	3
ART 2674: Introduction to Photography	3
ART 2631: Introduction to Ceramics	3
ART 3732: Intermediate Ceramics	3
ART 3733: Advanced Ceramics	3
ART 2611: Introduction to Sculpture	3
ART 3712: Intermediate Sculpture	3
ART 3713: Advanced Sculpture	3
ART 4834: Advanced 3D Studies	3
ART 37XX /48XX Studio Art Electives	9
ART 3703: Junior Portfolio Review	1
ART 4803: Senior Seminar	3
ART 4802: Senior Project	3

ART HISTORY AND THEORY

Course	s.h.
ART 1541: Survey of Art History 1	3
ART 1542: Survey of Art History 2	3
ART 3788: Theory of Art	3
ART 5881: 20 th Century to 1960	3
ART 5882: 20 th Century from 1960	3
ART 37XX Art History Electives	3

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.

ART HISTORY

Course	s.h.
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Major Requirements

ART 1541: Survey of Art History 1	3
ART 1542: Survey of Art History 2	3

Two of the following:

ART 3741: Topics in Medieval Art	3
ART 3742: Topics in Renaissance Art	3
ART 3744: 17 th /18 th Century American Art	3
ART 3743: Baroque and Rococo Art	3
ART 5840: Topics in Ancient Art	3

Two of the following:

ART 3745: 19 th Century European Art	3
ART 3746: 19 th Century American Art	3
ART 3747: African-American Art	3
ART 5881: 20 th Century Art to 1960	3
ART 5882: 20 th Century Art from 1960	3

One of the following:

ART 3780: African Art	3
ART 3782: Pre-Columbian Art	3
ART 3781: Native North American Art	3

Art History Electives:

Three of any 3700 or higher Art History	3 each
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Capstone:

ART 4889: Seminar in Art History	3
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Studio Art Electives	6
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Required Support Courses

One Foreign Language	11
Any Religious Studies	3
Any English Literature, Music Literature, or Intro. to Theater Arts	3

Art History for Studio Art Majors Minor

ART HISTORY FOR STUDIO ART MAJORS MINOR

Course	s.h.
<i>Six of the following courses:</i>	
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 th & 18 th C. American Art	3

ART 3745: 19 th C. European Art	3
ART 3746: 19th 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 th C. Art to 1960	3
ART 5882: 20 th C Art from 1960	3
Total Number of Semester Hours	18

Graphic Design for Non-Art Majors Minor

GRAPHIC DESIGN FOR NON-ART MAJORS MINOR

Course	s.h.
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
<i>One of the following courses:</i>	
ART 2669: Intro to Interactive	3
ART 4861: Publication Design	3
ART 3768: Pre-Press Production	3
Total Number of Semester Hours	21

Graphic Design for Studio Art Majors Minor

GRAPHIC DESIGN FOR STUDIO ART MAJORS MINOR

Course	s.h.
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
<i>Two of the following courses:</i>	
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
Total Number of Semester Hours	18

Interactive Design for Studio Art Majors Minor

INTERACTIVE DESIGN FOR STUDIO ART MAJORS MINOR

Course	s.h.
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 or ART 3765: Motion for Interactive Design or ART 4863: Identity Systems or ART 4867: Graphic Design Internship or ART 4800: Studio Problems	3
Total Semester Hours:	18

Interactive Design for Non-Art Majors Minor

INTERACTIVE DESIGN FOR NON-ART MAJORS MINOR

Course	s.h.
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
<i>Select one of the following courses:</i>	
ART 4869: Advanced Interactive Design or ART 4800: Studio Problems or ART 3765: Motion for Interactive Design or ART 4863: Identity Systems	3
Total Semester Hours:	21

Art Minor

ART MINOR

Course	s.h.
ART 1501: Fundamentals of 2-D Design	3
ART 1521: Foundation Drawing	3
ART 1502: Fundamentals of 3-D Design	3
Select from two (2) or three (3) courses from any fine-art discipline (drawing, painting, printmaking, ceramics, sculpture) 26xx or higher; 2 must be upper-division	
Total Semester Hours:	18

Painting for Studio Art Majors Minor

PAINTING FOR STUDIO ART MAJORS MINOR

Course	s.h.
ART 3751: Intermediate Painting 1	3
ART 3752: Intermediate Painting 2	3
ART 4851: Advanced Painting 1	3
ART 4852: Advanced Painting 2	3
<i>Select two from the following:</i>	
ART 2653: Watercolor Painting	3
ART 4853: Advanced Painting 3	3
ART 4800: Studio Problems	1-3
Total Semester Hours:	18

Painting for Non-Art Majors Minor

PAINTING FOR NON-ART MAJORS MINOR

Course	s.h.
ART 1501: Fundamentals of 2D Design	3
ART 1521: Foundation Drawing	3
ART 2650: Intro to Painting	3
ART 3751: Intermediate Painting 1	3
ART 3752: Intermediate Painting 2	3
<i>Select two from the following:</i>	
ART 2653: Watercolor Painting	3
ART 4851: Advanced Painting 1	3
ART 4852: Advanced Painting 2	3
ART 4800: Studio Problems	1-3
Total Number of Semester Hours	21

Photography for Non-Art Majors Minor

PHOTOGRAPHY FOR NON-ART MAJORS MINOR

Course	s.h.
ART 1501: Fundamentals of 2D Design	3
ART 2674: Introduction to Photography	3
ART 2675: Introduction to Digital Photography	3
ART 2676: Introduction to Analog Photography	3
<i>Select two of the following courses:</i>	
ART 3774: Intermediate Digital Photography	3
ART 3776: Intermediate Analog Photogrgraphy	3
ART 3748: Special Topics in Studio	3
ART 4873: Advanced Photography	3
ART 4800: Studio Problems	1-3
Total Number of Semester Hours	18

Photography for Studio Art Majors Minor

PHOTOGRAPHY FOR STUDIO ART MAJORS MINOR

Course	s.h.
ART 2675: Introduction to Digital Photography	3
ART 2676: Introduction to Analog Photography	3
<i>Select four of the following courses:</i>	
ART 3774: Intermediate Digital Photography	3
ART 3776: Intermediate Analog Photography	3
ART 3748: Special Topics in Studio Art	3
ART 4800: Studio Problems	1-3
ART 4873: Advanced Photography	3
Total Number of Semester Hours	18

Printmaking for Studio Art Majors Minor

PRINTMAKING FOR STUDIO ART MAJORS MINOR

Course	s.h.
<i>Select one or both from the following courses:</i>	
ART 2625: Introduction to Print Intaglio Relief	3
ART 2626: Introduction to Print Litho Screenprint	3
<i>Select one or both that coincide with Intro to Print Selection(s):</i>	
ART 3725: Intermediate Print Intaglio Relief	3
ART 3726: Intermediate Print Litho Screenprint	3
<i>May be taken up to 3 times:</i>	
ART 4824: Advanced Printmaking	3
ART 4800: Studio Problems in Printmaking	3
Total Number of Semester Hours	18

Art History for Non-Art Majors Minor

ART HISTORY FOR NON-ART MAJORS MINOR

Course	s.h.
ART 1541: Survey of Art History 1	3
ART 1542: Survey of Art History 2	3
<i>Four of the following courses:</i>	
ART 3741: Topics in Medieval Art	3
ART 3742: Topics in Renaissance Art	3
ART 3743: Baroque and Rococo Art	3
ART 3744: 17 th & 18 th Century American Art	3
ART 3745: 19 th Century European Art	3
ART 3746: 19 th Century American Art	3
ART 3781: Native North American Art	3
ART 3782: Topics in Pre-columbian Art	3
ART 4880: Special Topics in Art History	3
ART 4889: Seminar in Art History	3
ART 5881: 20 th Century Art to 1960	3
ART 5882: 20 th Century Art from 1960	3
Total Number of Semester Hours	18

Digital Media for Non-Art Majors

DIGITAL MEDIA FOR NON-ART MAJORS

Course	s.h.
ART 1501: Fundamentals of 2-D Design	3

ART 2691: Introduction to Digital Media	3
<i>Select four (4) courses from the following:</i>	
ART 3748: Special Topics in Studio Art/Digital Media	3
ART 3792: Video Art	3
ART 3796: Ideation	3
ART 3797: Web as Art	3
ART 4800: Studio Problems: Digital Imaging	3
ART 4893: Advanced Digital Media Studio	3
Total Number of Semester Hours	18

Digital Media for Art Majors

DIGITAL MEDIA FOR ART MAJORS

Course	s.h.
ART 3748: Special Topics in Studio Art/Digital Media	3
ART 3792: Video Art	3
ART 3796: Ideation	3
ART 3797: Web as Art	3
<i>May be taken twice:</i>	
ART 4800: Studio Problems: Digital Imaging	3
ART 4893: Advanced Digital Media Studio	3
Total Number of Semester Hours	18

Interdisciplinary Art Minor for Studio Art Majors

Select 18 credits from 2 or 3 Fine Art disciplines (painting, printmaking, ceramics, sculpture etc). Two must be upper division. Note Students cannot double count courses between the major and the minor.

Choose from the following:

INTERDISCIPLINARY ART MINOR FOR STUDIO ART MAJORS

Course	Prerequisites	s.h.
ART 2615: Introduction to Metals	ART 1503	3
ART 2675: Introduction to Digital Photography	ART 2674	3
ART 2653: Watercolor Painting	ART 1503	3
ART 2621: Life Drawing	ART 1503	3

Upper Division			
ART 3712: Intermediate Sculpture	ART 2611	3	
ART 3713: Advanced Sculpture Studio	ART 3712	3	
ART 3715: Intermediate Metals	ART 2615	3	
ART 3721: Expressive Drawing	ART 1503	3	
ART 3725: Intermediate Printmaking: Intaglio	ART 2625	3	
ART 3726: Intermediate Printmaking: Woodblock	ART 2626	3	
ART 3732: Intermediate Ceramics	ART 2631	3	
ART 3733: Advanced Ceramics	ART 3732	3	
ART 3748: Ideation	ART 1503	3	
ART 3748: Special Topics Studio Art (topic varies)	ART 1503	3	
ART 3751: Intermediate Painting 1	ART 2650	3	
ART 3752: Intermediate Painting 2	ART 3751	3	
ART 3792: Introduction to Video Art	ART 2691	3	
ART 4800: Studio Problems (various disciplines)	Senior Standing or Permission	1 to 3	
ART 4834: Adv. Spatial Arts Studio Ceramics	ART 3733	3	
ART 4834: Adv. Spatial Arts Studio Sculpture	ART 3713	3	
ART 4824: Advanced Printmaking	ART 3725 or ART 3726	3	
ART 4851: Advanced Painting	ART 3752	3	

Printmaking for Non-Art Majors Minor

PRINTMAKING FOR NON-ART MAJORS MINOR	
Course	s.h.
<i>Select one or both from the following courses:</i>	
ART 1501 Fundamentals of 2D Design	3
ART 1521 Foundation Drawing	3

Select one or both from the following courses:

ART 2625 Introduction to Printmaking: Intaglio and Relief	3
ART 2626 Introduction to Printmaking: Litho and Screen Printing	3
<i>Select one or both that coincide with Intro to Print Selection(s):</i>	
ART 3725 Intermediate Printmaking: Intaglio and Relief	3
ART 3726 Intermediate Printmaking: Litho and Screen Printing	3
<i>May be taken up to 3 times:</i>	
ART 4824 Advanced Printmaking	3
ART 4800F Studio Problems in Printmaking	3
Total Number of Semester Hours	18

3 Dimensional Studies for Non-Art Majors Minor

3 Dimensional Studies for Non-Art Majors Minor	
Course	s.h.
ART 1501 Fundamentals of 2D Design	3
ART 1502 Fundamentals of 3D Design	3
ART 2611 Intro to Sculpture	3
ART 2631 Intro to Ceramics	3
<i>Select three of the following courses:</i>	
ART 3712 Intermediate Sculpture	3
ART 3713 Advanced Sculpture Studio	3
ART 3732 Intermediate Ceramics	3
ART 3733 Advanced Ceramics	3
ART 4834 Advanced 3D Studies	3
Total Number of Semester Hours	21

3 Dimensional Studies for Art Majors Minor

3 DIMENSIONAL STUDIES FOR ART MAJORS MINOR

Course	s.h.
<i>Select six from the following courses:</i>	
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
ART 4834 Advanced Spatial Arts Studio	3
ART 4800 Studio Problems	3
Total Number of Semester Hours	18

Department of Communication

330-941-3631

Associate Dean Cary Wecht, Professors McCloud, O'Neill, Owens; Associate Professors Crawford, Curnalia, Earnheardt (Chair), Grubb, Mathews, Tyus; Instructors Jackson, Mermer.

The Bachelor of Arts degree for communication studies and telecommunication studies requires 39-40 credit hours within the department. In addition to major coursework within the department, students are required to complete a minor. These degrees may be earned in eight semesters if students average 15 to 16 hours per semester. For further information about the department, including meeting with a faculty member who will discuss degree requirements with you, contact the department office at 330-941-3631. The department office is located in Bliss Hall, Room 2000. Our web address is <http://web.ysu.edu/ccac/communication> - <http://web.ysu.edu/ccac/communication>.

Communication Studies

Courses in this major provide students with the necessary communication skills for an evolving global marketplace and future career demands. The Communication Studies program deals, in part, with people in conversations in settings that are usually face-to-face, but that are increasingly becoming mediated (such as computer-mediated). Public speaking, media and public relations, persuasion and argumentation, conflict management, social media, and gender communication are some of the areas students examine in this major. Courses touch on a wide variety of areas including social and political movements, the process of legislation, or new media communication.

Communication Studies courses address the universal emphasis placed on effective, competent communication skills by employers 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, media and public relations, advertising, social media or computer-mediated communication should choose the media track.
- Careers in pharmaceutical sales, industrial sales, retail and corporate sales, politics or law (including law school) should choose the persuasion track.

The overriding goal of each track is to challenge each student to explore and apply 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 must have a GPA of 2.00 and be in "good academic standing." Students are expected to meet with a communication studies faculty advisor prior to registration and are encouraged to meet with them whenever they have questions or concerns, and to monitor progress.

Department of Communication - <http://web.ysu.edu/ccac/communication> - <http://web.ysu.edu/ccac/communication>

Bachelor of Arts 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

Course	s.h.	TOTAL	21	
<i>(take all 6 courses)</i>				
CMST 2600: Communication Theory	3	Students must complete all requirements for a Bachelor of Arts degree, including the completing of an approved academic minor. Students in the communication studies major are not permitted to minor in communication studies. Students seeking a degree in communication studies through a weekend or an evening program should consult with the department chair to determine if it is possible.	Minor in Communication Studies	
CMST 2653: Group Communication	3			
CMST 2656: Interpersonal Communication	3			
CMST 3700: Designing Communication Research	3			
CMST 4899: Senior Project	3			
TOTAL	15			
INTERPERSONAL/ORGANIZATIONAL TRACK				
Course	s.h.	Students interested in improving their communication skills beyond CMST 1545 should consider one of four minors in communication studies. The minors focus on different areas of communication and each one will help you develop a different skills set. These skills are in high demand by employers and recruiters and include interpersonal and intercultural communication, social media campaign development, and conflict management and negotiation.		
<i>(take 5 of 6 courses plus 6 s.h. of upper division electives in CMST)</i>				
CMST 2610: Intercultural Communication	3	To complete the minor in communication studies, a student must successfully complete 18 s.h. in one of the areas below.	MINOR IN COMMUNICATION STUDIES	
CMST 3756: Interviewing	3			
CMST 3750: Gender Communication	3			
CMST 4850: Computer Mediated Communication	3			
CMST 4855: Interpersonal Relationships	3			
CMST 4859: Organizational Cultures	3	MINOR IN COMMUNICATION STUDIES		
CMST 5852: Conflict Management	3			
TOTAL	21	Course	s.h.	
MEDIA TRACK				
Course	s.h.	<i>Take the following course:</i>		
CMST 3717: Media Campaigns	3	CMST 2600 Communication Theory	3	
CMST 3756: Interviewing	3	<i>and one of the following courses:</i>		
CMST 3757: Media Relations Writing	3	CMST 2630 Social Media Literacy	3	
CMST 4850: Computer Mediated Communication	3	CMST 2655 Communication in Groups and Organizations	3	
CMST 4851: New Communication Media	3	CMST 2656 Interpersonal Communication	3	
CMST 4859: Organizational Cultures	3	<i>and then complete minor with four CMST upper-division courses (3700 and above, 12 s.h.)</i>		
CMST 4898: Media Analysis	3	Total Number of Semester Hours	18	
TOTAL	21	Telecommunication Studies		
PERSUASION TRACK				
Course	s.h.	Telecommunication Studies address human communication that passes through some medium such as television, radio or the Internet. For example, in this area, students may study how the Internet impacts traditional forms of broadcast media such as radio and television. A student may learn about early stages of the field, as well as contemporary combinations of telecasting through the Internet. A major in the telecommunication studies curriculum provides students with an in-depth knowledge and intellectual challenge in		
CMST 2610: Intercultural Communication	3			
CMST 2645: Presentational	3			
CMST 3754: Argumentation	3			
CMST 3756: Interviewing	3			
CMST 3760: Persuasion	3			
CMST 4850: Computer Mediated Communication	3			
CMST 4851: New Communication Media	3			

electronic communication. Students receive practical orientation to the skills and techniques of broadcasting. Further, students 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 communication, industrial communication, 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 15 semester hours while in the Pre-TCOM category, and completion of ENGL 1550, TCOM 1580 AND TCOM 1581 (with grades of A or B in all three), students will be reassigned to the "Telecommunication Studies" (TCom) category.

Students may transfer to the Pre-TCom, but not TCom, category from another program at YSU or from another institution. Students who have completed associate- or bachelor-level degrees also may enter the Pre-TCom, but not TCom, category. Upon completion of 15 semester hours while in the Pre-TCom category, and completion of ENGL 1550, TCOM 1580 and TCOM 1581 (with grades of A or B in all three), students will be reassigned to the TCom category.

Students who have interrupted their attendance at YSU for three consecutive semesters or more will be assigned to the Pre-TCom category upon return (even if the student was a TCom major). After

completion of 15 semester hours while in the Pre-TCom category, and completion of ENGL 1550, TCOM 1580 and TCOM 1581 (with grades of A or B in all three), students will be reassigned to the TCom category.

Bachelor of Arts Degree in Telecommunication Studies

CLASSIC TRACK

Course	s.h.
TCOM 1500: Orientation to Telecommunication Studies	1
TCOM 1580: Introduction to Telecommunication Studies	3
TCOM 1581: Telecommunication Technologies	2
<i>Then</i>	
TCOM 2682: Scriptwriting for Electronic Media	3
TCOM 2683: Media Operations and Performance	3
<i>Then</i>	
TCOM 3780: Principles and Practices of Media Announcing	3
TCOM 3781: Audio Production <i>or</i> TCOM 3782: Video Production 1	3
TCOM 3783: Telecommunications Regulation	3
TCOM 4887: Theories and Criticisms of Telecommunication	3
TCOM 4897: Seminar in Telecommunication	3
TCOM 4899: Capstone	2
Plus a minimum of 11 credits of TCOM electives	
TOTAL	40

SPORTS BROADCASTING TRACK

Course	s.h.
TCOM 1500: Orientation to Telecommunication Studies	1
TCOM 1510: Sports Field Production 1	1
TCOM 1570: Elements of Media and Production	3
TCOM 1581: Telecommunication Technologies	2
<i>Then</i>	
TCOM 2682: Scriptwriting for Electronic Media	3

TCOM 2683: Media Operations and Performance	3
<i>Then</i>	
TCOM 3792: Broadcast Sports Writing and Producing	3
TCOM 3793: Broadcast Sports Performance	3
TCOM 3794: Cross-Platform Sports Broadcasting	3
TCOM 3795: Sports Media Production 1	3
TCOM 4887: Theories and Criticisms of Telecommunication	3
TCOM 4889: Sports Broadcasting Internship	3
TCOM 4899: Capstone	2
Plus a minimum of 7 credits of TCOM electives	
TOTAL	40

<i>All of the following courses:</i>	
TCOM 1580: Intro to Telecom Studies	3
TCOM 1581: Telecom Technologies	2
<i>Then:</i>	
TCOM 2682: Scriptwriting for Elec Media	3
TCOM 2683: Media Operations & Performance	3
<i>3 of the following:</i>	
TCOM 3783: Telecom Regulation	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

Minor in Communicating in Diverse Organizations

MINOR IN COMMUNICATING IN DIVERSE ORGANIZATIONS

Course	s.h.
CMST 2600 Communication Theory	3
CMST 2655 Communication in Groups and Organizations	3
<i>and one of the following:</i>	
CMST 2610 Intercultural Communication	3
CMST 2656 Interpersonal Communication	3
<i>then:</i>	
CMST 4859 Organizational Cultures	3
CMST 5852 Conflict Management	3
<i>and one of the following:</i>	
CMST 3750 Gender Communication	3
CMST 3756 Interviewing	3
CMST 4855 Interpersonal Communication Relationships	3
Total Number of Semester Hours	18

Minor in Telecommunication Studies

Students interested in developing mass communication skills should consider the telecommunication studies minor. The minor focuses on different areas of mass media studies and will help students develop an introductory skill set that would serve as a complementary minor to many different majors. These skills are in high demand by employers and recruiters in a variety of fields. To complete the minor in telecommunication studies, a student must successfully complete 20 s.h. in:

All of the following courses:

MINOR IN TELECOMMUNICATION STUDIES

Course	s.h.
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Minor in Social Media Campaigns

MINOR IN SOCIAL MEDIA CAMPAIGNS

Course	s.h.
<i>First take these:</i>	
CMST 2600: Communication Theory	3
ENGL 2624: Image and Design of News	3
CMST 2630: Social Media Literacy	3
<i>Then pick three:</i>	
CMST 3717: Introduction to Media Relations Campaigns	3
CMST 3740: Social Media Communication	3
CMST 3757: Media Relations Writing	3
CMST 4850: Social Media Campaigns	3
CMST 4851: New Communication Media	3
Total Number of Semester Hours	18

Minor in Interpersonal Communication

Minor in Interpersonal Communication	
<i>First take these</i>	
Course	s.h.
CMST 2600 Communication Theory	3
CMST 2630 Social Media Literacy	3
CMST 2656 Interpersonal Communication	3
<i>Then take these</i>	
CMST 3750 Gender Communication	3
CMST 4855 Interpersonal Communication Relationships	3
CMST 5852 Conflict Management Negotiation	3
Total Semester Hours	18

Dana School of Music

330-941-3636

Professors Ausmann, Crist (Director), Engelhardt, Gage, Gelfand, Krummel, Morgan, Mosher, Oltmanns, Perkins, Rollin, J. Umble, Wilcox; Associate Professors Lee, Schaft, K. Umble, Yun; Assistant Professors Boczkowska, Fowler, Goldberg, Kiser, Louth, Merrell, Mickens, Payne, Reale, Root, Wang, Yudha; 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. The BA degrees allow for work in minor areas. The BA in Applied Music allows for more extensive minor areas like nonprofit leadership.

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 Creative Arts and Communication. 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 Classroom

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 classroom 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. 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, Dana Research Society, YSU Percussion Collective.

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 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:**
 1. Academic. These courses are normally taken in high school. Deficiencies must be overcome prior to completing 60 semester hours at YSU.
 2. 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 Creative Arts and Communication 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 50-minute 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 50-minute 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.

Dana Young Scholars Award celebrates student research in music. The competition is open to all graduate and undergraduate students at the sophomore level or higher who are enrolled in a music degree at the Dana School of Music.

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.

Dana School of Music -
<http://web.ysu.edu/ccac/music/> -
<http://web.ysu.edu/ccac/music/>

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.

JAZZ OR APPLIED/BA MAJOR	
Course	s.h.
1501, 1502. See Performance Major	2+2
2603, 2604. See Performance Major	3+3

3703, 3704. See Major/Performance	3+3
4803, 4804. See Major/Performance	3+3

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.

MUSIC EDUCATION MAJOR	
Course	s.h.
1501, 1502 See Performance Major	2+2
2601, 2602 See Performance Major	2+2
3701, 3702 See Performance Major	2+2
4801 See Performance Major	2

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.

LOWER-DIVISION: 12 S.H., INCLUDING	
Courses	s.h.
MUTC 1531 and Lab Theory 1/1L	4

PLUS AN ADDITIONAL 8 S.H. FROM THE FOLLOWING LOWER-DIVISION COURSES

Courses	s.h.
Any Dana School of Music Ensemble (may be repeated)	1
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	MUEN 0013: Studio Ensemble	0-1
MUHL 2619: Music in Non-Western Societies	3	MUEN 0014: Women's Chorus	0-1
MUHL 2621: Music Lit. and Appreciation	3	MUEN 0015: Early Music Ensemble	0-1
MUHL 2622: Popular Music in America	3	MUEN 0016: Flute Ensemble	0-1
MUTC 1532 and Lab Theory 2/2L	4	MUEN 0017: Brass Ensemble	0-1
MUTC 2631 and Lab Music Theory 3/3L	4	MUEN 0018: Horn Choir	0-1
MUTC 2632 and Lab Music Theory 4/4L	4	MUEN 0019: Trombone Ensemble	0-1
UPPER-DIVISION: 6 S.H. FROM THE FOLLOWING COURSES			
Courses	s.h.	MUEN 0020: Tuba Ensemble	0-1
MUHL 3771: Music History and Lit. 1	3	MUEN 0021: Brass Chamber Ensemble	0-1
MUHL 3772: Music History and Lit. 2	3	MUEN 0022: Trumpet Ensemble	0-1
MUHL 3773: Music History and Lit. 3	3	MUEN 0024: Composer's Ensemble	0-1
MUHL 3774: Music History and Lit. 4	3	MUEN 0026: Chamber Orchestra	0-1
MUTC 3700A: Minor Appl. Study	1	MUEN 0028: Chamber Winds	0-1
MUTC 3700B: Minor Appl. Study	1	MUEN 0029: Guitar Ensemble	0-1
MUTC 5800A: Minor Appl. Study	1	MUEN 0030: Jazz Combo	0-1
MUED 3722: Music in Early Childhood	3	MUEN 0035: Saxophone Quartet	0-1
Total Number of Semester Hours: 18		MUEN 0036: Clarinet Choir	0-1
		MUEN 0041: Basketball Pep Band (spring only)	0-1
		MUEN 0051: Piano Chamber Ensemble	0-1

Large Ensembles

LARGE ENSEMBLES

Course	s.h.
MUEN 0002: Dana Chorale	0-1
MUEN 0003: Dana Madrigal	0-1
MUEN 0004: University Chorus	0-1
MUEN 0005: Concert Band	0-1
MUEN 0006: Marching Band (fall only)	0-1
MUEN 0007: Wind Ensemble	0-1
MUEN 0008: Symphony Orchestra	0-1
MUEN 0023: Jazz Ensemble	0-1
MUEN 0040: University Band (spring only)	0-1

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

Chamber Ensembles

CHAMBER ENSEMBLES

Course	s.h.
MUEN 0009: Percussion Ensemble	0-1
MUEN 0010: String Ensemble	0-1
MUEN 0012: Opera Workshop	0-3

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.

Curriculum For Performance Degrees

I. GENERAL UNIVERSITY REQUIREMENTS

Course	s.h.
Writing 1 and 2	6
Communications	3
Math	3
Domains:	
Social and Personal Awareness	6
Arts and Humanities (MUHL 3771, MUHL 3772, MUHL 3773)	6
Natural Sciences	7
Social Science	6

II. CORE MUSIC REQUIREMENTS

Course	s.h.
Music Theory 1531-3750	19
Music History 3771-3774	12
Junior/Senior Recitals	N/C

III. REQUIREMENTS UNIQUE TO AREA OF EMPHASIS

Course	s.h.
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	5
Jazz Combo	5
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

Course	s.h.
Writing 1 and 2	6

Communications	3
Math	3
Domains:	
Social and Personal Awareness	6
Arts and Humanities	6
(MUHL 3771, MUHL 3772, MUHL 3773)	
Natural Sciences	7
Social Science	6

II. CORE MUSIC REQUIREMENTS

Course	s.h.
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

Course	s.h.
Writing 1 and 2	6
Communications	3
Math	3
Domains:	
Social and Personal Awareness	6
Arts and Humanities	6
(MUHL 3771, MUHL 3772, MUHL 3773)	
Natural Sciences	7
Social Science	6

II. CORE MUSIC REQUIREMENTS

Course	s.h.
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

Course	s.h.
1. Instrumental	
Large Ensemble	5
Chamber Ensemble	2
Keyboard Musicianship 1581-2682	4
Methods/Applied Classes	5
Music Education 4826	2
2. Keyboard	
Large Ensemble	4
Chamber Ensemble	2
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	5
Keyboard Musicianship 1581-2682	4
Pedagogy 5880	1
Diction	1
Methods/Applied Classes	3
Music Education 4827	2

IV. COLLEGE OF EDUCATION LICENSURE REQUIREMENTS

Course	s.h.
PSYC 3709	3
FOUN 1501	3
FOUN 3708	3
SPED 2630	3
TERG 3710	3
MULT 4807	2
SED 4844 and seminar	1-10

Students are required to complete the Senior Recital before student teaching.

Curriculum For Bachelor Of Arts Degree

I. GENERAL UNIVERSITY REQUIREMENTS

Course	s.h.
Writing 1 and 2	6
Communications	3
Math	3
Domains:	
Social and Personal Awareness	6
Arts and Humanities	6
(MUHL 3771, MUHL 3772, MUHL 3773)	
Natural Sciences	7
Social Science	6
Foreign Language	8
Minor Field	18

II. CORE MUSIC REQUIREMENTS

Course	s.h.
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

Course	s.h.
1. Applied Music	
Applied Instrument/Voice 1501-4801	14
Large Ensemble	7
Electives	9
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 in Music Recording and Technology

GENERAL EDUCATION REQUIREMENTS

Course	s.h.
Writing 1 and 2	6
Communications	3
Math	3
Domains:	
Social and Personal Awareness	6
Arts and Humanities	6
(MUHL 3771, MUHL 3772, MUHL 3773)	
Natural Science	7
Social Science	6

Musicianship

I. MUSIC THEORY (19 s.h.)

Course	s.h.
MUTC 1531/MUTC 1531L	4
MUTC 1532/MUTC 1532L	4
MUTC 2631/MUTC 2631L	4
MUTC 2632/MUTC 2632L	4
MUTC 3750	3

II. MUSIC HISTORY AND LITERATURE (15 s.h.)

Course	s.h.
MUHL 3771 or MUHL 3772	3
MUHL 3773	3
MUHL 3774	3
MUHL 3775	3

Music Performance

I. APPLIED MAJOR (14 s.h.)

Course	s.h.
1501	2
1502	2
2601	2
2602	2

3701	2
3702	2
4801	2

II. KEYBOARD MUSICIANSHIP (4 s.h.)

Course	s.h.
MUAC 1581	1
MUAC 1582	1
MUAC 3781	1
MUAC 3782	1

III. CONDUCTING (3 s.h.)

Course	s.h.
MUCO 3715	3

IV. ENSEMBLES (7 s.h. must include 5 large and 2 chamber)

Course	s.h.
MUEN	1
MUEN	1
MUEN	1
MUEN	1
MUEN	1
MUEN	1
MUEN	1

Music Recording and Electives

I. AUDIO ENGINEERING AND TECHNOLOGY (19 s.h.)

Course	s.h.
MUIN 1561	4
MUIN 3762	2
MUIN 3763	2
MUIN 3764	2
MUIN 3765	2
MUIN 4866	3
MUIN 4867 (Capstone)	4

II. ELECTIVE (15 s.h.)

Course	s.h.
Elective	15

TOTAL HOURS: 124

Department of Theater and Dance

330-941-3810

Associate Professor Irelan (Chair), Professor Cobb;

Assistant Professor Jones, Mazuroskie, Vanmeter; 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** â€” Students demonstrate competence in the creation and presentation of public theater events, either as performers, designers or technicians.
- **Knowledge of History and Cultural Dimensions** â€” Students demonstrate knowledge of the history and cultural influences of and upon the institution of theater throughout the ages.
- **Informed Assessments of Quality** â€” Students demonstrate the ability to critically evaluate works of theater.
- **Critical Thinking** â€” 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** â€” Students demonstrate an understanding of music theory, and the keyboard, and the ability to read music.
- **Vocal Competence** â€” 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** â€” Students demonstrate an understanding of basic management principles and entrepreneurship.
- **Dance Techniques** â€” Students demonstrate competence in a number of dance techniques and styles, including a basic understanding of world dance forms and styles.
- **Pedagogy** â€” Students demonstrate competence in transferring the knowledge, skills, aesthetics, and art of dance through teaching assessment.
- **Choreography and Composition** â€” Students demonstrate the ability to create movement combinations leading to successful compositional studies and performance choreography.

Department of Theater and Dance - <http://web.yosu.edu/ccac/theater> -

BA 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 BA 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 BA IN THEATER STUDIES

Course	s.h.
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 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
Plus 9 credits of theater or dance electives, a minor, and a foreign language	

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 BFA 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 BFA IN THEATER

Course	s.h.
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
<i>Two of the following three:</i>	
THTR 3763: Scene Design	3
THTR 3765: Stage Lighting	3
THTR 3769: Costume Design	3
<i>Plus either</i>	
THTR 3791: Rehearsal & Performance (taken twice) or THTR 3792: Projects in Production (taken twice)	6
<i>Plus</i>	
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
<i>Plus 12 credits taken from:</i>	
THTR 1563: Costume Construction	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
<i>Plus 3 credits in movement taken from:</i>	
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	THTR 4893: Independent Study	1-3
HPES 1558: Physical Fitness	1	THTR 4899: Topics in Theater	3
HPES 1557: Weight Training	1	THTR 5864: Directing 2	3
Plus 12 credits of theater or dance electives emphasizing either performance or design/technology		<i>Plus 16 credits of Applied Voice</i>	16
		<i>Plus 2 credits of Applied Keyboard</i>	2
		<i>Plus 4 credits of Music Theory</i>	4
		<i>Plus 5 credits in movement taken from</i>	

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 BFA IN MUSICAL THEATER

Course	s.h.
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
<i>Plus 6 credits taken from</i>	
THTR 1563: Costume Construction	3
THTR 3768: Script Analysis	3
THTR 4870: Acting 4: Acting on Camera	3

DNCE 1572: Ballet 1	1
DNCE 1540: Modern Dance 1	1
DNCE 1541: Modern Dance 2	2
DNCE 1571: Tap and Jazz 2	2
DNCE 3767: Choreography for Musical Theater	2
HPES 1514: Fencing 1	1
HPES 1515: Fencing 2	1
HPES 1557: Weight Training	1

Curriculum guides detailing the BFA 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 BA IN DANCE MANAGEMENT

Course	s.h.
<u><i>Business/Management Sequence (25% of the major):</i></u>	
BUS 1500: Exploring Business	3
ENT 3700: Entrepreneurship & New Venture Creation	3
MGT 3725: Fundamentals of Management	3
ENT 4800: Entrepreneurship & Business Plan Development	3
MKTG 3740: Professional Selling	3
<i>Plus one of the Following:</i>	
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 (2 semester Hours: required)	1-2
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 (capstone course in theater or dance)	3

Plus one of the following:

THTR 3765: Stage Lighting	3
THTR 3761: Stage Makeup	3

Minor In Theater

To complete a minor in theater, a student must take a minimum of 18 hours as described below:

MINOR IN THEATER

Course	s.h.
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:

THTR 4891: Theater History to 1700	3
THTR 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:

MINOR IN DANCE

Course	s.h.
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Required Courses

One-third of the dance minor (7 credit Hours:) must be 3000 level or above.

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 1570: Tap and Jazz 1*	1
DNCE 1571: Tap and Jazz 2	2
DNCE 1572: Ballet 1*	1
DNCE 1573: Ballet 2	2
DNCE 2698: Survey of Dance	3
THTR 3791: Rehearsal and Performance	3
DNCE 4892: Pedagogy of Dance Technique	3

or

DNCE 3767: Choreography for Musical Theater	2
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Plus a minimum of 3 or 4 additional credit Hours: selected from the following, depending on whether one takes DNCE 4892 or DNCE 3767:

DNCE 2606: Creative Dance for the Child	1
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DNCE 2680: Tap Dance 3	1
DNCE 3751: Modern Dance 3	2
DNCE 3770: Jazz Dance 3	2
DNCE 3781: Ballet 3	2
DNCE 4871: Jazz 4	2
DNCE 4881: 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**

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 and a professional doctorate degree program further expand and advance the competencies of graduates in the delivery and administration of health care and human services.

Accreditation

- The emergency medical services (EMS), 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 medical laboratory technology and medical laboratory science 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 Accreditation Council for Education in Nutrition and Dietetics (ACEND).
- 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 Accreditation Commission for Education in Nursing and approved by the Ohio Board of Nursing Education and Nurse Registration.

- 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

If a student enters the College as an undetermined major, select pre-major student (see department's requirements), a student requiring extensive 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, 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 (AAS, BSAS, MS)
Forensic Science (BSAS)

Department of Health Professions

*Allied Health (BSAS)
Medical Laboratory Technology (AAS)
Medical Laboratory Science (BSAS)
**Public Health (BSAS)
Dental Hygiene (BS)
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, MRC)

Department of Human Ecology

Dietetic Technician (A)
**Family and Consumer Sciences Education (BSEd)
Family and Consumer Studies (BSAS)
Coordinated Program in Dietetics (BSAS)
Didactic Program in Dietetics (BSAS)
Hospitality Management Technology (AAS, BSAS)
Merchandising: Fashion and Interiors (BSAS)
Early Childhood Associate/Pre-Kindergarten (AAS)

Department of Human Performance and Exercise Science

Exercise Science (BSAS)

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)

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.

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 of 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*.

The Dr. Dominic A. and Helen M. Bitonte College of Health and Human Services -
<http://web.ysu.edu/bchhs> -
<http://web.ysu.edu/bchhs>

Early Childhood Associate Pre-K

330.941.3343

Assistant Professor O'Leary (Program Coordinator).

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 pre-kindergarten 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.

Early Childhood Associate Pre-K - http://web.ysu.edu/gen/bcohhs/PreKindergarten_m118.html
http://web.ysu.edu/gen/bcohhs/PreKindergarten_m118.html

Curriculum

GENERAL EDUCATION REQUIREMENTS

Courses	s.h.
ENGL 1550 Writing 1	3
ENGL 1551 Writing 2	3
CMST 1545 Communication Foundations	3
PSYC 1560 General Psychology	3

Arts & Humanities

(1 approved elective)	3
SOC 1500 Introduction to Sociology	3
PSYC 3755 Child Development	3

Major Courses

CHFM 1514 Introduction to Early Childhood Education	3
CHFM 1530 Infants and Toddlers: Development and Care	3
HMEC 1550 Human Ecology Professions	1
HEPE 2624 PE for Children in Early Childhood Settings	3
SPED 2630 Intervention Strategies with Special Needs Children in Early Childhood	3
CHFM 2633 Early Childhood: Integrating Development and Education	3
CHFM 2650 Introduction to Assessment of Young Children	3

CHFM 2664 Managing Classroom Behavior and Staff Relationships in Early Childhood Settings	3
CHFM 2675 Integrated Curriculum for Prekindergarten	3
MUED 3722 Music in Early Childhood	3
CHFM 3733L Practicum in Preprimary Settings	3
ART 3737 Prek-4, Visual Arts Education	3
CHFM 3750 Parent and Professional Relationships	3
CHFM 3770 Wellness During the Early Childhood Years	3
CHFM 3790 Directed Practice in PreK Education	4
CHFM 3790S Directed Practice Seminar	2

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 AERO 1501 and AERO 1503 for the fall term and AERO 1502 and AERO 1504 for the spring term. *Sophomores* may register for AERO 2601 and AERO 2603 for the fall term and AERO 2602 and AERO 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 AERO 3701 and AERO 3703 for the fall term and AERO 3702 and AERO 3704 for the spring term. *Seniors* in the AFROTC program will register for AERO 4801 and AERO 4803 for the fall term and AERO 4802 and AERO 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, AFROTC DET 630, 104 Terrace Hall, Kent State University, Kent, Ohio 44242 at (330) 672-2182, or e-mail us at: det630@kent.edu.

Public Health

Assistant Professor Robinson.

The public health program offers the Bachelor of Science in Applied Science (BSAS) 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 meets 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 BSAS 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 BSAS 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 BSAS in public health. No minor is required for this professional BSAS degree.

Public Health Program -
http://web.ysu.edu/gen/bcohhs/Public_Health_Program_m38.html
 -
http://web.ysu.edu/gen/bcohhs/Public_Health_Program_m38.html

Department of Criminal Justice and Forensic Sciences

330.941.3279

Associate Professors Frissora, Hazy, Wagner (Chair); Assistant Professors Bellas, Clutter, Onwudiwe, Rogers, 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).

- 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.

Department of Criminal Justice and Forensic Sciences- <http://web.ysu.edu/bchhs/cj> - <http://web.ysu.edu/bchhs/cj>

Certificate in Basic Peace 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.

GENERAL CERTIFICATE REQUIREMENTS

Course	s.h.
CJFS 1500 Introduction to Criminal Justice	3
CJFS 2601 Policing	3
CJFS 3777 POTA-Law Enforcement	12
ENGL 1550 Writing 1	3
<i>Choose one of the following:</i>	
SOC 1500 Introduction to Sociology	3
PHIL 1560 Introduction to Philosophy	3
AHLT 1502 Applied Pathophysiology	4
CJFS 2602 Introduction to Philosophy	3

Associate in Applied Science - Criminal Justice

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/Humanities course. There also are 15 hours of required basic related studies: SOC 1500, CJFS 1500, AHLT 1502, PHIL 2625, and a Natural Sciences course with lab. 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.

GENERAL DEGREE REQUIREMENTS

Courses	s.h.	Criminal Justice
Writing		
ENGL 1550	3	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.
ENGL 1551	3	
Psychology		
PSYC 1560	3	
Sociology		
SOC 1500	3	
Philosophy		
PHIL 2625	3	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).
Natural Sciences (Choose one course)	3	
Allied Health		
AHLT 1502	4	
Speech		
CMST 1545	3	The purpose of each emphasis area is as follows: <ul style="list-style-type: none"> • 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.
Art/Humanities (Select one course)	3	
Electives	5	
Department Requirements (AAS)		
1500 Introduction to Criminal Justice and Forensic Sciences	3	
2601 Policing	3	
2602 Criminal Courts	3	
2603 Corrections	3	
3735 Crime and Delinquency*	3	
3719 Criminal Law	3	
*Students should not take SOC 2630 or 3735 if taking CJFS 3735.		
<i>Select 12 hours from one of the following tracks:</i>		
LAW ENFORCEMENT (select 12 hours)		
3700, 3714, 3714L, 3715, 3736, 3740, 3765, 3777, 4870		
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		
TOTAL HOURS Criminal Justice and Forensic Sciences	30	

Bachelor of Science in Applied Science -

GENERAL DEGREE REQUIREMENTS

Courses	s.h.
Criminal Justice and Forensic Sciences	

CJFS 1500	3	GENERALIST (approved by advisor select 5 courses)	15
Writing			
ENGL 1550	3		
ENGL 1551	3	Total Criminal Justice and Forensic Sciences Hours	45
Psychology			
PSYC 1560	3		
Sociology		Bachelor of Science in Applied Science Degree - Forensic Science	
SOC 1500	3		
Philosophy			
PHIL 2625	3	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.	
Natural Sciences			
Select one or two courses	3-6		
Speech			
CMST 1545	3	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.	
Art/Humanities			
Select two-three courses	6-9		
Mathematics			
MATH 2623	3		
Social Science			
Select one course	3	GENERAL DEGREE REQUIREMENTS	
Allied Health		Courses	s.h.
AHLT 1502	4	Writing	
Selected Topics (see advisor)	3	ENGL 1550H Honors Writing 1	3
Electives	26	ENGL 1551 Writing 2	3
		Speech	
Department Requirements (BSAS)		CMST 1545 Communication Foundations	3
2601 Policing	3	Math	
2602 Criminal Courts	3	MATH 1571 Calculus 1	4
2603 Corrections	3	MATH 1572 Calculus 2	4
3710 Social Statistics	3	Natural Sciences	
3712 Criminal Justice and Forensic Sciences Research	3	BIOL 2601 General Biology: Molecules and Cells & 2601L	4
3715 Criminal Justice and Forensic Sciences Management Concepts	3	BIOL 2602 General Biology: Organisms and Ecology & 2602L	4
3719 Criminal Law	3	Art/Humanities	
3735 Crime and Delinquency	3	Select two courses	6
Elective CJFS hours	12	Social Science	
		CJFS 1500 Introduction to Criminal Justice	3
<i>Complete one of the following tracks (12 hours each):</i>		ANTH 1500 Introduction to Anthropology	3
LAW ENFORCEMENT		Social and Personal Awareness	
3714, 3714L, 3740, 4870, and 5825	12	Select two courses	6
CORRECTIONS			
3702, 3702L, 4803, and 5802	12	Core Requirements	
LOSS PREVENTION / ASSETS PROTECTION		Chemistry	
3700, 3740, 3751, and 4848	12	CHEM 1515 General Chemistry 1 & 1515L	4
LEGAL PROCESSES			
3720, 3721, 4890, and 5825	12		

CHEM 1516 General Chemistry 2 & 1516L	4
CHEM 3719 Organic Chemistry 1 & 3719L	4
CHEM 3720 Organic Chemistry 2 & 3720L	4
CHEM 2604 Quantitative Analysis & 2604L	5
Criminal Justice and Forensic Sciences	
CJFS 1510 Survey of Forensic Sciences	3
CJFS 2602 Criminal Courts	3
CJFS 3714 Forensic Science: Crime Scene Investigation & 3714L	2+1
CJFS 3716 Forensic Science Evidence Analysis & 3716L	2+1
CJFS 3700 Forensic Fire Investigation	3
CJFS 4807 Criminal Justice Internship	3-12
CJFS 4850 Special Topics in Criminal Justice	3
CJFS 5814 Forensic Science and the Criminal Justice System	3
Physics	
PHYS 2610 General Physics 1 & 2610L	4+1
PHYS 2611 General Physics 2 & 2611L	4+1
Other	
BIOL 3721 Genetics	3
STAT 3717 Statistical Methods	4

Complete *one* of the following emphasis areas:

BIOLOGY

Upper-division science electives	16
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CHEMISTRY

Upper-division science electives	16
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ANTHROPOLOGY

Upper-division science electives	16
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Minor in Criminal Justice - Corrections

GENERAL DEGREE REQUIREMENTS

Courses	s.h.
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

Total Number of Semester hours 18

Minor in Criminal Behavior

GENERAL DEGREE REQUIREMENTS

Courses	s.h.
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	
PSYC 3702 Abnormal Psychology	3
Total Number of Semester Hours	18

**Same as SOC 2630 and 3735.*

Minor in Criminal Justice Ethics

GENERAL DEGREE REQUIREMENTS

Courses	s.h.
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 one from the following:

PHIL 1561 Technology and Human Values	3
PHIL 1565 Critical Thinking	3
PHIL 2635 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

Total Number of Semester Hours 18

Minor in Criminal Justice System

GENERAL DEGREE REQUIREMENTS

Courses	s.h.
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	
Total Number of Semester Hours	18

Minor in Criminal/Legal Processes

GENERAL DEGREE REQUIREMENTS

Courses	s.h.
CJFS 1500 Introduction to Criminal Justice	3
CJFS 2602 Courts	3
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

Minor in Forensic Science

GENERAL DEGREE REQUIREMENTS

Courses	s.h.
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

Minor in Juvenile Justice System

GENERAL DEGREE REQUIREMENTS

Courses	s.h.
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
Total Number of Semester Hours	21

**Same as SOC 2630 and 3735.*

Minor in Law Enforcement

GENERAL DEGREE REQUIREMENTS

Courses	s.h.
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

Minor in Loss Prevention and Assets Protection

GENERAL DEGREE REQUIREMENTS

Courses	s.h.
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	http://web.yosu.edu/gen/bcohhs/Bachelor_of_Science_in_Applied_Science_in_Forensic_Science_BSAS_fouryear_p25.html
CJFS 3751 Prevention Strategies	3	http://web.yosu.edu/gen/bcohhs/Bachelor_of_Science_in_Applied_Science_in_Forensic_Science_BSAS_fouryear_p25.html
CJFS 4848 Loss Prevention and Assets Protection Administration	3	
Total Number of Semester Hours	24	

Police Academy and Internships

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.

Forensic Science Program -

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 2361.

YSU's Criminal Justice and Forensic Sciences 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.

Department of Health Professions

330-941-3327

Professors Delost, Juruaz, Mistovich (Chair), Vendemia; Associate Professors Kandray, Robinson, Yacovone; Assistant Professors Dugan, Fusillo, Kearns, Lyons, Roby, Stefan; Clinical Instructor Smith.

The department offers certificate, associate, baccalaureate and master's degree programs for future members of the health care delivery and public health professions. Certificate programs are offered in paramedic and polysomnography. Associate degree programs are offered in emergency medical services, medical assisting technology and clinical laboratory technician. Baccalaureate programs are offered in allied health, public health, clinical laboratory science

(medical technology), dental hygiene and respiratory care. A master's degree program in health and human services offers three tracks: health promotion, administration for health and human services, and health informatics. A master's degree program in respiratory care is available for licensed respiratory therapists. The allied health, public health, master of health and human services, and master of respiratory care programs can be completed in a web-based distance education delivery format. 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 or Master of Respiratory Care degree refer to the Graduate School catalog for program details.

Allied Health Program

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.

Online Undergraduate Degree Programs

- Bachelor of Science in Applied Science, Allied Health
- Bachelor of Science in Applied Science, Public Health

For additional information please visit the Office of Distance Education website at <http://web.ysu.edu/de/> - <http://web.ysu.edu/de/>. You can contact the Office of Distance Education by e-mail at distanceed@ysu.edu or by phone at 330-941-1516.

Department of Health Professions - <http://web.ysu.edu/bchhs/hp> - <http://web.ysu.edu/bchhs/hp>

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+
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GENERAL EDUCATION REQUIREMENTS

Courses	s.h.
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Writing

ENGL 1550 Writing 1	3
ENGL 1551 Writing 2	3

Speech

CMST 1545 Communication Foundations	3
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Math

MATH	3
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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

AHLT 3704 Quantitative Methods in Health Sciences	3
AHLT 3708 Preventive Public Health Care	3
AHLT 3711 Health Care Information Systems	3
AHLT 4806 Research Methods	3
AHLT 4810 Management Skills for Health Professionals	3
AHLT 4820 Directed Research	2
AHLT 5807 Epidemiology	3
AHLT 5840 Comparative Health Systems	4

Allied Health Electives (Select 6 s.h.)

AHLT 3705 Pharmacotherapeutics	3
AHLT 3707 Clinical Informatics for the Health Care Provider	3
AHLT 3709 Elements of Urban Environmental Health Practice	3
AHLT 3740 Pathology of Infectious Diseases	3
AHLT 3755 Principles of Occupational Health/Safety	3
AHLT 4801 Special Topics	1-3
AHLT 4804 Stress and the Health Care Professional	3
AHLT 4805 Health Education for Allied Health	3
AHLT 4808 Environmental Health Concerns	3
AHLT 4812 Advanced Cardiac Life Support (YSU Only)	3
AHLT 4831 Industrial Hygiene	3

AHLT 5816 Environmental Regulations

3

Minor (Optional) or elective courses (18+ s.h.)

Upper-Division Courses (Catalog number 3700 or higher) Required 48

Total Hours 124 Minimum

Pre-admission counseling is required for students seeking entry to the BSAS in Allied Health. For greater detail on program content or admissions, students should contact the Department of Health Professions.

Medical Laboratory Technician (MLT-AAS) Curriculum

The 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.

Medical laboratory technicians (MLT) work in a supportive role in a hospital laboratory, private laboratory, clinic, public health facility, or pharmaceutical laboratory. The MLT performs laboratory tests under the supervision or direction of pathologists and other physicians, and clinical laboratory scientists. Physicians and other health care professionals 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 MLT collects samples from patients and develops data on the blood, tissues and body fluids by using a variety of precise methodologies and technologies. Medical laboratory technicians use modern instruments, with the ability to discriminate between similar items and correct errors using preset strategies. The MLT has knowledge of specific techniques and instrumentation and is able to recognize factors that affect laboratory procedures. The MLT also monitors quality assurance procedures.

The MLT 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.naacsls.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 must have a minimal Math Placement of Level 3 or its equivalent to be considered for the MLT program. Students in Pre-MLT are not considered to be enrolled in the MLT program. Students must first complete MLT 1501, MLT 1501L and BIOL 2601, BIOL 2601L with a minimal grade of C. Program admission is based on the applicant's overall GPA and performance in Chemistry, MLT, and Biology courses. All MLT, BIOL, & CHEM courses must be completed with a minimum grade of a "C". Students must maintain an overall program GPA of at least 2.5. Students receiving a total of 6 hours or more grades of "D"/"F" in MLT, BIOL, or CHEM will be dismissed from the program. All developmental courses such as ENGL 1539 & ENGL1540; RSS 1510A & RSS 1510B; and MATH 1500, MATH 1501, MATH 1502, MATH 1503, MATH 1507 & MATH 1508 do not count toward degree requirements. There will be no course substitutions for MLT, BIOL, or CHEM courses. Students are permitted a total of 2 course repetitions for recalculation of GPA. Readmission to the program is based on GPA and availability of class space. Students must maintain a minimum of 2.5 GPA for placement into clinical practicum. Courses must be taken in proper sequence; students may invalidate clinical placement when failing to do so. Students are required to complete a physical exam, background check, and immunizations as program requirements.

Medical laboratory technicians 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.

FIRST YEAR

Courses	s.h.
FALL - 1 PRE-MLT	
MLT 1501/MLT 1501L: Introduction to Medical Laboratory Science & Lab	2+1
CHEM 1515/CHEM 1515L: General Chemistry 1 with Lab	4+0
BIOL 2601/BIOL 2601L: General Biology: Molecules & Cells with Lab	4+0
ENGL 1550: Writing 1	3
General Education Course*	3

Total	17
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Only those students who complete MLT 1501/MLT 1501L and BIOL 2601/BIOL 2601L with a grade of C or better will be considered for admission into the CLTC Program.

SPRING - 1

MLT 1502/MLT 1502L: Urinalysis & Lab	2+1
MLT 1503/MLT 1503L: Immunohematology & Lab	3+1
MLT 2601/MLT 2601L: Clinical Chemistry 1 & Lab	2+1
BIOL 2602/BIOL 2602L: General Biology: Organisms & Ecology with Lab	4+0
ENGL 1551: Writing 2	3
Total	17

SUMMER - 1

MLT 3701/MLT 3701L: Hematology 1	3
MLT 3700 & MLT 3700L: Clinical Chemistry II & Lab	3+1
Total	7

SECOND YEAR

Courses	s.h.
FALL - 2	
MLT 3702/MLT 3702L: Clinical Hematology 2	3
MLT 2603: Topics in CLTC	4
MLT 3703L: Clinical Immunology Lab	1
MLT 3787/MLT 3787L: Diagnostic Microbiology & Lab	3+2
MATH 2625: Mathematical Literacy & Critical Reasoning	3
Total	16

SPRING - 2

MLT 3706: Seminar	2
MLT 3716: Clinical Practicum	8
MLT 3710: Interpretation of Lab Results	1
General Education Course*	3
Total	14
Total program hours	71

Medical Laboratory Science (MLS-BSAS) Curriculum

Professor Delost (Program Director).

The medical laboratory science program is a four-year program leading to a Bachelor of Science in Applied Science degree with a major in Medical Laboratory Science. Students in the program must have a physical examination and provide records of their immunizations, including the hepatitis B immunization series.

All course work in the MLS 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 MLS courses. Students receiving a total of 6 semester hours of D or F grades in MLS, 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 MLS hospital program. Upon successful program completion, graduates are qualified to take the certification examinations offered through ASCP and become certified as MLS (ASCP). Additionally, a MLT to MLS completion program will be available by Spring Semester, 2015.

Medical laboratory scientists perform hundreds of scientific procedures that have been devised to detect subtle changes that occur in disease. The MLS performs a full range of laboratory tests, ranging from complete blood 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 grouping and cross matching for transfusions are examples of the high complexity procedures performed by medical laboratory scientists. Positions are available as bench-level technologists, supervisors, and laboratory managers.

In addition to traditional laboratory careers, there are opportunities in education, research, and in industry as technical and sales representatives. In their quest to aid the physician and other health care providers, laboratory professionals do much more than look through a microscope. They operate complex analytical equipment, perform computations, and utilize precision instruments. Medical laboratory scientists act 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.

FIRST YEAR

Courses	s.h.
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FALL - 1

MLT 1501/MLT 1501L: Introduction to the Medical Laboratory Profession & Lab	2+1
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CHEM 1515/CHEM 1515L: General Chemistry 1 with Lab	4+0
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BIOL 2601/BIOL 2601L: General Biology: Molecules & Cells with Lab	4+0
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ENGL 1550: Writing 1	3
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Total	14
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SPRING - 1

CHEM 1516/CHEM 1516L: General Chemistry 2 with Lab	4+0
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BIOL 2602/BIOL 2602L: General Biology: Organisms & Ecology with Lab	4+0
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ENGL 1551: Writing 2	3
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General Education Course*	3
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Total	14
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SECOND YEAR

Courses	s.h.
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FALL - 2

CHEM 3719/CHEM 3719L: Organic Chemistry 1 with Lab	4+0
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BIOL 3702/BIOL 3702L: Microbiology with Lab	4+0
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CMST 1545: Communication Foundations	3
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MATH 2625: Mathematical Literacy & Critical Reasoning	3
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General Education Course*	3
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Total	18
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SPRING - 2

CHEM 3720/CHEM 3720L: Organic Chemistry 2 with Lab	4+0
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Two General Education Courses*	6
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BIOL 1545/BIOL 1545L: Allied Health Anatomy & Physiology with Lab	5+0
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Total	15
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SUMMER - 2

MLT 3701/MLT 3701L: Clinical Hematology	3
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1

MLT 3700/MLT 3700L: Clinical Chemistry 2 & Lab	3+1
Total	7

THIRD YEAR

Courses	s.h.
FALL - 3	
CHEM 3785/CHEM 3785L: Biochemistry 1 & Lab	3+1
MLT 3702/MLT 3702L: Clinical Hematology 2	3
MLT 3787/MLT 3787L: Diagnostic Microbiology and Lab	3+2
Total	12
SPRING - 3	
MLS 3703/MLS 3703L: Clinical Immunology & Lab	3+1
Two General Education Courses*	6
BIOL 3711: Cell Biology: Fine Structure	3
Total	13

CLINICAL YEAR - SUMMER - 4

AHLT 4806: Research Methods	3
MLS 4804: Misc. Clinical Experience	5
Total	8

FOURTH YEAR

Courses	s.h.
CLINICAL YEAR - FALL - 4	
MLS 4801: Advanced Hematology	7
MLS 4802: Advanced Immunohematology	7
Total	14
CLINICAL YEAR - SPRING - 4	
MLS 4803: Advanced Microbiology	8
MLS 4800: Advanced Clinical Chemistry	6
Total	14
Total Clinical Year	36

**General education courses must fulfill the requirements for the baccalaureate degree. Students must take two courses from Arts & Humanities, two courses from Social Science, and two courses from Social and Personal Awareness.*

Total Program Hours 129

Minor in Community Health Planning and Evaluation

GENERAL DEGREE REQUIREMENTS

Course	s.h.
PHLT 1568 Healthy Lifestyles	3
or	
PHLT 1531 Fundamentals of Public Health	3
PHLT 3702 Foundations of Health Education Theory and Practice	3
PHLT 3725 Topics in Public Health	1
PHLT 3791 Community Health	3
PHLT 4801 Field Work in Health Education	1
PHLT 4826 Community Health Planning and Promotion	4
PHLT 4827 Evaluation of Health Promotion Programs	3
PHLT 4828 Grant Writing	3
Total Number of Semester Hours	21

Minor in Public Health

GENERAL EDUCATION REQUIREMENTS

Courses	s.h.
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

Medical Laboratory Programs

Professor Delost (Program Director).

Laboratory analysis 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 medical laboratory programs (MLS-BSAS and MLT-AAS) are as follows:

- Graduates will be prepared to function as entry-level health care professionals in the medical laboratory as medical laboratory technicians and medical laboratory scientists. At entry level, the medical laboratory graduate will be able to demonstrate the ability to comprehend, apply and evaluate information relative to the medical laboratory profession.
- These learning outcomes include comprehension of the theory and the ability to apply and evaluate the didactics of hematology, clinical chemistry, immunohematology, microbiology, immunology, coagulation, molecular diagnostics, and other emerging diagnostics.
- Graduates will be prepared to function as entry-level health care professionals in the medical laboratory as medical laboratory technicians and medical laboratory scientists. Upon completion of the program, graduates will demonstrate technical proficiency in laboratory applications.
- These psychomotor learning outcomes include the performance of laboratory procedures in hematology, clinical chemistry, immunohematology, microbiology, immunology, coagulation, molecular diagnostics, 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 medical 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 medical relevance and significance of specific aspects of laboratory testing.

Medical Laboratory Programs -
http://web.ysu.edu/gen/bcohhs/Clinical_Laboratory_Programs_m26.html -
http://web.ysu.edu/gen/bcohhs/Clinical_Laboratory_Programs_m26.html

MLS Internship Guidelines

Students should apply for Medical Laboratory Science 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 medical laboratory courses. To enhance their chances of acceptance into a medical 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.

Minor in Environmental Health and Safety

COURSE REQUIREMENTS

Course	s.h.
PHLT 1513 Introduction to Environmental Health and Safety	3
AHLT 3708 Preventive Public Health	3
PHLT 3709 Elements of Urban Environmental Health Practices	3
AHLT 3755 Principles of Occupational Health and Safety	3
AHLT 4808 Environmental Health Concerns	3
AHLT 4831 Industrial Hygiene	3
AHLT 5816 Environmental Regulations	3
TOTAL SEMESTER HOURS	21

Dental Hygiene

330.941.3342

Professors Vendemia, Juruaz, Kandray; Instructor Smith (Program Director).

The Bachelor of Science in Dental Hygiene degree 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 and nitrous oxide; 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) 440-2500 or at 211 East Chicago Avenue, Chicago, IL 60611. The Commission's web address is: <http://www.ada.org/en/home-ada/coda> - <http://www.ada.org/en/home-ada/coda>.

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) 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**, and the Admission Policy document, 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 fingerprinting call the Ohio State Dental Board at (614) 466-2580.

Students can access u.select at <https://www.transferology.com/welcome.htm> - <https://www.transferology.com/welcome.htm>, a free web-based source where they can find accurate information regarding courses that transfer and apply to a degree 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 October 15 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 (see Admissions Policy) 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).

Department of Dental Hygiene -
http://web.yosu.edu/gen/bcohhs/Dental_Hygiene_m29.html
http://web.yosu.edu/gen/bcohhs/Dental_Hygiene_m29.html

Pre-Dental Hygiene Courses

FIRST YEAR	
Courses	s.h.
FALL SEMESTER	
ENGL 1550: Writing 1	3
SOC 1500: Introduction to Sociology	3
BIOL 1545/L: Allied Health Anatomy and Physiology	5
CHEM 1505: Allied Health Chemistry 1	3
Total	14
SPRING SEMESTER	
ENGL 1551: Writing 2	3
CMST 1545: Communication Foundations	3
CHEM 1506/L: Allied Health Chemistry 2	3
PSYC 1560: General Psychology	3
MATH 2623: Survey of Mathematics	3
or	
MATH 2625: Mathematical Literacy and Critical Reasoning	4
Total	15-16
SECOND YEAR	
Courses	s.h.
FALL SEMESTER	
BIOL 1560: Microbiology for the Health Professions	2
PHIL 2625: Introduction into Professional Ethics	3
Arts and Humanities	3

Social and Personal Awareness Elective	3
Total	12

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 2104. 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.yosu.edu/gen/bcohhs/Dental_Hygiene_m29.html - http://web.yosu.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 of the Admissions Policy document).
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:

1. Current CPR/BLS certification.
2. Completed physical and dental exam.
3. Proof of required immunization requirements.

Emergency Medical Services

Professor Mistovich; Assistant Professor 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 EMS 1500, EMS 1500L, and EMS 1500C.
- Successfully complete the field internship objectives

The 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) 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) [CoAEMSP #600045]) 8301 Lakeview Parkway Suite 111-312, Rowlett, TX 75088, 214-703-8445, fax 214-703-8992 and the Ohio Department of Public Safety Division of Emergency Medical Services, 1970 West Broad Street, Columbus, OH 43223, (www.ems.ohio.gov) [ODPS #333]) 614-466-9447, fax 614-466-9461.

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 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 and Physiology (BIOL 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 - http://web.ysu.edu/gen/bcohhs/Emergency_Medical_Technology_m33.html - http://web.ysu.edu/gen/bcohhs/Emergency_Medical_Technology_m33.html

Emergency Medical Services Curriculum

GENERAL EDUCATION REQUIREMENTS

Courses	s.h.
AAS Degree	
Summer Semester One	
BIOL 1545/L: Allied Health Anatomy and Physiology	5
Total Semester Hours	5

Fall Semester One

EMS 1501: Introduction to Pre-hospital Medicine	1
EMS 1502: General Pathophysiology for the Paramedic*	3
EMS 1503: Patient Assessment and Airway Management*	3
EMS 1504: Principles of Trauma*	3
EMS 1505: Emergency Medical Techniques 1 Lab	1
EMS 1506: Clinical Experience 1*	1
MATC 1501: Medical Terminology	3
Total Semester Hours	15

Spring Semester One

EMS 1507: Cardiovascular Emergencies*	3
EMS 1508: Cardiovascular Emergencies Laboratory*	1
EMS 1512: Medical Conditions and Management Techniques*	3
EMS 1513: Emergency Medical Techniques 3 Lab	1
EMS 1514: Emergency Medical Services Operations	1
EMS 1515: Clinical Experience 2*	1
EMS 1516: Pre-hospital Field Experience 1*	1
PSYC 1560: General Psychology**	3
Total Semester Hours	14

Summer Semester Two

EMS 2600: EMS Special Patient Populations*	3
EMS 2601: Emergency Medical Techniques 2 Lab*	1
EMS 2603: Clinical Experience 3*	1
EMS 2604: Pre-hospital Field Experience 2*	1
EMS 2605: Pulmonary Emergencies*	3
Total Semester Hours	9

Fall Semester Two

EMS 2606: EMS Special Certifications*	1
EMS 2607: EMS Special Certifications Lab*	1
EMS 2608: Clinical Experience 4*	2
EMS 2609: Pre-hospital Field Internship*	2
ENGL 1550: Writing 1	3
SOC 1500: Introduction to Sociology**	3

CHEM 1505: Allied Health Chemistry 1	3
CHEM 1505L: Allied Health Chemistry 1 Lab	3

Total Semester Hours **15**

Completion of Certificate **46**

Spring Semester Two

EMS 2613: Critical Care Paramedic*	3
EMS 2614: Critical Care Paramedic Lab*	1
EMS 2631: Advanced Clinical and Field Internship Experience	2
ENGL 1551: Writing 2	3
CMST 1545: Communication Foundations	3
MATH 2623: Survey of Mathematics**	3
Total Semester Hours	15

Completion of Associate in Applied Science in EMS **73**

*All developmental courses such as ENGL 1539 & ENGL 1540, RSS 1510A & RSS 1510B and MATH 1500, MATH 1501 & MATH 1504 do not count towards degree requirements.

**Courses may be taken Credit/No Credit.

*A Grade of C or better is required for all EMS, BIOL and MATC Courses.

Medical Assisting Technology

330.941.2000

Professor Fusillo (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) 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, monetary 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 -
http://web.ysu.edu/gen/bcohhs/Medical_Assisting_Technology_m37.html
http://web.ysu.edu/gen/bcohhs/Medical_Assisting_Technology_m37.html

Medical Assisting Technology Curriculum

GENERAL UNIVERSITY REQUIREMENTS

Courses	s.h.
ENGL 1550, ENGL 1551: Writing 1 and 2	6
CMST 1545: Communication Theory and Practice	3
PSYC 1560: General Psychology	3
BIOL 1545/L: Allied Health Anatomy/Physiology	5
Artistic & Literary Perspective Elective	3
Total	20

MAJOR REQUIREMENTS

Courses	s.h.
MATC 1501: Medical Terminology	3
MATC 1502: Medical Law & Ethics	3
MATC 2600: Medical Insurance Forms	2
MATC 2602: Diagnostic & Procedure Coding	2
MATC 2605: Intro. to Pharmacology	3
MATC 2610: Intro. to Disease Processes	3
MATC 2611L: Clinical Procedures Lab	1
MATC 2612: Medical Records Management	2
MATC 2614: Medical Office Procedures	3
MATC 2620: Advanced Clin. Procedures	3
MATC 2620L: Advanced Clin. Procedures Lab	1
MATC 2680: Medical Laboratory Procedures	1
MATC 2680L: Medical Laboratory Procedures Lab	1
MATC 2692: Medical Assisting Externship, Practicum	3

Total	31
RELATED COURSE REQUIREMENTS	
Course	s.h.
PHLT 1568: Healthy Lifestyles	3
ACCT 2602: Financial Accounting	3
AHLT 4810: Management Skills for Health Professionals	3
CSIS 1514: Business Computer Systems	3
INFO 1575: Document Preparation	4
BIOL 1560: Paramedical Microbiology	2
BIOL 1560L: Paramedical Microbiology Lab	1
Total	19
Total Semester Hours	70

Respiratory Care

330.941.1764

Associate Professor Yacovone (Program Director); Assistant Professor Dugan (Director of Clinical Education), Roby.

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, sub acute, and home care settings. To function effectively as a member of the multidisciplinary 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). Students with questions regarding accreditation of the YSU Respiratory Care and Polysomnography Certificate 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 -
http://web.ysu.edu/gen/bcohhs/Respiratory_Care_m39.html
http://web.ysu.edu/gen/bcohhs/Respiratory_Care_m39.html

Respiratory Care Curriculum

YEAR 1	
Courses	s.h.
FALL SEMESTER	
BIOL 1545: Allied Health Anatomy and Physiology	5
MATH 1501: Medical Terminology	3
MATH 2623: Survey of Math	3
ENGL 1550: Writing 1	3
CHEM 1505: Chemistry for Health. Prof. 1	3
Total	17
SPRING SEMESTER	
CHEM 1506: Chemistry for Health Prof. 2	3
CMST 1545: Comm Theory & Prac	3
ENGL 1551: Writing 2	3
PHLT 1568: Healthy Lifestyles	3
PHLT 1531: Intro to Public Health	3
Total	12

SUMMER SEMESTER

SOC 1500: Intro to Sociology	3
PSYC 1560: General Psychology	3
Total	6

YEAR 2

Courses	s.h.
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FALL SEMESTER

RESC 1529: Resp. Care Orientation	2
RESC 1531: Resp. Care Essentials	3
MATC 2605: Intro to Pharmacology	3
BIOL 1560: Microbiology for Hlth. Prof	2
MLT 2687L: Microbiology for Hlth. Care	1
PHIL 2625: Intro to Prof. Ethics	3
Total	14

SPRING SEMESTER

RESC 1503: Resp. Procedures 1	4
RESC 1520: Resp. Assessment 1	3
PHYS 1506: Physics for Health Care	3
AHLT 3705: Pharmacotherapeutics	3
Total	13

SUMMER SEMESTER

RESC 2620: Resp. Assessment 2	3
RESC 2621: Cardiopulmonary Disease	4
Total	7

YEAR 3

Courses	s.h.
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FALL SEMESTER

RESC 3706: Resp. Procedures 2	3
RESC 3720: Mech. Ventilation 1	3
AHLT 4806: Research Methods	3
AHLT 5840: Comp. H.C. Systems	4
Total	13

SPRING SEMESTER

RESC 2699: Clinical Practice 1	1
RESC 3708: Clinical Specialties	3
RESC 3709: Pediatric Resp. Care	4
RESC 3725: Mech. Ventilation 2	3
RESC 3731: Respiratory Care Mgmt	2
Total	13

SUMMER SEMESTER

RESC 3740: Clinical Practice 2	4
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RESC 3750: Pulmonary Rehab	2
Total	6

YEAR 4

Courses	s.h.
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FALL SEMESTER

RESC 3765: Adv. R.C. Diagnostics	3
RESC 3741: Respiratory Clinics 3	3
RESC 4831: Pulmonary Case Mgmt	3
AHLT 4812: ACLS	3
RESC 4838: Resp Seminar 2	1
RESC 4846: Sleep Diagnostics 1 [OPTIONAL]	3
RESC 4847: Sleep Clinics 1 [OPTIONAL]	1
Total	13 + (4)

SPRING SEMESTER

RESC 4835: Respiratory Clinics 4	3
RESC 4842: Resp Seminar 2	1
AHLT 4820: Directed Ind. Res	2
Elective (Art & Humanities)	3
Elective (Social & Personal Awareness)	3
RESC 4846: Sleep Diagnostics 1 [OPTIONAL]	3
RESC 4847: Sleep Clinics 1 [OPTIONAL]	1
Total	12 + (4)

SEMESTER HOURS/BSRC Program	126
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<i>Sleep Diagnostics option</i>	8
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Department of Human Ecology

330.941.3344

Associate Professors Leson, Pohle-Krauza, Rowlands (Chair), Gitimu; Assistant Professors Dombrosky, Mincher, O'Leary, Turel; Instructor Waithaka, 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 and 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 3303, Cushwa Hall.

Department of Human Ecology
- <http://web.ysu.edu/bchhs/he> -
<http://web.ysu.edu/bchhs/he>

**Family and Consumer Sciences
Education Curriculum**

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 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 interrelationships; 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.

GENERAL EDUCATION REQUIREMENTS

Courses	s.h.
ENGL 1550: Writing 1	3
ENGL 1551: Writing 2	3
CMST 1545: Communication Foundations	3
MATH 2623: Survey of Mathematics	3
AH Elective	3
AH Elective	3
CHEM 1500: Chemistry in Modern Living	4
or	
ENST 1500/L: Intro to Envir. Science	4
or	
BIOL 1505/L: Biol. and the Modern World	4
NS Elective	3
SOC 1500: Foundations of Sociology	3
ECON 2610: Principles I	3
or	
ECON 1501: Economics in Action	3
PSYC 1560: General Psychology	3
PHLT 1568: Healthy Lifestyles	3
FNUT 1551: Normal Nutrition	3

Major Requirements - Teaching Field

HMEC 1550: Human Ecology Professions	1
FNUT 1512: Food Safety and Sanitation	1
MRCH 1506: Clothing Selections & Image Development	3
PHLT 2692: Human Sexuality	3
or	
PSYC 2692: Human Sexuality	3
FNUT 1551: Normal Nutrition (SPA)	3
FNUT 1553: Food Science & Mgmt. Principles	3
FNUT 1553L: Food Science & Mgmt. Principles Lab	1
CHFM 3731: Individual & Family Development	3
CHFM 3750: Parent & Professional Relationships	3
PSYC 3755: Child Development	3
PSYC 3756: Adolescent Development	3
or	
PSYC 3758: Lifespan Development	3
MRCH 3764: Family Housing and Technology	3
HMEC 3780: Consumer Economics	3
HMEC 4890: Communicating Contemp. Issues	3
HMEC 4852: Family Resource Mgmt.	3
HMEC 5893: Work and Family (P)	3
Professional Education Requirements	
FOUN 1501: Introduction to Education	3
SPED 2630: Individuals w/Except in Society	3
FOUN 3708: Education and Society	3
PSYC 3709: Psychology of Education	3
EDTC 3771: Technologies for Teaching	3
AYA Cluster:	
TERG 3711: Rdg. Appl. Content Area, P-12	3
SED 3706: Principles of Teaching Adolescents	3
FOUN 3710: Assessment	3
HMEC 4800: Teaching Family & Consumer Sciences	3
SED 4842: Student Teaching CA (P)	10
SED 4842A: Student Teaching Seminar	2
Electives	6

Family and Consumer Sciences Education - http://web.ysu.edu/gen/bcohhs/Family_and_Consumer_Sciences_Education_m114.html - http://web.ysu.edu/gen/bcohhs/Family_and_Consumer_Sciences_Education_m114.html

Family and Consumer Studies Curriculum

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.

GENERAL EDUCATION REQUIREMENTS

Courses	s.h.
ENGL 1550: Writing 1	3
ENGL 1551: Writing 2	3
CMST 1545: Communication Foundations	3

GER Arts and Humanities	6
ECON 2610: Principles 1	3
SOC 1500: Intro to Sociology	3
PSYC 1560: General Psychology	3
PSYC 3758: Life Span Development	3
GER Natural Science	7
MATH 2623: Survey of Math	3
PHLT 1568: Healthy Lifestyles	3
FNUT 1551: Normal Nutrition	3
CHFM 3731: Individual & Family Development	3
MRCH 3764: Family Housing & Technology	3
HMEC 1550: Human Ecology Professions	1
HMEC 3780: Consumer Economics	3
HMEC 4836: Internship	3
HMEC 4890: Communication of Contemporary Issues	3
HMEC 4852: Family Resource Management	3
PSYC 2617: Research Methods and Statistics	4
or	
FNUT 4802: Research in Dietetics	2
HMEC 4876: Undergraduate Research	2
HMEC 4877: Research Capstone	2
Family Studies Option	
HMEC 5893: Work and Family	3
CHFM 3750: Parent/Professional Relationships	3
PHLT 2692: Human Sexuality	3
PSYC 3755: Child Development	3
Department Electives	15
Minor	18
Electives to reach 124 total hours	
or	
Consumer Studies Option	
MRCH 3705: Fashion Textiles	3
MRCH 3730: Social Psychology of Clothing	3
FNUT 1553: Food Science & Mgmt. Principles	3
FNUT 1553L: Food Science & Mgmt. Principles Lab	1
Department Electives	17
Minor	18

Electives to reach 124 total hours

Family and Consumer Studies - http://web.ysu.edu/gen/bcohhs/Family_and_Consumer_Studies_m168.html - http://web.ysu.edu/gen/bcohhs/Family_and_Consumer_Studies_m168.html

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.

****Admission to the DT program requires an application.**

Most of the required courses can be applied to the BS in AS 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	
Course	s.h.
BIOL 1551/L: Anatomy & Physiology/Lab	4
*HMEC 1550: Human Ecology Professions	1
*FNUT 1553: Food Science & Management Principles	3
*FNUT 1553L: Food Science & Management Principles Lab	1
*FNUT 1551: Normal Nutrition	3
*FNUT 2652L: Nutrition Assessment Lab	1
ENGL 1550: Writing 1	3
BIOL 1552/1552L: Anatomy & Physiology/Lab	4
*FNUT 1512: Food Safety & Sanitation	1
*FNUT 2612: Food Systems: Operation, Production and Service	3
*FNUT 2612L: Food Systems: Operation, Production and Service Lab	2
PSYC 1560: General Psychology	3

SECOND YEAR

Course	s.h.
ENGL 1551: Writing 2	3
CHEM 1505/L: Allied Health Chemistry/Lab	3
BIOL 1560/L Microbiology/Health Profession/Lab	3
*FNUT 2603/L Medical Nutrition Therapy 1/Lab	4
COUN 2651: Helping Skills for Human Ecology	2
ACCT 2602: Financial Accounting	3
or	
ACCT 1503: Elementary Accounting	3
*FNUT 2610: Organization & Mgmt	3
*FNUT 2609L: Food Systems: Supervised Practice	3
*FNUT 2613L: Nutritional Care Clinical Experience	4
SOC 1500: Intro to Sociology	3
CSIS 1514: Business Computer Systems	3
CMST 1545: Communication Foundations	3

SUMMER SEMESTER

Course	s.h.
*FNUT 2628: DT Practicum	3
AH Elective	3

Total Program Hours

75

**Final grade of C or better required in all major courses. Courses cannot be taken Credit/No Credit.*

***Application forms available in the Department of Human Ecology.*

Dietetic Technician -
http://web.ysu.edu/gen/bcohhs/The_Dietetic_Technician_Program_m113.html -
http://web.ysu.edu/gen/bcohhs/The_Dietetic_Technician_Program_m113.html

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). Students may not select the Didactic Program in Dietetics as a major until they have met Admission Criteria. These criteria include grades of "C" or better in HMEC 1550, ENGL 1550, ENGL 1551, FNUT 1551, BIOL 1551/L, BIOL 1552/L and CHEM 1505/L, and a minimum cumulative GPA of 2.5. Students who have not yet been admitted to the DPD program, but are working toward that end, may enroll as "Pre-dietetics-DPD" majors.

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 (RD).

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

Courses s.h.

Basic Skills

ENGL 1550: Writing 1	3
ENGL 1551: Writing 2	3
CMST 1545: Communication Foundations	3
MATH 2623: Survey of Math	3

or

MATH 2625: Math Literacy & Critical Reasoning	3
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Arts & Humanities

Elective	3
Elective	3

Social and Personal Awareness

FNUT 1551: Normal Nutrition	3
Elective	3

Social Sciences

SOC 1500: Intro to Sociology	3
PSYC 1560: Intro to Psychology	3

Natural Sciences

CHEM 1505/L: Allied Health Chem 1	3
CHEM 1506/L: Allied Health Chem 2	3
BIOL 1551/L: Anat & Phys 1	4
BIOL 1552/L: Anat & Phys 2	4

Additional Program Requirements

ACCT 2602: Financial Accounting	3
or	
HMGT 2603: Hospitality Managerial Accounting	3
or	
ACCT 1503: Elementary Accounting	3
BIOL 1560: Microbiology	2

BIOL 1560L: Microbiology Lab	1
COUN 2651: Foundations of Helping Skills	1
MATC 1501: Medical Terminology	3
MGT 3725: Fundamentals of Management	3
Elective	3

Major Courses

FNUT 1512: Food Safety and Sanitation	1
HMEC 1550: Human Ecology Professions	1
FNUT 1551: Normal Nutrition	3
FNUT 1553: Food Science & Mgmt. Prin.	3
FNUT 1553L: Food Sci & Mgmt. Prin. Lab	1
FNUT 2603: Medical Nutr Therapy 1	3
FNUT 2603L: Medical Nutr Therapy 1 Lab	1
FNUT 2612: Food Systems	3
FNUT 2612L: Food Systems Lab	2
FNUT 2652L: Nutrition Assessmt. Lab	1
CHFM 3731: Individ & Family Develop	3
FNUT 3735: Nutritional Biochemistry	2
FNUT 3759: Advanced Nutrition	3
FNUT 3760: Medical Nutr Therapy 2	3
FNUT 3761: Sci of Nutr In Exercise	3
FNUT 4802: Research Methods in Dietetics	2
FNUT 4802L: Research Methods in Dietetics Lab	1
FNUT 4810: Experimental Foods	2
FNUT 4810L: Experimental Foods Lab	1
FNUT 4858: Foodservice Systems Mgt.	3
FNUT 4860: Medical Nutr Therapy 3	3
FNUT 4874: Community Nutr and Wellness	3
FNUT 4872: Maternal & Child Nutr	2
FNUT 4873: Nutrition & Aging	2
HMEC 4890: Comm. of Contemporary Issues	3
FNUT 4895: DPD Capstone	3
FNUT 5862: Food and Culture	2
FNUT 5862L: Food and Culture Lab	1

Suggested-Other Electives

SPAN 1550: Elementary Spanish	4
SOC 3745: Soc. of Health, Illness, & Health	3
GEOG 2626: World Geography	3
PSYC 3700: Social Psychology	3
PHLT 1531: Intro to Public Health	3

Minimum upper-division hours (3700 or higher) = 48; total hours for degree 124

Food and Nutrition Didactic Program in Dietetics

http://web.ysu.edu/gen/bcohhs/Didactic_Program_in_Dietetics_m112.html
http://web.ysu.edu/gen/bcohhs/Didactic_Program_in_Dietetics_m112.html

Food and Nutrition Coordinated Program in Dietetics (CPD) Dietitian (Registration Eligible)

Associate 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 Education in Nutrition and Dietetics (ACEND) within the Academy of Nutrition and Dietetics (AND).

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/ACEND/
<http://www.eatright.org/ACEND/>

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 RD 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

Courses	s.h.
FNUT 3761: Science of Nutrition in Exercise	3
FNUT 3759: Advanced Nutrition	3
FNUT 3760: Med Nutr Therapy 2	3
FNUT 3760R: Med Nutr Therapy 2 Recitation	2
FNUT 3760L: Med Nutr Therapy 2 Lab	2
FNUT 4802: Research Methods in Dietetics	2
Elective	3
Total	18

THIRD YEAR-SPRING SEMESTER

Courses	s.h.
MGT 3725: Fundamentals of Management	3
CHFM 3731: Individual & Family Development	3

FNUT 4802L: Research Methods in Dietetics Lab	1
FNUT 4860: Med Nutr Therapy 3	3
FNUT 4860L: Med Nutr Therapy 3 Lab	3
FNUT 5862/L: Food and Culture	3
Total	16

FOURTH YEAR-FALL SEMESTER

Courses	s.h.
FNUT 4858: Food Service Systems Management	4
FNUT 4858L: Food Service Systems Management Lab	3
FNUT 4873: Nutrition & Aging	2
FNUT 4873L: Nutrition & Aging Lab	3
HMEC 4890: Communication of Contemp. Issues	3
SOC 3745: Sociology of Health, Illness, & Healthcare	3
Total	18

FOURTH YEAR-SPRING SEMESTER

Courses	s.h.
FNUT 4810: Experimental Foods	2
FNUT 4810L: Experimental Foods Lab	1
FNUT 4874: Community Nutrition & Wellness	3
FNUT 4874L: Community Nutrition & Wellness Lab	3
FNUT 4872: Maternal & Child Nutrition	2
FNUT 4872L: Maternal & Child Nutrition Lab	2
Total	13

FOURTH YEAR-SUMMER SEMESTER

Courses	s.h.
FNUT 4885: Practicum in Dietetics	4
Total	4

Food and Nutrition Coordinated Program in Dietetics

http://web.ysu.edu/gen/bcohhs/Coordinated_Program_in_Dietetics_m111.html
http://web.ysu.edu/gen/bcohhs/Coordinated_Program_in_Dietetics_m111.html

Hospitality Management

330.941.1784

Assistant Professor Dombrosky (BSAS Program Coordinator); Instructor Zetts (AAS Program Coordinator).

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.

Hospitality Management -

http://web.ysu.edu/gen/bcohhs/Hospitality_Management_m116.html
http://web.ysu.edu/gen/bcohhs/Hospitality_Management_m116.html

Hospitality Management Associate Degree Curriculum

GENERAL EDUCATION REQUIREMENTS

Courses	s.h.
Essential Skills	
ENGL 1550: Writing 1	3
ENGL 1551: Writing 2	3

CMST 1545: Communication Foundations	3
MATH 2623: Survey of Math	3
Social & Personal Awareness Elective*	3
or	
Natural Science 1 Elective	3

*Students who take FNUT 1551 for the GER SPA will not be required to take FNUT 1543

Arts & Humanities 1 Elective	3
Social Science 1 Elective	3

Other Requirements

CSIS 1514: Business Computer Systems	3
MGT 2604: Legal Environment of Business 1	3
FNUT 2610: Organization & Management	3
or	
*MGT 3725: Fund. of Management	3

Major Courses

Must have C or better; courses cannot be taken Credit/No Credit

HMGT 1500: Intro. to Hospitality Industry	3
FNUT 1512: Food Safety & Sanitation	1
FNUT 1543: Personal Nutrition	1
or	
FNUT 1551: Normal Nutrition (SPA)	3
HMEC 1550: Human Ecology Professions	1
FNUT 1553: Food Science & Management Principles	3
FNUT 1553L: Food Science & Management Principles Lab	1
HMGT 2603: Hospitality Managerial Accounting 1 (P)	4
*HMGT 2691: Hospitality Cooperative Work Experience (P)	3
HMGT 3719: Facilities Management (P)	4
HMGT 3745: Hospitality Marketing & Sales (P)	4

CONCENTRATIONS

Courses	s.h.
Restaurant and Foodservice Management	
FNUT 2612: Food Systems	3
FNUT 2612L: Food Systems Lab	2
HMGT 3725: Food & Bev. Mgt.	3
Total Hours for Degree	69

Hotel and Lodging Management

HMGT 2622: Hotel Management	3
HMGT 3734: Front Office Management	3
Total Hours for Degree	67

Event Management

FNUT 2612: Food Systems	3
FNUT 2612L: Food Systems Lab	2
HMGT 4846: Event Mgt.	3

Total Hours for Degree	69
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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.

Hospitality Management Bachelor's Degree Curriculum

GENERAL EDUCATION REQUIREMENTS

Course	s.h.
ENGL 1550: Writing 1	3
ENGL 1551: Writing 2	3
CMST 1545: Communication Foundations	3
MATH 2623: Survey of Math (P)	3
Social & Personal Awareness (Spa)	
FNUT 1551: Normal Nutrition	3
SPA Elective	3
Arts & Humanities (Ah)	
PHIL 2625: Introduction to Prof. Ethics	3
or	
PHIL 2628: Business Ethics	3
AH Elective	3

Social Sciences

PSYC 1560: General Psychology	3
ECON 2610: Principles 1	3
ECON 2630: Principles 2	3

Natural Sciences (Ns)

Lab Science	4
Other	3

Support Courses

CSIS 1514: Business Computer Systems	3
MGT 2604: Legal Environment of Business 1	3
MKTG 3703: Market Concepts/Practice (P)	3
MGT 3725: Fundamentals of Management (P)	3

Major Courses

(Must have C or better, Courses cannot be taken Credit/No Credit)

HMGT 1500: Intro to Hospitality	3
HMEC 1550: Human Ecology Professions	1
FNUT 1553: Food Science & Mgmt. Principles	3
FNUT 1553L: Food Science & Management Principles Lab	1
HMGT 2603: Hospitality Managerial Acct. (P)	4
FNUT 2612: Food Systems (P)	3
FNUT 2612L: Food Systems Lab (P)	2
HMGT 2622: Hotel Management	3
HMGT 2691: Hospitality Coop. Work Exper. (P)	3
HMGT 3719: Facilities Management (P)	4
CHFM 3731: Individual & Family Develop (P)	3
HMGT 3745: Hospitality Marketing & Sales (P)	4
HMGT 4804: Hospitality Industry Law & Ethics (P)	3
HMEC 4836: Internship	5
HMEC 4890: Communication of Contemporary Issues (P)	3
HMGT 4896: Hospitality Operations Mgmt. (CA)	3

Concentration (or Minor) & Electives 24 s.h.

A. Concentration & Electives	24
(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	24
(Must include 18 upper-division hours)	

Hospitality Management Program

330.941.1784

Assistant Professor Dombrosky (BSAS Program Coordinator); Instructor Zetts (AAS Program Coordinator).

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.

Hospitality Management -
http://web.yu.edu/gen/bcohhs/Hospitality_Management_m116.html -
http://web.yu.edu/gen/bcohhs/Hospitality_Management_m116.html

Merchandising: Fashion and Interiors

Associate Professor Gitimu (Program Coordinator).

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; researching 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 (BSAS) requirements at YSU, those students who pursued the degree option will be awarded an Associate of Applied

Sciences (AAS) 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.

Merchandising: Fashion and Interiors - http://web.ysu.edu/gen/bcohhs/Fashion_and_Interiors_m117.htm
- http://web.ysu.edu/gen/bcohhs/Fashion_and_Interiors_m117.html

Fashion Merchandising Curriculum

GENERAL EDUCATION REQUIREMENTS	
Courses	s.h.
Essential Skills	
ENGL 1550: Writing 1	3
ENGL 1551: Writing 2	3
CMST 1545: Communication Foundations	3
MATH 2623: Survey of Math (P)	3
Social and Personal Awareness (SPA)	
SPA Elective	3
SPA Elective	3
Arts & Humanities (AH)	
ART 1540: Masterpieces of World Art	3
or	
ART 1541: Survey of Art History 1	3
or	
ART 1542: Survey of Art History 2	3
PHIL 2625: Introduction to Professional Ethics	3

or		MRCH 3713: Merchandise Buying (P)	3
PHIL 2628: Business Ethics	3	CHFM 3731: Indiv. & Family Development (P)	3
Social Science (SS)		*HMEC 4836: Internship (P)	3
SOC 1500: Introduction to Sociology	3	MRCH 4880: Merchandise Mgmt. (P) CA	3
PSYC 1560: General Psychology	3	HMEC 4890: Comm. of Contemporary Issues (P)	3
ECON 2610: Principles 1	3	MRCH 3730: Soc/Psych. of Clothing & Appearance (P)	3
Natural Science (NS)		or	
CHEM 1500/L Chemistry in Modern Living	4	MRCH 3764: Family Housing & Technology (P)	3
or		MRCH 4877: History of Fashion	3
CHEM 1505/L Allied Health Chemistry	3	or	
or		MRCH 4879: History of Furnishings & Interiors (P)	3
CHEM 1515/L General Chemistry	3		
NS Elective	3		
		<i>Choose THREEâLower Division Courses (min 9 s.h.)</i>	
Required Support Courses		MRCH 1506: Clothing & Image Development	3
CSIS 1514: Business Computer Systems	3	MRCH 1508: Apparel Production	3
MGT 2604: Legal Environment of Business 1	3	MRCH 1510: Apparel Evaluation	3
**MKTG 3703: Marketing Concepts/Practices (P)	3	MRCH 2661: Fundamentals of Interior Design	3
**MKTG 3709: Retail Marketing (P)	3	MRCH 2663: Materials and Methods	3
**MGT 3725: Fundamentals of Management (P)	3	MRCH 2662: Computer Appl. for Housing & Interiors	3
ACCT 1503: Elementary Accounting	3	or	
or		DDT 1503 Auto CAD 1	2
ACCT 2602: Financial Accounting	3		
Total Hours	58	<i>Choose THREEâUpper Division Courses (min 9 s.h.)</i>	
ELECTIVES OR MINOR (9-MUST BE UPPER DIVISION)	19-20	MRCH 3740L: Computer App. for Textiles and Apparel Lab (P)	3
Major Requirements		MRCH 3742: Applied Textile Design (P)	3
(Must have a C or better, Courses cannot be taken Credit/No Credit)		MRCH 3745: Product Line Development (P)	3
HMEC 1550: Human Ecology Professions	1	MRCH 3760: Visual Merchandising (P)	3
FNUT 1543: Personal Nutrition	1	MRCH 3795: Fashion Industry Tour	1-3
or		MRCH 4870: Global Fashion Economy (P)	3
FNUT 1551: Normal Nutrition (Also counts as SPA)		HMEC 4875: Directed Individual Study (P)	1-3
MRCH 2625: The World of Fashion	3	Total Program Hours	124
MRCH 3705: Fashion Textiles (P)	3	* Electives must include 6 s.h. of upper division (3700-4899) level courses	
		(P) Course has prerequisites	

Minor in Fashion

GENERAL EDUCATION REQUIREMENTS

Courses	s.h.
MRCH 1506 Clothing and Image Development	3
MRCH 2625 The World of Fashion	3
<i>Then choose four</i>	
MRCH 3705 Fashion Textiles (P)	3
MRCH 3730 Soc/Psych. of Clothing and Appearance (P)	3
MRCH 3740L Computer Applications for Textiles and Apparel Lab (P)	3
MRCH 3742 Applied Textile Design (P)	3
MRCH 3760 Visual Merchandising	3
MRCH 4877 History of Fashion	3
Total Number of Semester Hours	18

Department of Human Performance and Exercise Science

330-941-3654

Professors Bosso, Pintar (Chair); Associate Professor Mullins; Assistant Professor Michaliszyn.

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 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 students with preexisting medical conditions 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.

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).

Department of Human Performance and Exercise Science - <http://web.yzu.edu/bchhs/hpes> - <http://web.yzu.edu/bchhs/hpes>

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 specialists. 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, medically 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 BSAS 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, and lead group exercise.
- 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:

REQUIRED COURSES	
Courses	s.h.
HPES 1559 Aerobic Conditioning Activities	2
HPES 1560 Resistance Training	1

HPES 1595 Intro Concepts PE Exercise Science	2
HPES 2605 Sports First Aid and Injury Prevention	3
HPES 2625 Pedagogical Aspects of Exercise Science	3
HPES 3700 Exercise Testing and Prescription 1	4
HPES 3705 Statistics and Research Design in Exercise Science	3
HPES 3710 Physiology of Exercise	4
HPES 3710L Physiology of Exercise Lab	1
HPES 3720 Kinesiology and Applied Anatomy	3
HPES 3720L Kinesiology Lab	1
HPES 3730 Exercise Testing and Prescription 2	4
HPES 3760 Strength Training and Conditioning	3
HPES 4805 Administration of Exercise Programs	4
HPES 4810 Exercise Testing and Prescription 3	5
HPES 4880 Internship	8-12

Exercise Science - B.S. in Applied Science -
http://web.ysu.edu/gen/bcohhs/B.S.A.S._Exercise_Science_m46.html
-
http://web.ysu.edu/gen/bcohhs/B.S.A.S._Exercise_Science_m46.html

Department of Military Science

330-941-3205

Assistant Professor Crawford (Chair); Instructors Torres, 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 70 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 cadet's 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, paid attendance at the Leader Development and Assessment Course (LDAC), and a monthly stipend 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.

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 cadet's 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. Contact the Military Science Department for details.

Scholarship Programs

ROTC scholarships are offered on a case-by-case basis, according to individual merit. Call YSU's Military Science Department at 330-941-3205 for details.

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 have numerous opportunities to participate in optional ROTC activities outside the classroom. Cadets provide color guards for YSU campus and local community events. At home football games,

YSU Cadets raise the national colors and mark every Penguin touchdown by firing the cannon and doing push-ups for the fans. They may participate in overnight field training exercises at Camp Ravenna Joint Military Training Center, testing their land navigation and tactical leadership skills. Cadets receive realistic Army training, including rifle marksmanship, helicopter rides, paintball, rappelling, obstacle courses, and combat water survival. They may attend formal military banquets each semester, as well.

Cadets may compete to represent the ROTC program at prestigious events throughout the year. In the fall, they may be selected to be part of the Bold Warrior Challenge team, and represent YSU in a competition at Fort Knox, KY, against teams from other universities nationwide. Cadets must demonstrate military proficiency and physical fitness above their peers, as they are tested in a variety of tasks including rifle marksmanship, land navigation, constructing and utilizing a rope bridge over water, using a Zodiac raft, passing a physical fitness test, and completing a road march. Cadets may have the opportunity to earn the German Armed Forces Badge for Military Proficiency by completing a fitness test, pistol qualification, demonstrating proficiency in first aid, and completing a road march. Cadets who qualify may also participate in the annual Army Ten Miler in Washington, DC, or honor fallen Soldiers and their families at the Mountain Man Memorial March in Gatlinburg, TN.

Department of Military Science - <http://web.ysu.edu/rotc/> - <http://web.ysu.edu/rotc/>

Minor in Military Science

GENERAL EDUCATION REQUIREMENTS	
Courses	s.h.
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
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

Department of Military Science Curriculum

GENERAL EDUCATION REQUIREMENTS

Courses	s.h.
MSCI 1510 Introduction to ROTC	1
MSCI 1520 Introduction to Leadership	1
MSCI 2610 Self Team Development	2
MSCI 2620 Individual / Team Military Tactics	2
MSCI 3710 Leading Small Organizations	3
MSCI 3720 Leading Small Organizations 2	3
MSCI 4810 Leadership Challenges and Goal Setting	3
MSCI 4820 Transition to Lieutenant	3

Department of Nursing

330-941-3293

Professors Hoyson, Serroka, Wood; Associate Professors Lisko, O'Dell, Wagner (Chair); Assistant Professors Coffee, Shields; Instructors Clark, Daniels, Rankin, Rendano, Roche, Shortreed, Thompson, Weaver.

The Department of Nursing offers a Bachelor of Science in Nursing (BSN) degree 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—an entry-level (pre-licensure) and RN completion program. The entry-level program is a four-year program for new or transfer students entering YSU without a previous degree or diploma in nursing. The program prepares students for the registered nurse role. 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 Accreditation Commission for Education in Nursing (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. Entry-level 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 3.2 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 3.0.
 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 entry-level 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 NURS 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 entry-level 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/> - <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 Student Learning Outcomes

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 healthcare 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.

Department of Nursing -
<http://web.ysu.edu/bchhs/nursing> -
<http://web.ysu.edu/bchhs/nursing>

Curriculum Leading to the Bachelor of Science in Nursing Degree for Entry-

level Students (Non-RN)

FIRST YEAR

First Semester (Pre-Nursing)

Courses	s.h.
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
Total Semester Hours	17

Second Semester (Pre-Nursing)

Courses	s.h.
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)
Total Semester Hours	16

SECOND YEAR

First Semester (Nursing Majors)

Courses	s.h.
BIOL 1560/L Microbiology	3 (2+1)
NURS 2610 Contemporary	3
NURS 2643/L Health Assessment	4 (3+1)
NURS 2646 Pathophysiology	4
Total Semester Hours	14

Second Semester

Courses	s.h.
FNUT 1551 Nutrition	3
CMST 1545 Communications	3
NURS 2650 Pharmacology	3
NURS 2645/L Professional Nursing 1	8 (4+4)
Total Semester Hours	17

THIRD YEAR

First Semester

Courses	s.h.
NURS 3741/L Prof. Nursing 2	6 (3+3)
NURS 3710/L Nursing in the Community	5 (3+2)
Arts & Humanities	3
Elective	2
Total Semester Hours	16

Second Semester

Courses	s.h.	NURS 3720	3
NURS 3743/L Prof. Nursing 3	5 (3+2)	NURS 3749	3
NURS 3749 Nursing Research	3	NURS 3770	3
*NURS 3731/L Childbearing, Family & Women's Health	5 (3+2)	NURS 3772	3
Arts & Humanities (AH) GER	3	NURS 4804	3
Total Semester Hours	16	NURS 4846/L	4
		NURS 4854/L	4

FOURTH YEAR

First Semester

Courses	s.h.	NURS Electives	6
*NURS 4840/L Complex Care	5 (3+2)	Total	30

*NURS 4832/L Nursing Care of Children	5 (3+2)
NURS 4844 Com. Health Nursing	3
Elective	3
Total Semester Hours	16

Second Semester

Courses	s.h.
*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
Total Semester Hours	15

**Will be taken either spring or fall semester.*

Curriculum Leading to the Bachelor of Science in Nursing Degree for RN Students (RN-BSN Completion)

NURSING COURSES

1. Nursing credit hours awarded after completion of NURS 2643, NURS 2650, and NURS 2646 with a cumulative GPA of 2.00	44 s.h.
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Equates to the following courses:

NURS 2645, NURS 3731, NURS 3741, NURS 3743, NURS 4832, NURS 4840, NURS 4842

3. Required Support Courses	s.h.
MATH 2625	4
ARTS & HUMANITIES (AH)	6
CMST 1545	3
Electives	6
Total	19

4. Required Nursing Courses	s.h.
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5. 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.

School Nurse Licensure Program - http://web.ysu.edu/gen/bcohhs/School_Licensure_Program_m62.html

Department of Social Work

330-941-1598

3030 Cushwa Hall

Professors Keller, Silver; Associate Professor Morawski (Chair); Assistant Professors Alschuler, Hyppolite, Masalenhdan-Block; Instructors Holcomb, Wyant.

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.

YSU offers Bachelor of Social Work degree completion programs at the following off-campus sites:

- Butler Community College (Butler, Pennsylvania)
- Lakeland Community College (Kirtland, Ohio)
- Loraine Community College (Elyria, Ohio)
- Stark State College (North Canton, Ohio)

Students in these programs take course work at the host community college and combine credits earned with YSU social work courses taught on the site of the respective community college to fulfill requirements for the BSW degree. All YSU instruction is provided by YSU faculty members through face-to-face meetings, telephone, or video conferencing. Students have access to Ohio LINK online research services and student support available on the community college campus.

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.

Department of Social Work -
<http://web.ysu.edu/bchhs/sw> -
<http://web.ysu.edu/bchhs/sw>

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:

Courses	s.h.
HAHS 1500 Introduction to the BCHHS	1
ENGL 1550 Writing 1	3
ENGL 1551 Writing 2	3
SOC 1500 Introduction to Sociology	3
CMST 1545 Communication Foundations	3
PSYC 1560 General Psychology	3
ANTH 1500 Introduction to Anthropology	3
POL 1560 American Government	3
SCWK 1510 Introduction to Social Work	3
SCWK 2600 Health Issues for Social Work Practice	3
SCWK 2622 Social Work Processes	3
SCWK 2641 American Social Welfare	3
SCWK 2642 Human Behavior and the Social Environment 1	3
SCWK 2644 Human Behavior and the Social Environment 2	3
PHIL 2625 Introduction to Professional Ethics	3
PHIL 1565 Critical Thinking	3
REL 2601 Introduction to World Religion	3
Total Semester Hours	49

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.

Courses	s.h.
MATH 2623 Survey of Mathematics	3
Natural Science With Lab	3+1
Natural Science	3
Social & Personal Awareness	3
Electives	17
Total Semester Hours	30

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.
4. 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:

Courses	s.h.
SCWK 3736 Social Work Methods with Individuals	3
SCWK 3750 Analysis of Social Work Practice Data	3
SCWK 3760 Research Methods for Social Workers	3
SCWK 5820 Social Policy	3
<i>One special-populations course from the following:</i>	
SCWK 3728 Social Services for Children	3
SCWK 3730 Social Services and the Aged	3
SCWK 3731 Social Services and the Disabled	3
SCWK 4860 An Approved Special Topics Course	3

The following courses may be taken concurrently with the field work in social services:

SCWK 4825 Field Work in Social Services – 2 SEMESTERS 6+6

SCWK 3737 Social Work Methods with Groups	3
SCWK 3738 Social Work Methods with Families	3
SCWK 5822 Social Work Methods with Organizations and Communities	3
SCWK 5823 Cultural Diversity in Practice	3
SCWK 4826* Integrated Field Work Seminar	3
SCWK 4827* Integrated Capstone Seminar	3
Total Semester Hours	45
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	s.h.
HAHS 1500 Introduction to BCHHS	1
ENGL 1550 Writing 1	3
ENGL 1551 Writing 2	3
CMST 1545 Communication Foundations	3
Social and Personal Awareness Elective	3
SOC 1500 Introduction to Sociology	3
PSYC 1560 General Psychology	3
ANTH 1500 Introduction to Anthropology	3
POL 1560 American Government	3
SCWK 2600 Health Issues for Social Work Practice	3
PHIL 1565 Critical Thinking	3
REL 2601 Introduction to World Religions	3
Elective	3
Total Semester Hours	37

DEPARTMENT REQUIREMENTS FOR SOCIAL SERVICES TECHNOLOGY

Courses	s.h.
SCWK 1510 Introduction to Social Work	3
SCWK 2622 Social Work Processes	3
SCWK 2641 American Social Welfare	3
SCWK 2642 Human Behavior and the Social Environment 1	3
SCWK 2644 Human Behavior and the Social Environment 2	3
SCWK 3736* Social Work Methods with Individuals	3
SCWK 2695* Applied Social Work	6
SCWK Special Populations Elective	3
Total Semester Hours	27
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.

Minor in Social Work		SCWK 5823 Cultural Diversity in Social Work Practice	3
SOCIAL WORK MINOR		<i>Plus 3 s.h. from the following courses:</i>	
Courses	s.h.	SCWK 2600 Health Issues for Social Work Practice	3
<i>All of the following:</i>			
SCWK 1510 Introduction to Social Work	3	SCWK 3728 Social Services for Children	3
SCWK 2622 Social Work Processes	3	SCWK 3730 Social Services and the Aged	3
SCWK 2641 American Social Welfare	3	SCWK 3731 Social Services and the Disabled	3
SCWK 2642 Human Behavior and the Social Environment for Social Workers 1	3	Total Semester Hours	18

The College of Liberal Arts and Social Sciences

The College of Liberal Arts and Social Sciences

Jane E. Kestner, Interim Dean

The College grants three bachelor's degrees: Bachelor of Arts (BA), Bachelor of General Studies (BGS), and Bachelor of Science in Applied Science (BSAS). Additionally an Associate in Arts (AA) 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

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 BA Degree

- Africana Studies
- American Studies
- Anthropology
- Economics
- English
- French
- Geography
- Gerontology
- History
- Italian
- Journalism
- Long Term Care Administration
- Philosophy
- Political Science
- Professional and Technical Writing
- Psychology
- Religious Studies
- Social Studies
- Sociology
- Spanish

Programs 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 BA or BS 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 (BA, BGS) 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 BA 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.

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 of this *eBulletin*.

The College of Liberal Arts and Social Sciences-
<http://web.ysu.edu/class> - <http://web.ysu.edu/class>

CLASS Associate Degree Requirements

Requirements for the completion of the Associate of Arts (AA) degree include those applicable to all associate degrees as detailed in the **Academic Policies and Procedures** section of the *eBulletin*: at

least 64 semester hours of credit including 37 hours of general education. All associate degrees awarded in the College of Liberal Arts and Social Sciences require the following:

General Education Requirements

	s.h.
ENGL 1550 and ENGL 1551	6
CMST 1545 Communication Foundations	3
MATH 1510 College Algebra	4
<i>Courses taken to fulfill the AA general education knowledge domains must be OTM (Ohio Transfer Module) approved. Please see an advisor to ensure the general education courses you are completing have been OTM approved.</i>	
Natural Sciences	6 + 1 (lab)
Arts and Humanities	6
Social Science	6
General Education Electives	6
Concentration Area Students choose a concentration area of humanities, social sciences, or natural sciences.	21
Electives	5
Total Degree Hours	64*

*The last 20 semester hours and at least 16 sh of the concentration area 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; and Africana Studies 2601.

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.

Natural Sciences: courses must be selected from the following disciplines: astronomy, biology, chemistry, environmental science, geology, physics, physical geography, and A&S/STEM 2600

(no longer offered).

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'Apolito - 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.

Africana Studies - <http://web.ysu.edu/class/afrst> - <http://web.ysu.edu/class/afrst>

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

Courses	s.h.
AFST 2600 Introduction to Africana Studies I (GERâ€œSocieties and Institutions)	3
AFST 2601 Introduction to Africana Studies II (GERâ€œArtistic Literary Perspectives)	3
AFST 3700 Colloquium 1	3
AFST 3701 Colloquium 2	3
CHEM 2602 African and African American Contributions to Science	3

SOCIAL STUDIES COURSES

Chooses 2-3 courses

Courses	s.h.
AMER 4801 Perspectives on America	9 (total)
HIST 3730 The Black Experience in American History	3
HIST 4801 Select Problems in American History	3
HIST 3750 History of Modern South Africa in the Sahara	3

HIST 4860 Select Problems in Third World History	3
POL 3706 African American Politics	3
PSYC 3745 The Minority Individual	3
SCWK 3726 The African-American Family	3
SCWK 3727 The African-American Community	3
SOC 3700 Minority Groups	3
REL 3751 Liberation Theologies and Revolutionary Change	3

HUMANITIES *Choose 2-3 courses*

Courses	s.h.
ART 3742 African Art	3
ART 3744 African-American Art	3
ENGL 2620 Introduction to African Literature	3
ENGL 4871 The Black Experience in American Literature	3
MUHL 2616 Survey of Jazz	3
REL 3708 African American Religion	3
REL 3710 African and Neo-American Religion	3

CORE COURSES *18 s.h.*

Courses	s.h.
Social Studies	6-9
Humanities	6-9

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

Associate Professor Dolores Sisco - 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.

American Studies -
<http://web.ysu.edu/class/amerst> -
<http://web.ysu.edu/class/amerst>

Bachelors Program American Studies

REQUIRED COURSES 12 hours

Courses	s.h.
AMER 2601 American Identity	3
AMER 3701 Approaches to American Studies	3
AMER 4801 American Studies Research Seminar	3
AMER 4810 Independent Project in American Culture	1-3

Literacy and Competencyâ€¢21 hrs.

Choose one 3-hour course for each of seven learning goals below.

Literacies

TEXTUAL

Be able to analyze cultural texts such as visual materials, literary texts, artifacts, maps, historical documents, and others.

Courses	s.h.
AMER 4815 American Material Culture	3
ANTH 3761 Cultures of the New World	3
ART 3744 Seventeenth and Eighteenth Century American Art	3
ART 3746 (W) Nineteenth Century American Art	3
ART 3747 African American Art	3
ART 3781 Native North American Art	3
ENGL 3732 Images of Women	3
ENGL 3765 Film Genres	3
ENGL 3780 American Genres	3
ENGL 4862 Themes in American Literature	3
ENGL 4864 American Literary Conversations	3
ENGL 4865 Selected Topics in Film	3
GEOG 3750 Topics in Regional Geography	3

HIST 4815 American Material Culture	3
HIST 5806 American Architectural History 1	3
MUHL 2616 Survey of Jazz	3

SOCIAL

Understand theories of culture and social processes, difference, and interactions, between Americans as individuals and as members of groups.

Courses	s.h.
AMER 5845 Work in America	3
AMER 5850 Class and Culture	3
ANTH 3705 (T/W) Cultural Anthropology	3
CJFS 5831 Violence in America	3
FOUN 3708 Education and Society	3
GEOG 3726 Urban Geography	3
HIST 3723 History of American Sports	3
HIST 3736 History of American Cities	3
MGT 3750 Managing Individuals Organizations	3
MGT 5845 Work in America	3
POL 3712 Political Behavior	3
PSYC 3707 Psychology of Intimate Relationships	3
SOC 2601 Social Problems	3
SOC 2640 Women in Society	3
SOC 3705 The Family	3
SOC 3707 Urban Sociology	3
SOC 3741 Social Movements	3
SOC 3743 Social Stratification and Inequality	3
SCWK 2641 American Social Welfare	3

HISTORICAL

Understand historical narratives of the U.S.

Courses	s.h.
AMER 2605 Turning Points in U.S. History 1	3
AMER 2606 Turning Points in U.S. History 2	3
AMER 3770 American Literature in Historical Perspective	3
ANTH 4825 New World Archaeology: Topics	3
JOUR 2626 (O) American Journalism	3
ENGL 3770 American Literature in Historical Perspective	3
HIST 2605 (T) Turning Points in U.S. History 1	3
HIST 2606 (T) Turning Points in U.S. History 2	3

HIST 3700 The Atlantic World	3
HIST 3702 Early America	3
HIST 3704 The Age of Jefferson and Jackson	3
HIST 3706 Age of Lincoln and Grant	3
HIST 3710 Incorporation of America: 1877-1919	3
HIST 3712 United States in Crises: 1920-1945	3
HIST 3713 Cold War America: 1945-1990	3
HIST 3734 History of Organized Crime in the United States	3
HIST 4801 Selected Problems in American History	3

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.

Courses	s.h.
AMER 3705 Cultural Anthropology	3
ANTH 3790 Aging in Cross-Cultural Perspective	3
FNLG 2660 (W) Women in the Ancient World	3
HIST 1511 (T) World Civilization to 1500	3
HIST 1512 (T) World Civilization since 1500	3
HIST 3727 Mexico and the Caribbean	3
PHIL 3702 (O) History of Modern Philosophy	3
PHIL 2635 Ethics of War and Peace	3
POL 2640 Contemporary World Governments	3
POL 2660 (T) International Relations	3
POL 2695 Model United Nations	1
POL 3744 European Politics	3
POL 3751 Latin American Politics	3
POL 3763 International Law	3
POL 3764 International Organizations	3
POL 3768 International Conflict & Conflict Management	3
POL 5860 Select Problems of Global Affairs	2-4
REL 2605 (O) Myth, Symbol, and Ritual	3
REL 3710 African and Neo-African Religions	3
REL 3726 Buddhism	3
REL 3751 Liberation Theologies and Revolutionary Change	3

THTR 4860 (W) Theater History After 1700	3
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CULTURAL PLURALISM

Explore the diversity of American culture, especially issues such as ethnicity, gender, race, class, language, and region.

Courses	s.h.
AFST 2600 Introduction to Africana Studies 1	3
AFST 2601 Introduction to Africana Studies 2	3
AFST 3700 Africana Studies Colloquium 1	3
AFST 3701 Africana Studies Colloquium 2	3
AMER 3700 Minority Groups	3
ART 3744 Seventeenth and Eighteenth Century American Art	3
ENGL 2617 Women in Literature	3
ENGL 2618 American Literature and Diversity	3
ENGL 3790 Selected Topics in Multicultural Studies	3
ENGL 4871 The Black Experience in American Literature	3
HIST 3726 (W) History of Women in the United States	3
HIST 3730 The Black Experience in American History	3
HIST 3743 Labor in United States History	3
MGT 3755 Managing Diversity	3
POL 3706 African-American Politics	3
PSYC 3730 (W) Psychology of Women	3
PSYC 3745 The Minority Individual	3
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
SOC 2640 Women in Society	3
SOC 3700 Minority Groups	3
SOC 3743 Social Stratification and Inequality	3
SOC 3703 Aging and Society	3
SPAN 3758 Culture and Literature of Spanish-Speaking Groups in the U.S.	3
SPAN 5885 Topics in Hispanic Literature and Film	3

Competencies

QUANTITATIVE

Be able to analyze quantitative data such as statistics, opinion polls, or content analysis, and use such information in cultural analysis.

Courses	s.h.
AMER 3720 Applied Sociology	3
ANTH 4850 Research Methods	3
CJFS 3712 Criminal Justice Research	3
POL 3712 (T) Political Behavior	3
POL 3714 American Public Opinion	3
SOC 3720 Applied Sociology	3
SOC 4851 Social Research	3

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.

Courses	s.h.
AMER 3770 American Literature in Historical Perspective	3
AMER 4815 American Material Culture	3
ANTH 3702 Archaeology	3
ANTH 3778 Archaeological Techniques	1-9
ANTH 4877 Method and Theory in Archaeology	3
ENGL 3770 American Literature in Historical Perspective	3
HIST 4811 Practicum in Historic Preservation	3
HIST 4815 American Material Culture	3
HIST 4809 Documentation and Interpretation of Historic Sites	3
HIST 5810 Conservation of the Historic Built Environment	3

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.

American Studies Minor

Courses	s.h.
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

Department of Economics

330-941-3428

Professors Petruska, Porter (Chair), Riley, Usip; Associate Professors Hu, Ovaska, Palardy, Sumell, Uppal, Wang.

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.

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, ECON 3710, ECON 3712, ECON 5809, ECON 5811, and ECON 5812.

- Marketing: ECON 3710, ECON 3712, and ECON 5801.
- Management: ECON 3710, ECON 3712, ECON 4810, ECON 5801, and ECON 5831.
- Pre-Law: ECON 3702, ECON 3710, and ECON 3712.
- Environmental Studies: ECON 3710, ECON 3712, and ECON 3705

Department of Economics -
<http://web.ysu.edu/class/economics> -
<http://web.ysu.edu/class/economics>

BA in Economics

A student can earn either a Bachelor of Arts (BA) in economics through the College of Liberal Arts and Social Sciences or a Bachelor of Science in Business Administration (BS in BA) 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 BA 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

Courses	s.h.
ECON 2610 Principles 1: Microeconomics	3
ECON 2630 Principles 2: Macroeconomics	3
Calculus (MATH 1552, MATH 1570, or MATH 1571)	4
ECON 3710 Intermediate Microeconomic Theory	3
ECON 3712 Intermediate Macroeconomic Theory	3
ECON 3790 Statistics for Business and Economics	5
ECON 4880 Analysis of Economic Problems	3

Economics courses at the 1500 level cannot be counted towards the major.
 Students intending to apply for PhD programs in

economics should consider taking MATH 1571, MATH 1572, MATH 2673, and MATH 3720.
 For information on the BS in BA in Business Economics see the Williamson College of Business Administration.

Specializations

The following are suggested curricula for students wishing to concentrate their studies in a specific are of economics, students are not required to choose a specialization.

SPECIALIZATION IN INTERNATIONAL ECONOMICS

Recommended economics electives

Courses	s.h.
ECON 3701 Money and Banking	3
ECON 3720 Comparative Economic Systems	3
ECON 5809 Current Problems in Money, Banking, and Financial Markets	3
ECON 5811 International Trade	3
ECON 5812 International Finance	3

Students should also consider taking electives outside the major in accounting, marketing, and international relations.

SPECIALIZATION IN MONEY AND BANKING

Recommended economics electives

Courses	s.h.
ECON 3701 Money and Banking	3
ECON 3702 Public Finance	3
ECON 5809 Current Problems in Money, Banking, and Financial Markets	3
ECON 4810 Managerial Economics	3

Students should also consider taking electives in accounting and finance.

SPECIALIZATION IN QUANTITATIVE ECONOMIC METHODS

Recommended economics electives

Courses	s.h.
ECON 5824 Applied Time Series Analysis of Economic and Business Data	3
ECON 5853 Applied Econometrics	3
ECON 5856 Topics in Quantitative Economics	3
MATH 1571 Calculus 1	4
MATH 1572 Calculus 2	4
MATH 2673 Calculus 3	4

MATH 3720 Linear Algebra and Matrix Theory 3

Introductory courses in computer programming

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, ECON 3710, ECON 3712, ECON 5809, ECON 5811, and ECON 5812.

Marketing:

ECON 3710, ECON 3712, and ECON 5801.

Management:

ECON 3710, ECON 3712, ECON 4810, ECON 5801, and ECON 5831.

Pre-Law:

ECON 3702, ECON 3710, and ECON 3712.

Environmental Studies:

ECON 3710, ECON 3712, and ECON 3705

"4+1" Bachelors/Masters Program

The accelerated "4+1" program allows students to earn a masters degree in economics in one year after completing their bachelors degree. Undergraduate students can apply to take graduate courses after completing 78 semester hours with a GPA of 3.3 or higher. Students can take a maximum of 9 semester hours of graduate coursework that can count both towards a bachelors degree and either an MA in Economics or an MA in Financial Economics. Students who successfully complete the masters courses are encouraged to apply for a graduate assistantship.

Qualified students can take the courses listed below after having met the following requirements.

- ECON 6904 – A grade of B or A in ECON 3790, and a grade of B or A in MATH 1552 or MATH 1570 or MATH 1571
- ECON 6912 – A grade of B or A in ECON 3710, and a grade of B or A in MATH 1552 or MATH 1570 or MATH 1571; or A grades in ECON 2610, MATH 1571, and MATH 1572 (in this case ECON 6912 is taken in place of ECON 3710)
- ECON 6922 – A grade of B or A in ECON 3712, and a grade of B or A in MATH 1552 or MATH 1570 or MATH 1571; or A grades in ECON 2630, MATH 1571, and MATH 1572 (in this case ECON 6922 is taken in place of ECON 3712)
- ECON 6939 – A grade of B or A in ECON 3712, and a grade of B or A in MATH 1552 or MATH 1570 or MATH 1571
- ECON 6945 – A grade of B or A in ECON 6912
- ECON 6976 – A grade of B or A in ECON 6904; or a grade of A in ECON 3790 or STAT 3743, and

a grade of A in MATH 1552 or MATH 1570 or MATH 1571

Department of English

330-941-3414

Professors Barnhouse, Brady, Brown, Diamond, Francisco, Gergits (Chair), Greenway, Hauschildt, Leonard, Reese, Tingley; Associate Professors Buchanan, Earnheardt, Gordon, Lenhoff, Strom; Assistant Professors Andrews, Awad, Beadling, Barzak, Graber, Lee, Seamon, Sisco; Instructors Benton, Davis, 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.

Department of English -
<http://web.ysu.edu/class/english> -
<http://web.ysu.edu/class/english>

BA in English

Curriculum

Beyond the freshman sequence, the English major comprises at least 39 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

18 s.h. required of all majors

Courses	s.h.
ENGL 3700 Introduction to Literary Studies	3
ENGL 3710 Survey of British Literature 1	3
ENGL 3711 Survey of British Literature 2	3
ENGL 3712 Survey of American Literature 1	3

ENGL 3713 Survey of American Literature 2	3
ENGL 4890 Senior Seminar	3

English Studies Strand (21 s.h. beyond core)

LANGUAGE STUDIES

Courses	s.h.
ENGL 3755 Principles of Linguistics	3

BRITISH LITERATURE STUDIES

Choose one from list below

Courses	s.h.
ENGL 4830 Major Figures in British Literature	3
ENGL 4831 Genres, Circles & Movements in British Literature	3
ENGL 4860 The Medieval World	3
ENGL 4881 Shakespeare and His World	3
ENGL 4882 The English Renaissance	3
ENGL 4886 Restoration & 18th Century British Literature	3
ENGL 4887 The Romantic Period	3
ENGL 4892 19th Century British Literature	3
ENGL 4895 Early 20th Century British Studies	3
ENGL 4896 British Literature WWII to present	3

AMERICAN LITERATURE STUDIES

Choose one from list below

Courses	s.h.
ENGL 3770 American Literature in Historical Perspective	3
ENGL 3780 American Genres	3
ENGL 4862 Themes in American Literature	3
ENGL 4864 American Literary Conversation	3
ENGL 4871 The Black Experience in American Literature	3

MULTICULTURAL STUDIES

Courses	s.h.
ENGL 2617 Women in Literature	3
ENGL 2618 American Literature & Diversity	3
ENGL 2620 African Literature	3
ENGL 3732 Images of Women	3
ENGL 3790 Selected Topics in Multicultural Studies	3
ENGL 4850 Sociolinguistics	3

ENGL 4871 The Black Experience in American Literature*	3
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NOTE: Courses that fulfill this requirement may NOT also be

counted toward electives or American literary studies.

ADVANCED WRITING

Choose one from the list below

Courses	s.h.
JOUR 3716 Introduction to Magazine Journalism	3
JOUR 3717 Editorial & Opinion Writing	3
JOUR 3721L Journalism Workshop	3
ENGL 3740 Advanced Writing	3
ENGL 3741 Advanced Writing for Teachers	3
ENGL 3743 Professional and Technical Communication	3
ENGL 3744 Proposal and Report Writing	3
ENGL 3746 Fiction Writing Workshop	3
ENGL 3747 Poetry Writing Workshop	3
ENGL 3748 Screenwriting	3

NOTE: Courses that fulfill this requirement may NOT also be counted toward electives.

ELECTIVES

Courses	s.h.
Two courses from any area in English, 2602 or higher	6

CREDIT HOURS NEEDED FOR ENGLISH STUDIES STRAND OF ENGLISH MAJOR

Courses	s.h.
Core Courses	18
Language Studies	3
British Literary Studies	3
American Literary Studies	3
Multicultural Studies	3
Advanced Writing	3
Electives	6
Total	39
Minor	18
General Degree Requirement	124

Literature Studies Strand (21 s.h. beyond core)

LANGUAGE STUDIES

Courses s.h.

ENGL 3755 Principles of Linguistics 3

or

ENGL 3757 Development of the English 3

LANGUAGE LITERARY STUDIES

Courses s.h.

ENGL 3706 Introduction to Literary Theory 3

SHAKESPEARE

Courses s.h.

ENGL 4881 Shakespeare and His World 3

BRITISH LITERATURE STUDIES

Courses s.h.

ENGL 4830 Major Figures in British Literature 3

ENGL 4831 Genres, Circles & Movements in British Literature 3

ENGL 4860 The Medieval World 3

ENGL 4881 Shakespeare and His World 3

ENGL 4882 The English Renaissance 3

ENGL 4886 Restoration & 18th Century British Literature 3

ENGL 4887 The Romantic Period 3

ENGL 4892 19th Century British Literature 3

ENGL 4895 Early 20th Century British Studies 3

ENGL 4896 British Lit. WWII to present 3

AMERICAN LITERATURE STUDIES

Courses s.h.

ENGL 3770 American Literature in Historical Perspective 3

ENGL 3780 American Genres 3

ENGL 4862 Themes in American Literature 3

ENGL 4864 American Literary Conversation 3

ENGL 4871 The Black Experience in American Literature 3

ADDITIONAL BRITISH OR AMERICAN LITERATURE STUDIES

Courses s.h.

Choose one additional course from British or American lists above. 3

MULTICULTURAL STUDIES

Courses s.h.

ENGL 2617 Women in Literature 3

ENGL 2618 American Literature & Diversity 3

ENGL 2620 African Literature 3

ENGL 3732 Images of Women 3

ENGL 3790 Selected Topics in Multicultural Studies 3

ENGL 4850 Sociolinguistics 3

ENGL 4871 The Black Experience in American Literature* 3

*May NOT also be counted toward American literary studies requirement.

CREDIT HOURS REQUIRED FOR LITERATURE STUDIES STRAND OF ENGLISH MAJOR

Courses s.h.

Core Courses 18

Language Studies 3

Literary Studies 3

Shakespeare 3

British Literature Studies 3/6

American Literature Studies 3/6

Multicultural Studies 3

Total 39

Minor 18

General Degree Requirement 124

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.

BA in Journalism

Professors Francisco, Gergits (Chair); Associate Professor Earnhardt, Lenhoff; Assistant Professors

Seamon; Instructor Davis.

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 courses designed to enhance editing, writing and publishing skills. 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

REQUIRED CORE COURSES

Courses	s.h.
JOUR 2622 News Reporting	3
JOUR 2624 Image and Design of News	3
JOUR 2626 American Journalism	3
JOUR 3721L Journalism Workshop	3
JOUR 3723 Advanced Journalism Editing and Design	3
JOUR 3760 News Reporting 2	3
JOUR 4824 Journalism Law and Ethics	3
JOUR 4893 Journalism Senior Project	3
Total	24

ELECTIVES

Choose 12 s.h. from the list below. Be sure to choose those that are appropriate for your selected option. WR indicates class suitable for writing/reporting option, MG indicates class suitable for magazine option, E

indicates class suitable for electronic option, JS indicates classes suitable for the journalism studies option.

Courses	Option	s.h.
JOUR 2605 Journalism as Literature	WR/MG/JS	3
JOUR 2632 Photojournalism	WR/MG/E/JS	3
JOUR 3716 Introduction to Magazine Journalism	MG/JS	3
JOUR 3717 Editorial and Opinion Writing	WR/E/JS	3
JOUR 3720L Magazine Journalism Workshop	MG/JS	1
JOUR 3722L Radio News Workshop	WR/E/JS	3
JOUR 3758 Projects in Working Class Reporting	MG/JS	3
JOUR 3759 Sports Journalism	WR/E/JS	3
JOUR 3761 New Media Journalism	WR/E/JS	3
JOUR 3762 Political Reporting	WR/E/JS	3
JOUR 4822 Magazine Writing and Reporting	MG/JS	3
JOUR 4823 In-Depth Reporting	WR/MG/JS	3
JOUR 4825 Selected Topics in Journalism	WR/MG/E/JS	3
JOUR 4894* Journalism Internship	WR/MG/E/JS	1-3

* Repeatable up to 6 s.h.

REQUIRED SUPPORT COURSES

Courses	s.h.
CMST 3756 Interviewing	3
CMST 4850 Computer-Mediated Communication	3

ELECTIVE SUPPORT COURSES
Select 6 s.h.

Courses	s.h.
ENGL 3740 Advanced Writing	3
ENGL 3743 Professional and Technical Communication	3
ENGL 3745 Writing for Online Environments	3
ENGL 4849 Professional and Technical Editing	3
ENGL 4850 Sociolinguistics	3
ENST 2600 Foundations of Environmental Studies	3

POL 3702 Law and Society	3
POL 3714 American Public Opinion	3
POL 3722 State and Local Government	3
TCOM 1580 Introduction to Telecommunication Studies	3
CSIS 1510 Global Electronic Information Resources	3
ACCT 2602 Financial Accounting	3
CMST 2600 Communication Theory	3
CJFS 2601 Policing	3
CJFS 2602 Criminal Courts	3
STAT 2601 Introductory Statistics	3

Curriculum for journalism majors entering the program before Fall 2012

THE JOURNALISM BA REQUIRES STUDENTS TO TAKE ALL OF THE FOLLOWING COURSES

Courses	s.h.
ENGL 2622 News Reporting	3
JOUR 2626 American Journalism	3
JOUR 3716 Introduction to Magazine Journalism	3
JOUR 3717 Editorial and Opinion Writing	3
JOUR 3721L Journalism Workshop	3
JOUR 3723 Advanced Journalism Editing and Design	3
JOUR 3760 News Reporting II	3
JOUR 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

BA in Professional and Technical Writing (PTW)

Professors Gergits (Chair); Associate Professor Gordon; Assistant Professors Awad, Lee; Instructor Pittman, and Shebat.

Learning Outcomes

The English Department has established the

following learning outcomes for students completing the professional and technical writing 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 63 semester hours, distributed as follows:
PWE CORE COURSES (27 s.h.)

Courses	s.h.
JOUR 2622 News Reporting 1	3
JOUR 2624 Imaging and Design of News	3
ENGL 3740 Advanced Writing	3
ENGL 3743 Professional & Tech Comm	3
ENGL 3744 Proposal and Report Writing	3
ENGL 3745 Writing for Online Environments	3
ENGL 4843 Advanced Professional & Tech Writing	3
ENGL 4849 Professional & Tech Editing	3
ENGL 4899 Prof. Writing Senior Project*	3

II. WRITING AND LANGUAGE STUDY (12 s.h.)

Select 12 s.h. with no more than 9 s.h. from a single group

Courses	s.h.
Journalism	
JOUR 3716 Intro to Magazine Journalism	3
JOUR 3717 Editorial and Opinion Writing	3
JOUR 3717L	
JOUR 3760 New Reporting 2	3
Creative Writing	
ENGL 3746 Fiction Writing Workshop	3
ENGL 3747 Poetry Writing Workshop	3

ENGL 3748 Screenwriting 3

Linguistics

ENGL 3755 Principles of Linguistic Study 3

ENGL 4850 Sociolinguistics 3

ENGL 4855 Advanced Linguistics 3

ENGL 4858 English Grammar 3

ENGL 4859 Selected Topics in Discourse 3

III. CRITICAL READING (6 s.h.)

Courses s.h.

Select one:

ENGL 2610 World Literature 3

ENGL 2617 Women in Literature 3

ENGL 2681 3

ENGL 2620 African Literature 3

ENGL 3700 Literary Study 3

ENGL 3751 Readings in Prof Writing Edit 3
[new course]

IV. PROFESSIONAL AREA (18 s.h.)

Minimum of 18 s.h in cognate field (other upper division courses in a cognate fields may be substituted with advisor approval). Up to 3 s.h. of the 18 s.h. total may be taken as internship (see V below). See your advisor for options.

- Option 1: Publication Design
- Option 2: Electronic Document Development
- Option 3: Technical/Scientific Writing
- Option 4: Organizational Writing
- Option 5: Independent Professional Area

V. INTERNSHIP (Optional)

Courses s.h.

Internship: ENGL 4898 1-3

TOTAL SEMESTER HOURS REQUIRED: 63 s.h.

Minor in English Studies

Courses s.h.

ENGL 3700 Introduction to Literary Studies 3

One of the following literature survey courses

Courses s.h.

ENGL 3710 Survey of British Literature I 3

ENGL 3711 Survey of British Literature II 3

ENGL 3712 Survey of American Literature I 3

ENGL 3713 Survey of American Literature II 3
One upper division Am. Lit. OR upper division British Lit from the following

Courses s.h.

Am Lit courses

ENGL 3770 American Literature in Historical Perspective 3

ENGL 3780 American Genres 3

ENGL 4862 Themes in American Literature 3

ENGL 4864 American Literary Conversations 3

ENGL 4871 Black Experience in American Literature 3

Brit Lit courses

ENGL 4830 Major Figures in British Literature 3

ENGL 4831 British Genre Circles Movement 3

ENGL 4860 The Medieval World 3

ENGL 4881 Shakespeare and His World 3

ENGL 4882 English Renaissance 3

ENGL 4886 Restoration and Eighteenth Century British Literature 3

ENGL 4887 The Romantic Period 3

ENGL 4892 19th Century British Literature 3

ENGL 4895 Early 20th Century British Studies 3

ENGL 4896 British Literature WW2 to Present 3

One other literature course from the following

Courses s.h.

ENGL 2610 World Literature 3

ENGL 2617 Women in Literature 3

ENGL 2618 American Literature and Diversity 3

ENGL 2620 African Literature 3

ENGL 2631 Mythology in Literature 3

ENGL 2665 Introduction to Film Study 3

ENGL 3703 Literature for Young Children 3

ENGL 3704 Literature for Middle School Readers 3

ENGL 3705 Young Adult Literature 3

ENGL 3738 Selected Topics in World Literature 3

ENGL 3765 Film Genres 3

ENGL 4865 Selected Topics in Film 3

Two additional English Studies courses-one course from any two of the following groups

Courses	s.h.
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	
JOUR 2622 News Reporting I	3
JOUR 2626 American Journalism	3
JOUR 3716 Introduction to Magazine Journalism	3
JOUR 3717 Editorial and Opinion Writing	3
JOUR 3723 Advanced Journalism Editing and Design	3
JOUR 4824 Press Law and Ethics	3
GROUP 3: Creating Writing	
ENGL 2646 Introduction to Fiction Writing	3
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	

Minor in British and American Literature

Courses	s.h.
ENGL 3700 Introduction to Literary Studies	3
<i>One British Literature survey</i>	
Courses	
ENGL 3710 Survey of British Literature I	3
ENGL 3711 Survey of British Literature II	3
<i>One American Literature survey</i>	
Courses	
	s.h.

ENGL 3712 Survey of American Literature I	3
ENGL 3713 Survey of American Literature II	3
<i>One upper division American Literature course</i>	

Courses	s.h.
ENGL 3770 American Literature in Historical Perspective	3
ENGL 3780 American Genres	3
ENGL 4862 Themes in American Literature	3
ENGL 4864 American Literary Conversations	3
ENGL 4871 Black Experience in American Literature	3
<i>One upper division British Literature course</i>	

Courses	s.h.
ENGL 4830 Major Figures in British Literature	3
ENGL 4831 British Genre Circles Movement	3
ENGL 4860 The Medieval World	3
ENGL 4881 Shakespeare and His World	3
ENGL 4882 English Renaissance	3
ENGL 4886 Restoration and Eighteenth Century British Literature	3
ENGL 4887 The Romantic Period	3
ENGL 4892 19th Century British Literature	3
ENGL 4895 Early 20th Century British Studies	3
ENGL 4896 British Literature WW2 to Present	3
Courses	
ENGL 4890 Senior Seminar	3
Total Number of Semester Hours:18	

Minor in Professional Writing and Editing

The following four courses are required

Courses	s.h.
ENGL 3743 Professional and Technical Communication	3
ENGL 3744 Proposal and Report Writing	3
ENGL 4843 Advanced Professional and Technical Communication	3
ENGL 4849 Professional and Technical Editing	3
<i>Select two of the following courses</i>	
Courses	
	s.h.

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

Minor in Web Communications

Courses	s.h.
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
Or	
ENGL 4849 Professional/Technical Editing	3

Total Semester Hours: 20

Minor in Journalism

All of the following courses

Courses	s.h.
ENGL 2622 News Reporting 1	3
JOUR 2626 American Journalism	3
JOUR 3721L Journalism Workshop	3
JOUR 3723 Advanced Journalism Editing and Design	3
JOUR 4824 Press Law and Ethics	3

Plus one of the following courses

Courses	s.h.
JOUR 3716 Introduction to Magazine Editing	3
JOUR 3717 Editorial and Opinion Writing	3

Total major hours: 18

Minor in Linguistics

REQUIRED COURSE

Courses	s.h.
ENGL 3755 Principles of Linguistic Study	3
AT LEAST TWO COURSES FROM GROUP I	
Courses	s.h.
ENGL 3750 Language and Culture	3
ENGL 3757 Development of the English Language	3
ENGL 4850 Sociolinguistics	3
ENGL 4855 Advanced Linguistics	3
ENGL 4858 English Grammar	3
FRNC 3710 Applied French Phonetics	3
FRNC 3715 Conversation & Composition	3
FRNC 4885 Special Topics	3
ITAL 3720 Advanced Grammar & Composition	3
ITAL 3725 Phonetics	3
SPAN 3724 Spanish Pronunciation	3
SPAN 3735 Advanced Spanish Grammar & Composition	3
SPAN 3736 Introduction to Spanish Linguistics	3
SPAN 5855 Topics in Spanish Language & Linguistics	3

ADDITIONAL COURSEWORK FROM GROUPS I AND II (FOLLOWING)

Courses	s.h.
ENGL 4851 Language Acquisition	3
ENGL 4856 TESOL Methods	3
ENGL 4857 TESOL Practicum	3
ENGL 4858 English Grammar	3
ENGL 4859 Select Topics in Discourse	3
PHIL 2619 Introduction to Logic	3
PHIL 3714 Language and Mind	3
PHIL 3719 Symbolic Logic	3
CSCI 5835 Artificial Intelligence	3
PSYC 3761/PSYC3761L Cognition/Lab	4
PSYC 3764/PSYC 3764L Psycholinguistics/Lab	4
Total Number of Semester Hours: 18	

Minor in Creative Writing

CREATIVE WRITING

Courses	s.h.
ENGL 2646 Introduction to Fiction Writing	3
ENGL 2647 Introduction to Poetry Writing	3

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 s.h.	

Linguistics

Barnhouse, Brown, Vigliotti (Program Director), English; Becerra, Behney (Assistant), Corbé, 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.

Department of Foreign Languages & Literature

330-941-3461

Professors Becerra, Sarkissian (Chair), Associate Professors Masagara, Palardy; Assistant Professors Behney, Corb  , 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. The student will achieve a level of Advanced Low on the Oral Proficiency

Interview administered by the American Council on the Teaching of Foreign Languages.

- 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. The student will achieve a level of Advanced Low on the Writing Proficiency Test administered by the American Council on the Teaching of Foreign Languages.

Department of Foreign Languages & Literature -
<http://web.ysu.edu/class/forlang> -
<http://web.ysu.edu/class/forlang>

FRENCH (P-12) - Multi-Age License

Courses	s.h.
FRNC 1550 Elementary French	4
FRNC 2600 Intermediate French (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)	4
<i>All fourteen (14) courses listed below are required:</i>	
FRNC 2605 Advanced Intermediate French (required for Admission to Teacher Education Program)	3
FRNC 2606 Intensive French Review	3
FRNC 3710 Applied French Phonetics	3
FRNC 3716 Adv. French Gram. & Comp.	3
FRNC 3717 Advanced French Conversation	3
FRNC 3720 Lit. & Culture: France	3
FRNC 3725 Francophone Lit. & Culture	3
FRNC 3736 Intro. to French Linguistics	3
FRNC 3740 French for Bus. & Comm.	3
FRNC 3750 French Civ. and Culture	3
FRNC 4885 French Conv. & Comp. Capstone	3
ENGL 4851 Language Acquisition	3
FNLG 4801 Methods of Foreign Lang. Teaching	3
FNLG 4899 Professional Development for Teachers	1

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: 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.

ITALIAN (P-12) - Multi-Age License

The following courses are required:

Courses	s.h.
ITAL 2600 Intermediate Italian	4
ITAL 2605 Advanced Intermediate Italian	4
ITAL 3702 Intensive Italian Review	4
ITAL 3724 Italian Linguistics and Phonetics	4
ITAL 4880 Italian Conversation & Composition Capstone	4
OR	
ITAL 4881 Italian Composition & Conversation Capstone	4
FNLG 4801 Methods of Foreign Language Teaching	3
FNLG 4899 Professional Development for Teachers	1
ENGL 4851 Language Acquisition	3

An additional 16 hours are required from among the following courses:

Courses	s.h.
ITAL 3735 Italian Civilization and Culture	4
ITAL 3740 Survey of Italian Literature 1	4
ITAL 3741 Survey of Italian Literature 2	4
ITAL 3750 Contemporary Italian Literature	4
ITAL 4880 Italian Conversation and Composition Capstone	4
ITAL 3750 Contemporary Italian Literature	4
ITAL 3760 Literary Representations of 19th Century Italy	4
ITAL 3798 Study Abroad in Sicily	4

BA in French

Assistant Professor CorbÃ©, Associate Professor Masagara.

REQUIRED COURSES

Course	s.h.
Beginning with FRNC 2605: Advanced Intermediate French	3
FRNC 2606: Intensive French Review	3
FRNC 3710: Applied French Phonetics	3
FRNC 3716: Advanced French Grammar and Composition	3
FRNC 3717: Advanced French Conversation	3
FRNC 3720: Literature and Culture: France	3
FRNC 3725: Francophone Literature and Culture	3
FRNC 3736: Intro to French Linguistics	3
FRNC 3740: French for Business and Communication	3
FRNC 3750: French Civilization and Culture	3
FRNC 4885: French Conversation and Composition Capstone*	3

Total major semester hours: 33 s.h.

* In order to complete 4885, the student must achieve the level of Advanced Low on the ACTFL Oral Proficiency Interview and Writing Proficiency Test.

French Minor

FRENCH

Courses	s.h.
<i>The following courses are required:</i>	
FRNC 2600: Intermediate French	3
FRNC 2605: Advanced Intermediate French	3
FRNC 2606: Intensive French Review	3
<i>Select three (3) of the following courses:</i>	
FRNC 3701* Service Learning in French	2
FRNC 3716* Advanced French Grammar & Composition	3
FRNC 3717* Advanced French Conversation	3
FRNC 3740* French for Business and Communication	3

**with permission of the Chair other 3700 level courses may be substituted*

Total Semester Hours: 18-19

Credit by Examination for FRNC 2600

A student who places into FRNC 2605 and successfully completes that course may apply for credit by examination for FRNC 2600, thereby expediting the attainment of a French Minor.

BA in Italian

Assistant Professors Behney, and Simonini.

Courses	s.h.
ITAL 2605: Advanced Intermediate Italian	4
ITAL 3702: Intensive Italian Review	4
ITAL 4880: Italian Conversation and Composition Capstone*	4
Plus 5 of the following:	
ITAL 3724: Italian Linguistics and Phonetics	4
ITAL 3735: Italian Civilization and Culture	4
ITAL 3740: Survey of Italian Literature 1	4
ITAL 3741: Survey of Italian Literature 2	4
ITAL 3760: Literary Representations of 19th Century Italy	4
ITAL 3798: Study Abroad in Sicily	4

Total major semester hours: 32

* In order to complete 4880, the student must achieve the level of Advanced Low on the ACTFL Oral Proficiency Interview and Writing Proficiency Test.

Italian Minor

ITALIAN	
Courses	s.h.
ITAL 2600: Intermediate Italian	4
ITAL 2605: Advanced Intermediate Italian	4
ITAL 3702: Intensive Italian Review	3
Select an additional 6-8 hours of Italian (ITAL) courses at the 3700 level:	6-8

Total Number of Semester Hours: 19-20

Credit by Examination for ITAL 2600

A student who places into ITAL 2605 and successfully completes that course may apply for credit by examination for ITAL 2600, thereby expediting the attainment of an Italian Minor.

BA in Spanish

Professor Becerra; Assistant Professor Palardy.

REQUIRED

Courses	s.h.
SPAN 2605: Advanced Intermediate Spanish	3
SPAN 3702: Intensive Spanish Review	3
SPAN 3735: Advanced Spanish Grammar and Composition	3
SPAN 3755: Advanced Spanish Conversation	3

PLUS ONE OF THE FOLLOWING

Courses	s.h.
SPAN 3724: Spanish Pronunciation	3
SPAN 3736: Intro to Spanish Linguistics	3

PLUS FOUR OF THE FOLLOWING

Courses	s.h.
SPAN 3758: Culture and Literature of Spanish Speaking Groups in the U.S.	3
SPAN 3762: Culture Spain	3
SPAN 3763: Introduction to Literature: Spain	3
SPAN 3766: Culture: Spanish-America	3
SPAN 3767: Intro to Literature: Spanish-America	3

PLUS TWO OF THE FOLLOWING

Courses	s.h.
SPAN 5855: Topics in Spanish Language and Linguistics	3
SPAN 5870: Topics in Spanish Literature: Spain	3
SPAN 5885: Topics in Hispanic Literature and Film	3
SPAN 5890: Topics in Spanish Lit: Spanish-America	3

In addition the student must achieve the level of Advanced Low on the ACTFL Oral Proficiency Interview and the Writing Proficiency Test.

Total Major semester hours: 33

Spanish Minor

ALL OF THE FOLLOWING COURSES	
Courses	s.h.
<i>The following courses are required:</i>	
SPAN 2600: Intermediate Spanish	4
SPAN 2605: Advanced Intermediate Spanish	3
SPAN 3702: Intensive Spanish Review	3
<i>Select three (3) of the following courses:</i>	
SPAN 3701* Service Learning in Spanish	2
SPAN 3740* Business Spanish	3
SPAN 3755* Advanced Spanish Conversation	3
<i>*with permission of the Chair other 3700 level courses may be substituted</i>	

Total Number of Semester Hours: 18-19

Credit by Examination for SPAN 2600

A student who places into SPAN 2605 and successfully completes that course may apply for credit by examination for SPAN 2600, thereby expediting the attainment of a Spanish Minor.

Greek Studies Minor

Courses	s.h.
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	
Courses	s.h.
FNLG 2660: Women in the Ancient World	3
HIST 3752: Ancient History I (Greece)	3
LATN 1550: Elementary	4

Total Number of Semester Hours: 19

General Studies

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

General Studies	-
http://web.ysu.edu/class/genstudies	-
http://web.ysu.edu/class/genstudies	-

Bachelor of General Studies

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:

Courses	s.h.
Two focus areas consisting of 18-24 s.h. each	36-48
Support courses	0-12
An approved capstone course	1-3
Completion of a Cultural/Diversity Requirement (Students are required to complete two classes from an approved list.)	6

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.

Department of Geography

330-941-3317

Professors: Campbell, and Shaklee; Associate Professors: Buckler, Cerny (chair) and Shellito; Assistant Professor: Kimosap, 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.

Department of Geography -
<http://web.yzu.edu/class/geography> -
<http://web.yzu.edu/class/geography>

BA in Geography

A major in Geography requires 33 semester hours distributed as follows:

REQUIRED COURSE

Courses	s.h.
GEOG 1503: Physical Geography	3

SELECT ONE OF THE FOLLOWING

Courses	s.h.
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GEOG 2626: World Geography	3
GEOG 2640: Human Geography	3

Select one from the following:

SELECT ONE FROM THE FOLLOWING

Courses	s.h.
GEOG 2610: Map Use and Interpretation	3
GEOG 2611: Geo-Spatial Foundations	3

SELECT ONE COURSE FROM THE FOLLOWING

Courses	s.h.
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 3750: Topics in Regional Geography	3
GEOG 5850: International Area Study	3

SELECT TWO COURSES FROM THE FOLLOWING

Courses	s.h.
GEOG 3775: Field Methods in Geography	3
GEOG 5805: Remote Sensing I	3
GEOG 5806: Remote Sensing II	3
GEOG 5810: Geographic Information Science I	3
GEOG 5811: Geographic Information Science II	3
GEOG 5812: Global Positioning Systems and GIS	3
GEOG 5814: 3D Modeling and GI Science	3

REQUIRED COURSE

Courses	s.h.
GEOG 4890: Geography Capstone	3

SELECT AN ADDITIONAL 12 HOURS

of course work from the list below or list above. At least nine s.h. must be upper division GEOG courses.

Courses	s.h.
GEOG 2630: Weather	3
GEOG 2630L: Weather Lab	1
GEOG 2650: Global Economic Landscapes	3
GEOG 3703: Human Impacts on the Environment	3
GEOG 3705: Mountain Geography	3
GEOG 3724: Themes in Cultural Geography	3

GEOG 3726: Urban 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 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 4825: Geography Internship	1-3
GEOG 4840: Seminar in Geography	3
GEOG 5802: Biogeography	3
GEOG 5820: Directed Research in Geography	1-3

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.

Geographic Information Systems

SELECT 3 S.H. FROM THE FOLLOWING

Courses	s.h.
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

Courses	s.h.
GEOG 5805: Remote Sensing 1	3
GEOG 5810: Geographic Information Science 1	3
GEOG 5811: Geographic Information Science 2	3

SELECT 6 S.H. FROM THE FOLLOWING

Courses	s.h.
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

Courses	s.h.
GEOG 4825: Geography Internship	1-3
GEOG 4840: Seminar in Geography	3

The following 3 s.h. course is suggested but not required

Courses	s.h.
CSIS 1590: Survey of Computer Science and Information Systems	3

**6 s.h. of the minor must be upper-division.
Total Number of Semester Hours: 18 s.h.**

Geography, Environmental

SELECT 3 S.H. FROM THE FOLLOWING

Courses	s.h.
GEOG 1503: Introduction to Physical Geography	3
GEOG 2630: Weather	3

SELECT 3 S.H. FROM THE FOLLOWING

Courses	s.h.
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

Courses	s.h.
GEOG 5805: Remote Sensing 1	3
GEOG 5810: Geographic Information Science 1	3

SELECT 9 S.H. FROM THE FOLLOWING

Courses	s.h.
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

Courses	s.h.
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 s.h.

Geography, General

THE FOLLOWING COURSE IS REQUIRED

Courses	s.h.
GEOG 1503: Physical Geography	3

SELECT 3 S.H. FROM THE FOLLOWING CULTURAL GEOGRAPHY COURSES

Courses	s.h.
GEOG 2626: World Geography	3
GEOG 2640: Human Geography	3

SELECT 3 S.H. FROM THE FOLLOWING PHYSICAL/ENVIRONMENTAL GEOGRAPHY COURSES

Courses	s.h.
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

Courses	s.h.
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

Courses	s.h.
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 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

Courses	s.h.
GEOG 5805: Remote Sensing 1	3
GEOG 5810: Geographic Information Science 1	3
GEOG 5812: Global Positioning and GIScience	3

6 s.h. of the minor must be upper-division.

Total Number of Semester Hours: 18

Geography, Human

THE FOLLOWING COURSE IS REQUIRED

Courses	s.h.
GEOG 2640: Human Geography	3

SELECT 3 S.H. FROM THE FOLLOWING

Courses	s.h.
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

Courses	s.h.
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

The following may be used to fulfill the required 12 s.h. if the course theme is human geography related

Courses	s.h.
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 s.h.

Geography, Regional

SELECT 3 S.H. FROM THE FOLLOWING

Courses	s.h.
GEOG 2626: World Geography	3
GEOG 2640: Human Geography	3

SELECT 15 S.H. FROM THE FOLLOWING

Courses	s.h.
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
<i>The following may be used to fulfill the required 15 s.h. if the course theme is regionally related</i>	

Courses	s.h.
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 s.h.

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

Courses	s.h.
GEOG 2610: Map Use and Interpretation	3
or	3
GEOG 2611: Geospatial Foundations	3
GEOG 5805: Remote Sensing 1	3
GEOG 5810: Geographic Information Science 1	3
GEOG 5806: Remote Sensing 2	3
or	3
GEOG 5811: Geographic Information Science 2	3

SELECT TWO ELECTIVE COURSES (6-7 S.H.)

FROM THE FOLLOWING

Courses	s.h.
GEOG 3712: Thematic Map Design and Symbolization	3
GEOG 3775: Field Methods	3
GEOG 3790: Seminar in Geography	3*
GEOG 4825: Geography Internship	3*
GEOG 5806: Remote Sensing 2	3**
GEOG 5811: Geographic Information Science 2	3**
GEOG 5812: Global Positioning Systems and GIS	3
GEOG 5814: 3D Modeling and GIS	3
GEOG 5820: Directed Research	3*
CSIS 3722: Development of Databases	3***
CSIS 3726: Visual / Object Oriented Programming	3***
CEEN 2610/L: Surveying	3 + 1 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.

Department of History

330-941-3452

Professors Ayana, DeBlasio, Pallante (Chair), Viehe, York; Associate Professors Barnes, Bonhomme, Congdon, Leary, Simonelli, Sinnreich.

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.

Department of History -
<http://web.ysu.edu/class/history> -
<http://web.ysu.edu/class/history>

History Major Requirements

Curriculum

GROUP A

Courses	s.h.
HIST 1511: World Civilization to 1500	3
HIST 1512: World Civilization from 1500	3
HIST 2605: Turning Points in US History 1	3
HIST 2606: Turning Points in US History 2	3
Or	
HIST 1511H: World Civilization to 1500	3
HIST 1512H: World Civilization from 1500	3
HIST 2605H: Turning Points in United States History 1	3
HIST 2606H: Turning Points in United States History 2	3

Select eight courses from the following with no more than three from each group:

GROUP B

Courses	s.h.
HIST 2601: American Military History	3
HIST 3700: The Atlantic World	3
HIST 3702: Early America	3
HIST 3704: Age of Jefferson and Jackson	3

HIST 3706: Age of Lincoln and Grant	3	HIST 3758: Renaissance Europe	3
HIST 3710: Incorporation Amer: 1877-1919	3	HIST 3759: The Reformation Era	3
HIST 3712: United States in Crisis: 1920-1945	3	HIST 3760: The Age of Louis XIV	3
HIST 3713: Cold War America: 1945-1990	3	HIST 3761: The French Revolution and Napoleon	3
HIST 3715: Introduction to Historic Preservation	3	HIST 3762: The Second World War	3
HIST 3717: Constitutional History of The US	3	HIST 3763: Modern France, 1815 to Present	3
HIST 3723: History of American Sports	3	HIST 3764: Modern Europe, 1715 to Present	3
HIST 3726: History of Women in the US	3	HIST 3765: Europe 1815 to 1871	3
HIST 3730: Black Experience in American History	3	HIST 3766: Europe 1871 to World War 1	3
HIST 3731: History of African American Mayors	3	HIST 3767: Europe from WW1 to the Present	3
HIST 3734: History of Organized Crime in the United States	3	HIST 3769: Modern Germany	3
HIST 3736: History of American Cities	3	HIST 3774: Global Environmental History	3
HIST 3740: The Vietnam War	3	HIST 3778: Russia to 1855	3
HIST 3741: Diplomatic History of the US 1	3	HIST 3779: Russia 1855 Present	3
HIST 3742: Diplomatic History of the US 2	3	HIST 3780: History of Eastern Europe	3
HIST 3743: Labor in US History	3	HIST 3782: History of the Balkans	3
HIST 3744: History of American Business	3	HIST 3783: Britain and Its Empire 1: 1688-1870	3
HIST 3747: History of Appalachia	3	HIST 3784: Britain and Its Empire 2: 1870-Present	3
HIST 3748: History of Ohio	3	HIST 3785: Modern Italy 1815 to Present	3
HIST 3762: The Second World War	3	HIST 3787: History of Women in Europe	3
HIST 4801: Select Problems in American History	3	HIST 3788: The Holocaust	3
HIST 4811: Practicum in Historic Preservation	3	HIST 3790: Medieval Britain	3
HIST 4812: Historic Preservation Internship	3	HIST 3794: The First World War	3
HIST 4815: American Material Culture	3	HIST 4850: International Area Study	3-9
HIST 5806: American Architectural History 1	3	HIST 4851: Select Problems in European Hist	3
HIST 5807: American Architectural History 2	3		
HIST 5810: Conservation of the Historic Built Environment	3		
GROUP C		GROUP D	
Courses	s.h.	Courses	s.h.
HIST 3745: History of Jewish Labor	3	HIST 3700: The Atlantic World	3
HIST 3752: Ancient History 1	3	HIST 3724: Colonial Latin America	3
HIST 3753: Ancient History 2	3	HIST 3725: Modern Latin America	3
HIST 3755: Early Medieval Civilization	3	HIST 3727: Mexico and the Caribbean	3
HIST 3756: High Medieval Civilization	3	HIST 3740: The Vietnam War	3
HIST 3757: History of Medicine	3	HIST 3749: History of African US Relations	3
		HIST 3750: History of Modern Africa	3
		HIST 3751: History of South Africa	3
		HIST 3770: Asia to 1500	3
		HIST 3772: History of Modern China	3
		HIST 3774: Global Environmental History	3

HIST 3775: Global Industrial Revolution	3
HIST 3776: History of Modern Japan	3
HIST 3779: Russia 1855 to Present	3
HIST 3789: Jewish History	3
HIST 3795: The World Since 1945	3
HIST 3796: Genocide and Mass Murder	3
HIST 3797: Middle East 1: The Islamic Centuries	3
HIST 3798: Middle East 2: The Modern Period	3
HIST 4850: International Area Study	3-9
HIST 4860: Select Problems in Transnational History	3

CAPSTONE

Courses	s.h.
HIST 4870: Senior Research Seminar	3

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.

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)

Courses	s.h.
HIST 1512: World Civilization From 1500	3
HIST 4860: Select Problems in Third World History	3
REL 2601: Introduction to World Religions	3
REL 2617: Introduction to Eastern Religions	3
GEOG 2626: World Geography	3
POL 2660: International Relations	3
POL 3768: International Conflict	3
PHIL 2635: Ethics of War and Peace	3
PSYC 4804: Conflict and Group Dynamics	3
SOC 3708: Political Sociology	3

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.

Minor in History

ONE OF THE FOLLOWING COURSES

Courses	s.h.
HIST 1511: World Civilization to 1500	3
HIST 1512: Civilization from 1500	3

ONE OF THE FOLLOWING COURSES

Courses	s.h.
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.

GROUP B (AMERICAN)

Courses	s.h.
HIST 2601: American Military History	3
HIST 2630	
HIST 3700: The Atlantic World	3
HIST 3702: Early America	3
HIST 3704: Age of Jefferson and Jackson	3
HIST 3706: Age of Lincoln and Grant	3
HIST 3710: Incorporation Amer, 1877-1919	3
HIST 3712: United States in Crisis: 1920-1945	3
HIST 3713: Cold War America: 1945-1990	3
HIST 3715: Introduction to Historic Preservation	3
HIST 3717: Constitutional History of The US	3
HIST 3723: History of American Sports	3
HIST 3726: History of Women in the US	3
HIST 3732	
HIST 3733	
HIST 3734: History of Organized Crime in the United States	3
HIST 3736: History of American Cities	3

HIST 3740: The Vietnam War	3
HIST 3741: Diplomatic History of the US 1	3
HIST 3742: Diplomatic History of the US 2	3
HIST 3743: Labor in US History	3
HIST 3744: History of American Business	3
HIST 3748: History of Ohio	3
HIST 3762: The Second World War	3
HIST 4801: Select Problems in American History	3

HIST 4811: Practicum in Historic Preservation	3
HIST 4812: Historic Preservation Internship	3
HIST 4815: American Material Culture	3
HIST 5808	
HIST 5809	
HIST 5810: Conservation of the Historic Built Environment	3

GROUP C (EUROPEAN)

Courses	s.h.
HIST 3752: Ancient History 1	3
HIST 3753: Ancient History 2	3
HIST 3755: Early Medieval Civilization	3
HIST 3757: History of Medicine	3
HIST 3758: Renaissance Europe	3
HIST 3759: The Reformation Era	3
HIST 3760: The Age of Louis XIV	3
HIST 3761: The French Revolution and Napoleon	3
HIST 3762: The Second World War	3
HIST 3763: Modern France, 1815 to Present	3
HIST 3765: Europe 1815 to 1871	3
HIST 3766: Europe 1871 to World War 1	3
HIST 3767: Europe from WW1 to the Present	3
HIST 3769: Modern Germany	3
HIST 3778: Russia to 1855	3
HIST 3779: Russia 1855 to Present	3
HIST 3780: History of Eastern Europe	3
HIST 3782: History of the Balkans	3
HIST 3785: Modern Italy, 1815 to Present	3
HIST 3787: History of Women in Europe	3
HIST 3788: The Holocaust	3
HIST 3790: Medieval Britain	3

HIST 3791	
HIST 3792	
HIST 3794: The First World War	3
HIST 4850: International Area Study	3-9
HIST 4851: Select Problems in European History	3

GROUP D (NON-WESTERN)

Courses	s.h.
HIST 2611	
HIST 2661	
HIST 2662	
HIST 2663	
HIST 3700: The Atlantic World	3
HIST 3727: Mexico and the Caribbean	3
HIST 3728	
HIST 3740: The Vietnam War	3
HIST 3749: History of African US Relations	3
HIST 3750: History of Modern Africa	3
HIST 3751: History of South Africa	3
HIST 3770: Asia to 1500	3
HIST 3772: History of Modern China	3
HIST 3776: History of Modern Japan	3
HIST 3779: Russia 1855 to Present	3
HIST 3781	
HIST 3789: Jewish History	3
HIST 3795: The World Since 1945	3
HIST 3797: Middle East 1: The Islamic Centuries	3
HIST 3798: Middle East 2: The Modern Period	3
HIST 4850: International Area Study	3-9
HIST 4860: Select Problems in Transnational History	3

Total Number of Semester Hours: 18

Minor in Applied History

Courses	s.h.
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

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:

Courses	s.h.
HIST 3736: History of American Cities	3
HIST 3748: History of Ohio	3
HIST 4815: American Material Culture	3
GEOG 3726: Urban Geography	3
ANTH 4890: Advanced Topics in Archaeology	3
ANTH 4825: New World Archaeology: Topics	3
ART 4883: Introduction to Museum Practices	3
MRCH 4879: History of Furnishings and Interiors	3

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.

Department of Philosophy and Religious Studies

330-941-3448

Professors Mir, Palmer-Fernandez, Tessier, Waller (Chair), Wan-Tatah; Associate Professors Mower, Vopat; Assistant Professors Jerryson, Tomhave.

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.

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.

Department of Philosophy and Religious Studies

- <http://www.ysu.edu/philrel/> -
<http://www.ysu.edu/philrel/>

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 31 semester hours, including PHIL 1560; 2619; 2612 or 3705; 3702; 3711; 4820; 4859 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.

Specialized Center

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 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.

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 31 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: REL 3708, 3710, 3720, 3722, 3724, 3726, 3728, 3740, 3742, 3743, 3744; (2) Methodologies in the Study of Religion: REL 3712, 3750, 3751, 3753, 3754, 3756, 3758, 4825, ANTH 4815; (3) Scriptural Studies: 3731, 3732, 3733; and REL 4850, 4869 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.

Specialized Centers

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.

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 31 required semester hours of credit in philosophy, in addition to: COUN 1587 and PSYC 1560 as GER prerequisites; and PSYC 3702, PSYC 3775 and PSYC 4800, and COUN 2650 as required university electives.

Religious Studies Pre-Counseling Track

The major consists of 31 required semester hours of credit in religious studies, in addition to: COUN 1587 and PSYC 1560 as GER prerequisites; and PHIL 1561, PSYC 3702, PSYC 3775 and PSYC 4800, and COUN 2650 as required university electives.

Professional Ethics Minor

ALL OF THE FOLLOWING COURSES

Courses	s.h.
PHIL 1560: 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

Courses	s.h.
PHIL 1561: Technology and Human Values	3
PHIL 2631: Environmental Ethics	3

PHIL 2627: Law and Criminal Justice Ethics	3
PHIL 3725: Biomedical Ethics	3
PHIL 2626: Engineering Ethics	3
PHIL 3735: Ethics and Scientific Research	3
PHIL 2635: Ethics of War and Peace	3

Total Number of Semester Hours: 18

Philosophy Minor

Courses s.h.

PHIL 1560: Introduction to Philosophy	3
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AT LEAST 6 S.H. FROM THE FOLLOWING COURSES

Courses s.h.

PHIL 1561: Technology and Human Values	3
PHIL 2619: Introduction to Logic	3
PHIL 2625: Introduction to Professional Ethics	3
PHIL 1565: Critical Thinking	3

AT LEAST 3 S.H. FROM THE FOLLOWING COURSES

Courses s.h.

PHIL 2612: 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

Courses s.h.

PHIL 3711: General Ethics	3
PHIL 3719: Symbolic Logic	3

Courses s.h.

Any 3700- or 4800-level course in philosophy	3
PHIL 4859: Capstone Cooperative Seminar	1

Total Number of Semester Hours: 19

Religious Studies Minor

Courses s.h.

REL 2601: Introduction to World Religions	3
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REL 2621: Religion and Moral Issues	3
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PLUS 3 S.H. FROM THE FOLLOWING COURSES

Courses s.h.

REL 2605: Myth, Symbol and Ritual	3
REL 2617: Introduction to Asian Religions	3
REL 2631: Religion and the Earth	3

PLUS 6 S.H. FROM THE FOLLOWING COURSES

Courses s.h.

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 3742: Islamic Intellectual History	3
REL 3744: Islamic Culture and Literature	3

Plus at least 6 s.h. of additional 3700- or 4800-level courses in Religious Studies.

Total Semester Hours: 18

Islamic Studies Minor

Courses s.h.

REL 2601: Introduction to World Religions	3
REL 3720: Islam	3
REL 3740: Muslim Thinkers	3

SELECT 9 S.H. FROM THE FOLLOWING

Courses s.h.

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 Minor

Courses s.h.

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

Courses	s.h.
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

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:

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Departmental Scholarships

The Department of Philosophy and Religious Studies offers the following scholarships. Please contact the department office for more information.

- 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 and 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.ysu.edu/philrel/> - <http://www.ysu.edu/philrel/> and join our Facebook group, "YSU Philosophy and Religious Studies Club", for updates about upcoming events at <https://www.facebook.com/pages/YSU-Philosophy-and-Religious-Studies-Department/188613781180674> - <https://www.facebook.com/pages/YSU-Philosophy-and-Religious-Studies-Department/188613781180674>

Department of Political Science and Rigelhaupt Pre-Law Center

330-941-3436

Professors Sracic (Chair), Porter, Associate Professors Lepak, Jackson Leftwich; Assistant Professor Fuller; Professor Emeritus Binning

Department of Politics and International Relations and Rigelhaupt Pre-Law Center - <http://web.ysu.edu/class/polisci> - <http://web.ysu.edu/class/polisci>

Politcal Science Major

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.

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.

REQUIRED CLASS

Courses	Social Science	Social and Personal Awareness	s.h.
POL 1560: American Government			3

OPTIONAL CLASS

Courses	Social Science	Social and Personal Awareness	s.h.
POL 1550: Introduction to Political Science	SS	SPA	3

AMERICAN GOVERNMENT
One course

Courses	s.h.
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 Pol. Parties & Elections	3
POL 3706: African-American Politics	3
POL 3712: Political Behavior	3
POL 3707: Moot Court I	3
POL 3714: American Public Opinion	3
POL 3717: Health Care Policy	3
POL 3718: American Public Policy & Policy Analysis	3
POL 3720: Public Management	3
POL 3721: Urban Government	3
POL 3722: State & Local Government	3
POL 3724: Public Budgeting	3
POL 3725: Individualized Study	1-3
POL 3757: Aging and Social Policy	3
POL 4805: Public Admin. & the Political Process	4
POL 4850: Sustainability, Climate Change & Society	3
POL 5800: Select Problems, American Government	2-4
POL 5830: Public Human Resource Management	4

POLITCAL THOUGHT

Courses	s.h.
POL 3785: Political Thought 1	3
POL 3786: Political Thought 2	3

POL 3787: Political Thought	3
POL 5880: Select Problems, Political Thought	2-4

CONTEMPORARY AND INTERNATIONAL
Two courses

Courses	Social Science	Social and Personal Awareness	s.h.
POL 2640: Contemporary World Governments	SS	SPA	3
POL 2660: International Relations			3
POL 2695: Model United Nations			1
POL 3741: Russia & China: From Revolution to Reform			3
POL 3742: Political Development & Political Regimes			3
POL 3744: European Politics			3
POL 3751: Latin American Politics			3
POL 3760: International Political Economy			3
POL 3761: U.S. Foreign Policy			3
POL 3763: International Law			3
POL 3764: International Organizations			3
POL 3767: Asian Politics			3
POL 3768: International Conflict			3
POL 5860: Select Problems of Global Affairs			2-4
POL 5865: Global Environmental Policy & Law			3

CAPSTONE COURSES

Courses	s.h.
POL 4801: Senior Research Seminar	3

Additional Required Hours in Political Science: minimum of 15 s.h. total 33 s.h. in Political Science

Foreign Affairs Major

The Foreign Affairs Track 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 GEN. ED COURSES: 9 s.h.

ECONOMICS

Select one course from below (3 s.h.)

Courses	s.h.
ECON 1501: Economics in Action	3
<i>For students minoring in Economics, one of the following may be substituted</i>	
ECON 2610: Principles 1 Microeconomics	3
ECON 2630: Principles 1 Microeconomics	3

GEOGRAPHY

Courses	s.h.
GEOG 2626: World Geography	3
GEOG 3713: Geography of South America	3
GEOG 3715: Geography of Middle America	3
GEOG 3717: Geography of Europe	3

HISTORY

Courses	s.h.
HIST 1512: World Civilizations from 1500	3

REQUIRED POLITICAL SCIENCE COURSES
18 s.h.

Courses	s.h.
POL 1560: American Government	3
POL 2640: Contemporary World Government	3
POL 2660: International Relations	3
<i>One additional Upper-level course in American Government</i>	3
POL 4801: Senior Research Seminar	3
<i>One Political Thought Course, choose from:</i>	3
POL 3785: Political Thought 1	3

POL 3786: Political Thought 2	3
POL 3787: Political Thought 3	3

PLUS FIVE UPPER-DIVISION COURSES

Select a total of 15 s.h. from the courses listed below. A minimum of 6 s.h. must be taken from International relations area and a minimum of 6 s.h. from the Comparative Politics area.

TWO OR THREE COURSES FROM FIELD OF INTERNATIONAL RELATIONS

Courses	s.h.
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 FRIEND OF COMPARATIVE POLITICS

Courses	s.h.
POL 3741: Russia and China: From Revol. to Reform	3
POL 3742: Political Development and Political Regimes	3
POL 3744: European Politics	3
POL 3751: Latin American Politics	3
POL 3767: Asian Politics	3

Total Credit: 33 s.h.

Political Science Minor

A political science minor will provide the student with a basic understanding of government and social institutions at the national and international level. A minor in Political Science comprises of 18 semester hours:

Political Science

Both of the following courses

Courses	s.h.
POL 1560: American Government	3

One of the following courses

Courses	s.h.
POL 2640: Contemporary World Government	3
POL 2660: International Relations	3

Plus four upper-division political science courses.

Total Number of Semester Hours: 18

Public Management Program

The public management track 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.

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: (Because of the required area specialty, a minor is not required for this track.)

REQUIRED COURSES

40 s.h.

Courses	s.h.
POL 1560: American Government	3
ECON 2610: Principles of Microeconomics	3
ECON 2630: Principles of Macroeconomics	3
ECON 3702: Public Finance	3
POL 3718: American Public Policy and Policy Analysis	3
POL 3720: Public Management	3
POL 3722: State and Local Government	3
POL 3724: Public Budgeting	3
POL 4801: Senior Research Seminar	3-4
ACCT 2602: Financial Accounting	3
SOC 3701: Social Statistics I	4

SELECT 3 s.h. FROM THE FOLLOWING COURSES

Courses	s.h.
POL 3785: Political Thought 1	3
POL 3786: Political Thought 2	3
POL 3787: Political Thought 3	3

SELECT 3 s.h. FROM THE FOLLOWING COURSES

Courses	s.h.
MGT 3725: Fundamentals of Management	3
MGT 3750: Human Behavior in Organization	3

Student is to select nine (9) additional credits to define an area specialty. See advisor in the Department of Political Science for details.

Total Required Credits: 49 s.h.

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.

HIST 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

Pre-Law Advisor: Dr. Paul Sracic

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 requires 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. Interested students are advised to visit the Law School Admission Council's (LSAC) website at www.lsac.org - <http://www.lsac.org/>.

American Politics Minor

Required courses

Courses	s.h.
POL 1560: American Government	3

Any five of the following courses

Courses	s.h.
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
POL 3714: American Public Opinion	3
POL 3718: American Public Policy and Policy Analysis	3
POL 3722: State and Local Government	3

Total Number of Semester Hours: 18

Foreign Affairs Minor

One course is required

Courses	s.h.
POL 1550: Intro to Political Science	3

One of the following two courses is required

Courses	s.h.
POL 2640: Contemporary World Governments	3
POL 2660: International Relations	3

One to three courses from field of international relations

Courses	s.h.
POL 3760: International Polit Economy	3
POL 3761: U.S. Foreign Policy	3
POL 3764: International Organization	3
POL 3763: International Law	3
POL 3768: International Conflict	3

One to three courses from field of comparative politics

Courses	s.h.
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

Political Science Tracks

Although not required, students interested in focusing on either Foreign Affairs or Public Management may select one of those two tracks within the Political Science major. When receiving their degree, students will be given a certificate by the department certifying that they have completed either the Foreign Affairs or the Public Management tracks described in this bulletin.

Department of Psychology

330-941-3401

Professors Coldren, Flora, Gray, Haynes, Stringer; Associate Professors Boron, Clayton, Giorgetti (Chair); Assistant Professors Jameson-Cox, Lindberg, Rawlin; Instructor Sethi.

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 BA 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 subdiscipline within the field, students propose solutions that involve applying psychological concepts. Given a psychological concept from a subdiscipline 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.

Department of Psychology -
<http://web.yzu.edu/class/psychology> -

BA in Psychology

Courses	s.h.
PSYC 1560: General Psychology	3
PSYC 2617: Research Methods and Statistics 1	4
PSYC 2618: Research Methods and Statistics 2	3

AT LEAST ONE COURSE MUST BE TAKEN FROM EACH OF THE FOLLOWING AREAS

Courses	s.h.
<i>Clinical:</i>	
PSYC 3702: Abnormal Psychology	3
PSYC 3775: Personality	3
<i>Social/Developmental (only two developmental courses may count towards the major):</i>	
PSYC 3700: Social Psychology	3
PSYC 3755: Child Development	3
PSYC 3756: Adolescent Development	3
PSYC 3757: Adult Development	3
PSYC 3758: Lifespan Development	3
<i>Learning/Perception/Cognition:</i>	
PSYC 3705: Psychology of Learning and 3705L	3+1
PSYC 3760: Perception and 3760L	3+1
PSYC 3761: Cognition and 3761L	3+1
<i>Physiological:</i>	
PSYC 3710: Psychophysiology and 3710L	3+1
PSYC 3728: Physiological Psychology	3

*Two laboratories attached to any psychology course are required

CAPSTONE COURSE - CHOOSE ONE

Courses	s.h.
PSYC 4890: Senior Thesis	1
PSYC 4895: Senior Psychology Capstone Experience	2

An additional 9 hours in courses applicable to the psychology major, excluding 3770 or 3790.

The remaining 3 hours in coursework may be taken in any course applicable to the major

Total major credit hours: 38

General Psychology Minor

Courses	s.h.
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

Courses	s.h.
PSYC 3702: Abnormal Psychology	3
PSYC 3775: Personality	3

ONE OF THE FOLLOWING COURSES

Courses	s.h.
PSYC 3755: Child Development	3
PSYC 3756: Adolescent Development	3
PSYC 3757: Adult Development	3
PSYC 3758: Lifespan Development	3

Total Semester Hours: 19

*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.

Courses	s.h.
PSYC 3755: Child Development	3
PSYC 3756: Adolescent Development	3
PSYC 3757: Adult Development	3
PSYC 3758: Lifespan Development	3

Developmental Psychology Minor

Courses	s.h.
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

Total Semester Hours: 19

*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.

Applied Behavioral Analysis Minor

Courses	s.h.
PSYC 1560: General Psychology	3
PSYC 3734: ABA Principles I: Applied Behavior Analysis	3
PSYC 4836: ABA Principles II: Behavioral Assessment and Methodology	3
PSYC 4835: ABA Principles III: Behavior Change Procedures	3

ONE OF THE FOLLOWING ELECTIVE COURSES

Courses	s.h.
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

Psychology of Mental Health Minor

Courses	s.h.
PSYC 1560: 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

Courses	s.h.
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

Bachelor of Arts-Psychology Pre-Physical Therapy

- A. PSYC 1560 (General); PSYC 2617 & 2618 (Research Methods and Statistics 1 & 2); PSYC 3702 (Abnormal)
- B. At least one course must be taken from each of the following: (1) Social/Developmental: PSYC 3700 or 3755 or 3756 or 3757 or 3758 (only two developmental courses may count towards the major). (2) Learning/Perception/Cognition: PSYC 3705 or 3760 or 3761. (3) Physiological: PSYC 3710 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 PSYC 3770 or 3790.
- F. The remaining 3 hours in coursework may be taken in any course applicable to the major-38 s.h.
- G. Biology Minor; BIOL 2601/L (General Biol: Molecules and Cells), 2602/L (General Biol: Organisms and Ecology), and 3705/L (Intro to Human Gross Anatomy). Additional upper division elective or if admitted to the PT program BIOL 5868/L (Gross Anatomy 1) and 4800 or 5800 elective with a lab or if admitted to the PT program BIOL 5868 (Gross Anatomy 2). 25 s.h.
- H. Support Courses: CHEM 1515/L/R (General Chem 1), 1516/L/R (General Chem 2); PHYS 1501/L (Fundamentals of Physics 1), 1502/L (Fundamentals of Physics 2); and PHYT 5800 (Pathology) with admission to the PT program. 23 s.h.

Department of Sociology, Anthropology, and Gerontology

330-941-3442

Professor Jiang (Chair); Associate Professors Gordiejew, Lease, Narcisse, O'Mansky, Van Dussen; Assistant Professors Felbaum, Hughes.

The Department of Sociology, Anthropology, and Gerontology offers majors and minors in all three programs. The department also offers a MA degree program and a Certificate in Applied Gerontology.

Department of Sociology, Anthropology, and Gerontology - <http://web.ysu.edu/class/sociology> - <http://web.ysu.edu/class/sociology>

BA in 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.

To earn the BA degree the student must satisfy all the degree requirements in the College of Liberal Arts and Social Sciences and take 34 semester hours of courses from the Sociology curriculum. Required courses are SOC 1500, SOC 3701, SOC 3749, SOC 4850, and SOC 4851, in addition to at least 18 semester hours of sociology elective courses form each of the six domains: Social Inequality, Social Institutions, Gender and the Family, Deviance and Criminology, Aging, and Research or Internship. 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.

Students wishing to minor in sociology must complete 18 s.h. by selecting courses from appropriate categories. 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. See minors for course requirements.

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 one substantive area within sociology in depth.

Sociology Minor

Courses	s.h.
SOC 1500: Introduction to Sociology	3

3 S.H. FROM THE FOLLOWING COURSES

Courses	s.h.
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

Courses	s.h.
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

Courses	s.h.
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

Courses	s.h.
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

Courses	s.h.
SOC 3720: Applied Sociology	3
SOC 4821: Internship in Sociology	3

Total Number of Semester Hours: 18

BA in 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.

To earn the BA degree the student must satisfy all the degree requirements in the College of Liberal Arts and Social Sciences and take 40 semester hours of courses from the Anthropology curriculum. Required courses are ANTH 1500, 3701, 3702, 3703, 3705, 4801, 4850, 4851, one area course from each of the three subfields, and two upper-division anthropology electives. 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.

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.

including various qualitative and quantitative methods. Students can synthesize theory and methods by completing an original empirical research project.

BA in 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.

To earn the BA degree the student must satisfy all the degree requirements in the College of Liberal Arts and Social Sciences and take 50 semester hours of courses from the Gerontology curriculum. Required courses are GERO 1501, 3703, 3755, 4821, 4850, and 4851; SOC 3701 and 4801; PSYC 3757 and 4857; GERO 3757 or POL 3717 or SCWK 3730; FNUTR 3720. In addition, at least 12 semester hours from a list of Gerontology related electives. 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.

Students wishing to minor in gerontology must complete 18 s.h. by selecting courses from appropriate categories. 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.

See Minors for course requirements.

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

Gerontology Minor

3 s.h. FROM THE FOLLOWING COURSES

Courses	s.h.
GERO 1501: Introduction to Gerontology	3
SOC 1500: Introduction to Sociology	3

15 s.h. FROM THE FOLLOWING COURSES

Courses	s.h.
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
SOC 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 3790 for 3 semester hours. In addition, students must take 6 s.h. from the elective courses. These courses are: GERO 3755, 3757, 4804, or 4821; SOC 3745, 3756, 3760, or 6905; ANTH 3790; FNUT 3720; HPES 4870; POL 3717; SCWK 3730; or ECON 1504. Students must maintain a "C" or better in all course work, satisfy all prerequisites, and cannot take a course on a "CR/NC" basis.

Anthropology, General Minor

Courses	s.h.
ANTH 1500: 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 Minor

Courses	s.h.
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 Minor

Courses	s.h.
ANTH 1500: 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 Minor

Courses	s.h.
ANTH 1500: Introduction to Anthropology	3
ANTH 2600: Human Osteology	3
ANTH 3703: Biological Anthropology	3
ANTH 3702: Archaeology	3
ANTH 3780: Forensic Anthropology 1	3
ANTH 4881: Forensic Anthropology 2	3
ANTH 4883: Case studies in Forensic Anthropology	3

Total Number of Semester Hours: 21

Archaeology Minor

Courses	s.h.
ANTH 1500: Introduction to Anthropology	3
ANTH 1503: Rise and Fall of Civilizations	3
ANTH 3702: Archaeology	3
ANTH 3778: Archaeological Techniques	3
<i>or</i>	

ANTH 3779: Fieldwork in Historical and Industrial Sites	3
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TWO ELECTIVES FROM THE FOLLOWING COURSES

Courses	s.h.
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 an elective course

Courses	s.h.
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.

Total Number of Semester Hours: 18

Long Term Care Administration

The College of Liberal Arts and Social Sciences offers a Bachelor of Science in Applied Science degree in long term care 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.

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

Courses	s.h.
MATC 1501: Medical Terminology	3
FNUT 1551: Normal Nutrition I	3
or	
FNUT 4873: Nutrition and Aging	2
FNUT 2612: Food Systems I: Operation, Production and Service	3
NURS 2610: Contemporary Nursing	3
SOC 3703: Aging and Society	3
SCWK 3730: Social Services and the Aged	3
CSIS 1514: Business Computer Systems	3
ACCT 2602: Financial Accounting	3
ACCT 2603: Managerial Accounting	3
FIN 3720: Business Finance	3
MGT 3725: Fundamentals of Management	3
MGT 3735: Communications for Management and Business	3
or	
PSYC 3712: Industrial/Organizational Psychology	3
SCWK 4860: Seminar Special Topics in Social Work	1-3
CMST 3756: Interviewing	3
SOC 3701: Social Statistics I	4
or	
SCWK 3750: Analysis of Social Work Practice Data	3
SOC 4850: Research Methods	3
or	
SCWK 3760: Research Methods for Social Work	3
or	
AHLT 4806: Research Methods	3
or	
NURS 3749: Nursing Research	3
AHLT 5840: Comparative Health Systems	4
or	
AHLT 5816: Environmental Regulations	3
PHLT 5893: Workshop in Health Education	1-3
SOC 4821: Internship in Sociology	3-9

SCWK 4827: Integrated Capstone Seminar 3

Required Support Courses:

PSYC 1560: General Psychology	3
SOC 1500: Introduction to Sociology	3
BIOL 1505: Biology and the Modern World	3
ECON 1501: Economics in Action	3
or	
ECON 2610: Principles 1: Microeconomics	3

Women's Studies

Palardy (Director), Foreign Language and Literature ; Fagan, Garr, Gertis, Jackson, McNierney, Mower, Sinnreich, Sisco, Stringer, Strom, Tessier, 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.

W o m e n ' s S t u d i e s -
<http://web.ysu.edu/class/womensstudies> -
<http://web.ysu.edu/class/womensstudies>

Minor in Women's Studies

Courses	s.h.
WMST 2601: Introduction to Women's Studies	3
<i>Select 15 semester hours from the courses listed below, with a minimum of 6 semester hours required at the 3700 level or above*:</i>	
ENGL 1560: Language, Ethnicity and Gender	3
ENGL 2617: Women in Literature	3
FNLG 2660: Women in the Ancient World	3
PHLT 2692: Human Sexuality	3
SOC 2640: Women in Society*	3
SOC 2690: Identities and Differences	3
CHFM 3731: Individual & Family Development	3
CJFS 4851: Women and Justice	3
CMST 3750: Gender Communication	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	PSYC 3730: Psychology of Women	3
HMEC 5893: Work and Family	3	REL 3733: Women and the Bible	3
MGT 3755: Managing Diversity	3	REL 3754: Feminism, Ecology, and Religion	3
MRCH 3730: Social Psychology of Clothing and Appearance	3	WMST 3750: Special Topics in Women's Studies	3
PHIL 3709: Feminist Philosophy	3	WMST 4850: Senior Research Project	3
PSYC 3707: Psychology of Intimate Relationships	3	Total semester hours	18

The College of Science, Technology, Engineering, and Mathematics

The College of Science, Technology, Engineering, and Mathematics

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 (BA), Bachelor of Engineering (BE), Bachelor of Science (BS), and the Bachelor of Science in Applied Science (BSAS). It offers two associate degrees: Associate in Applied Science (AAS) and the Associate in Technical Studies (ATS). Also, in conjunction with FirstEnergy Corporation, the power plant technology option is available.

Please visit our website at www.ysu.edu/powersystems - <http://www.ysu.edu/powersystems> for more information regarding the lineworker and power plant technology programs.

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 this *eBulletin* for additional graduation

requirements for the BE degree.

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.

Prospective Teachers. Prospective elementary or secondary teachers may work toward a BA, BS, or BSEd 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 BA degrees and the BS and BA degrees in 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 BS entering after fall 2012 (except Math majors), BE degree and candidates for the BSAS degree do not have a foreign language requirement.

The College of Science, Technology, Engineering, and Mathematics (STEM) -
<http://web.yosu.edu/stem> -
<http://web.yosu.edu/stem>

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/CHEM 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 1500, ENGR 1550, ENGR 1560; CEEN 2610 and CEEN 2610L; ECEN 1521, and ECEN 1521L. 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 (BE) 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, CEEN 5837, CEEN 5855, & CEEN 4881.

Electrical and Computer Engineering

Students who have not earned a C or better grade in ECEN 3741 and ECEN 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	
Courses	s.h.
English	3
Algebra 1 and 2	2

Geometry	1
Trigonometry	½
Chemistry	1
Mechanical Drawing	1
Physics	1
Other	6½

Rayen School of Engineering and Engineering Technology - <http://web.ysu.edu/stem/engtech> - <http://web.ysu.edu/stem/engtech>

Department of Biological Sciences

330-941-3601

Professors Cooper, Diggins, Fagan, Leipheimer, Krontiris-Litowitz, Usis, Walker (chair), Womble; Associate Professors Asch, Caguiat, Johnston, Lorimer, Min, Renne, Tall-Gifford; Assistant Professor Butcher.

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.

Department of Biological Sciences - <http://web.ysu.edu/stem/biology> - <http://web.ysu.edu/stem/biology>

BS in Biological Sciences

330.941.3601

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:

- Students will be prepared for entry into professional health or research related schools, post-graduate (MS) 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 BS 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 BS 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, 4 s.h.+ 1 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 & CHEM 1515L and CHEM 1516 & CHEM 1516L, General Chemistry I and II; CHEM 3719 & CHEM 3719L and CHEM 3720 & CHEM 3720L, Organic Chemistry I and II. (CHEM 3785, Biochemistry, strongly recommended)
Physics-PHYS 1501, PHYS 1501L, PHYS 1502, and PHYS 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 STAT 3717 (Statistics)

BA 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 BA 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 BA degree:

Curriculum

The BA 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 BA 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/CHEM 1515L and CHEM 1516/CHEM 1516L; elementary and intermediate foreign language.

Organic Chemistry (CHEM 3719, CHEM 3719L, CHEM 3720, and CHEM 3720L) and Fundamentals of Physics (PHYS 1501, PHYS 1501L, PHYS 1502, and PHYS 1502L) are strongly recommended.

Students seeking admission to medically related professional schools should complete the BS 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 eBulletin).

Recommended core curriculum meeting science requirements of medically related and other professional schools.

REQUIRED COURSES	
Courses	s.h.
Biology	
BIOL 2601 General Biology: Molecules and Cells	4
BIOL 2602 General Biology: Organisms and Ecology	4
Core Courses	
BIOL 3711 Cell Biology: Fine Structure	3
BIOL 3721 Genetics	3
BIOL 3730 Human Physiology and Lab	4 + 1
Additional Courses	
BIOL 3702 Microbiology	4
BIOL 3703 Clinical Immunology	3
BIOL 3705 Introduction to Human Gross Anatomy	4
BIOL 5813 Vertebrate Histology	4
BIOL 4890 Molecular Genetics	3
BIOL 5832 Principles of Neurobiology	4
BIOL 4834 Advanced Systems Physiology	3
BIOL 4836 Cell Biology: Molecular Mechanisms	3
Chemistry	
CHEM 1515 General Chemistry I	4
CHEM 1516 General Chemistry II	4
CHEM 3719 Organic Chemistry I	4
CHEM 3720 Organic Chemistry II	4
(Biochemistry CHEM 3785, is strongly recommended)	3
Physics	
PHYS 1501 Fundamentals of Physics I	4
PHYS 1502 Fundamentals of Physics II	3

Mathematics

MATH 1570 Applied Calculus I or MATH 1571 Calculus I	4
STAT 3717 Statistical Methods	4

Biological Sciences Minor

REQUIRED MINOR COURSES	
Courses	s.h.
<i>Both of the following courses:</i>	
BIOL 2601 General Biology: Molecules and Cells	4
BIOL 2602 General Biology: Organisms and Ecology	4
<i>One of the following core courses:</i>	
BIOL 3711 Cell Biology: Fine Structure	3
BIOL 3721 Genetics	3
BIOL 3730/ BIOL 3730L Human Physiology and Lab	4 + 1
BIOL 3740/ BIOL 3740L Plant Diversity and Lab	4
BIOL 3741/ BIOL 3741L Animal Diversity and Lab	4
One 4800-5800-level course with lab	
One 3700-5800-level course	
Total Number of Semester Hours	18-21

Biomathematics Minor

REQUIRED MINOR COURSES	
Courses	s.h.
<i>One of the following:</i>	
BIOL 2601/BIOL 2601L General Biology: Molecules and Cells	4
BIOL 2602/BIOL 2602L General Biology: Organisms and Ecology	4
<i>One of the following:</i>	
BIOL 3711 Cell Biology: Fine Structure	3
BIOL 3780/BIOL 3780L Evolutionary Ecology	5
At least 3 s.h. of upper-division biology courses	
<i>Both of the following courses:</i>	

MATH 1571 Calculus 1	4
MATH 1572 Calculus 2	4
<i>One of the following:</i>	
STAT 3717 Statistical Methods	4
STAT 3743 Probability and Statistics	4
<i>One of the following:</i>	
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
<i>Both of the following:</i>	
MATH/BIOL 3701 Biomathematics Seminar	1-2
MATH/BIOL 4882 Biomathematics Research	1-4
Total Semester hours	18-28

Department of Chemistry

330-941-3663

Professors Balendiran, Hunter, Linkous, Lovelace-Cameron, Mettee, Norris, Wagner (Chair); Associate Professors Curtin, Jackson, Leskiw, 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 BS degree with a major in chemistry are listed in the BS curriculum. The courses required for a BA degree are those listed in the BA 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). Foreign Language is required through 2600 level of all BA degrees.

Department of Chemistry - <http://web.ysu.edu/stem/chemistry>
- <http://web.ysu.edu/stem/chemistry>

BS in Chemistry

Recommended Curriculum Leading to a BS Degree with a Major in Chemistry

Core Courses

YEAR ONE: FALL I

Course	s.h.
CHEM 1515 + CHEM 1515R	5
MATH 1571	4

SPRING I

Course	s.h.
CHEM 1516 + CHEM 1516R	5
MATH 1572	4

YEAR TWO: FALL II

Course	s.h.
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CHEM 3719 + CHEM 3719R	5
CHEM 2604	5
PHYS 2610 + PHYS 2610L	5
MATH 2673	4

SPRING II

Course	s.h.
CHEM 3720 + CHEM 3720R	5
PHYS 2611 + PHYS 2611L	5

YEAR THREE: FALL III

Course	s.h.
CHEM 3739	4
CHEM 3785	3

SPRING III

Course	s.h.
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+ CHEM 4850L.

Credit Hour Summary

Course	s.h.
Chemistry Hours in BS-Core:	39
Chemistry Elective Hours:	12
Capstone Course Hours:	+3
Total Hours in Chemistry	54

Other major-required Hours: +22
(Math/Physics)

Total Hours in Major 76

BS CHEM Electives

Course	s.h.
CHEM 3764 Chemical Toxicology	3
CHEM 3786 Biochemistry 2	3
CHEM 3790 Undergraduate Seminar	1
CHEM 4860 Regulatory Aspects of Industrial Chemistry	1
CHEM 5804 Chemical Instrumentation	4
CHEM 5821 Intermediate Organic Chemistry	3
CHEM 5822 Advanced Organic Lab	4
CHEM 5830 Intermediate Inorganic Chemistry	2
CHEM 5831 Inorganic Lab	2

CHEM 5832 Solid State Structural Methods	3
CHEM 5836 Chemical Bonding and Structure	3
CHEM 5861 Polymer Science 1, CHEM 5862 Polymer Science 2	3 + 3
CHEM 5876 Enzyme Analysis	2

BA in Chemistry

Core Courses

YEAR ONE: FALL I

Course	s.h.
CHEM 1515 + CHEM 1515R	5
MATH 1571	4

SPRING I

Course	s.h.
CHEM 1516 + CHEM 1516R	5
MATH 1572	4

YEAR TWO: FALL II

Course	s.h.
CHEM 3719 + CHEM 3719R	5
CHEM 2604	5
PHYS 2610 + PHYS 2610L	5

SPRING II

Course	s.h.
CHEM 3720 + CHEM 3720R	5
PHYS 2611 + PHYS 2611L	5

YEAR THREE: FALL III

Course	s.h.
CHEM 3739	4

In addition to BA core, BA 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

Course	s.h.
Chemistry Hours in BA-Core:	29
Chemistry Elective Hours:	9
Capstone Course Hours:	+1
Total Hours in Chemistry:	39
Other major-required Hours: (Math/Physics)	+18

Total Hours in Major: 57

BA CHEM Electives

Course	s.h.
CHEM 3729 Inorganic Chemistry	3
CHEM 3740 Physical Chemistry 2	4
CHEM 3764 Chemical Toxicology	3
CHEM 3785 Biochemistry 1, CHEM 3786 Biochemistry 2	3, 3
CHEM 3790 Undergraduate Seminar	1
CHEM 4850L Research Lab	2 - 3
CHEM 4860 Regulatory Aspects of Industrial Chemistry	1
CHEM 5804 Chemical Instrumentation	4
CHEM 5821 Intermediate Organic Chemistry	3
CHEM 5822 Advanced Organic Lab	4
CHEM 5830 Intermediate Inorganic Chemistry	2
CHEM 5831 Inorganic Lab	2
CHEM 5832 Solid State Structural Methods	3
CHEM 5836 Chemical Bonding and Structure	3
CHEM 5861 Polymer Science 1, CHEM 5862 Polymer Science 2	3, 3
CHEM 5876 Enzyme Analysis	2

Combined BS/MS 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 BS degree in chemistry after 3 years and the MS degree after 5 years.

Combined BS/MD 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 BS degree in combined science from Youngstown State University and the MD degree from the Northeast Ohio Medical University (NEOMED). (See Northeast Ohio

Medical University)

Chemistry Minor

Chemistry Minor	
Course	s.h.
All of the following courses:	
CHEM 1515 General Chemistry 1	4
CHEM 1516 General Chemistry 2	4
CHEM 3719 Organic Chemistry 1	4
Plus two of the following:	
CHEM 2604 Quantitative Analysis	5
CHEM 3720 Organic Chemistry 2	4
CHEM 3729 Inorganic Chemistry	3
CHEM 3739 Physical Chemistry 1	4
CHEM 3764 Chemical Toxicology	3
CHEM 3785 Biochemistry 1	3
CHEM 4850/CHEM 4850L Chemical Research	3
Total Number of Semester Hours:	18-21

Department of Computer Science and Information Systems

330-941-3134

Professor Schueller (chair); Associate Professors, Kramer, Lazar, Sullins; Assistant Professors Arslanyilmaz, Gaydos, Sharit, Zhang.

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.

Department of Computer Science and Information Systems - <http://www.csis.ysu.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, CSIS 3700, CSIS 3701, and CSIS 3740.
2. CSCI 3710, CSCI 5806, CSCI 5814, CSCI 5870, and at least 2 s.h. of CSCI 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, MATH 1572, MATH 3720, and either STAT 3743 or MATH 3760.
5. ENGL 3743, and PHIL 2625.
6. University general education requirements in essential skills, knowledge domains, and skill-intensive courses.

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, CSIS 1595, CSIS 2605, CSIS 3722, CSIS 3723, CSIS 3726, and CSIS 3760.
2. At least 9 additional semester hours of upper-division CIS elective courses.
3. ACCT 2602 and ACCT 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, CSIS 1595, CSIS 2605, CSIS 3722, CSIS 3723, CSIS 3726, and CSIS 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 ACCT 2603.
6. MATH 1570, STAT 3717.
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, CSIS 1590, CSIS 1595, CSIS 2605.
2. INFO 2663, INFO 3774, INFO 3704 or ENGL 3743, and INFO 3775.
3. CSIS 2699 or CSIS 4893, CSIS 3720 or CSIS 3782, CSIS 3722, and CSIS 3723, or CSIS 3783, and CSIS 3755.
4. MATH 1552 (MATH 1571 or MATH 1570 is also acceptable)
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, CSIS 1590, CSIS 1595, CSIS 2605 and either CSIS 2699 or CSIS 4893.
2. INFO 2663, INFO 3704 or ENGL 3743, INFO 3774, INFO 3775, and INFO 4880.
3. CSIS 3720 or CSIS 3782, CSIS 3722, CSIS 3723 or CSIS 3783, CSIS 3726, and CSIS 3755.
4. MATH 1552, and STAT 2601
5. 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.
6. An unspecified minor of 18 or more semester hours.
7. University general education requirements in essential skills, knowledge domains, and skill-intensive courses

Minor in Computer Databases

Minor in Computer Databases	
Course	s.h.
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
Total Number of Semester Hours:	20

Minor in Computer Networking

Minor in Computer Networking	
Course	s.h.
CSIS 1590 Survey of Computing and Information Systems	3
<i>At least 15 from the following courses:</i>	
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
Total Semester Hours:	18-19

Minor in Electronic Commerce Technologies

Minor in Electronic Commerce Technologies	
Course	s.h.
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
CSIS 3761 Electronic Commerce Strategies	3
Total Number of Semester Hours:	20

Minor in Information Systems Programming

Minor in Information Systems Programming	
Course	s.h.
CSIS 2610 Programming and Problem Solving	4
<i>At least 14 from the following courses:</i>	
CSIS 3700 Data Structures	4
CSIS 3701 Advanced Object-oriented Programming	3
CIS 3714 Assembly Language and Architecture	3
CSIS 3726 Visual/Object-oriented Programming	4
CIS 3735 Unix Environment	3
CSIS 3760 Electronic Commerce Programming	3
Total Number of Semester Hours:	18

Minor in Integrated Technologies

Minor in Integrated Technologies

Course	s.h.
CSIS 1590 Survey of Computing and Information Systems	3
INFO 1575 Document Preparation	4
INFO 3714 Advanced Spreadsheets	3
INFO 3774 Multimedia Technologies	4
<i>Two courses from the following:</i>	
INFO 3787 Training and Employee Development	3
CSIS 3723 Data Concepts and Administration	3
CSIS 3722 Development of Databases	3
Total Semester Hours:	20

Minor in Multimedia and Web Design

Minor in Multimedia and Web Design

Course	s.h.
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
Total Number of Semester Hours:	19

Minor in Object-Oriented Programming

Minor in Object-Oriented Programming

Course	s.h.
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
Total Number of Semester Hours:	20

Minor in Computer Science

Courses	s.h.
CSIS 2610 Programming & Problem Solving	4
CSIS 3700 Data Structures & Objects	4
CSIS 3701 Advanced Object-Oriented Programming	3
PLUS THREE OF THE FOLLOWING	
Courses	s.h.
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

Total semester hours: 20-21

Department of Geological and Environmental Sciences

330-941-3612

Professors Beiersdorfer, Dick (Chair), Jacobs; Associate Professors Amin, Armstrong; Assistant Professors Matthews, McLean.

Geology Programs

Geology may be the major for the degree of Bachelor of Science or Bachelor of Arts.

The Bachelor of Science and Bachelor of Arts in Geology both prepare students for professional employment. The Bachelor of Science degree also prepares students for graduate study in geology and related fields. The dominant fields of employment include environmental geology, engineering geology, hydrogeology, geophysics, government compliance and regulation, mining, petroleum geology and other fields within the energy industry. The Bachelor of Science and Bachelor of Arts degrees in Geology can be completed in eight semesters if students average sixteen hours of coursework per semester.

Learning Outcomes

The learning outcomes for the Bachelor of Science 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.

Department of Geolocial and Environmental Sciences - <http://web.ysu.edu/stem/ges> - <http://web.ysu.edu/stem/ges>

BS in Geology

Curriculum for the Bachelor of Science-Geology

The Bachelor of Science degree requires the successful completion of a minimum of 74 s.h. of core and elective courses. These courses include a Geology capstone experience of Geology Field Camp which is normally completed during summer following the junior year. Alternatively, students may opt for an internship (STEM 4890) experience or a Senior Thesis research experience (GEOL 4830).

I. Required Courses (37 s.h. minimum)

Courses	s.h.
GEOL 1505 Physical Geology / GEOL 1505L Lab	4
ENST 2600 Foundations of Environmental Studies / ENST 2600L Lab	4
GEOL 2605 Historical Geology	4
GEOL 3700 Mineralogy	4
GEOL 3701 Geomorphology	3
GEOL 3704 Structural Geology / GEOL 3704L Lab	3
GEOL 3718 Igneous & Metamorphic Petrology	4
GEOL 3750 Geoscience Seminar	1
GEOL 5802 Sedimentology & Stratigraphy	3
GEOG 5810 Geographic Information Science 1	3
<i>at least one of the following courses:</i>	
GEOL 48XX Field Camp (Minimum)	4
STEM 4890 STEM Internship (Maximum)	4
GEOL 4830 Senior Thesis	4
Total	37

II. Electives (Minimum 8 s.h . Geology Courses, 12 s.h. Total)

Courses	s.h.
ENST 3700 /ENST 3700L Environmental Chemistry and Lab	4
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	3-4
ENST 3751 Water Quality Analysis / ENST 3751L Water Quality Analysis Lab	3
ENST 3781 Environmental Sampling Methods	3
GEOL 4804 Ground Water	3
GEOL 4824 Tectonics	3
GEOL 4899 Special Topics	1-3
GEOL 5805 Special Problems in Geology	1-3
ENST 5810 Environmental Safety	1
GEOG 5811 Geographic Information Systems 2	3
GEOL 5815 Geology & the Environment 2	3
GEOL 5817 Environmental Geochemistry	3
ENST 5860 Environmental Regulations	3

III. Ancillary Science Courses (25-26 s.h .)

Courses	s.h.
CHEM 1515 General Chemistry I / CHEM 1515L Lab	4
CHEM 1516 General Chemistry II / CHEM 1516L Lab	4
MATH 1571 Calculus I	4
(and) MATH 1572 Calculus II	4
(or) STAT 3717 Statistical Methods	4
PHYS 1501 Fundamentals of Physics I / PHYS 1501L Lab	4 + 1
PHYS 1502 Fundamentals of Physics II / PHYS 1502L Lab	3 + 1
(or) PHYS 2610 General Physics I / PHYS 2610L Lab	4 + 1
PHYS 2611 General Physics II / PHYS 2611L Lab	4 + 1

BA in Geology - Geoscience Option

Learning Outcomes

The learning outcomes for the Bachelor of Arts degree 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. Foreign Language through the intermediate level is required.

I. Required

Courses	s.h.
GEOL 1505 Physical Geology / GEOL 1505L Lab	4
ENST 2600 Foundations of Environmental Studies/ ENST 2600L Lab	4
GEOL 2605 Historical Geology	4
GEOL 3700 Mineralogy	4
GEOL 3701 Geomorphology	3
GEOL 3704 Structural Geology / GEOL 3704L Lab	3
GEOL 3718 Igneous & Metamorphic Petrology	4
GEOL 3750 Geoscience Seminar (new course)	1
GEOL 5802 Sedimentology & Stratigraphy (capstone course)	3
MATH 1570 Applied Calculus	4
Total	37

II. Elective Courses

Courses	s.h.
Science Electives I: Choose a minimum of 18 s.h. from the following:	
ASTRO 2609 Moon and Planets	3

BIOL 2601 General Biology I / BIOL 2601L Lab	4
BIOL 2602 General Biology II / BIOL 2602L Lab	4
CHEM 1515 General Chemistry I / CHEM 1515L Lab	4
CHEM 1516 General Chemistry II / CHEM 1516L Lab	4
GEOG 2630 Weather	3
GEOL 2602 Introduction to Oceanography	3
GEOL 2615 Geology & the Environment 1	3
MATH 2670 Applied Calculus 2	5
PHYS 1501 Fundamentals of Physics I / PHYS 1501L	5
PHYS 1502 Fundamentals of Physics II	4
STAT 3717 Statistical Methods	4

Science Electives II: Choose a minimum of 20 s.h. from the following:

Courses	s.h.
ENST 3700 Environmental Chemistry / ENST 3700L Lab	4
GEOL 3702 Glacial Geology	3
GEOL 3706 Economic Mineral Deposits	3
GEOL 3709 Subsurface Investigations	3
GEOL 3714 Principles of Paleontology	3
GEOL 3716 Environmental Impact of Abandoned Mines	3-4
GEOL 3720 Field Investigations in Geology	3
ENST 3751 Water Quality Analysis / ENST 3751L Lab	3
ENST 3781 Environmental Sampling Methods	3
GEOL 4804 Ground Water	3
GEOL 4824 Tectonics	3
GEOL 4899 Special Topics	1-3
GEOL 48XX Geology Field Camp (minimum)	4
GEOL 5805 Special Problems in Geology	1-3
ENST 5810 Environmental Safety	1
GEOG 5810 Geographic Information Science I	3
GEOG 5811 Geographic Information Science II	3
GEOL 5815 Geology and the Environment 2	3

GEOL 5817 Environmental Geochemistry	3
ENST 5860 Environmental Regulations	3
(The field camp is chosen in consultation with the advisor and the department's Curriculum Committee.)	

BA in 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.

REQUIRED	
Courses	s.h.
GEOL 1505 Physical Geology/GEOL 1505L 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
<i>Capstone Course (one of the following)</i>	
GEOL 5802 Sedimentology and Stratigraphy	3
<i>Or</i>	
GEOL 48xx Field Camp (minimum)	3
<i>Or</i>	
ENST 5830 Risk Assessment	3
<i>*Science Electives II (see list below)</i>	12
<i>One of the following</i>	
MATH 1570 Applied Calculus	4
<i>Or</i>	
MATH 1571 Calculus I	4
<i>Or</i>	
STAT 3717 Statistical Methods	3

*12 S.H. FROM THE FOLLOWING SCIENCE ELECTIVES

Courses	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
ASTR 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

ENVIROMENTAL ELECTIVES

Courses	s.h.
Upper-division geology or environmental studies courses	6

BS in Environmental Studies

The environmental studies program leading to a Bachelor of Science (BS) 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 BS 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

Courses	s.h.
ENST 2600 Foundations of ENST	3
ENST 2600L Foundations Lab	1
ENST 3700 Environmental Chemistry	4
ENST 3730 Air Quality	3
ENST 3750 Seminar	1
ENST 3751 Water Quality	3
ENST 3780 Research	2
ENST 3781 Environmental Sampling (b)	3
ENST 3790 Internship	4
ENST 5800 Environ. Impact Assessment (c)	3
ENST 5810 Environmental Safety	1
ENST 5830 Risk Assessment (d)	3
ENST 5860 Environmental Regulations	3
Total	34

SUPPORT COURSES IN SCIENCE AND MATHEMATICS

(1) Satisfies General Education Science or Science Lab Domain, (2) Satisfies General Education Mathematics Domain, (3) Satisfies General Education Science Domain

Courses	s.h.
BIOL 2601/BIOL 2601L Principles 1 (1)	4
CHEM 1515/CHEM 1515L Principles 1 (1)	4
CHEM 1516/CHEM 1516L Principles 2 (1)	4
CHEM 1515R/CHEM 1516R Recitation (optional)	1+1
GEOL 1505/GEOL 1505L Physical (1)	4
MATH 1570 Applied Calculus (2)	4
Or	
MATH 1571 Calculus (2) (Recommended for Technology minors)	4
Total	21 s.h. +2 s.h. optional

PLUS TWO OF THE FOLLOWING SUPPORT

COURSES

(1) Satisfies General Education Science or Science Lab Domain, (2) Satisfies General Education Mathematics Domain, (3) Satisfies General Education Science Domain

Courses	s.h.
PHYS 1501 Principles 1 (3) (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)	4
Total	6-7 s.h.

Recommended Curriculum Leading to a BS Degree with a Major in Environmental Studies*

FIRST YEAR

Courses	s.h.
CHEM 1515/CHEM 1515L, CHEM 1516/CHEM 1516L	9
WRITING I, II	6
MATH 1570 or MATH 1571	4
ENST 2600/ENST 2600L	4
Gen. Ed	12
Total	34

SECOND YEAR

Courses	s.h.
BIOL 2601/BIOL 2601L	5
GEOL 1505/GEOL 1505L	4
ENST 3700, ENST 3781, ENST 3751/ENST 3751L, ENST 5800	13
PHYS 1501 or STAT 2601/STAT 3717 or GEOG 2630	3-4
Gen. Ed	9
Total	34-35

THIRD YEAR

Courses	s.h.
ENST 3730, ENST 5810, ENST 5830	9
PHYS 1501 or STAT 2601/STAT 3717 or GEOG 2630	3-4
Gen. Ed	9
Minor	9-12
Total	30-34

FOURTH YEAR

Courses	s.h.
ENST 5860, ENST 3750, ENST 3780, ENST 3790	10
Gen. Ed./electives	3-9
Electives	5-12
Minor	0-9
Total	28-31

* 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.

Minor in Environmental Studies

ALL OF THE FOLLOWING COURSES

Courses	s.h.
ENST 2600 Foundations of Environmental Studies	3
ENST 2600L Foundations of Environmental Studies Lab	1

ONE OF THE FOLLOWING CORE COURSES

Courses	s.h.
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

Total Number of Semester Hours: 19-21

Minor in Environmental Geology

ALL OF THE FOLLOWING COURSES

Courses	s.h.
GEOL 1505 Physical Geology and 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

Courses	s.h.
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

Minor in Natural Gas and Water Resources

REQUIRED CORE COURSES

Course	s.h.
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

A. WATER RESOURCES AND ENVIRONMENTAL MANAGEMENT

At least 3 s.h. from group A

Course	s.h.
BIOL 4801/BIOL 4801L 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/CHEM 2604L Quantitative Analysis with Lab	5
CHEM 3719/CHEM 3719L Organic Chemistry I with Lab	4
CHEM 4860 Regulatory Aspects of Industrial Chemistry	1
CHEM 5804/CHEM 5804L Chemical Instrumentation	4
ENST 3700/ENST 3700L Environmental Chemistry with Lab	4
ENST/CEEN 3751/ENST/CEEN 3751L Water Quality Analysis with Lab	3

ENST 3781 Environmental Sampling Methods	3
ENST 5860 Environmental Regulations	3
or	
AHLT 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

Course	s.h.
ACCT 3730 Oil and Gas Accounting	3
AHLT 4808 Environmental Health Concerns	3
CEEN 3716/CEEN 3716L Fluid Mechanics with Lab	4
or	
MECH 3720/MECH 3720L Fluid Dynamics with Lab	4
or	
MET 3714/MET 3714L Fluid Mechanics with Lab	3
CHEN 2688 Energy Assessment	3
GEOG 5810 Geographic Information Science	3
1	
GEOL 3709 Subsurface Investigations	3
GEOL 4825 Geophysical Well Log Interpretation	3
ISEN 3736/ISEN 3736L Methods Engineering	3

NATURAL GAS AND WATER RESOURCES APPLICATIONS

Course	s.h.
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.*

Minor in Engineering Geology

Minor in Engineering Geology

Course	s.h.
GEOL 1505 Physical Geology	3
GEOL 1505L Physical Geology Lab	1

GEOL 2605 Historical Geology	4
GEOL 3704 Structural Geology	2
GEOL 3704L Structural Geology Lab	1
GEOL 3706 Geology of Economics Mineral Deposits	3
GEOL 3709 Subsurface Investigations	3
GEOL 4804 Ground Water	3
Total Number of Semester Hours:	20

Department of Mathematics and Statistics

330-941-3302

Professors Burden, Chang, Fabrykowski, O'Mellan, Rodabaugh, Smotzer, Spalsbury (Chair), Wingler, Yates; Associate Professors Jalics, Kerns, Pollack, Tartir, Taylor, Wakefield; Assistant Professors Flowers, Goldthwait,; Instructor Carlson.

Mathematics may be the major subject for the following degree programs: Bachelor of Science (BS), Bachelor of Arts (BA), and Bachelor of Science in Education (BSEd). The BA and BS 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 in addition to Foreign Language 2600, the following core courses: MATH 1571, MATH 1572, MATH 2673, MATH 3715, MATH 3720, MATH 3721, MATH 3751, and MATH 4896 or MATH 4897H or MATH 4893; also STAT 3743 and CSIS 2610.

Department of Mathematics and Statistics -
web.ysu.edu/stem/math
http://web.ysu.edu/stem/math

BS in Mathematics

Learning Outcomes

The student learning outcomes for a BS 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, MATH 5822, and MATH 5880, together with at least one of MATH 3760, MATH 3705, or MATH 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 43.

Statistics Track. In addition to the core, MATH 3760, MATH 5845, and a minor in statistics that would consist of STAT courses STAT 3743, STAT 5817, MATH 5843, STAT 5844, and two elective courses which can be chosen from the STAT courses STAT 5840, STAT 5846, STAT 5847, STAT 5849 and MATH 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 34.

Applied Mathematics Track. In addition to the core, MATH 3705, MATH 3760, and two electives from MATH 5825, MATH 5835, MATH 5845, MATH 5855, and MATH 5861, 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 40.

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 34.

Actuarial Mathematics Track. In addition to the core, students choose at least two courses among MATH 3760, STAT 5800, STAT 4888, STAT 5802, and STAT 5844 and complete a minor in actuarial

science that would consist of STAT courses STAT 5843 and STAT 5817, ECON courses ECON 2610 and ECON 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 34.

BA in Mathematics

Learning Outcomes

The student learning outcomes for a BA 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, BA 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. Foreign Language through 2600 level required.

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 PhD in mathematics. Students planning to pursue a PhD 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 Minor

OPTION 1		
Courses		s.h.
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.		10
OR		
OPTION 2		
Courses		s.h.
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.		9+
Total Number of Semester Hours: 18		

Statistics Minor

ONE INTRODUCTORY STATISTICS COURSE		
Courses		s.h.
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

Courses	s.h.
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

Courses	s.h.
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
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

Courses	s.h.
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

Department of Physics and Astronomy

330-941-3616

*Professors Andrews, Crescimanno, Oder, Sturuss
(Chair); Associate Professors Balaz, Durrell, Feldmeier,
Priour.*

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 nonspecializing 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 BA 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 BA program in physics, students of the BS 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 BA program in physics, students of the BS program in physics and astronomy will learn to apply the concepts of astrophysics to solve problems and predict numeric results.

Degree Options

The BA 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 BS degree program in physics is designed for students who plan to pursue graduate studies in physics. The BS degree program with a combined physics-astronomy major is designed for students who plan to pursue graduate studies in astronomy or space science.

Students pursuing the BA degree must complete Foreign Language through the 2600 level.

A student desiring to teach physics or astronomy in secondary schools should consult the dean of the College of Education.

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.

Department of Physics and Astronomy -
<http://web.ysu.edu/stem/physics> -
<http://web.ysu.edu/stem/physics>

BS and BA in Physics with a Minor in Mathematics

Shown below are suggested curricula for complete four-year programs.

Suggested Curriculum for a BS in Physics with a Minor in Mathematics

FIRST YEAR	
Courses	s.h.
PHYS 2610, PHYS 2610L, PHYS 2611, PHYS 2611L	10
MATH 1571, MATH 1572	8
CHEM 1515, CHEM 1516	8
ENGL 1550, ENGL 1551	6
Total	32
SECOND YEAR	
Courses	s.h.
PHYS 3704, PHYS 3704L, PHYS 3705, PHYS 3705L	8
MATH 2673, MATH 3705	7
Electives (See note)	15
Total	30
THIRD YEAR	
Courses	s.h.
PHYS 3703	6
PHYS 3741, PHYS 3742	6
PHYS 3750	3
Electives (See note)	16
Total	31
FOURTH YEAR	
Courses	s.h.
PHYS 5810, PHYS 5811	6
PHYS 4805	3
Electives (See Note)	22
Total	31

Note: The electives must satisfy the general University and/or STEM College requirements.

Minimum requirements for the BA degree in physics with a minor in mathematics

PHYSICS COURSES	
Courses	s.h.
PHYS 2610 General Physics, PHYS 2610L	4+1
PHYS 2611 General Physics 2, PHYS 2611L	4+1
PHYS 3703 Classical Mechanics and Dynamics	4
PHYS 3704 Modern Physics, PHYS 3704L	4+1
PHYS 3705 Thermodynamics and Classical Statistical Dynamics, PHYS 3705L	3+1
PHYS 3741 Electromagnetic Field Theory 1	3
PHYS 4805 Undergraduate Physics Research	3
Total	29

MATHEMATICS COURSES	
Courses	s.h.
MATH 1571 Calculus 1	4
MATH 1572 Calculus 2	4
MATH 2673 Calculus 3	4
MATH 3705 Differential Equations	3
Total	15

Minimum requirements for the B.S. degree in physics with a minor in mathematics

PHYSICS COURSES	
Courses	s.h.
PHYS 2610 General Physics, PHYS 2610L	4+1
PHYS 2611 General Physics 2, PHYS 2611L	4+1
PHYS 3703 Classical Mechanics and Dynamics	4
PHYS 3704 Modern Physics, PHYS 3704L	4+1
PHYS 3705 Thermodynamics and Classical Statistical Dynamics, PHYS 3705L	3+1
PHYS 3741 Electromagnetic Field Theory 1	3
PHYS 4805 Undergraduate Physics Research	3
PHYS 3742 Electromagnetic Field Theory 2	3
PHYS 3750 Mathematical Physics	3
PHYS 5810 Quantum Mechanics and Quantum Statistical Mechanics 1	3
PHYS 5811 Quantum Mechanics and Quantum Statistical Mechanics 2	3
Total	41

MATHEMATICS COURSES

Courses	s.h.
MATH 1571 Calculus 1	4
MATH 1572 Calculus 2	4
MATH 2673 Calculus 3	4
MATH 3705 Differential Equations	3
Total	15

Minimum requirements for the BS with a combined major in physics and astronomy and a minor in mathematics

PHYSICS COURSES

Courses	s.h.
PHYS 2610 General Physics, PHYS 2610L	4+1
PHYS 2611 General Physics 2, PHYS 2611L	4+1
PHYS 3703 Classical Mechanics and Dynamics	4
PHYS 3704 Modern Physics, PHYS 3704L	4+1
PHYS 3705 Thermodynamics and Classical Statistical Dynamics, PHYS 3705L	3+1
PHYS 3741 Electromagnetic Field Theory 1	3
10 s.h. of upper-division physics courses	10
Total	36

ASTRONOMY COURSES

Courses	s.h.
ASTR 1504 Descriptive Astronomy	3
ASTR 2609 Moon and Planets	3
ASTR 3711 Astrophysics 1	3
ASTR 3712 Astrophysics 2	3
ASTR 4815 Undergraduate Astronomy Research	3
ASTR 4811 Observational Astronomy 1	3
ASTR 4812 Observational Astronomy 2	3
Total	21

MATHEMATICS COURSES

Courses	s.h.
MATH 1571 Calculus 1	4
MATH 1572 Calculus 2	4
MATH 1572 Calculus 2	4
MATH 3705 Differential Equations	3
Total	15

Physics Minor

ALL OF THE FOLLOWING COURSES

Courses	s.h.
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

Astronomy Minor

Courses	s.h.
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
Total Number of Semester Hours	18

Department of Civil/Environmental and Chemical Engineering

330-941-3027

Professors Alam, Garr, Husain, Lim; Associate Professors Islam (Chair), Price; Assistant Professors Cortes, Tritico.

Department of Civil/Environmental and Chemical Engineering -
web.ysu.edu/stem/civilenveng -
<http://web.ysu.edu/stem/civilenveng>

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

Courses	s.h.
ENGR 1500 Engineering Orientation	1
ENGR 1550 Engineering Concepts	2

ENGR 1560 Engineering Computing	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	3
Total Semester Hours	33

SECOND YEAR

Courses	s.h.
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	3
Total Semester Hours	31

THIRD YEAR

Courses	s.h.
CHEN 3771 Chem Engr Thermo 1	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 4860 Regulatory Aspects of Industrial Chemistry	1
CHEM Advanced Chemistry/Biology Elective (see note 2)	3
F.E. Elective (see note 3)	3
GER Elective	3
GER Ethics Elective (see note 1)	3

Total Semester Hours	31
FOURTH YEAR	
Courses	s.h.
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 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	3
Total Semester Hours	32

Total Semester Hours: 127

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 1561 Technology and Human Values	3
PHIL 2625 Introduction To Professional Ethics	3
PHIL 2626 Engineering Ethics	3

2 - ADVANCED CHEMISTRY/BIOLOGY ELECTIVE ♣♣♣ CHOOSE ONE

3 s.h. of Upper-Division Chemistry or Biology

3 ♣♣♣ FUNDAMENTALS OF ENGINEERING ELECTIVE ♣♣♣ CHOOSE ONE

MECH 2606 Engineering Materials	3
or	
CHEN 2688 Energy Assessment	3
ECEN 2632 Basic Circuit Theory 1	3
or	
CEEN 2601 Statics	3
or	
STEM 4890 STEM Internship	1-4
or	
MTEN 5868 Failure Analysis Using the SEM	3

or

ISEN 3710 Engineering Statistics 3

Civil Engineering Program

Professor Anwarul Islam (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 has been continuously accredited by the Engineering Accreditation Commission of ABET since 1959. Our undergraduate program provides students with a strong foundation in math, science, and the fundamentals of engineering, as well as a broad background in all major areas of the civil engineering discipline.

Program Educational Objectives

The Civil Engineering program will provide graduates with the foundation of knowledge and skills necessary for productive and rewarding careers. Specifically, the program will prepare graduates to:

1. perform essential functions by incorporating social, ethical, political, economic, and environmental considerations in their professional careers and excel in any sector(s) of civil engineering;
2. exhibit necessary communication, management, and leadership skills to excel in engineering and non-engineering sectors; and
3. continue their intellectual and professional growth through lifelong learning, including:
 1. graduate study in civil engineering or a related field;
 2. registration as a Professional Engineer; and
 3. participation in professional and service organizations.

Student Outcomes

Students from the undergraduate program in Civil Engineering at YSU achieve the following outcomes:

1. an ability to apply knowledge of mathematics, science, and engineering
2. an ability to design and conduct experiments, as well as to analyze and interpret data
3. 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
4. an ability to function on multidisciplinary

- teams
5. an ability to identify, formulate, and solve engineering problems
 6. an understanding of professional and ethical responsibility
 7. an ability to communicate effectively
 8. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
 9. a recognition of the need for, and an ability to engage in life-long learning
 10. a knowledge of contemporary issues
 11. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

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 environmental, 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
ENGR 1560 Engineering Computing	2
MATH 1571 Calculus 1	4
MATH 1572 Calculus 2	4
CMST 1545 Communication Fdns	3
GER SS Elective.	3
GER AH Elective	3
Total	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
GEOG 2611 Geology for Engineers	3
PHYS 2610 General Physics 1	4
CHEM 1516/CHEM 1516L General Chemistry 2	4
Or	
PHYS 2611 General Physics 2	4
GER SPA Elective	3
Total	32

THIRD YEAR

Courses	s.h.
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 3710 Engineering Statistics	3
GER SPA Elective	3
GER SS Elective	3
Total	34

FOURTH YEAR

Courses	s.h.
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 3724 Engineering Economy	3
MECH 2641 Dynamics	3
F.E. Elective See Note Below (3)	3
GER AH Elective	3
Total	30

1. May substitute CHEM 1516/CHEM 1516L or PHYS 2611
2. May substitute out of Dept. course with approval of CE Program Coordinator
3. Fundamentals of Engineering Elective â€”
Choose One:
 - â€” MECH 2606 Engineering Materials; or
 - â€” MECH 2603 Thermodynamics I; or
 - â€” ECEN 2614 Basics of Electrical Engineering

SUMMARY

Courses	s.h.
Mathematics	18
Natural Science	15
Writing and Speech	9
General Education Electives	18
Civil Engineering	56
Other Engineering	12
Total	128

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

Professors Jalali (Chair), Munro, Pansino; Associate Professors Li, Mossayebi; Assistant Professor Lin Sun.

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 and ECEN 1521L, 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 which meet the highly demanding standards required by industry and preparation for further education.

We utilize the resources of the university and interact with industry to evaluate, optimize, and upgrade our teaching, research, scholarship, service and facilities to continue offering 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 University offers students a high standard of engineering education. In fulfillment of it's 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 for the Electrical Engineering Program.

Within a few years of graduation, our graduates

should be able to:

- Demonstrate technical competency in Electrical Engineering and its related fields while utilizing and disseminating engineering knowledge and skills.
- Design, analyze, test, and implement systems and devices which meet realistic economic constraints in engineering practice, regionally and globally.
- Practice engineering ethically and responsibly, both individually and in diverse teams, while considering global issues and the importance of engineering in society.

Sustain career growth through life-long learning in their engineering professions and post-graduate education.

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.
- 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 well-equipped laboratory facilities for circuits, electronics, communications, electromagnetics, energy conversion, power systems, control systems, and digital systems. PC computing and wireless networking are available, as well as various licensed software packages.

Professional Practice

The Department of Electrical and Computer

Engineering participates in the College of STEM Professional Practice Program.

Students who complete course and internship requirements related to the field may receive up to 2 s.h. of credit toward ECEN elective courses. Contact the department for details.

Options

Traditional, computer/digital, and biomedical options with 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 entrylevel 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 an internship? 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 office.

Department of Electrical and Computer Engineering - web.ysu.edu/stem/eleccompeng - <http://web.ysu.edu/stem/eleccompeng>

Electrical and Computer Engineering Curricula

Traditional Option

Elect & Comp Engin (ECEN)	
Course	s.h.
ECEN 1521 Basic Comp & Dig Circuits	3
ECEN 1521L Basic Comp & Dig Circuits Lab	1
ECEN 1560 Electrical Engineering Computing	2
ECEN 2611 Instr & Comp Lab 1	1
ECEN 2612 Instr & Comp Lab 2	1
ECEN 2632 Basic Circuit Theory 1	3
ECEN 2633 Basic Circuit Theory 2	3
ECEN 3710 Signals and Systems	3
ECEN 3711 Intermediate Lab 1	1
ECEN 3712 Intermediate Lab 2	1
ECEN 3733 Digital Circuit Design	3
ECEN 3741 Electromagnetic Fields 1	3
ECEN 3742 Electromagnetic Fields 2	3
ECEN 3771 Digital & Analog Circs 1	3
ECEN 3772 Digital & Analog Circs 2	3
ECEN 4803 Linear Control Systems	4
ECEN 4811 Senior Laboratory	1
ECEN 4844 Electromag Energy Conversion	3
ECEN 4899 Senior Design Project	4
ECEN Electives	9
Total Hours:	55

Science

Course	s.h.
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
Total Hours:	15

Summary for Traditional Option

Course	s.h.
Elec & Comp Engin	55
Science	15
Engineering *	9
Math *	18
Writing & Speech *	9
General Education *	18
Total Hours:	124

**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

Course	s.h.
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
Total Hours:	14

SPRING

Course	s.h.
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 Thry & Prac	3
Total Hours:	16

SECOND YEAR: FALL

Course	s.h.
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
Total Hours:	16

Spring

Course	s.h.
MATH 3705 Differential Equ	3

MATH 3715 Discrete Math	3
ECEN 2633 Basic Circuit Theory 2	3
ECEN 2612 Instru and Comput Lab 2	1
MECH 2620 Statics & Dynamics	3
Gen Ed Elective	3
Total Hours:	16

THIRD YEAR: FALL

Course	s.h.
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
Total Hours:	19

Spring

Course	s.h.
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
Total Hours:	16

FOURTH YEAR: FALL

Course	s.h.
ECEN 4811 Senior Laboratory	1
ECEN 4803 Linear Control Systems	4
ECEN Elective	3
ECEN Elective	3
PHYS 3705 Thermo & Classical Statistics	3
Total Hours:	17

Spring

Course	s.h.
ECEN 4899 Senior Design Project	4
ECEN Elective	3
GEOL 2611 Geology for Engineers	3
Gen Ed Elective	3
Total Hours:	13

Computer/Digital Option

Elect & Comp Engin (ECEN)

Course	s.h.
ECEN 1521 Basic Comp & Dig Circuits	3
ECEN 1521L Basic Comp & Dig Cir Lab	1
ECEN 1560 Electrical Engineering Computing	2
ECEN 2611 Instr & Comp Lab 1	1
ECEN 2612 Instr & Comp Lab 2	1
ECEN 2632 Basic Circuit Theory 1	3
ECEN 2633 Basic Circuit Theory 2	3
ECEN 3710 Signals and Systems	3
ECEN 3711 Intermediate Lab 1	1
ECEN 3712 Intermediate Lab 2	1
ECEN 3733 Digital Circuit Design	3
ECEN 3741 Electromagnetic Fields 1	3
ECEN 3742 Electromagnetic Fields 2	3
ECEN 3771 Digital & Analog Circs 1	3
ECEN 4803 Linear Control Systems	4
ECEN 4811 Senior Laboratory	1
ECEN 4844 Electromag Energy Conversion	3
ECEN 4899 Senior Design Project	4
Total Hours:	43

Computer Engineering/ Science

Course	s.h.
CSIS 2610 Prog & Prob-Solving	4
CSIS 3700 Data Structures & Objects	4
ECEN 3734 Computer Design	3
CSCI/ECEN from approved electives	8
Total Hours:	19

Science

Course	s.h.
CHEM 1515 Gen Chem 1	4
PHYS 2610 Gen Physics 1	4
PHYS 3705 Thermo & Classical Statistics	3
GEOL 2611 Geology for Engineers	3
Total Hours:	15

Summary for Computer/Digital Option

Course	s.h.
Elect & Comp Engineering	43
Computer Engineering/Science	19
Science	15

Engineering *	9	ECEN 2612 Instru and Comput Lab 2	1
Math *	18	MECH 2620 Statics & Dynamics	3
Writing & Speech *	9	Gen Ed Elective	3
General Education *	<u>18</u>	Total Hours:	16
Total Hours:	131	THIRD YEAR: FALL	

Suggested Option	Schedule-Computer/Digital
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Course	s.h.
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
Total Hours:	14

Course	s.h.
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
Total Hours:	16

Course	s.h.
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
Total Hours:	16

Course	s.h.
MATH 3705 Differential Equations	3
MATH 3715 Discrete Math	3
ECEN 2633 Basic Circuit Theory 2	3

THIRD YEAR: FALL

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
Total Hours:	17

Course	s.h.
ECEN 3712 Intermediate Laboratory 2	1
ECEN 3710 Signals and Systems	3
ECEN 3734 Computer Design	3
ECEN 3742 Electromagnetic Theory 2	3
ECEN 4844 Electromag Energy Conversion	3
CSIS 3700 Data Structures and Objects	4
Total Hours:	17

Course	s.h.
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
Total Hours:	18

Course	s.h.
ECEN 4899 Senior Design Project	4
CSCI/ECEN Elective	4
GEOL 2611 Geology for Engineers	3
Gen Ed Elective	3
Gen Ed Elective	3
Total Hours:	14

Course	s.h.	Elect & Comp Engin	43
ECEN 1521 Basic Comp & Dig Circuits	3	Science	32
ECEN 1521L Basic Comp & Dig Cir Lab	1	Math *	18
ECEN 1560 Electrical Engineering Computing	2	Engineering *	9
ECEN 2611 Instr & Comp Lab 1	1	Writing & Speech *	9
ECEN 2612 Instr & Comp Lab 2	1	General Education *	18
ECEN 2632 Basic Circuit Theory 1	3	Total Hours:	129
ECEN 2633 Basic Circuit Theory 2	3	<i>*See end of this curriculum section for courses in these areas that are common to the three options.</i>	
ECEN 3711 Intermediate Lab 1	1	Suggested Schedule-Biomedical Option	
ECEN 3712 Intermediate Lab 2	1	FIRST YEAR: FALL	
ECEN 3710 Signals and Systems, or ECEN 3734 Computer Design, or ECEN 3772 Digital & Analog Circs 2	3	Course	s.h.
ECEN 3733 Digital Circuit Design	3	MATH 1571 Calculus 1	4
ECEN 3741 Electromagnetic Fields 1	3	ENGR 1500 Engineering Orientation	1
ECEN 3742 Electromagnetic Fields 2	3	ENGR 1550 Engineering Concepts	2
ECEN 3771 Digital & Analog Circs 1	3	CHEM 1515 General Chemistry 1	4
ECEN 4803 Linear Control Systems	4	ENGL 1550 Writing 1	3
ECEN 4811 Senior Laboratory	1	Gen Ed Elective	3
ECEN 4844 Electromag Energy Conversion	3	Total Hours:	17
ECEN 4899 Senior Design Project	4	Spring	
Total Hours:	43	Course	s.h.
Science		MATH 1572 Calculus 2	4
Course	s.h.	ECEN 1560 Electrical Engin Computing	2
CHEM 1515 Gen Chem 1	4	CHEM 1516 General Chemistry 2	4
CHEM 1516 Gen Chem 2	4	ENGL 1551 Writing 2	3
CHEM 3719 Organic Chem 1	4	ECEN 1521 Basic Comp & Digital Circs	3
CHEM 3720 Organic Chem 2	4	ECEN 1521L Basic Comp & Dig Circs Lab	1
BIOL 2601 Gen Biol: Molec/Cells	4	Total Hours:	17
BIOL 2602 Gen Biol: Org & Ecol	4	SECOND YEAR: FALL	
PHYS 2610 Gen Physics 1	4	Course	s.h.
PHYS 2610L Gen Physics Lab 1	1	MATH 2673 Calculus 3	4
PHYS 3705 Thermo & Classical Statistics	3	ECEN 2632 Basic Circuit Theory 1	3
Total Hours:	32	ECEN 2611 Instru and Comput Lab 1	1
<i>The following two science courses are recommended for the biomedical option but do not count toward degree requirements:</i>		PHYS 2610 General Physics 1/PHYS 2610L	4
CHEM 3785 Biochemistry 1	3	CMST 1545 Comm Theory & Practice	3
BIOL 3702 Microbiology	4	Total Hours:	16
Summary for Biomedical Option		Spring	
Course	s.h.	Course	s.h.
		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
MECH 2620 Statics & Dynamics	3
Gen Ed Elective	3
Total Hours:	16

THIRD YEAR: FALL

Course	s.h.
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
Total Hours:	17

Spring

Course	s.h.
ECEN 3712 Intermediate Laboratory 2	1
ECEN 3734/ECEN 3772/ECEN 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
Total Hours:	17

FOURTH YEAR: FALL

Course	s.h.
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
Total Hours:	15

Spring

Course	s.h.
ECEN 4899 Senior Design Project	4
CHEM 3720 Organic Chemistry 2	4
Gen Ed Elective	3
Gen Ed Elective	3
Total Hours:	14

*Courses Common to All Options

Engineering

Course	s.h.
ENGR 1500 Engineering Orientation	1

ENGR 1550 Engineering Concepts	2
MECH 2620 Statics & Dynamics	3
ISEN 3710 Engineering Statistics	3
Total Hours:	9

Mathematics

Course	s.h.
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
Total Hours:	18

Writing & Speech

Course	s.h.
CMST 1545 Comm Thry & Practice	3
ENGL 1550 Writing 1	3
ENGL 1551 Writing 2	3
Total Hours:	9

General Education (codes)

Course	s.h.
ECON 2610 Principles 1 (SS)	3
PHIL 2626 Engineering Ethics (AH)	3
Elective (AH)	3
Elective (SS)	3
Elective (SPA)	6
Total Hours:	18

Minor in Electrical and Computer Engineering

GENERAL EDUCATION REQUIREMENTS

Course	s.h.
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

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

Department of Mechanical and Industrial Engineering

330-941-3016

Professors Cala, Kudav, Mehri, Shields; Associate Professors Marie (Chair), Wallace; Assistant Professors Meyers, Panta, Solomon; Professors Emeritus Kim, 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

330-941-3016

Professors Cala (Coordinator), Mehri; Associate Professor Wallace, Conner; Assistant Professor Manogharan, Meyers.

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 Student 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 predetermined 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 societal 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 and 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.

Industrial And Systems Engineering -
<http://web.ysu.edu/stem/indsyseng> -
<http://web.ysu.edu/stem/indsyseng>

Curriculum for the Bachelor of Engineering Degree with a Major in Industrial and Systems

FIRST YEAR FALL

Courses	s.h.
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
Total Semester Hours:	17

Spring

Course	s.h.
ENGL 1551 Writing 2	3
PHYS 2610 Physics 1	4
STEM Course 2a (Computing)	2
MATH 1572 Calculus 2	4
General Education Elective 2 (SS)	3
Total Hours:	16

Second Year: Fall

Course	s.h.
MATH 2673 Calculus 3	4
ISEN 3724 Engineering Economy	3
ISEN 3710 Engineering Statistics	3
STEM Course 2b (Computing)	4
CMST 1545 Speech	3
Total Hours:	17

Spring

Course	s.h.
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
Total Hours:	16

Third Year: Fall

Course	s.h.
ISEN 3727 Simulation	3
ISEN 3745 Accounting for Engineers	3
ISEN 3723 Manufacturing Processes	3

STEM Course 4 (Electronics)	3
STEM Course 5 (Dynamics)	3
Total Hours:	12

Spring

Course	s.h.
ISEN 3720 Statistical Quality Control	3
ISEN 5823 Automation	3
ISEN 5830 Human Factors Engr.	3
STEM Course 6 (Math)	3
General Education Elective 4 (AH)	3
Total Hours:	15

Fourth Year: Fall

Course	s.h.
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
Total Hours:	15

Spring

Course	s.h.
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
Total Hours:	13

Total 124

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.

Minor in Industrial and Systems Engineering

Minor in Industrial and Systems Engineering

Courses	s.h.
ISEN 3710 Engineering Statistics	3
ISEN 3716 Systems Analysis and Design	3
ISEN 3720 Statistical Quality Control	3
ISEN 3723 Manufacturing Processes	3
ISEN 3724 Engineering Economy	3
ISEN 3736 Methods Engineering	2
ISEN 3736L Methods Engineering Laboratory	1
Total Semester Hours	18

Mechanical Engineering Program

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 educational objectives of the mechanical engineering undergraduate program are to educate graduates who will be professional, productive, and ethical members of society. As they progress professionally after graduation, our alumni will do the following:

1. Demonstrate **successful application of mechanical engineering knowledge and skills** through
 - employment in leadership roles in industry, academia, government, or other organizations
 - engagement in research and development in graduate study or industry
 - analytical problem solving in less traditional careers such as law, medicine, business, public policy, secondary education, service industries, etc.
 - mentorship of younger engineers in careers involving management or entrepreneurship
2. Demonstrate the **commitment to lifelong learning** through
 - active participation in professional development opportunities in their disciplines; such as conferences, short courses, graduate education
 - development of new knowledge and skills necessary for new areas of expertise or careers
 - adaption of their fundamental engineering knowledge for effectiveness in changing global markets and workforce trends
3. Demonstrate **active engagement in professional service** through
 - application of their engineering knowledge to advance society and to help solve technical and societal problems
 - engagement in activities that promote sustainable economic development that enhances the quality of life
 - promotion of the engineering profession as a source of societal good
 - participation in community activities where their engineering knowledge adds significantly to their contributions

These Program Educational Objectives describe long-term accomplishments for which we seek to prepare the graduates of Youngstown State University mechanical engineering program. It is expected that progress toward these objectives is measurable

Program Outcomes

The YSU mechanical engineering program student outcomes ensure that our graduates have been given the skills to attain the program educational objectives after graduation. Student outcomes for direct assessment are ABET specified outcomes (a) through (k); our students are expected to graduate with:

- 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.
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

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.

Mechanical Engineering -
<http://web.ysu.edu/stem/mecheng> -
<http://web.ysu.edu/stem/mecheng>

Curriculum for the Bachelor of Engineering Degree with a Major in Mechanical Engineering

First Year	
Course	s.h.
ENGL 1550 Writing 1, ENGL 1551 Writing 2	6
MATH 1571 Calculus 1, MATH 1572 Calculus 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
Total Hours:	33
Second Year	
Course	s.h.
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
Total Hours:	33
Third Year	
Course	s.h.

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	3
Total Hours:	33
Fourth Year	
Course	s.h.
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	9
Total Hours:	33

MECHANICAL ENGINEERING ELECTIVES

Heat & Fluid Flow	
Course	s.h.
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
Solid Mechanics	
Course	s.h.
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	
Course	s.h.
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)	60
Total	130

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

Professors Bosela, Messuri; Associate Professors, Costarell, Lamb (Director), Moy, Vuksanovich; Assistant Professors George, Korenic; Instructors Coyne, Gross, Sanson; Professors Emeritus Zupanic.

The school 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 School of Engineering Technology offers Associate of Technical Study (ATS) 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 school 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 (BSAS).

Graduates of the BSAS 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. BSAS 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 Engineering Accreditation Board for Engineering and Technology (ETAC-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 and 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 parttime 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 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 is required of all engineering technology majors.

Department of Engineering Technology - <http://web.ysu.edu/stem/engtech> - <http://web.ysu.edu/stem/engtech>

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

Courses	s.h.
GER - P S Personal & Social Awareness	3
ENGL 1550 College Writing 1	3

ENTC 1500 Technical Skills Development	4	Total Semester Hours	15		
EUT 1502/EUT 1502L Power Plant Fundamentals + Lab*	4+1	Semester Hours for degree: 64-66			
Total Semester Hours	15	<i>*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.</i>			
FIRST YEAR SPRING					
Courses	s.h.	Civil and Construction Engineering Technology			
EUT 1500/EUT 1500L Electrical Fundamentals + Lab	3+1	330-941-3287			
EUT 1503/EUT 1503L Power Plant Mechanical Equipment + Lab	3+1	<i>Assistant Professor Korenic, Program Coordinator</i>			
MATH 2623 Survey of Math	3	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 (AAS) degree. The A.A.S. degree provides early access to employment in engineering support positions. Upon completion of the AAS degree, the student may continue on for the Bachelor of Science in Applied Science (BSAS) 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.			
ENGL 1551 College Writing 2	3				
CSIS 1514 Business Computer Systems	3				
Total Semester Hours	17				
FIRST YEAR SUMMER					
Course	s.h.				
EUT 2699 Electric Utility Co-op (Optional)	2				
SECOND YEAR FALL					
Courses	s.h.	Program Educational Objectives			
EUT 2604/EUT 2604L Power Plant Elec. Equip.+ Lab	3+1	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.			
EUT 2605/EUT 2605L Intermediate Power Plant Systems + Lab	3+1				
EUT 2606 Power Plant Operator Practice	3				
CMST 1545 Communication Theory and Practice	3				
GER-SS GER, Social Sciences	3				
Total Semester Hours	17	During their first few years after earning of the civil and construction engineering technology degree at YSU, graduates will have demonstrated the ability to: <ul style="list-style-type: none">• 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.			
SECOND YEAR SPRING					
Courses	s.h.				
EUT 2607/EUT 2607L Power Plant Inst and Control+ Lab	3+1				
EUT 2608/EUT 2608L Advanced Power Plant Systems	3+1				
MGT 3725 Fundamentals of Management (recommended)	3				
or					
MGT 3750 Human Behavior in Organizations	3				
GER-NS GER. Nat. Sci. Elect and Lab.	3+1				

- 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

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.

Department of Engineering Technology - <http://web.ysu.edu/stem/engtech> - <http://web.ysu.edu/stem/engtech>

Associate of Science in Applied Science in 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.

Associate of Science in Applied Science

FIRST YEAR - FALL		
Courses		s.h.
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
Total Semester Hours		16
FIRST YEAR - SPRING		
Courses		s.h.
MET 1515 Mechanics 1		3
CCET 2604 Prop/Strength of Mat'ls		3
CCET 2614L Materials Lab 1		1
DDT 2607 CAD Microstation		2
ENGL 1551 Writing 2		3
PHYS 1501 Physics 1		4
*GER SII		3

Total Semester Hours	19
SECOND YEAR - FALL	
Courses	s.h.
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 (2)	3

Total Semester Hours	16
SECOND YEAR - SPRING	
Courses	s.h.
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

Total Semester Hours	17
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**Total of 68 Semester Hours for AAS
Notes:**

*Students must meet YSU's General Education Requirements (GER). Students are responsible for ensuring that all course pre-requisites are satisfied. See the "General Education Requirements" for a listing of the requirements and approved courses.

1. SI, Societies and Institutions, ECON 2610- Principles of Microeconomics, is recommended but not required.
2. AH, Personal and Social Responsibility, PHIL 2626-Engineering Ethics

**Bachelor of Science in Applied Science
in Civil and Construction Engineering
Technology**

THIRD YEAR

	FALL	
Courses		s.h.
DESIGN ELECTIVE 1	3	
CCET 3705 Computing for Tech	3	
MATH 2670 Applied Calculus 2	5	

CHEM 1505/CHEM 1505L Allied Health Chem 1	3
GER AH	3
Total Semester Hours	17

	SPRING	
Courses		s.h.
DESIGN ELECTIVE 2	3	
CCET 3730 Transportation Tech	3	
CCET 3740 Construction Mgmt (4817)	3	
CCET 3708/CCET 3708L Bldg. Info. Modeling	3	
EET 3725 Electro Mechanical Systems	3	
CCET ELECTIVE 1	3	
Total Semester Hours		18

FOURTH YEAR

	FALL	
Courses		s.h.
DESIGN ELECTIVE 3	3	
CCET 3714 Soil Mechanics	2	
CCET 3714L Soil Mechanics Lab	1	
CCET ELECTIVE 2	3	
TECH ELECTIVE 1	3	
GER SPA	3	
Total Semester Hours		15

	SPRING	
Courses		s.h.
CCET ³ 4884 Civil/Struct. Facilities Design	3	
EET ³ 4880 Elect./Mech. Facilities Design	3	
GER SPA	3	
GER SS	3	
GER ² Elective	3	
Total Semester Hours		15

Total Semester Hours for BSAS.....	133
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**TECHNICAL ELECT.
(1 Req'd)**

Courses	s.h.
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)

Courses	s.h.
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)

Courses	s.h.
CCET 4807 Proj Plng/Sch	3
CCET 4809 Struct. Anal. 2	3
CCET 4810 Const. Srvyg	3
CCET 4824 Envrion Tech	3
*CCET 4890 Spcl Tpcs CCET	3
*ENTC 4895 Indept. Proj.	1-3

³Approval 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.

²Choose: BIOL 2601/BIOL 2601L, GEOL 1505/GEOL 1505L, or GEOL 2611

Drafting and Design Technology

Associate Professor Lamb, Director.

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

Drafting and Design Technology -
web.ysu.edu/stem/engtech -
<http://web.ysu.edu/stem/engtech>

Drafting and Design Associate in Applied Science Degree

FIRST YEAR

FALL

Courses	s.h.
ENTC 1505 Engr. Tech Concepts	4
MATH 1513 Algebraic and Trans Functions	5
DDT 1503 Autocad 1	2
DDT 1504 Drafting and Plan Reading	2
ENGL 1550 Writing 1	3
Total Semester Hours	16

SPRING

Courses	s.h.
MET 1515 Mechanics 1	3
CCET 2604 Properties and Strength of Mat'ls	3
CCET 2614L Materials Lab 1	1
DDT 2606 CAD-Solid Modeling	4
MET 2630 Manuf. Techniques	2
MET 2630L Manuf. Techniques Lab	1
GER Elective (SS)	3
Total Semester Hours	17

SECOND YEAR

FALL	
Courses	s.h.
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/PHYS 1501L Fund's. Physics 1 Lab	1
Total Semester Hours	16
SPRING	
Courses	s.h.
GER Elective (AH)	3
DDT 2608 Machine Elements	3
Science Elective	3
Technical Elective 2**	3
CMST 1545 Communication Thry/Prac	3
Total Semester Hours	15

**Technical Electives: CCET 2617, CCET 3705, CCET 3709, CCET 3711, EET 1501 + EET 1501L, EET 2650, MET 3706, MET 3707, MET 3710, CEEN 2610/CEEN 2610L, CSIS 1500, CSIS 1514, alternate course approved by DDT Coordinator.

Electrical Engineering Technology

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 (AAS) degree. The AAS provides early access to employment in engineering support positions. Upon completion of the AAS degree, the student may continue on for the Bachelor of Science in Applied Science (BSAS) 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.

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, smart grid and power distribution, 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 BSAS degree taking evening classes. Students are encouraged to take the Fundamentals of Engineering (FE) exam as the first step toward professional registration.

Electrical Engineering Technology - web.ysu.edu/stem/engtech - <http://web.ysu.edu/stem/engtech>

Electrical Engineering Technology 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.

TRADITIONAL OPTION		
FIRST YEAR		
FALL		
Courses		s.h.
MATH 1513 Algebra/Trans functions		5
ENTC 1505 Engr. Tech Concepts		4
EET 1501/EET 1501L Circuit Theory 1 + Lab		3+1
ECON 2610 Microeconomics (GER SS)		3
Total Hours		16
SPRING		
MATH 1570 Applied Calculus 1		4
EET 1502 + EET 1502L Circuit Theory 2 + Lab		3+1
ENGL 1550 Writing 1		3
EET 2620 + EET 2620L Digital Electronics + Lab		2+1
PHIL 2626 Engr. Ethics (GER AH)		3
Total Hours		18

SECOND YEAR

FALL

EET 2605/EET 2605L Electronics 1 + Lab	4
EET 3710/EET 3710L Electrical Machines + Lab	4
DDT 1503 AutoCad 1	3
DDT 1504 Draft/Plan Reading	2
CHEM 1515/CHEM 1515L Gen. Chemistry	4
Total Hours	16

SPRING

EET 3735/EET 3735L Microprocessor Arch. + Lab	4
EET 3706/EET 3706L Electronics 2 + Lab	3+1
CMST 1545 Communication Theory and Practice	3
ENGL 1551 Writing 2	3
Total Hours	18
Semester Hours for AAS - Traditional Opt.	71

Electrical Engineering Technology 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, smart grid and power distribution, 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 BSAS degree taking evening classes. Students are encouraged to take the Fundamentals of Engineering (FE) exam as the first step toward professional registration.

GENERAL EDUCATION REQUIREMENTS

Courses	s.h.
THIRD YEAR	
FALL	
MATH 2670 Applied Calculus 2	5
EET 3730/EET 3730L Logic Systems + Lab	3
EET 3780/EET 3780L Communication Systems + Lab	3

ENGL 3743 Prof. and Tech. Comm.	3
EET 3745 Microproc. Sys 21/EET 3745L	3
Total Hours	17

SPRING

EET 4845/EET 4845L Microproc. Sys 3	3
EET 3760/EET 3760 L Var. Spd. Dr	3
EET 4870/EET 4870 L Proc. Control Tech	4
EET 2653/EET 2653L Fiber Optics	3
EET 3712/EET 3712 L Prg. Logic Control	4
Total Hours	17

FOURTH YEAR

FALL

EET 4850/EET 4850 L Intgrd. Circuit App	3
EET 4820/EET 4820 L Pwr. Sys. Cntrl	3
CCET 3705 Comptg. for Techs.	3
GER Elective (AH)	3
GER Elective (SPA)	3
Total Hours	15

SPRING

GER (SPA)	
GER (SS)	3
EET 4880 Elec./Mech. Facilities Design	3
CCET 4884 Civil/Struct. Facilities Design	3
GER Elective NS Nat. Sciences	4
Total Hours	16
Semester Hours for BSAS	134

Minor in Electrical Engineering Technology

Courses	s.h.
EET 1501 Circuit Theory 1 + EET 1501L Lab	3 + 1
EET 1502 Circuit Theory 2 + EET 1502L Lab	3 + 1
EET 2620 Digital Electronics + EET 2620L Lab	2 + 1
EET 3712 Programmable Logic Controllers + EET 3712L Lab	3 + 1
EET 3735 Microprocessor Architecture + EET 3735L Lab	3 + 0

EET 3745 Microprocessor Systems 2 + EET 3745L Lab	3 + 0
Total Semester Hours	21

Mechanical Engineering Technology

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 School of 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

Mechanical Engineering Technology - http://web.ysu.edu/gen/stem/Mechanical_Engineering_Technology_Program_m1553.html - http://web.ysu.edu/gen/stem/Mechanical_Engineering_Technology_Program_m1553.html

Mechanical Engineering Technology 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 mechanical products, or of the industrial equipment and processes used to manufacture consumer products.

Curriculum

FIRST YEAR

FALL

Courses	s.h.
MATH 1513 Algebra/Trans Functions	5
ENTC 1505 Engr. Tech Concepts	4
DDT 1503 AUTOCAD 1	2
DDT 1504 DRFT'G and Plan	2
ENGL 1550 Writing 1	3
Total Semester Hours	16

SPRING

Courses	s.h.
MATH 1570 Applied Calculus 1	4
MET 1515 Mechanics 1	3
CCET 2604 Properties and Str of Mat'ls	3
CCET 2614L Materials Lab 1	1
DDT 2606 CAD Solid Modeling	4
Total Semester Hours	15

SECOND YEAR

FALL

Courses	s.h.	Total Semester Hours	15
MET 2616 Mechanics 2	3		
MET 3706 Machine Design 1	4		
MET 3714 Fluid Mechanics/MET 3714L Fluid Mechanics Lab	5		
CMST 1545 Comm Theory and Practice	3		
PHYS 1501 Physics 1	4		
Total Semester Hours	19		
SPRING			
Courses	s.h.		
MET 2630 Mfg Techniques/MET 2630L Mfg Techniques Lab	4		
CHEM 1515/CHEM 1515L	4		
ENGL 1551 Writing 2	3		
GER Elective SS	3		
GER Elective AH	3		
Total Semester Hours	17		
Total Semester Hours for Associate Degree	67		
		SPRING	
		THIRD YEAR	
		FALL	
		MET 3705 Thermodynamics	4
		MET 4860/MET 4860L Robotics Tech.	3
		NS Elective	3
		MET Elective*	3
		CCET 3705 Computing for Technologists	3
		Total Semester Hours	15
		FOURTH YEAR	
		FALL	
		MET 3711 Heat & Power Cycles	4
		MET 4810 Mfg Systems Analysis	3
		MET Elective*	3
		GER Elective SS	3
		GER Elective AH	3
		Total Semester Hours	16

Mechanical Engineering Technology 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.

SPRING

MET 4820 Machine Systems (Capstone)	3
ISEN/MGT Elective	3
MET 4870 Appld. Finite Element	3
GER Elective SPA	3
GER Elective SPA	3
Total Semester Hours	15
Semester hours for B.S.A.S	129

REQUIRED COURSES

Course	s.h.	*MET Electives
THIRD YEAR		
FALL		
MET 3720 Mechanisms	3	MET 3710 Tool Design 3
MET 3707 Machine Design 2	3	MET 4812/MET 4812L Numerical Control 3+1
EET 3725 Electromechanical Systems	4	MET 4890 Special Topics in MET (**) 1-4
MATH 2670 Applied Calculus 2	5	EET 4880 Elec & Mech Facilities Design (**) 3
		ENTC 4895 Independent ET Project (**) 1-4
		(**) Requires permission from MET Coordinator prior to registration.

Courses of Instruction

ACCOUNTING — ACCT

Lariccia School of Accounting and Finance

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.

3701. *Intermediate Accounting 1*. 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. 4 s.h.

3702. *Intermediate Accounting 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 3701 and 2.5 overall GPA for 3702. 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

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 interrelationships 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 United States Air Force 1*. 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. 1 s.h.

1502. *Foundation of United States Air Force 2*. Survey course looking at the origin and organization of the Air Force. Selected topics contributing to an understanding of the Air Force. 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 CR/NC. 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 CR/NC. 1 s.h.

2601. *Evolution of United States Air Force and Space Power 1*. Survey course to examine air and space power from a historical perspective. Course covers early flight World War I to the Korean War and ICBMs. 1 s.h.

2602. *Evolution of United States Air Force Air and Space Power 2*. 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. 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 CR/NC. 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 CR/NC. 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 CR/NC. 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 CR/NC. 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 CR/NC. 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 CR/NC. 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.

3704. *Quantitative Methods in Health Sciences*. This course is designed to provide the Health Care Professional with the ability to read and critically evaluate published research results and reports. Also, to become an educated consumer of medical/dental research and apply evidence based decision making. Critique research results to make judgments regarding the relevance, creditably and usefulness to clinical decision making. Allows for application of research results in the clinical setting. Prereq.: MATH 2623 or consent of the instructor. 3 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.

3707. *Clinical Informatics Healthcare Provider*. Application of health informatics by the practicing clinician in the clinical setting. Foundational and Structural Interoperability is provided to address the changing health care needs within the United States. Prereq.: AHLT 3711 or consent of the instructor. 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.

3711. *Health Care Information Systems*. The course is comprehensive analysis of the concepts and applications of medical informatics. Relevant technologies and "real world" skills are presented in the field of Medical Informatics using data and medical software. Prereq.: AHLT 3704 or consent of instructor. 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 United States History 1*. 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 United States History 2*. 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 childrens 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

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 exploration of the range of human variation within and between populations. 4 s.h.

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. Cross-listed with BIOL 3704. 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.

3750. *Religion and Race*. Examines race theory and its relation to religious studies through consideration of immigration patterns and the

ways in which religion has been affixed to markers of identity over the last two hundred years. Cross-listed with REL 3750 and SOC 3750. Prereq.: REL 2601 or SOC 1500 or 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.

3777. *Bahamian Archaeology*. Examines the prehistory and ecology of the Bahamas and entails archaeological surveys and excavation of sites. May be repeated once. Prereq.: ANTH 3702 or permission of the instructor. 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 1. An in-depth examination of the human skeletal system, 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 3780 with "C" or better. 4 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; or BIOL 3759 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.

ARABIC — ARBC

Department of Foreign Languages and Literatures

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* 1. 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. Prereq.: ARBC 2600. 3 s.h.

2606. *Advanced Intermediate Arabic* 2. A continuation of ARBC 2605 with intensive training in understanding, speaking, reading, and writing Arabic. Prereq.: ARBC 2605. 3 s.h.

3701. *Advanced Arabic* 1. 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 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 students 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 years advance planning. Prereq.: Sophomore status and approval of the Chair of Foreign Languages. 1-15 s.h.

ART — ART

Department of Art

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, ART 1521 and enrollment in ART 1522 and ART 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 worlds 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.

1530. *Design in Practice*. Introduction to the visual and organizational components of two and three dimensional design, development of ideas and creative critical thinking as applied to tangible form. The course leads to an understanding of design as a verb and encourages inventiveness and collaboration to generate ideas. 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 Screenprinting*. An introduction to basic lithography and screenprinting 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.

2640. *Ceramics for Non Majors- Handbuilding*. Introduction to the basic building methods, a variety of surfacing techniques, glaze and electric firing. Class projects will allow students to practice techniques while developing their personal aesthetic within the realm of ceramic art. 3 s.h.

2641. *Ceramics for Non-Majors- Wheel and Alternative Processes*. Introduction to the basic wheel throwing technology, mold making, and slip casting process. A variety of surfacing techniques, glaze and kiln firing will be covered. Class projects will allow students to practice techniques while developing their personal aesthetic within the realm of ceramic art. 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 2661. 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.

2674. *Introduction to Photography*. Introduction to black and white digital photographic image capture emphasizing visual literacy, creative possibilities and critical awareness of the medium as an art form. Course content focuses on DSLR camera operation, composition and basic computer editing. A digital SLR camera is required. Prereq.: ART 1503 or permission of instructor. 3 s.h.

2675. *Introduction to Digital Photography*. Introduction to color digital still photography utilizing the computer as a fine art tool. Course content focuses on retouching, image manipulation, color management and high quality printing. Prereq.: ART 2671 or 2674. 3 s.h.

2676. *Introduction to Analog Photography*. Introduction to photographic analog printing emphasizing photography as an expressive art form. Course content focuses on lighting, film development and black and white enlargement and printing. Prereq.: Art 2674 or 2671. 3 s.h.

2691. *Introduction to Digital Media*. This course is designed to give students a technical and theoretical overview of digital media as a means of personal and cultural expression, strengthening visual literacy. Students will explore static and dynamic digital methods. Prereq.: ART 1503 and passing the foundation portfolio review. 3 s.h.

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 Screenprinting*. Further exploration of lithography and screenprinting processes, including digital and photo-mechanical processes, multiple-plate color printing, and alternative screenprinting 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 handbuilding 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 15th and 16th 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 17th and early 18th 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 17th and 18th 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 19th century. Prereq.: ART 1542 or consent of instructor. 3 s.h.

3747. *African-American Art*. A survey of Black American art history from the 17th century through the 20th 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 3703 and 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 3703 and ART 3761. 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 Photography*. An exploration of concepts and techniques in digital fine art photography. Course content focuses on advanced image manipulation, lighting skills, large-scale printing and conceptual development. Prereq.: ART 2675, or 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 Analog Photography*. An exploration of concepts and techniques in traditional analog fine art photography. Course content includes medium and large format films, advanced black and white printing and lighting techniques. Prereq.: ART 2676, or 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.

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. *Video Art*. This course introduces video as an expressive form of communication ranging from narrative to non-narrative structures. Students will gain technical knowledge by working individually and in small teams on pre-production, production and post production. Prereq.: ART 2691 or permission of instructor. 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 students 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, artists statement, gallery representation, graduate study and other professional issues are considered. Prereq.: ART 4834. 3 s.h.

4834. *Advanced 3D Studies*. 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 and 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 3703 and 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 3703 and 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.: ART 3703 and ART 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 3703 and ART 3761. 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. Prereq.: 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 3703 and ART 3761. 3 s.h.

4873. *Advanced Photography*. Advanced study of fine art photography exploring conceptual development and creative expression through individual projects. Course content focuses on project development, refinement of technical skills, reading and writing assignments. May be repeated a total of three times. Prereq.: Passing of ART 3703 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 museums 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 Digital Media Studio*. Advanced students work on individual projects in guidance with faculty through directed readings, writings, group discussions and critiques. While refinement of technical skills is essential, emphasis is placed on experimentation, critical thinking and manipulation of the aesthetic experience. (May be repeated up to 12 s.h.) Prereq.: ART 3792, or ART 3796, or ART 3797 or permission of instructor. 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.

5881. *Twentieth Century Art to 1960*. A survey of the visual arts history of the 20th century beginning with its 19th 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 20th 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.

AMERICAN SIGN LANGUAGE — ASL

Department of Foreign Languages and Literatures

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.

ASTRONOMY — ASTR **Department of Physics and Astronomy**

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.

3711. *Astrophysics 1*. 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 s.h.

3712. *Astrophysics 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 s.h.

4811. *Observational Astronomy 1*. 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 s.h.

4812. *Observational Astronomy 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 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.

BASSOON — BASS **Dana School of Music**

1500A. *Bassoon*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Bassoon*. Private Music Lessons. 1 s.h.

1501. *Bassoon*. Private Music Lessons. Audition required. 2 s.h.

1502. *Bassoon*. Private Music Lessons. 2 s.h.

2600A. *Bassoon*. Private Music Lessons. 1 s.h.

2600B. *Bassoon*. Private Music Lessons. 1 s.h.

2601. *Bassoon*. Private Music Lessons. 2 s.h.

2602. *Bassoon*. Private Music Lessons. 2 s.h.

2603. *Bassoon*. Private Music Lessons. 3 s.h.

2604. *Bassoon*. Private Music Lessons. 3 s.h.

2605. *Bassoon*. Private Music Lessons. 4 s.h.

2606. *Bassoon*. Private Music Lessons. 4 s.h.

3700A. *Bassoon*. Private Music Lessons. 1 s.h.

3700B. *Bassoon*. Private Music Lessons. 1 s.h.

3701. *Bassoon*. Private Music Lessons. 2 s.h.

3702. *Bassoon*. Private Music Lessons. 2 s.h.

3703. *Bassoon*. Private Music Lessons. 3 s.h.

3704. *Bassoon*. Private Music Lessons. 3 s.h.

3705. *Bassoon*. Private Music Lessons. 4 s.h.

3706. *Bassoon*. Private Music Lessons. 4 s.h.

4801. *Bassoon*. Private Music Lessons. 2 s.h.

4802. *Bassoon*. Private Music Lessons. 2 s.h.

4803. *Bassoon*. Private Music Lessons. 3 s.h.

4804. *Bassoon*. Private Music Lessons. 3 s.h.

4805. *Bassoon*. Private Music Lessons. 4 s.h.

4806. *Bassoon*. Private Music Lessons. 4 s.h.

5800A. *Bassoon*. Private Music Lessons. 1 s.h.

5800B. *Bassoon*. Private Music Lessons. 1 s.h.

BARITONE **HORN/EUPHONIUM —** **BHRN** **Dana School of Music**

1500A. *Baritone Horn*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Baritone Horn*. Private Music Lessons. 1 s.h.

1501. *Baritone Horn*. Private Music Lessons. Audition required. 2 s.h.

1502. *Baritone Horn*. Private Music Lessons. 2 s.h.

2600A. *Baritone Horn*. Private Music Lessons. 1 s.h.

2600B. *Baritone Horn*. Private Music Lessons. 1 s.h.

2601. *Baritone Horn*. Private Music Lessons. 2 s.h.

2602. *Baritone Horn*. Private Music Lessons. 2 s.h.

2603. *Baritone Horn*. Private Music Lessons. 3 s.h.

2604. *Baritone Horn*. Private Music Lessons. 3 s.h.

2605. *Baritone Horn*. Private Music Lessons. 4 s.h.

2606. *Baritone Horn*. Private Music Lessons. 4 s.h.

3700A. *Baritone Horn*. Private Music Lessons. 1 s.h.

3700B. *Baritone Horn*. Private Music Lessons. 1 s.h.

3701. *Baritone Horn*. Private Music Lessons. 2 s.h.

3702. *Baritone Horn*. Private Music Lessons. 2 s.h.

3703. *Baritone Horn*. Private Music Lessons. 3 s.h.

3704. *Baritone Horn*. Private Music Lessons. 3 s.h.

3705. *Baritone Horn*. Private Music Lessons. 4 s.h.

3706. *Baritone Horn*. Private Music Lessons. 4 s.h.

4801. *Baritone Horn*. Private Music Lessons. 2 s.h.

4802. *Baritone Horn*. Private Music Lessons. 2 s.h.

4803. *Baritone Horn*. Private Music Lessons. 3 s.h.

4804. *Baritone Horn*. Private Music Lessons. 3 s.h.

4805. *Baritone Horn*. Private Music Lessons. 4 s.h.

4806. *Baritone Horn*. Private Music Lessons. 4 s.h.

5800A. *Baritone Horn*. Private Music Lessons. 1 s.h.

5800B. *Baritone Horn*. Private Music Lessons. 1 s.h.

BIOLOGICAL SCIENCES — BIOL Department of Biological Sciences

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. *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.

1545L. *Allied Health Anatomy and Physiology Laboratory*. Allied Health Anatomy and Physiology Laboratory. 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. *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.

1552L. *Anatomy and Physiology 2 Laboratory*. Anatomy and Physiology 2 Laboratory. 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. *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.

2601L. *General Biology: Molecules and Cells Laboratory*. General Biology: Molecules and Cells Laboratory. 0 s.h.

2602. *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.

2602L. *General Biology: Organisms and Ecology Laboratory*. General Biology: Organisms and Ecology Laboratory. 0 s.h.

2603. *Integrated Biology for BS/MD*. This course is an introduction to general biology that focuses on those aspects of biology that are the fundamental basis of medicine and human biology. Prereq.: admittance to the BS/MD program. 4 s.h.

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. *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.

3702L. *Microbiology Laboratory*. Microbiology Laboratory. 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*. 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 BIOL 3703. Identical with MLS 3703L and MLT 3703L. Prereq.: BIOL 2602. 1 s.h.

3704. *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. Also listed with ANTH 3703. Prereq.: ANTH 1500 and BIOL 2601. 3 s.h.

3705. *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.

3705L. *Introduction to Human Gross Anatomy*

Laboratory. Introduction to Human Gross Anatomy Laboratory. 0 s.h.

3710. *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.

3710L. *Mammalian Anatomy Laboratory*. Mammalian Anatomy Laboratory. 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.

3721. *Genetics*. Genetic material, reproductive cycles, sex determination, mitosis, meiosis, mendelism, probability linkage, genes in populations, mutation, evolution. Prereq.: BIOL 2601. 3 s.h.

3725. *Mammalogy*. Overview of structure, function, evolutionary history, behavior, ecology, and classification of mammals. Animal groups will be studied from diverse biological points of view. Three hours lecture. Prereq.: BIOL 2601/2602. 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. *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.

3740L. *Plant Diversity Laboratory*. Plant Diversity Laboratory. 0 s.h.

3741. *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.

3741L. *Animal Diversity Laboratory*. Animal Diversity Laboratory. 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. Prereq.: BIOL 2601 and BIOL 2602 or instructor consent. 3 s.h.

3762. *Field Botany*. Identification, ecology, and significance of local plants. Two hours lecture, four hours lab. Prereq.: BIOL 2602. 4 s.h.

3762L. *Field Botany Laboratory*. Field Botany Laboratory. 0 s.h.

3775. *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.

3775L. *Comparative Vertebrate Anatomy Laboratory*. Comparative Vertebrate Anatomy Laboratory. 0 s.h.

3780. *General Ecology*. Examination of ecological principles affecting species distributions, interactions and biodiversity; dynamics of populations, communities and ecosystems; life history evolution; origin, maintenance and loss of genetic variation; mechanisms of speciation and extinction; experimental design and analysis. Three hours lecture, four hours lab. Prereq.: BIOL 2602. 5 s.h.

3780L. *General Ecology Laboratory*. General Ecology Laboratory. 0 s.h.

4800. *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.

4800L. *Bioinformatics Laboratory*. Bioinformatics Laboratory. 0 s.h.

4801. *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.

4801L. *Environmental Microbiology Laboratory*. Environmental Microbiology Laboratory. 0 s.h.

4805. *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.

4805L. *Ichthyology Laboratory*. Ichthyology Laboratory. 0 s.h.

4811. *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.

4811L. *Comparative Biomechanics Laboratory*. Comparative Biomechanics Laboratory. 0 s.h.

4819. *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.

4819L. *Taxonomy of Flowering Plants Laboratory*. Taxonomy of Flowering Plants Laboratory. 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. *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.

4830L. *Functional Neuroanatomy Laboratory*. Functional Neuroanatomy Laboratory. 0 s.h.

4834. *Advanced Physiology: Integrative*

Mechanisms. Examination of advanced human physiology through a detailed study of selected body systems. Systems examined may include the cardio-vascular, respiratory, and renal systems, exchange dynamics among body fluid compartments, and acid-base balance. Three hours lecture. Prereq.: BIOL 3730. 3 s.h.

4834L. *Advanced Physiology: Integrative Mechanisms Laboratory*. Experimental approach to the examination of advanced human physiology through a detailed study of selected body systems. Systems examined may include the cardiovascular, renal and respiratory systems, exchange dynamics among body fluid compartments, and acid-base balance. Three hours lab. Prereq. or concurrent with BIOL 4834. 1 s.h.

4835. *Advanced Physiology: Regulatory Mechanisms*. Examination of advanced human physiology through a detailed study of selected body systems. Systems examined may include musculoskeletal, gastrointestinal, metabolic and thermoregulatory. Three hours lecture. Prereq.: BIOL 3730. 3 s.h.

4835L. *Advanced Physiology: Regulatory Mechanisms Laboratory*. Experimental approach to the examination of advanced human physiology through a detailed study of selected body systems. Systems examined may include the musculoskeletal, gastrointestinal, metabolic and thermoregulatory. Three hours lab. Prereq. or concurrent with BIOL 4835. 1 s.h.

4836. *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.

4836L. *Cell Biology: Molecular Mechanisms Laboratory*. Cell Biology: Molecular Mechanisms Laboratory. 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. *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.

4841L. *Animal Parasitology Laboratory*. Animal

Parasitology Laboratory. 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. *Dendrology*. Identification, ecology, and significance of local plants. Two hours lecture, four hours lab. Prereq.: BIOL 3740 or 3762. 4 s.h.

4866L. *Dendrology Laboratory*. Dendrology Laboratory. 0 s.h.

4871. *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.

4871L. *Entomology Laboratory*. Entomology Laboratory. 0 s.h.

4878. *Conservation Biology*. A socioeconomic, political and ecological approach to issues associated with the maintenance and value of biodiversity and ecosystem services; consequences of anthropogenic climate change, fragmentation, overharvesting, extinction, and invasion of non-native species; biofuels; ecological restoration, nature reserve design and sustainability. Three hours lecture. Prereq.: BIOL 3759 or BIOL 3780 or permission of instructor. 3 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.

4893. *Biology of Proteins*. This course engages the student in the world of proteins, from the basic structure and function of proteins in biological systems, to the applied sciences involved in the development of commercially valuable proteins. This course extends the students previous understanding and expertise in molecular biology to emphasize proteins. Prereq.: BIOL 3711 or BIOL 4890 or consent of instructor. 2 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.

5811. *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.

5811L. *Ornithology Laboratory*. Ornithology Laboratory. 0 s.h.

5813. *Vertebrate Histology*. The microscopic study of mammalian tissues and organs. Three hours lecture, two hours lab. Prereq.: BIOL 3711 or 3730. 4 s.h.

5813L. *Vertebrate Histology Laboratory*. Vertebrate Histology Laboratory. 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. *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.

5824L. *Behavioral Neuroscience Laboratory*. Behavioral Neuroscience Laboratory. 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. *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.

5868L. *Gross Anatomy 1 Laboratory*. Gross Anatomy 1 Laboratory. 0 s.h.

5869. *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.

5869L. *Gross Anatomy 2 Laboratory*. Gross Anatomy 2 Laboratory. 0 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.

5888L. *Environmental Biotechnology Laboratory*. Environmental Biotechnology Laboratory. 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, junior standing, GPA: 2.5. 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, junior standing, GPA: 2.5. 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. *International 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. Prereq.: 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.

CIVIL AND CONSTRUCTION

ENGINEERING TECHNOLOGY — CCET Engineering Technology

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.: ENTC 1505 and MATH 1513 grade of "C" or better. 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.

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.: MATH 1570 grade of "C" or better and 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 1503, DDT 1504, MET 1515, MATH 1513, CCET 2604. 4 s.h.

3708. *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.

3708L. *Building Information Modeling Laboratory*. Building Information Modeling Laboratory. 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 1503, DDT 1504, 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 3724. 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 pile 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

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.

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 students 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 students 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.

CELLO — CELL Dana School of Music

1500A. *Cello*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Cello*. Private Music Lessons. 1 s.h.

1501. *Cello*. Private Music Lessons. Audition required. 2 s.h.

1502. *Cello*. Private Music Lessons. 2 s.h.

2600A. *Cello*. Private Music Lessons. 1 s.h.

2600B. *Cello*. Private Music Lessons. 1 s.h.

2601. *Cello*. Private Music Lessons. 2 s.h.

2602. *Cello*. Private Music Lessons. 2 s.h.

2603. *Cello*. Private Music Lessons. 3 s.h.

2604. *Cello*. Private Music Lessons. 3 s.h.

2605. *Cello*. Private Music Lessons. 4 s.h.

2606. *Cello*. Private Music Lessons. 4 s.h.

3700A. *Cello*. Private Music Lessons. 1 s.h.

3700B. *Cello*. Private Music Lessons. 1 s.h.

3701. *Cello*. Private Music Lessons. 2 s.h.

3702. *Cello*. Private Music Lessons. 2 s.h.

3703. *Cello*. Private Music Lessons. 3 s.h.

3704. *Cello*. Private Music Lessons. 3 s.h.

3705. *Cello*. Private Music Lessons. 4 s.h.

3706. *Cello*. Private Music Lessons. 4 s.h.

4801. *Cello*. Private Music Lessons. 2 s.h.

4802. *Cello*. Private Music Lessons. 2 s.h.

4803. *Cello*. Private Music Lessons. 3 s.h.

4804. *Cello*. Private Music Lessons. 3 s.h.

4805. *Cello*. Private Music Lessons. 4 s.h.

4806. *Cello*. Private Music Lessons. 4 s.h.

5800A. *Cello*. Private Music Lessons. 1 s.h.

5800B. *Cello*. Private Music Lessons. 1 s.h.

CHEMISTRY — CHEM Department of Chemistry

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. *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.

1505L. *Allied Health Chemistry 1 Laboratory*. Allied Health Chemistry 1 Laboratory. 0 s.h.

1505R. *Recitation for Allied Health Chemistry 1*. Discussion and problem solving exercises to complement and enhance study in CHEM 1505. Concurrent with CHEM 1505. 1 s.h.

1506. *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.

1506L. *Allied Health Chemistry 2 Laboratory*. Allied Health Chemistry 2 Laboratory. 0 s.h.

1506R. *Recitation for Allied Health Chemistry 2*. Discussion and problem solving exercises to complement and enhance study in CHEM 1506. Concurrent with CHEM 1506. 1 s.h.

1515. *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.

1515L. *General Chemistry 1 Laboratory*. General Chemistry 1 Laboratory. 0 s.h.

1515R. *Recitation for General Chemistry 1*. Discussion and problem solving based on current material in CHEM 1515. Concurrent with CHEM 1515. 1 s.h.

1516. *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.

1516L. *General Chemistry 2 Laboratory*. General Chemistry 2 Laboratory. 0 s.h.

1516R. *Recitation for General Chemistry 2*. Discussion and problem solving based on current material in CHEM 1516. Concurrent with CHEM 1516. 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. *Quantitative Analysis*. Chemical equilibrium, stoichiometry, theory of errors, and volumetric and gravimetric procedures as applied to quantitative determinations. Introduction to electroanalytical, chromatographic and spectrophotometric methods. Emphasis on development of technique. Three hours lecture, six hours lab. Prereq.: CHEM 1516. 5 s.h.

2604L. *Quantitative Analysis Laboratory*. Quantitative Analysis Laboratory. 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.

3719. *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.

3719L. *Organic Chemistry 1 Laboratory*. Organic Chemistry 1 Laboratory. 0 s.h.

3719R. *Organic Chemistry Recitation 1*. An introduction to the preparation and analysis of organic compounds. Discussion of CHEM 3719 material and approaches to problem solving. Required for chemistry majors. Concurrent with CHEM 3719. 1 s.h.

3720. *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.

3720L. *Organic Chemistry 2 Laboratory*. Organic Chemistry 2 Laboratory. 0 s.h.

3720R. *Organic Chemistry Recitation 2*. An introduction to the preparation and analysis of organic compounds. Discussion of CHEM 3720 material and approaches to problem solving. Required for chemistry majors. Concurrent with CHEM 3720. 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. *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.

3739L. *Physical Chemistry 1 Laboratory*. Physical Chemistry 1 Laboratory. 0 s.h.

3740. *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.

3740L. *Physical Chemistry 2 Laboratory*. Physical Chemistry 2 Laboratory. 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. *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.

5804L. *Chemical Instrumentation Laboratory*. Chemical Instrumentation Laboratory. 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. *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.

5822L. *Advanced Organic Laboratory*. Advanced Organic Laboratory. 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. *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.

5832L. *Solid State Structural Methods Laboratory*. Solid State Structural Methods Laboratory. 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. *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.

5861L. *Polymer Science 1: Polymer Chemistry and Plastics Laboratory*. Polymer Science 1: Polymer Chemistry and Plastics Laboratory. 0 s.h.

5862. *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.

5862L. *Polymer Science 2: Polymer Rheology, Processing, and Composites Laboratory*. Polymer Science 2: Polymer Rheology, Processing, and Composites Laboratory. 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.

CHEMICAL ENGINEERING — CHEN Department of Civil/Environmental and Chemical Engineering

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.

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 CHEM 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. *Chemical Engineering Thermodynamics 1*. 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. 3 s.h.

3772. *Chemical Engineering Thermodynamics 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.: CHEN 3771. 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. *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.

4802. *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.

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. *Chemical Reactor Design 1*. 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. 3 s.h.

4881. *Chemical Reactor Design 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 4880. 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 geometries, 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.

CHILD AND FAMILY — CHFM

Department of Human Ecology

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.

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, FNUT 1551. 3 s.h.

3733L. *Pract. in Preprimary Set.* 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.

CHINESE — CHIN

Department of Foreign Languages and Literatures

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 1*. 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. Prereq.: CHIN 2600 or placement test. 3 s.h.

2606. *Advanced Intermediate Chinese 2*. A continuation of CHIN 2605 with intensive training in understanding, speaking, reading, and writing Chinese. Prereq.: CHIN 2605. 3 s.h.

3701. *Advanced Chinese 1*. 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 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 students 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 years advance

planning. Prereq.: sophomore status and approval of the Chair of Foreign Languages. 1-15 s.h.

COMPUTER INFORMATION SYSTEMS — CIS

Department of Computer Science and Information Systems

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 2605 or 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.: CSIS 2605 or CSIS 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 2605 or 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 2605 or 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 4890, CSIS 3722, CSIS 3723, and 3 additional s.h. of upper-division departmental courses. 4 s.h.

CRIMINAL JUSTICE — CJFS

Department of Criminal Justice

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 caseflow 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.

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 facilities. 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. *Ohio Peace Officer Basic Training*. The Ohio Attorney Generals Office, Peace Officer Training Academy's requirements for peace/police officers are taught in the academy. The training academy at YSU consists of approximately 585 classroom hours (5 days a week, 8 hours a day for 15 weeks,

plus a minimum of three weekends). Upon completion, students receive eligibility from the Ohio Peace Officer Training Commission for certification if they successfully pass the physical, skills, and written exams. Prereq.: Senior standing and permission from the Academy Coordinator. 16 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.

CLARINET — CLAR Dana School of Music

1500A. *Clarinet*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Clarinet*. Private Music Lessons. 1 s.h.

1501. *Clarinet*. Private Music Lessons. Audition required. 2 s.h.

1502. *Clarinet*. Private Music Lessons. 2 s.h.

2600A. *Clarinet*. Private Music Lessons. 1 s.h.

2600B. *Clarinet*. Private Music Lessons. 1 s.h.

2601. *Clarinet*. Private Music Lessons. 2 s.h.

2602. *Clarinet*. Private Music Lessons. 2 s.h.

2603. *Clarinet*. Private Music Lessons. 3 s.h.

2604. *Clarinet*. Private Music Lessons. 3 s.h.

2605. *Clarinet*. Private Music Lessons. 4 s.h.

2606. *Clarinet*. Private Music Lessons. 4 s.h.

3700A. *Clarinet*. Private Music Lessons. 1 s.h.

3700B. *Clarinet*. Private Music Lessons. 1 s.h.

3701. *Clarinet*. Private Music Lessons. 2 s.h.

3702. *Clarinet*. Private Music Lessons. 2 s.h.

3703. *Clarinet*. Private Music Lessons. 3 s.h.

3704. *Clarinet*. Private Music Lessons. 3 s.h.

3705. *Clarinet*. Private Music Lessons. 4 s.h.

3706. *Clarinet*. Private Music Lessons. 4 s.h.

4801. *Clarinet*. Private Music Lessons. 2 s.h.

4802. *Clarinet*. Private Music Lessons. 2 s.h.

4803. *Clarinet*. Private Music Lessons. 3 s.h.

4804. *Clarinet*. Private Music Lessons. 3 s.h.

4805. *Clarinet*. Private Music Lessons. 4 s.h.

4806. *Clarinet*. Private Music Lessons. 4 s.h.
 5800A. *Clarinet*. Private Music Lessons. 1 s.h.
 5800B. *Clarinet*. Private Music Lessons. 1 s.h.

COMMUNICATION STUDIES — CMST

Department of Communication

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.

2630. *Social Media Literacy*. Analyze and evaluate social media communication in its variety of forms. Includes message evaluation, digital media curating, ethics and privacy. 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.

2650. *Rhetoric of Film*. Conceptual examination and critical analyses of film including mythic, feminism, Marxist, auteur, genre, and rhetorical perspectives. Prereq.: ENGL 1551. 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.

2655. *Communication in Groups and Organizations*. Introduction to theories and concepts relating to group and organizational communication effectiveness with practical career applications. 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.

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.

3740. *Social Media Communication*. Examination of applications and strategies for communicating through social media, including managing personal and professional social media messages, social media content development, and dissemination. Prereq.: CMST 2630. 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 and CMST 2600. 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 2600 or 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 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 2600. 3 s.h.

4850. *Social Media Campaigns*. Integrated media campaign development using social media applications; theory and practice of social media campaign lifecycles including inception, implementation, and evaluation of client-based projects. Prereq.: CMST 1545 and CMST 2630 and junior standing. 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 or CMST 1530 and junior standing. 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 2600 or CMST 1530 and CMST 2656 and junior standing. 3 s.h.

4859. *Organizational Cultures*. Analysis of organizational cultures. Relationships between organizational culture and communication in modern organizations. Prereq.: CMST 2655 or junior standing. 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 2655, junior 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 3700 or 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.: Junior standing, major in Communication Studies, 24 s.h. of communication studies major complete, including CMST 3700 or 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 meditation and arbitration. Prereq.: CMST 2600. 3 s.h.

5898. *Seminar*. A cooperative exploration of topics in communication studies. May be repeated up to 6 s.h. Prereq.: CMST 2600. 3 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 communication 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. *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.

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 professions 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.

COMPUTER SCIENCE — CSCI

Department of Computer Science and Information Systems

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, cryptovisible techniques, key management, and database security issues. Prereq.: CSIS 1560 or 2610; MATH 1548 or 1571 or Math Placement Test 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 CSCI 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

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 users 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.

1595. *Fundamentals of Programming and Problem-Solving I*. Introduction to concepts, principles, and skills of programming using a high-level programming language. Topics include programming language characteristics, an integrated development environment, algorithms and pseudocode, variables, operators, conditional statements, looping statements, functions, arrays, testing, debugging, documentation and program style. Two hours lecture and two hours lab. Credit will not be given for both CSIS 1595 and CSIS 2610. Prereq.: CSIS 1590 or MATH 1507 or Level 40 on Math 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.

2605. *Fundamentals of Programming and Problem-Solving 2*. Theory and application of programming principles, data and information structures, simple linked lists, searching, and sorting, software development life cycle. Practice using these concepts in an object-oriented programming language. Two hours lecture and two hours lab. Credit will not be given for both CSIS 2605 and CSIS 2610. Prereq.: CSIS 1595. Prereq. or concurrent: MATH 1513 or MATH 1552 or Level 50 on Math Placement Test. 3 s.h.

2610. *Programming and Problem-Solving*. Problemsolving 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. Credit will not be given for both CSIS 2605 and CSIS 2610. Prereq.: MATH 1513 or Level 50 on Math Placement Test. 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 2605 or CSIS 2610. 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 students 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.

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 2605 or 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 2605 or 2610. 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 2605 or 2610. 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 2605 or 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 2605 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 2605 or 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 2605 or 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 2605 or CSIS 2610. 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.: CSIS 2605 or CSIS 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 3783. 4 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.

DENTAL HYGIENE – DHYG

Department of Health Professions

1514L. *Clinical Dental Hygiene Remediation*. This course is designed to improve the dental hygiene students clinical skills, and to develop the basic competencies essential for performing invasive dental hygiene procedures. The students 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.

2601L. *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. 3 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.

4845. *Expanded Functions for the Dental Hygienist*. Review of tooth morphology, properties and manipulation of dental restorative material, and techniques and procedures for restoring teeth with amalgam and tooth colored direct restorations. Concepts of four-handed dentistry and knowledge to perform as an Expanded Functions Dental Auxiliary (EFDA). Prereq.: DHYG 2620, DHYG 2620L and junior standing or consent of instructor. 3 s.h.

4845L. *Expanded Functions for the Dental Hygienist Lab*. Laboratory application of restorative techniques utilizing the principles and skills of restorative four-handed dentistry. Preparation of the dental hygiene student to perform the duties of an expanded function dental auxiliary. Coreq.: DHYG 4845. Prereq.: DHYG 2620, DHYG 2620L and junior standing or consent of instructor. 1 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.

4855L. *Expanded Functions Clinical*. Clinical implementation of expanded functions dental

auxiliary skills gained in DHYG 4845L. Planned, evaluated and supervised clinical experience. Prereq.: DHYG 2620, DHYG 2620L, and DHYG 4845L or consent of instructor. 2 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.

DANCE — DNCE

Department of Theater and Dance

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 childrens 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.

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.

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.

ELECTRICAL AND COMPUTER ENGINEERING — ECEN

Department of Electrical and

Computer Engineering

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.

1560. *Electrical Engineering Computing*. Problem solving techniques for the fields of electrical and computer engineering; procedural program development using the C/C++ programming language. Fundamentals of engineering drawing using AutoCAD commercial software packages. One hour lecture, three hours lab. Prereq.: MATH 1571 or concurrent high school technical drawing proficiency or ENGR 1555. ENGR 1555 may be taken concurrently. 2 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. or concurrent 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. 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.

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.

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. 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. 3 s.h.

3741. *Electromagnetic Fields 1*. Maxwells equations. Static electric and magnetic fields. Magnetic materials and forces, dielectrics, conductance, capacitance, and inductance. Poissons and Laplaces equations. Prereq.: ECEN 2633 or concurrent MATH 3705. 3 s.h.

3742. *Electromagnetic Fields 2*. Maxwells equations. Time varying electric and magnetic fields. Electro-mechanical 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. *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, MECH 2620. 4 s.h.

4803L. *Linear Control Systems Laboratory*. Linear Control Systems Laboratory. 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.: ECEN 3741 or concurrent: MECH 2620. 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.

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.: ECEN 3742 and 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 System Design*. 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. Three hours lecture, three hours laboratory. Prereq.: ECEN 3733. 4 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. Three hours lecture, three hours laboratory per week. Prereq.: ECEN 4803. 4 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 and MATH 3705. 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 3741 and ECEN 3771.3 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 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 busses, 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 ECEN 5808. 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 3742 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.

ECONOMICS — ECON

Department of Economics

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, United States 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 United States 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.

3703. *Behavioral Economics*. Uses insights from economics and psychology to explain why normally rational people make poor choices in their lives, be it in terms of money, health, education or long-term happiness. This introductory course explores the sources of poor economic choices and examines ways to improve them. Prereq.: ECON 2610 or PSYCH 1560. 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 failure 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 students 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 ENGINEERING TECHNOLOGY — EET Engineering Technology

1501. *Circuit Theory 1*. Theoretical analysis of DC electrical circuits including units conversions, current voltage, power, Ohms Law, Kirchhoffs Laws, network theorems, capacitance, magnetic circuits, inductance and transient analysis of RL and RC circuits. Prereq.: all concurrent: "C" or better in ENTC 1505, MATH 1513, 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 and EET 1501L and MATH 1513 and ENTC 1505. 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.: "C" or better in EET 1502 and EET 1502L and ENTC 1505 and MATH 1513. 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 MATH 1513 and 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 1502 and EET 1502L and EET 2605 and EET 2605L and MATH 1570. 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 1502 and EET 1502L and EET 2605 and EET 2605L and MATH 1570. 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.: "C" or better in EET 1502 and EET 1502L and ENTC 1505 and MATH 1570. 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). Examination of input/output (I/O) device characteristics and interfacing including both digital and analog I/O. Installation, maintenance and safety practices for PLCs. Prereq.: "C" or better in EET 1502 and EET 1502L and EET 2620 and EET 2620L and EET 3710 and EET 3710L and MATH 1513. 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.

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 SSI, MSI, and LSI as system components. Prereq.: "C" or better in EET 2620 and EET 2620L and EET 2605 and EET 2605L and EET 1502 and EET 1502L and MATH 1570. 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. *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 CSIS 1590 or EET 1501 and EET 1501L and EET 2620 and EET 2620L and MATH 1513. 3 s.h.

3735L. *Microprocessor Architecture and Programming Laboratory*. Microprocessor Architecture and Programming Laboratory. 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.: "C" or better in EET 3735 and EET 3735L and EET 1502 and EET 1502L and MATH 1513. 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.: "C" or better in EET 3710 and EET 3710L and EET 3706 and EET 3706L and MATH 2670. 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.: "C" or better in EET 1502 and EET 1502L and EET 3706 and EET 3706L and MATH 2670. 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 and EET 3710L and EET 3712 and EET 3712L and MATH 2670. 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.: "C" or better in EET 3730 and EET 3730L and EET 3745 and EET 3745L and MATH 2670. 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.: "C" or better in EET 3706 and EET 3706L and EET 1502 and EET 1502L and MATH 2670. 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.: "C" or better in EET 1502 and EET 1502L and EET 3706 and EET 3706L and EET 3780 and EET 3780L and MATH 2670. 4 s.h.

4880. *Electrical and Mechanical Facilities Design*. Multidisciplinary study of building systems; HVAC, plumbing, electrical power, lighting, and communication systems. Computational labs and group projects for each topic. Prereq.: Senior standing and permission of the CCET or EET students 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.

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 4th and 5th 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.

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, EtCO₂ 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, EtCO₂ 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.

ENGLISH – ENGL

Department of English

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.

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 1509, 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 womens issues. Examination of topics such as language, socialization, oral vs written language, language and class membership, and intra-ethnicity variation in Urban Vernacular English. 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.

2610. *World Literature*. A survey of nonwestern

literatures, emphasizing their cultural, historical, literary, and global contexts. 3 s.h.

2615. *Science Fiction and Fantasy Literature*. Works from the science fiction and fantasy genres are read and discussed critically to promote understanding and enjoyment of reading. 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.

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.

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.

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 childrens 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 application of critical approaches to literature. By reading core works in literary theory, students will learn application of theoretical approaches to various texts. Prereq.: ENGL 1551 "C" or higher. 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.

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.

3749. *Writing the Youth Novel*. Examination and application of elements associated with novels for young readers. Students will develop their own narrative skills, styles, and talents in a supervised workshop. May be repeated once. Prereq.: ENGL 2646. 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.

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 3700 or concurrent. 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 3700 or concurrent. 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.

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 3700 or concurrent. 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 3700 or concurrent. 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 3755. 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 3700 or concurrent. 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 3700 or concurrent. 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 3700 or concurrent. 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 3700 or concurrent. 3 s.h.

4881. *Shakespeare and His World*. Study of Shakespeares works along with an exploration of the artistic and social forces that shaped his writing. Prereq.: ENGL 3700 or concurrent. 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 3700 or concurrent. 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 3700 or concurrent. 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 3700 or concurrent. 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 periods culture and history. Prereq.: ENGL 3700 or concurrent. 3 s.h.

4895. *Early Twentieth Century British Studies*. Literature read in the context of the periods literary movements, culture, and history. Prereq.: ENGL 3700 or concurrent. 3 s.h.

4896. *British Literature from World War II to the Present*. Literature read in the context of the periods literary movements, culture, and history. Prereq.: ENGL 3700 or concurrent. 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 students final undergraduate year. Prereq.: Senior standing and permission of a Professional Writing and Editing advisor. 3 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. Engineering problems and open ended design projects are solved in teams with results professionally presented. 1.5 hours lecture, 1.5 hours lab. Prereq.: ENGR 1550, MATH 1571 or concurrent. 2 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.

ENVIRONMENTAL STUDIES – ENST

Interdisciplinary

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.

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; GPA 2.5. 3 s.h.

3750. *Entrepreneurship-Small Business Financial Management*. Practical application of accounting and finance concepts in small/new businesses. Emphasis on raising capital, understanding financial statements, implementing small business accounting software, and forecasting revenue, expenses, and cash flow. Prereq.: ENT 3700 or FIN 3720; GPA 2.5. 3 s.h.

4800. *Entrepreneurship-Business Plan Development*. An in-depth study of the aspects of a successful

business plan. An individual business plan will be developed by students based on the analysis of a viable business concept. Prereq.: ENT 3700 and ENT 3750 or MGT 3725 and MKTG 3703 and FIN 3720; GPA 2.5. 3 s.h.

4850. *Entrepreneurship Internship*. The student is given the opportunity to relate theory to practice in an on-site field experience in a new venture or local small business. Student works 12-15 hours per week under direct supervision of company management and direct guidance of faculty advisor. A weekly journal and final report are required. Prereq.: ENT 3700; ENT 3750; ENT 4800; GPA 2.5; Approval of Director. 3 s.h.

4851. *Field Studies in Entrepreneurship*. Students work with actual problems and opportunities faced by small businesses under faculty supervision. Problems/opportunities are defined, analyzed and researched. Recommendations are developed and presented to business owners for evaluation. Prereq.: ENT 3700; ENT 3750; ENT 4800 or MGT 3725; MKTG 3703; FIN 3720; GPA 2.5. 3 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 students 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.

ELECTRIC UTILITY TECHNOLOGY — EUT Engineering Technology

1500. *Electrical Fundamentals*. Introduction to direct and alternating current circuits. Study of resistance, capacitance, inductance, Ohms and Kirchoffs 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, oxyacetylene 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 semiconductors, 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 manufacturers 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 manufacturers 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 manufacturers 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.

FRENCH HORN — FHRN

Dana School of Music

1500A. *French Horn*. Private Music Lessons. Audition required. 1 s.h.

1500B. *French Horn*. Private Music Lessons. 1 s.h.

1501. *French Horn*. Private Music Lessons. Audition required. 2 s.h.

1502. *French Horn*. Private Music Lessons. 2 s.h.

2600A. *French Horn*. Private Music Lessons. 1 s.h.

2600B. *French Horn*. Private Music Lessons. 1 s.h.

2601. *French Horn*. Private Music Lessons. 2 s.h.

2602. *French Horn*. Private Music Lessons. 2 s.h.

2603. *French Horn*. Private Music Lessons. 3 s.h.

2604. *French Horn*. Private Music Lessons. 3 s.h.

2605. *French Horn*. Private Music Lessons. 4 s.h.

2606. *French Horn*. Private Music Lessons. 4 s.h.

3700A. *French Horn*. Private Music Lessons. 1 s.h.

3700B. *French Horn*. Private Music Lessons. 1 s.h.

3701. *French Horn*. Private Music Lessons. 2 s.h.

3702. *French Horn*. Private Music Lessons. 2 s.h.

3703. *French Horn*. Private Music Lessons. 3 s.h.

3704. *French Horn*. Private Music Lessons. 3 s.h.

3705. *French Horn*. Private Music Lessons. 4 s.h.

3706. *French Horn*. Private Music Lessons. 4 s.h.

4801. *French Horn*. Private Music Lessons. 2 s.h.

4802. *French Horn*. Private Music Lessons. 2 s.h.

4803. *French Horn*. Private Music Lessons. 3 s.h.

4804. *French Horn*. Private Music Lessons. 3 s.h.

4805. *French Horn*. Private Music Lessons. 4 s.h.

4806. *French Horn*. Private Music Lessons. 4 s.h.

5800A. *French Horn*. Private Music Lessons. 1 s.h.

5800B. *French Horn*. Private Music Lessons. 1 s.h.

FINANCE — FIN

Lariccia School of Accounting and Finance

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 individuals 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.

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 individuals 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 clients 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.

FLUTE — FLUT

Dana School of Music

1500A. *Flute*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Flute*. Private Music Lessons. 1 s.h.

1501. *Flute*. Private Music Lessons. Audition required. 2 s.h.

1502. *Flute*. Private Music Lessons. 2 s.h.

2600A. *Flute*. Private Music Lessons. 1 s.h.

2600B. *Flute*. Private Music Lessons. 1 s.h.

2601. *Flute*. Private Music Lessons. 2 s.h.

2602. *Flute*. Private Music Lessons. 2 s.h.

2603. *Flute*. Private Music Lessons. 3 s.h.

2604. *Flute*. Private Music Lessons. 3 s.h.

2605. *Flute*. Private Music Lessons. 4 s.h.

2606. *Flute*. Private Music Lessons. 4 s.h.

3700A. *Flute*. Private Music Lessons. 1 s.h.

3700B. *Flute*. Private Music Lessons. 1 s.h.

3701. *Flute*. Private Music Lessons. 2 s.h.

3702. *Flute*. Private Music Lessons. 2 s.h.

3703. *Flute*. Private Music Lessons. 3 s.h.

3704. *Flute*. Private Music Lessons. 3 s.h.

3705. *Flute*. Private Music Lessons. 4 s.h.
 3706. *Flute*. Private Music Lessons. 4 s.h.
 4801. *Flute*. Private Music Lessons. 2 s.h.
 4802. *Flute*. Private Music Lessons. 2 s.h.
 4803. *Flute*. Private Music Lessons. 3 s.h.
 4804. *Flute*. Private Music Lessons. 3 s.h.
 4805. *Flute*. Private Music Lessons. 4 s.h.
 4806. *Flute*. Private Music Lessons. 4 s.h.
 5800A. *Flute*. Private Music Lessons. 1 s.h.
 5800B. *Flute*. Private Music Lessons. 1 s.h.

FOREIGN LANGUAGES — FNLG

Department of Foreign Languages and Literatures

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. Assignments in the Language Learning and Resource Center (LLRC). Grading is ABC/NC. 4 s.h.

2600. *Intermediate 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 the speakers, are studied. Assignments in the Language Learning and Resource Center (LLRC). Prereq.: FNLG 1550 in the same language. 4 s.h.

2601. *Advanced Intermediate Foreign Language 1*. Intensive training in understanding, speaking, reading, and writing a foreign language not regularly offered. Geography and daily life, as well as appreciation of the cultures of speakers of the language, are studied. Prereq.: FNLG 2600 in the same language. 3 s.h.

2602. *Advanced Intermediate Foreign Language 2*. 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.

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.

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.

3701. *Advanced Foreign Language 1*. 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 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 students 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 years 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.

FOOD AND NUTRITION — FNUT

Department of Human Ecology

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. Three hours lab per week. Prereq.: FNUT 1553 or concurrent. 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 1551, and BIOL 1552L or concurrent. 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 1503, FNUT 2612 or concurrent, FNUT 2610 or concurrent. 3 s.h.

2610. *Organization and Management*. Concepts of organization and management related to hospitality/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. 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, FNUT 2613L. Overall GPA of 2.5 required. 3 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. 1 s.h.

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. Prereq.: CHEM 1506/L or CHEM 1516. 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, BIOL 1552/L, FNUT 3735, or CHEM 3706 & L. 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.: FNUT 2603, FNUT 3759 or concurrent. 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, FNUT 3735 or CHEM 3706 & L. 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 and FNUT 1553L, junior standing. 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, junior standing. 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. Prereq.: 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. 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 or concurrent. 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, 12 hours clinical experience per week. Prereq.: FNUT4873 or concurrent and restricted to Coordinated Program in Dietetics. 3 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 3760. 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, FNUT 4860L. Restricted to Coordinated Program in Dietetics. 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 4860, FNUT 4874 or concurrent, and HMEC 4890 or concurrent. 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.

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.

FRENCH — FRNC

Department of Foreign Languages and Literatures

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.

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.

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.

3780. *French Composition and Conversation Review*. Review course emphasizing impromptu conversations and in-class essay writing. Intended for students who need additional coursework to achieve the level of Advanced Low on the ACTFL Oral Proficiency Interview and/or the ACTFL Writing Proficiency Test. May not be counted toward the major. Grading is CR/NC. Prereq.: 15 s.h. in French at the 3700 level or above and permission of Chair. 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 students 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 years advance planning. Prereq.: Sophomore status and approval of the chair of Foreign Languages. 1-15 s.h.

4885. *French Conversation and Composition Capstone*. Capstone course emphasizing impromptu conversations and in-class essay writing. Students must achieve a level of Advanced Low 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.

4886. *French Composition and Conversation Capstone*. Capstone course emphasizing impromptu conversations and in-class essay writing. Student 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.

GEOGRAPHY – GEOG

Department of Geography

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.

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.

2630L. *Weather Lab*. Students observe, collect and analyze atmospheric data, and determine and predict weather conditions. Atmospheric laws and meteorological principles, concepts, and processes are investigated using the scientific method. Weekly investigations are undertaken in this hybrid lab encompassing in-class and online instructions. The class meets in-person as needed for guidance. Optional lab to accompany GEOG 2630: Weather. Prereq.: GEOG 2630 or concurrently with GEOG 2630. 1 s.h.

2640. *Human Geography*. An examination of the place to place variation in peoples utilization of the earth. Topics include the distribution of people, spatial variations in culture, urbanization and politicization of space. 3 s.h.

2640H. *Honors Human Geography*. An examination of the place to place variation in peoples utilization of the earth. Topics include the distribution of people, spatial variations in culture, urbanization and politicization 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.

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.

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 Nino/La Nina. 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.

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.

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 students 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

1500. *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.

1500L. *Environmental Geology Laboratory*. Environmental Geology Laboratory. 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. *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.

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.

1505L. *Physical Geology Laboratory*. Physical Geology Laboratory. 0 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.

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.

3750. *Geoscience Seminar*. Guest lecture and student presentation forum course designed to provide students with exposure to a broad range of topics and current research relevant to the geosciences. Course may be repeated. Prereq.: Junior standing. GES major. 1 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.

4830. *Senior Thesis*. Designed to be completed during the students senior year and is expected to be a significant research-based contribution to the

geosciences. A typical senior thesis topic will support the research program of full-time GES faculty. Students may develop their own research topic provided they have the support of one or more full-time GES faculty. Prereq.: Junior standing, minimum cumulative GPA of 3.0, submission of approved research proposal, permission of GES Chairperson. 4 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 students 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, Anthropology, and Gerontology

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 subcultures, 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.

GREEK (ANCIENT) — GRK

Department of Foreign Languages and Literatures

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. Grading is ABC/NC. 4 s.h.

2600. *Intermediate Ancient Greek*. 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. Prereq.: Placement test or GRK 1550. 4 s.h.

2603. *Directed Reading in Ancient Greek 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.: Permission of Chair and either placement test or GRK 2600. 3 s.h.

3753. *Directed Reading in Ancient Greek 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, and writing of evaluative essays. May be repeated once if topic is different. Prereq.: GRK 2603 and permission of Chair. 3 s.h.

4883. *Directed Reading in Ancient Greek 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 Chair. 3 s.h.

GERMAN — GRMN

Department of Foreign Languages and Literatures

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.

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.

GUITAR — GUIT

Dana School of Music

1500A. *Guitar*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Guitar*. Private Music Lessons. 1 s.h.

1501. *Guitar*. Private Music Lessons. Audition required. 2 s.h.

1502. *Guitar*. Private Music Lessons. 2 s.h.

2600A. *Guitar*. Private Music Lessons. 1 s.h.

2600B. *Guitar*. Private Music Lessons. 1 s.h.

2601. *Guitar*. Private Music Lessons. 2 s.h.

2602. *Guitar*. Private Music Lessons. 2 s.h.

2603. *Guitar*. Private Music Lessons. 3 s.h.

2604. *Guitar*. Private Music Lessons. 3 s.h.

2605. *Guitar*. Private Music Lessons. 4 s.h.

2606. *Guitar*. Private Music Lessons. 4 s.h.

3700A. *Guitar*. Private Music Lessons. 1 s.h.

3700B. *Guitar*. Private Music Lessons. 1 s.h.

3701. *Guitar*. Private Music Lessons. 2 s.h.

3702. *Guitar*. Private Music Lessons. 2 s.h.

3703. *Guitar*. Private Music Lessons. 3 s.h.

3704. *Guitar*. Private Music Lessons. 3 s.h.

3705. *Guitar*. Private Music Lessons. 4 s.h.

3706. *Guitar*. Private Music Lessons. 4 s.h.

4801. *Guitar*. Private Music Lessons. 2 s.h.

4802. *Guitar*. Private Music Lessons. 2 s.h.

4803. *Guitar*. Private Music Lessons. 3 s.h.

4804. *Guitar*. Private Music Lessons. 3 s.h.

4805. *Guitar*. Private Music Lessons. 4 s.h.

4806. *Guitar*. Private Music Lessons. 4 s.h.

5800A. *Guitar*. Private Music Lessons. 1 s.h.

5800B. *Guitar*. Private Music Lessons. 1 s.h.

HEALTH AND HUMAN SERVICES, COLLEGE OF — HAHS

College of Health and Human Services

1500. *Introduction to the Bitonte College of Health and Human Services*. Freshman orientation course. designed to enhance students transition to college life through exploration of personal, academic, and career development. The course includes exposure to YSU student services and activities, as well as academic policies and procedures. Class is CR/NC and must be taken within the first 31 semester hours of course work. 1 s.h.

1510. *Investigations into Social Classes in America*. The course examines the impact of social classes 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 Deans 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.

HARPSICHORD — HARP

Dana School of Music

1500A. *Harpsichord*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Harpsichord*. Private Music Lessons. 1 s.h.

1501. *Harpsichord*. Private Music Lessons. Audition required. 2 s.h.

1502. *Harpsichord*. Private Music Lessons. 2 s.h.

2600A. *Harpsichord*. Private Music Lessons. 1 s.h.

2600B. *Harpsichord*. Private Music Lessons. 1 s.h.

2601. *Harpsichord*. Private Music Lessons. 2 s.h.

2602. *Harpsichord*. Private Music Lessons. 2 s.h.

2603. *Harpsichord*. Private Music Lessons. 3 s.h.
 2604. *Harpsichord*. Private Music Lessons. 3 s.h.
 2605. *Harpsichord*. Private Music Lessons. 4 s.h.
 2606. *Harpsichord*. Private Music Lessons. 4 s.h.
 3700A. *Harpsichord*. Private Music Lessons. 1 s.h.
 3700B. *Harpsichord*. Private Music Lessons. 1 s.h.
 3701. *Harpsichord*. Private Music Lessons. 2 s.h.
 3702. *Harpsichord*. Private Music Lessons. 2 s.h.
 3703. *Harpsichord*. Private Music Lessons. 3 s.h.
 3704. *Harpsichord*. Private Music Lessons. 3 s.h.
 3705. *Harpsichord*. Private Music Lessons. 4 s.h.
 3706. *Harpsichord*. Private Music Lessons. 4 s.h.
 4801. *Harpsichord*. Private Music Lessons. 2 s.h.
 4802. *Harpsichord*. Private Music Lessons. 2 s.h.
 4803. *Harpsichord*. Private Music Lessons. 3 s.h.
 4804. *Harpsichord*. Private Music Lessons. 3 s.h.
 4805. *Harpsichord*. Private Music Lessons. 4 s.h.
 4806. *Harpsichord*. Private Music Lessons. 4 s.h.
 5800A. *Harpsichord*. Private Music Lessons. 1 s.h.
 5800B. *Harpsichord*. Private Music Lessons. 1 s.h.

HEBREW — HBRW

Department of Foreign Languages and Literatures

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 Hebrew*. 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 Language Learning and Resource Center (LLRC). Prereq.: Placement test or HBRW 1550. 4 s.h.

2605. *Advanced Intermediate Hebrew*. Reading and discussion in Hebrew of selections from the Hebrew Scripture. Prereq.: Placement test or HBRW 2600. 3 s.h.

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 students 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 years advance planning. Prereq.: Sophomore status and approval of the chair of Foreign Languages. 1-15 s.h.

HEALTH

EDUCATION/PHYSICAL

EDUCATION — HEPE

College of Health and Human Services

1567. *Performance and Analysis of Invasion Games*. Analysis, practice in performance, strategy development, and assessment for invasion games, such as basketball, football, soccer, team handball, rugby, ultimate frisbee, field hockey, floor hockey, and lacrosse. Two hour lecture, two hour lab. Prereq.: Physical Education major. 3 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 Target and Fielding Games*. Analysis, practice in performing and strategies for teaching and assessing activities such as golf, bowling, softball, cricket and other lifetime activities. Two hour lecture, two hour lab. Prereq.: Physical Education major. 3 s.h.

1575. *Performance and Analysis of Net and 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.

2610. *Introduction to Outdoor Pursuits*. Introduction to outdoor education including participation in initiatives, cooperative, orienteering, hiking, high and low ropes, and water based outdoor pursuits. Focus on activities to challenge by choice. One hour lecture, two hour

lab. Prereq.: Physical Education major. 2 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.

2628. *Movement for Early Childhood*. Labans 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*. Analysis, adaptation and creation of games for varying developmental levels and environmental situations in grades 3-12. Large and small group, coeducational, field day events, self-challenging, multicultural activities, and developmentally appropriate lead-up games. Two hours lecture, two hour lab. Prereq.: 4 s.h. from among HEPE 1567, 1574, 1575 and 1577. 3 s.h.

2672. *Mechanical Principles of Movement*. Knowledge and methods of mechanical concepts as they relate and apply to the structure and function of human movement. Muscular structure and function in relation to physical movement, analysis of fundamental human movements. Includes the physical characteristics of the human body and applicable principles of mechanical physics. Two hours lecture. Two hours lab. Prereq.: BIOL 1552/1552L or BIOL 1545/1545L. 3 s.h.

2689. *Scientific Basis of Fitness*. Introduction to components of fitness and their physiological basis. Role of exercise and physical activity in the life of the P-12 learner. Application of training principles and participation in a variety of fitness activities. Introduction to physical fitness assessment. Two hour lecture, two hour lab. Prereq.: Physical Education major and PHLT 1568. 3 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.

3715. *Health Education for Grade PreK-6*. Comprehensive School Health Education curricula, methods and materials for teaching pre-kindergarten through sixth grade students. Prereq.: HEPE 3702, BIOL 1545, and UD COE. 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.: HEPE 3702, BIOL 1545 and UD COE. 3 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.: HEPE 2672/L. 3 s.h.

3767. *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 HEPE 2661, and 3766. 4 s.

3768. *Advocacy and Best Practices in Health and Physical Education*. Emphasizes the advocacy role of the health and physical educator. Includes use of research and best practices documents to advocate for the inclusion of health and physical education for all P-12 learners. Two hour lecture. Prereq.: 20 s.h. in Physical Education major or Health Education major and HEPE 3767. 2 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.: HEPE 3767. 2 s.

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 Education and Health Education major and 72 s.h. 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.

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.: HEPE 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.: HEPE 3767. 3 s.h.

4889. *Selected Topics in Health and Physical Education*. In depth study of special topics/subject matter within the field of Physical Education and Health. Topics announced each time the course is offered. May be repeated for maximum of 6 s.h. with change of topic. Two hour lecture. Prereq.: HEPE 3768, concurrent with HEPE 3702. 2 s.h.

4895. *Introduction to Adapted Physical Education*. Introduction to developmentally appropriate, inclusive physical education for P-12 learners. Emphasis on acquiring a basic understanding of planning, delivering, and assessing appropriate inclusive physical education experiences for all children. Approximately 20 hours of field work. Three hour lecture, two hour lab. Prereq.: HEPE 3766. 4 s.h.

HISTORY — HIST

Department of History

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 United States 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.

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.

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.

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 MSC1 2601. 3 s.h.

2605. *Turning Points in United States 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. *Turning Points in United States History 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 United States 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. *Turning Points in United States History 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 Honors 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.

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 19th 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 and urban, industrial nation. The nations 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 20th century Mexico. Prereq.: HIST 2611, or consent of instructor. 3 s.h.

3730. *The Black Experience in American History*. A historical study of Black peoples 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 of 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 19th and 20th 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. *Diplomatic History of the United States 1*. 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 s.h.

3742. *Diplomatic History of the United States 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 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 20th 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 18th 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 20th century. Prereq.: HIST 2663 or consent of instructor. 3 s.h.

3750. *History of Modern Africa*. The impact of colonialism on the peoples of 20th century Africa, focusing on subSahara: Colonialism, colonial administration, urbanization, nationalism, pan-Africanism, decolonization 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 19th 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 16th 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 civilizations' 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*. Japans 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 4th 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 Victorias 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 Britains 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 20th 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 childrens 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.

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 interrelationships 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.: CMST 1545, HMEC 1550, junior standing. 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.

HOSPITALITY MANAGEMENT — HMG 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.: HMG 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 HMG 1500; 2.0 GPA. 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.: HMG 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 HMG 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 HMG 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.

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. *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.

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. *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.

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.

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.

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.

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.

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.

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.

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.

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 instructors 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.

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.

2697. *Camping*. The specific skills and problems encountered in camping: shelter, clothing, food, transportation, and site selection. Two hours lab. 1 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.

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.

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.

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.

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 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.

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.

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.

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.

4888. *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.

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.

INFORMATION TECHNOLOGY — INFO Department of Computer Science

and Information Systems

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.

3704. *Business Communication*. Communication theory and practice. Business letter writing; oral communication. Review of English usage. Prereq.: ENGL 1551. 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.

INDUSTRIAL AND SYSTEMS ENGINEERINGS — 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.

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*. The course discusses major topics in management of technology and innovations. Dynamics of technology innovation, sources of technology innovations, corporate technology strategy, collaboration and intellectual property, structures and process for innovations, idea generation, commercialization of technology and innovations, and market entry. 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.

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. Prereq.: Placement test or ITAL 2600. 4 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.

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.

3702. *Intensive Italian Review*. Intensive training in understanding, speaking, reading, and writing Italian. Grammatical structures and vocabulary in context. Prereq.: ITAL 2605. 4 s.h.

3724. *Italian Linguistics and Phonetics*. Examination of basic concepts and issues of modern Italian linguistic theory in the areas of phonology, morphology, syntax and pragmatics., Special emphasis is placed on sociolinguistics and on theory and practice in Italian phonetics aimed at improving the pronunciation and intonation of second language learners. Regular in-class discussion and occasional in-class writing assignments, all in Italian. Prereq.: ITAL 3702, or ITAL 2605 and 2606. 4 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. Regular in-class discussion and occasional in-class writing assignments, all in Italian. Prereq.: ITAL 3702 or 2605 and 2606. 4 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. Regular in-class discussion and occasional in-class writing assignments, all in Italian. Prereq.: ITAL 3702 or 2605 and 2606. 4 s.h.

ITALIAN — ITAL

Department of Foreign Languages and Literatures

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. Regular in-class discussion and occasional in-class writing assignments, all in Italian. Prereq.: ITAL 3702 or 2605 and 2606. 4 s.h.

3750. *Contemporary Italian Literature*. A study of contemporary Italian literature and its movements and innovations across a variety of genres, including fiction, memoir, poetry, song lyrics, rap and journalism. Featuring the works of Ammaniti, Baricco, Benni, Consoli, Khouma, Mazzucco, Severgnini and Virzl. Regular in-class discussion and occasional in-class writing assignments, all in Italian. Prereq.: ITAL 3702 or 2605 and 2606. 4 s.h.

3760. *Literary Representations of 19th Century Italy*. A study of literary representations of 19th century Italy and the Italians from the pre-Risorgimento era through the turn of the century, with concentration on the works of Foscolo, Manzoni, Verga and di Lampadusa. Regular in-class discussion and occasional in-class writing assignments, all in Italian. Prereq.: ITAL 3702 or 2605 and 2606. 4 s.h.

3780. *Italian Composition and Conversation Review*. Review course emphasizing impromptu conversations and in-class essay writing. Intended for students who need additional coursework to achieve the level of Advanced Low on the ACTFL Oral Proficiency Interview and/or the ACTFL Writing Proficiency Test. May not be counted toward the major. Grading CR/NC. Prereq.: 16 s.h. in Italian at the 3700 level or above and permission of Chair. 3 s.h.

3798. *Study Abroad in Sicily*. A structured but individualized program of study at the Culturforum Italian Language School in Cefalu, Sicily. Prereq.: either ITAL 3702 or both 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 students 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 advance planning. Prereq.: Sophomore status and approval of the chair of Foreign Languages. 1-15 s.h.

4880. *Italian Conversation and Composition Capstone*. Capstone course emphasizing impromptu conversations and in-class essay writing. Students must achieve a level of

Advanced Low on both the ACTFL Oral Proficiency Interview and the ACTFL Writing Proficiency Test. Prereq.: 16 s.h. in Italian at the 3700 level or above and permission of Chair. 4 s.h.

4881. *Italian Composition and Conversation 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.: 16 s.h. in Italian at the 3700 level or above and permission of Chair. 4 s.h.

JOURNALISM – JOUR

Department of English

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.

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.

JUDAIC STUDIES — JUDC

Department of History

1500. *Introduction to Jewish Studies*. A broad overview of Jewish history, culture, literature, and religion. Covers Jewish Civilization from its emergence in the Ancient Near East to its diverse worldwide expressions in the present day. 3 s.h.

3751. *Lessons of the Holocaust from the United States Holocaust Memorial Museum*. The history of the Holocaust as revealed by the United States Holocaust Memorial Museum. Requires supervised visit to the United States Holocaust Memorial Museum in Washington D.C. in addition to coursework. Prereq.: By permit only. 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 years 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 students 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.

LATIN — LATN

Department of Foreign Languages and Literatures

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 Latin*. Continuation of Latin 1550 with emphasis on more complex aspects of Latin grammar. Translation of more advanced Latin texts, including some authentic passages. Prereq.: Placement test or LATN 1550. 4 s.h.

2603. *Directed Reading in Latin 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 LATN 2600. 3 s.h.

3753. *Directed Reading in Latin 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, and writing of evaluative essays. May be repeated once if topic is different. Prereq.: LATN 2603 and permission of Chair. 3 s.h.

4883. *Directed Reading in Latin 3*. Reading of selections from a Latin author or genre with emphasis on translation and interpretation of text, review of Latin grammar, and writing of a research paper. May be repeated once if topic is different. Prereq.: LATN 3753 and permission of Chair. 3 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, Workers 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 individuals 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, physicians 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 physicians 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.

MATHEMATICS — MATH

Department of Mathematics and Statistics

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. *Beginning Algebra 1*. 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 s.h.

1503. *Beginning Algebra 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 s.h.

1505. *Intermediate Algebra with Applications*. This course is intended to prepare students for their college-level mathematics requirement. Topics include linear and nonlinear equations and inequalities; problem solving; relations of function types that include linear, polynomial, radical, rational, exponential, and logarithmic; applications. Does not count toward a degree. 5 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.

1510. *College Algebra*. This course, along with MATH 1511 is primarily intended to prepare STEM students for MATH 1571. Topics include real numbers, equations and inequalities, linear, quadratic, polynomial, exponential, and logarithmic functions, graphing techniques, systems of equations, matrices, determinants, permutations and combinations, the Binomial Theorem, and applications. The course fulfills the general education requirements for mathematics. 4 s.h.

1511. *Trigonometry*. Topics include algebraic structure and graphs of trigonometric functions and inverse trigonometric functions, angle measurements, similar triangles, trigonometric identities, vectors, and solving trigonometric equations. 3 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. *Foundations of Middle School Mathematics 1*. 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 s.h.

1570. *Applied Calculus 1*. 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 MATH 1510 and MATH 1511, or at least Level 50 on the Mathematics Placement Test. 4 s.h.

1571. *Calculus 1*. 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 1513, minimum grade of C, or MATH 1510 and MATH 1511, minimum grade of C in both courses, or at least Level 70 on the Mathematics Placement Test. 4 s.h.

1572. *Calculus 2*. 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 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. *Calculus 1 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. This sequence will be offered at most once during each academic year. Prereq.: Level 90 on the Mathematics Placement Test. 5 s.h.

1586H. *Honors Calculus Laboratory 1*. 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 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. *Statistical Literacy and Critical Reasoning*. An introduction to statistics and its applications. Topics include descriptive statistics, experimental design, probability sampling distribution, statistical inference, correlation and regression. Emphasis on applications, critical reasoning, and data analysis using statistical software. 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. *Mathematics for Early Childhood Teachers 1*. 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. 3 s.h.

2652. *Mathematics for Early Childhood Teachers 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 2651 for MATH 2652. 3 s.h.

2665. *Foundations of Middle School Mathematics 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 s.h.

2670. *Applied Calculus 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. 5 s.h.

2673. *Calculus 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 s.h.

2686H. *Calculus 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. This sequence will be offered at most once during each academic year. Prereq.: MATH 1585H. 5 s.h.

2687H. *Honors Calculus Laboratory 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 s.h.

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 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 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. *Algebra/Geometry for Middle School Teachers 1*. 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 s.h.

3768. *Algebra/Geometry for Middle School Teachers 2*. 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 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 on 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 PDEs (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.

MUSIC, COMPOSITION — MCMP

Dana School of Music

1501. *Composition*. Private Music Lessons. Audition required. 2 s.h.

1502. *Composition*. Private Music Lessons. 2 s.h.

2601. *Composition*. Private Music Lessons. 2 s.h.

2602. *Composition*. Private Music Lessons. 2 s.h.

3703. *Composition*. Private Music Lessons. 3 s.h.

3704. *Composition*. Private Music Lessons. 3 s.h.

4803. *Composition*. Private Music Lessons. 3 s.h.

4804. *Composition*. Private Music Lessons. 3 s.h.

MECHANICAL ENGINEERING — MECH

Department of Mechanical and Industrial Engineering

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; psychometry. 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.

2620. *Statics and Dynamics*. Principles of engineering mechanics as applied to statics and dynamics, Vector applications to forces and moments; centroid and center of gravity; static equilibrium. Kinematics of particles; Newtons laws; work-energy; and impulse momentum techniques using vector approach, Prereq.: MATH 1572 and PHYS 2610 or concurrent. 3 s.h.

2641. *Dynamics*. Kinematics of particles and rigid bodies. Newtons 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.

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. *Heat Transfer 1*. Fundamentals of heat transfer by conduction, convection, and radiation. Heat transfer by combined modes. Prereq.: MECH 3720 or concurrent. 3 s.h.

3725L. *Heat Transfer 1*. Fundamentals of heat transfer by conduction, convection, and radiation. Heat transfer by combined modes. Prereq.: MECH 3720 or concurrent. 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. *Mechanical Systems Design 1*. 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 offering 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. 2 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.

4809. *Mechanical Systems Design 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 offering after completing 4808. Grading in MECH 4808 is Traditional/PR. Two hours lecture per week for 4808, three hours lecture for 4809. Prereq. for 4809: MECH 4808. 3 s.h.

4809L. *Mechanical Systems Design Laboratory 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

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.: C or better in ENTC 1505 and 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, Newtons second law, work and energy, impulse and momentum. Two hours lecture, three hours lab per week. Prereq.: MET 1515 C or better. 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,

Geometric Dimensioning and Tolerancing. Prereq.: C or better in ENTC 1505. 3 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.

3705. *Thermodynamics*. Properties of ideal and real gases, first and second laws of thermodynamics, application to thermodynamic cycles involving power plants and cyclic machinery. Prereq.: C or better in CHEM 1515 or CHEM 1505, C or better in EET 3725. 4 s.h.

3706. *Machine Design 1*. Principles of stresses and deflections, shear and moment diagrams, combined stresses, fatigue, measurement of strain, and theories of failure. Application of these principles to design of machine components. Prereq.: C or better in CCET 2604, C or better in DDT 1503. 4 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, three hours lab per week. Prereq.: C or better in MET 3707. 3 s.h.

3711. *Heat and Power Cycles*. A continuation of MET 3705, including the study of heat transfer, the Rankine cycle, the Otto cycle, the Diesel cycle, and the performance of pumps and heat exchangers. Prereq.: C or better in MET 3714, C or better in MET 3705. 4 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.: C or better in MET 1515. 4 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.

3720. *Mechanisms*. Graphical and analytical solution of problems involving displacement, velocity, and acceleration in machine mechanisms. Design of linkages with drafting software to provide required motions of machine members. Two hours lecture, three hours lab per week. Prereq.: C or better in MET 2616, C or better in MATH 1570 or C or better in MATH 1571. 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 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 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 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 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 1/2 computational lab. Prereq. or Coreq.: 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 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 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 and statistical simulation of production systems. Two hours lecture and three hours of computational lab per week. Prereq.: C or better in MET 3707. 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. Prereq.: C or better in DDT 2606, and C or better in MET 3707. 3 s.h.

4812L. *Numerical Control Lab*. A study of the programming of numerically-controlled machine tools. Students program NC machines using manual and computer-assisted techniques. Three hours lab per week. Coreq. or Prereq.: MET 4812. 1 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, three hours lab per week. Prereq.: C or better in MET 3720, and C or better in MET 4810. 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 manufacturers 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 3714 C or better. 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. Prereq.: MET 3714 C or better. 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, three hours lab per week. Prereq. or Coreq.: with MET 3707 or C or better in 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 inter-disciplinary group project. Three hours lecture and 3 hours lab. Prereq.: senior standing in MET (AET option) and permission of the instructor. 4 s.h.

MANAGEMENT — MGT

Department of 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.

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.

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.

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.

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.

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.

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.

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.

3734. .

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

4840. *Managing Organizational Environments*. Dynamics of structure, design, strategy and culture in the context of an organizations 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 organizations environments. Prereq.: MGT 3725, permission of instructor. 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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

MARKETING — MKTG

Department of Marketing

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. Prereq.: permission of instructor. 1-3 s.h.

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; ACCT 2602; GPA of 2.5. 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.

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.

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.: MKTG 3703 and 2.5 GPA. 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 4815 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.

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 and GPA of 2.5. 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 and GPA of 2.5. 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.

MEDICAL LABORATORY SCIENCE — MLS Department of Health Professions

1501. *Introduction to the Medical Laboratory Profession*. Overview of the medical laboratory profession, ethics, responsibilities and clinical relevance of laboratory procedures. Concurrent with MLS 1501L. Prereq.: MATH 1504 or level 20 on Math Placement Test, high school chemistry or CHEM 1501, high school biology or BIOL 1505. 2 s.h.

1501L. *Introduction to the Medical Laboratory Profession Laboratory*. Phlebotomy, specimen collection and processing; basic medical laboratory exercises. Three hours lab per week. Concurrent with MLS 1501. Prereq.: MATH 1504 or level 20 on Math Placement Test, high school chemistry or CHEM 1501, high school biology or BIOL 1505. 2 s.h.

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 MLS 3700L. Prereq.: MLT 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 MLS 3700. Prereq.: MLT 2601/L or CHEM 1515. 1 s.h.

3701. *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.: MLS 1501/L, BIOL 2601 with a minimal grade of C. Two hours of lecture and 3 hours of laboratory per week. 3 s.h.

3701L. *Clinical Hematology 1 Laboratory*. Clinical Hematology 1 Laboratory. 0 s.h.

3702. *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.: MLS 3701/L with a minimal grade of C. 3 s.h.

3702L. *Clinical Hematology 2 Laboratory*. Clinical Hematology 2 Laboratory. 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. Recommended BIOL 3702. Prereq.: BIOL 2601. 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 MLS 3703. Identical with MLT 3703L and BIOL 3703L. Prereq.: MLS 1501/L, BIOL 2602. 1 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. Concurrent with MLS 3787L. 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. Identical with MLT 3787L. Concurrent with MLS 3787. Prereq.: BIOL 2602. 2 s.h.

4800. *Advanced Clinical Chemistry*. Didactics, critical analysis, and clinical practice of clinical

chemistry. 3 hours of lecture and competency based clinical practice. Prereq.: Acceptance into a clinical internship. Grading is Traditional or PR. 6 s.h.

4801. *Advanced Hematology*. Didactics, critical analysis, and clinical practice of clinical hematology and hemostasis. Three hours of lecture and competency based clinical practice. Prereq.: Acceptance into a clinical internship. Grading is Traditional or PR. 7 s.h.

4802. *Advanced Immunohematology*. Didactics and clinical experience of blood banking, Immunohematology, and Transfusion Medicine. Three hours of lecture and competency based clinical practicum. Prereq.: Acceptance into a clinical internship. Grading is Traditional or PR. 7 s.h.

4803. *Advanced Microbiology*. Didactics and clinical experience of bacteriology, mycology, virology and parasitology for the clinical laboratory scientist. Four hours of lecture and competency based clinical practice. Prereq.: Acceptance into a clinical internship. Grading is Traditional or PR. 8 s.h.

4804. *Miscellaneous Clinical Experience*. Didactic and clinical practicum including specimen collection and processing, management, education, molecular diagnostics, clinical immunology, and urinalysis and body fluids. Three hours of lecture and competency based clinical practice. Capstone course requiring laboratory research project. Prereq.: Acceptance into a clinical internship. Grading is Traditional or PR. 5 s.h.

MEDICAL LABORATORY TECHNOLOGY — MLT

Department of Health Professions

1501. *Introduction to the Medical Laboratory Profession*. Overview of the medical laboratory profession, ethics, responsibilities and clinical relevance of laboratory procedures. Concurrent with MLT 1501L. Prereq.: MATH 1504 or level 20 on Math Placement Test, high school chemistry or CHEM 1501, high school biology or BIOL 1505. 2 s.h.

1501L. *Introduction to the Medical Laboratory Profession Laboratory*. Phlebotomy, specimen collection and processing; basic medical laboratory exercises. Three hours lab per week. Concurrent with MLT 1501. Prereq.: MATH 1504 or level 20 on Math Placement Test, high school chemistry or CHEM 1501, high school biology or BIOL 1505. 2 s.h.

1502. *Urinalysis and Body Fluids*. Theory and techniques in the analysis of urine and body fluids. Concurrent with MLT 1502L. Prereq.: MLT 1501/L, BIOL 2601. 2 s.h.

1502L. *Urinalysis and Body Fluids Laboratory*. Chemical and microscopic analysis of urine.

Concurrent with MLT 1502. Three hours lab per week. Prereq.: MLT 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 MLT 1503L and BIOL 2602. Prereq.: BIOL 2601 and MLT 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 MLT 1503. Prereq.: MLT 1501/L, BIOL 2601. 1 s.h.

2601. *Clinical Chemistry 1*. Medical laboratory applications of clinical chemistry. Concurrent with MLT 2601L. Prereq.: MLT 1501/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 MLT 2601. Prereq.: MLT 1501/L, CHEM 1515. 1 s.h.

2603. *Topics in Medical 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.: MLT 1502 and 1503 with a minimal grade of C. 4 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.

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 MLT 3700L. Prereq.: MLT 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 MLT 3700. Prereq.: MLT 2601/L or CHEM 1515. 1 s.h.

3701. *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.: MLT 1501/L, BIOL 2601 with a minimal grade of C. Two hours of lecture and 3

hours of laboratory per week. 3 s.h.

3701L. *Clinical Hematology 1*. Clinical Hematology 1 Laboratory. 0 s.h.

3702. *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.: MLT 3701/L with a minimal grade of C. 3 s.h.

3702L. *Clinical Hematology 2 Laboratory*. Clinical Hematology 2 Laboratory. 0 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 MLS 3703. Identical with MLS 3703L and BIOL 3703L. Prereq.: MLS 1501/L, BIOL 2602. 1 s.h.

3706. *Medical Laboratory Seminar*. Internship evaluation, special topics in the clinical laboratory. Case studies in the clinical laboratory. Concurrent with MLT 3716. Prereq.: MLT 2603. 2 s.h.

3710. *Interpretation of Clinical Laboratory Results*. The significance of laboratory results and how they relate to gender and age. Prereq.: MLT 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. Concurrent with MLT 3706. Prereq.: completion of 30 s.h. of MLT curriculum with a grade of C or better and a minimum 2.5 GPA. 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. Concurrent with MLT 3787L. 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. Identical with BIOL 3787L, MLS 3787L. Concurrent with MLT 3787. Prereq.: BIOL 2602. 2 s.h.

MERCHANDISING: FASHING & 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, selecting, 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 buyers 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.

3715. *Fashion Promotion and Fashion Show Production*. Explorations of how the fashion industry creates awareness and stimulate customer demand through advertising campaigns, sales promotion, public relations and fashion shows. Discussions on ethical considerations in fashion promotion. Detailed deliberations and hands-on-activities on production and execution of a fashion show to promote fashion goods while engaging the community in philanthropy. Prereq.: MKTG 3703 or MRCH 2625 or MRCH 1506. 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. *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 ROTCs 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.

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.

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. *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.

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.

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.

MUSIC, APPLIED CLASSES — MUAC Dana School of Music

1556. *Singers Diction: English/Italian*. Application of the principles of Lyric diction; utilization of the International Phonetic Alphabet in developing and reading phonetics transcriptions of English, Italian song texts. 1 s.h.

1557. *Singers Diction: German*. Application of the principles of Lyric diction; utilization of the International Phonetic Alphabet in developing and reading phonetics transcriptions of German song texts. 1 s.h.

1558. *Singers Diction: French*. Application of the principles of Lyric diction; utilization of the International Phonetic Alphabet in developing and reading phonetics transcriptions of French song texts. 1 s.h.

1581. *Keyboard Musicianship 1*. Elements of keyboard techniques, with emphasis on sight reading, harmonization of popular and/or folk tunes, repertoire, transposition, and analysis. All major and minor scales and arpeggios, hands together. Required of all non-keyboard majors. Co-requisite: Major-level applied lessons (1501 or higher). 1 s.h.

1582. *Keyboard Musicianship 2*. Continuation of MUAC 1581; with emphasis on sight-reading, harmonization of popular and/or folk tunes with more extended chords and accompaniment patterns, repertoire, transposition, and analysis. All major and minor scales and arpeggios, hands together. Required of all non-keyboard majors. Prereq.: minimum grade of C in MUAC 1581 and Coreq.: major-level applied lessons (1502 or higher). 1 s.h.

2667. *Jazz Improvisation 1*. 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 s.h.

2668. *Jazz Improvisation 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 s.h.

2681. *Keyboard Musicianship 3*. A continuation and intensification of studies begun in MUAC 1581 and 1582, with emphasis on accompanying, score reading, harmonization (with secondary dominant chords), repertoire, and stylistic analysis. Technique: all major and minor scales; arpeggios. Prereq.: minimum grade of C in MUAC 1582, placement exam by the Coordinator of Keyboard Musicianship; admission to Dana School of Music and enrollment in major-level lesson. 1 s.h.

2682. *Keyboard Musicianship 4*. The last course in the keyboard musicianship sequence which started with MUAC 1581. Proficiency at the piano will be evaluated through performance of stylistically varied repertoire, advanced accompanying and harmonization, sight reading, transposition, and three- and four-part score reading. Technique: all major and minor scales, tonic arpeggios. Prereq.: minimum grade of C in MUAC 2681, placement exam by the Coordinator of Keyboard Musicianship; admission to Dana School of Music and enrollment in major-level lesson. 1 s.h.

2691. *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 s.h.

2691A. *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 s.h.

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 s.h.

2693. *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 s.h.

2693A. *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 s.h.

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 s.h.

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, bowing, fingering as well as appropriate evaluation of pedagogy. Study material stresses common features as well as differences. Prereq.: FOUN 1501. 1 s.h.

3735. *Jazz Methods*. Designed to prepare students jazz teaching relative to instruments and voice. Components include fundamental techniques and approaches for directing small and large jazz ensembles, teaching of basic improvisation skills, rhythms section/soloist interaction, and stylistic interpretation. Students will demonstrate basic performance proficiencies in jazz on their applied instruments and/or voices. Prereq.: FOUN 1501 or MUTC 1532. Meets 2 hours per week. 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.

3781. *Jazz Keyboard 1*. (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 s.h.

3782. *Jazz Keyboard 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 s.h.

4867. *Jazz Improvisation 3*. 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 s.h.

4868. *Jazz Improvisation 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 s.h.

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.: CHFM 2633. 3 s.h.

4823. *Music Teaching in Early Childhood (Pre-K-3)*. 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. MUED 4821 or 4822 recommended but not required. 2 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 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. MUED 4821 or 4822 recommended but not required. 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 either MUED 4821 or 4822. 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.

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.

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

0002. *Dana Chorale*. Dana Chorale. 1 s.h.

0003. *Dana Madrigal*. Dana Madrigal. 1 s.h.

0004. *University Chorus*. University Chorus. 1 s.h.

0005. *Concert Band*. Concert Band. 1 s.h.

0006. *Marching Band*. Marching Band. 1 s.h.

0007. *Wind Ensemble*. Wind Ensemble. 1 s.h.

0008. *Symphony Orchestra*. Symphony Orchestra. 1 s.h.

0009. *Percussion Ensemble*. Percussion Ensemble. 1 s.h.

0010. *String Ensemble*. String Ensemble. 1 s.h.

0011. *Mens Chorus*. Mens Chorus. 1 s.h.

0012. *Opera Workshop*. Opera Workshop. 1 s.h.

0013. *Contemporary Ensemble*. Contemporary Ensemble. 1 s.h.

0014. *Womens Chorus*. Womens Chorus. 1 s.h.

0015. *Early Music Ensemble*. Early Music Ensemble. 1 s.h.

0016. *Woodwind Ensemble*. Woodwind Ensemble. 1 s.h.

0017. *Brass Ensemble*. Brass Ensemble. 1 s.h.

0018. *Horn Choir*. Horn Choir. 1 s.h.

0019. *Trombone Ensemble*. Trombone Ensemble. 1 s.h.

0020. *Tuba Ensemble*. Tuba Ensemble. 1 s.h.

0021. *Brass Chamber Ensemble*. Brass Chamber Ensemble. 1 s.h.

0022. *Trumpet Ensemble*. Trumpet Ensemble. 1 s.h.

0023. *Jazz Ensemble*. Jazz Ensemble. 1 s.h.

0024. *Composers Ensemble*. Composers Ensemble. 1 s.h.

0026. *Chamber Orchestra*. Chamber Orchestra. 1 s.h.

0028. *Chamber Winds*. Chamber Winds. 1 s.h.

0029. *Guitar Ensemble*. Guitar Ensemble. 1 s.h.

0030. *Jazz Combo*. Jazz Combo. 1 s.h.

0035. *Saxophone Quartet*. Saxophone Quartet. 1 s.h.

0040. *University Band*. University Band. 1 s.h.

0041. *Basketball Pep Band*. Basketball Pep Band. 1 s.h.

0051. *Piano Chamber*. Piano Chamber. 1 s.h.

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 19th 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 20th 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.

3775. *Jazz History*. Students will study and develop an understanding of jazz origins, influences, performers, compositions, and stylistic features from the turn of the century to the present. This will include study of early jazz, the swing era, bebop, cool, hard bop, post bop, modal music, modal chromatic music, free jazz, and fusion. Prereq.: MUTC 1520 or minimum 80% on the music theory placement 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 INDUSTRY — MUIN 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.

3700. *Survey of Music Industry*. A general overview of the major functional areas of the music industry, with attention to the theoretical foundations and practical application of current business practices in the music industry. Prereq.: Junior standing or permission of instructor. 2 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.: MUIN 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.: MUIN 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.: MUIN 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.: MUIN 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.: MUIN 3765 and senior standing in music recording. 3 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.: MUIN 3765 and senior standing in music recording. 4 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, THEORY AND COMPOSITION — MUTC Dana School of Music

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. *Jazz Arranging 1*. 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 s.h.

3713. *Jazz Arranging 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 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. *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 s.h.

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 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 20th Century Music*. Study of the various elements of 20th 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, musique 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

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. *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.

2643L. *Health Assessment Laboratory*. Health Assessment Laboratory. 0 s.h.

2645. *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.

2645L. *Professional Nursing 1 Laboratory*. Professional Nursing 1 Laboratory. 0 s.h.

2646. *Pathophysiology*. Concepts related to pathophysiologic mechanisms of illness. Emphasis on application to nursing process to drug therapy across the lifespan. 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.

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. *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.

3710L. *Nursing in the Community Laboratory*. Nursing in the Community Laboratory. 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. *Child Bearing, Family, and Womens 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.

3731L. *Child Bearing, Family, and Womens Health Nursing Laboratory*. Child Bearing, Family, and Womens Health Nursing Laboratory. 0 s.h.

3741. *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.

3741L. *Professional Nursing 2 Laboratory*. Professional Nursing 2 Laboratory. 0 s.h.

3743. *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.

3743L. *Professional Nursing 3 Laboratory*.

Professional Nursing 3 Laboratory. 0 s.h.

3746. *Geriatric Health*. An examination of the aging persons physical changes with implications for determining healthcare needs and for interpreting the impact of these upon the elders 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.

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 1*. 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. *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 Consultants Certification examination. Prereq.: Valid RN Licensure. 5 s.h.

4800L. *Legal Nurse Consulting Laboratory*. Legal Nurse Consulting Laboratory. 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. *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.

4832L. *Nursing Care of Children and Families Laboratory*. Nursing Care of Children and Families Laboratory. 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. *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.

4840L. *Complex Care Laboratory*. Complex Care Laboratory. 0 s.h.

4842. *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.

4842L. *Mental Health Nursing Laboratory*. Mental Health Nursing Laboratory. 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. *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.

4846L. *Community Health Nursing for RNs Laboratory*. Community Health Nursing for RNs Laboratory. 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. *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.

4853L. *Nursing Transitions Laboratory*. Nursing Transitions Laboratory. 0 s.h.

4854. *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, totaling 60 hours. Prereq.: Completion of all other curriculum requirements except NURS 4852. 4 s.h.

4854L. *Nursing Transitions for Registered Nurses Laboratory*. Nursing Transitions for Registered Nurses Laboratory. 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.

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.

OBOE — OBOE Dana School of Music

1500A. *Oboe*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Oboe*. Private Music Lessons. 1 s.h.

1501. *Oboe*. Private Music Lessons. Audition required. 2 s.h.

1502. *Oboe*. Private Music Lessons. 2 s.h.

2600A. *Oboe*. Private Music Lessons. 1 s.h.

2600B. *Oboe*. Private Music Lessons. 1 s.h.

2601. *Oboe*. Private Music Lessons. 2 s.h.

2602. *Oboe*. Private Music Lessons. 2 s.h.

2603. *Oboe*. Private Music Lessons. 3 s.h.

2604. *Oboe*. Private Music Lessons. 3 s.h.
 2605. *Oboe*. Private Music Lessons. 4 s.h.
 2606. *Oboe*. Private Music Lessons. 4 s.h.
 3700A. *Oboe*. Private Music Lessons. 1 s.h.
 3700B. *Oboe*. Private Music Lessons. 1 s.h.
 3701. *Oboe*. Private Music Lessons. 2 s.h.
 3702. *Oboe*. Private Music Lessons. 2 s.h.
 3703. *Oboe*. Private Music Lessons. 3 s.h.
 3704. *Oboe*. Private Music Lessons. 3 s.h.
 3705. *Oboe*. Private Music Lessons. 4 s.h.
 3706. *Oboe*. Private Music Lessons. 4 s.h.
 4801. *Oboe*. Private Music Lessons. 2 s.h.
 4802. *Oboe*. Private Music Lessons. 2 s.h.
 4803. *Oboe*. Private Music Lessons. 3 s.h.
 4804. *Oboe*. Private Music Lessons. 3 s.h.
 4805. *Oboe*. Private Music Lessons. 4 s.h.
 4806. *Oboe*. Private Music Lessons. 4 s.h.
 5800A. *Oboe*. Private Music Lessons. 1 s.h.
 5800B. *Oboe*. Private Music Lessons. 1 s.h.

ORGAN — ORGN Dana School of Music

1500A. *Organ*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Organ*. Private Music Lessons. 1 s.h.

1501. *Organ*. Private Music Lessons. Audition required. 2 s.h.

1502. *Organ*. Private Music Lessons. 2 s.h.
 2600A. *Organ*. Private Music Lessons. 1 s.h.
 2600B. *Organ*. Private Music Lessons. 1 s.h.
 2601. *Organ*. Private Music Lessons. 2 s.h.
 2602. *Organ*. Private Music Lessons. 2 s.h.
 2603. *Organ*. Private Music Lessons. 3 s.h.
 2604. *Organ*. Private Music Lessons. 3 s.h.
 2605. *Organ*. Private Music Lessons. 4 s.h.
 2606. *Organ*. Private Music Lessons. 4 s.h.
 3700A. *Organ*. Private Music Lessons. 1 s.h.
 3700B. *Organ*. Private Music Lessons. 1 s.h.
 3701. *Organ*. Private Music Lessons. 2 s.h.
 3702. *Organ*. Private Music Lessons. 2 s.h.
 3703. *Organ*. Private Music Lessons. 3 s.h.
 3704. *Organ*. Private Music Lessons. 3 s.h.
 3705. *Organ*. Private Music Lessons. 4 s.h.
 3706. *Organ*. Private Music Lessons. 4 s.h.
 4801. *Organ*. Private Music Lessons. 2 s.h.

4802. *Organ*. Private Music Lessons. 2 s.h.
 4803. *Organ*. Private Music Lessons. 3 s.h.
 4804. *Organ*. Private Music Lessons. 3 s.h.
 4805. *Organ*. Private Music Lessons. 4 s.h.
 4806. *Organ*. Private Music Lessons. 4 s.h.
 5800A. *Organ*. Private Music Lessons. 1 s.h.
 5800B. *Organ*. Private Music Lessons. 1 s.h.

PERCUSSION — PERC Dana School of Music

1500A. *Percussion*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Percussion*. Private Music Lessons. 1 s.h.

1501. *Percussion*. Private Music Lessons. Audition required. 2 s.h.

1502. *Percussion*. Private Music Lessons. 2 s.h.
 2600A. *Percussion*. Private Music Lessons. 1 s.h.
 2600B. *Percussion*. Private Music Lessons. 1 s.h.
 2601. *Percussion*. Private Music Lessons. 2 s.h.
 2602. *Percussion*. Private Music Lessons. 2 s.h.
 2603. *Percussion*. Private Music Lessons. 3 s.h.
 2604. *Percussion*. Private Music Lessons. 3 s.h.
 2605. *Percussion*. Private Music Lessons. 4 s.h.
 2606. *Percussion*. Private Music Lessons. 4 s.h.
 3700A. *Percussion*. Private Music Lessons. 1 s.h.
 3700B. *Percussion*. Private Music Lessons. 1 s.h.
 3701. *Percussion*. Private Music Lessons. 2 s.h.
 3702. *Percussion*. Private Music Lessons. 2 s.h.
 3703. *Percussion*. Private Music Lessons. 3 s.h.
 3704. *Percussion*. Private Music Lessons. 3 s.h.
 3705. *Percussion*. Private Music Lessons. 4 s.h.
 3706. *Percussion*. Private Music Lessons. 4 s.h.
 4801. *Percussion*. Private Music Lessons. 2 s.h.
 4802. *Percussion*. Private Music Lessons. 2 s.h.
 4803. *Percussion*. Private Music Lessons. 3 s.h.
 4804. *Percussion*. Private Music Lessons. 3 s.h.
 4805. *Percussion*. Private Music Lessons. 4 s.h.
 4806. *Percussion*. Private Music Lessons. 4 s.h.
 5800A. *Percussion*. Private Music Lessons. 1 s.h.
 5800B. *Percussion*. Private Music Lessons. 1 s.h.

PHILOSOPHY — PHIL Department of Philosophy and Religious Studies

1560. *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.

1561. *Technology and Human Values*. An 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.

1565. *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.

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.

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.

2612. *Ancient & Medieval Philosophy*. An examination of philosophers and philosophical systems in Western civilization from the pre-Socratics until the Renaissance. 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 PHIL 1560 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 PHIL 1560 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.

2631. *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. 3 s.h.

2635. *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. 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.

3702. *History of Modern Philosophy*. Study of major Western philosophical figures and movements from the Renaissance through the 19th century. Prereq.: One 2600-level PHIL course or PHIL 1560. 3 s.h.

3705. *20th Century Philosophy*. A survey of Western philosophy in the 20th 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 or PHIL 1560. 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 1560. 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 1560 or WMST 2601. 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 1560. 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. Cross listed with REL 3712. Prereq.: PHIL 1560 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 childrens 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 or PHIL 1560. 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 1560. 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 1560. 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 or PHIL 1560. 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.

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 1560 or 2625. 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. Cross listed with REL 3740. Prereq.: any 2600-level REL course or PHIL 1560. 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.

4859. *Capstone Cooperative Seminar*. The course aids capstone students in developing and following a schedule for timely completion of a major research project, provides general direction on effective methods for working on such a project, and encourages and facilitates cooperative work among advanced students by providing peers with whom to discuss their ideas, exchange drafts, and provide constructive comments on ongoing written work. Must be taken concurrently with PHIL 4861. 1 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 students 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.

PUBLIC HEALTH — PHLT

Department of Health Professions

1513. *Introduction to Environmental Health and Safety*. Provides an introduction to and overview of the key areas of environmental health, one of the core areas of public health. Using the perspectives of the population and community, the course will cover factors associated with the development of environmental health problems. 3 s.h.

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.

2607. *Ethical Issues in Public Health*. Examines practical aspects of ethics and public health. This course will help students develop the analytical skills necessary for evaluating ethical issues related to public health policy and public health prevention, treatment, and research. Prereq.: PHLT 1531 or PHLT 1568. 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.

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.

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. *Public Health Internship*. Supervised experience designed to provide an opportunity to enable students to apply entry-level competencies acquired in the classroom setting to public health practice through experiential activities. The student will be required to be at the internship approximately 23-24 hours per week in a 15 week semester, for a total of 350 hours. Prereq.: senior standing and consent of instructor. 8 s.h.

4892. *Environmental Health and Safety Internship*. Supervised experience designed to provide an

opportunity to enable students to apply entry-level competencies acquired in the classroom setting to environmental health practice through experiential activities. The student will be required to be at the internship approximately 23-24 hours per week in a 15 week semester, for a total of 350 hours. Prereq.: senior standing and consent of instructor. 8 s.h.

4898. *Environmental Health and Safety Senior Seminar*. Synthesis of professional course work. Development of resume and professional portfolio; preparation for internship; administration of outcome assessment instruments for public health majors. Prereq.: senior standing and consent of instructor. 3 s.h.

4899. *Public Health Senior Seminar*. Synthesis of professional course work. Development of resume and professional portfolio; preparation for internship; administration of outcome assessment instruments for public health majors; preparation for the CHES certification exam. Prereq.: Senior standing and consent of instructor. 3 s.h.

5804. *Multicultural Health*. Explore multicultural models of health, illness, and treatments or therapies to increase understanding of various approaches to prevention, health promotion, healing, and maintenance of health and well-being. Prereq.: PHLT 1568 or PHLT 1531 and junior standing. 3 s.h.

5810. *Agents of Mass Casualty*. Explorations of biological agents, chemical agents or radiological and nuclear devices, terrorism, security, emergency planning, and community and public health roles in the event of a deployment of these agents. Increase understanding through case analysis of how to apply course concepts to real world scenarios. Prereq.: PHLT 1531 or PHLT 1568 and junior standing. 3 s.h.

5812. *Crisis Management in Public Health*. Exploration of roles, thought processes and actions of public health professionals during crisis situations, by understanding the anatomy of crises. Increase knowledge through case analysis of how to apply course concepts to real world scenarios. Prereq.: PHLT 1531 or PHLT 1568 and junior standing. 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.

PHYSICS — PHYS

Department of Physics and Astronomy

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.: C or better in MATH 1507 and 1508 or equivalent or at least level 40 on the Mathematics Placement Test. 4 s.h.

1501L. *Fundamentals of Physics Laboratory 1*. 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 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.

1502L. *Fundamentals of Physics Laboratory 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 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; Newtons 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. *General Physics laboratory 1*. Experimental work designed to supplement the PHYS 2610, 2611 sequence. Three hours per week. Prereq. or concurrent: PHYS 2610 or 2601 for 2610L. 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.

2611L. *General Physics laboratory 2*. Experimental work designed to supplement the PHYS 2610, 2611

sequence. Three hours per week. Prereq. or concurrent: PHYS 2611 or 2602 for 2611L. 1 s.h.

3703. *Classical Mechanics and Dynamics*. Kinematics and dynamics of particles and rigid bodies in inertial and non-inertial reference systems. Linear and non-linear oscillations and oscillating systems. Conditions for chaotic motion. Gravitational and central forces. Lagrangian and Hamiltonian mechanics. Prereq.: PHYS 2611 or concurrent with MATH 3705. 4 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. Wave mechanics of single particles in one-dimensional potentials. Selected topics in atomic, nuclear and condensed matter physics. Prereq.: PHYS 2611 and Prereq. or concurrent MATH 2673. 4 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. *Electromagnetic Field Theory 1*. Intermediate theory of electric and magnetic fields. Topics include electric field, scalar potential, techniques for calculating scalar potential (method of images, Laplaces and Poissons equations, multipole expansion, Greens Function approach), dielectrics

and polarization, Maxwells 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 s.h.

3742. *Electromagnetic Field Theory 2*. Intermediate theory of electric and magnetic fields. Topics include electric field, scalar potential, techniques for calculating scalar potential (method of images, Laplaces and Poissons equations, multipole expansion, Greens Function approach), dielectrics and polarization, Maxwells 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 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. *Quantum Mechanics and Quantum Statistical Mechanics 1*. 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 s.h.

5811. *Quantum Mechanics and Quantum Statistical Mechanics 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 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.

PHYSICAL THERAPY — PHYT Department of Physical Therapy

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.

PIANO — PIAN Dana School of Music

1500A. *Piano*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Piano*. Private Music Lessons. 1 s.h.

1501. *Piano*. Private Music Lessons. Audition required. 2 s.h.

1502. *Piano*. Private Music Lessons. 2 s.h.

2600A. *Piano*. Private Music Lessons. 1 s.h.

2600B. *Piano*. Private Music Lessons. 1 s.h.

2601. *Piano*. Private Music Lessons. 2 s.h.

2602. *Piano*. Private Music Lessons. 2 s.h.

2603. *Piano*. Private Music Lessons. 3 s.h.

2604. *Piano*. Private Music Lessons. 3 s.h.

2605. *Piano*. Private Music Lessons. 4 s.h.

2606. *Piano*. Private Music Lessons. 4 s.h.

3700A. *Piano*. Private Music Lessons. 1 s.h.
 3700B. *Piano*. Private Music Lessons. 1 s.h.
 3701. *Piano*. Private Music Lessons. 2 s.h.
 3702. *Piano*. Private Music Lessons. 2 s.h.
 3703. *Piano*. Private Music Lessons. 3 s.h.
 3704. *Piano*. Private Music Lessons. 3 s.h.
 3705. *Piano*. Private Music Lessons. 4 s.h.
 3706. *Piano*. Private Music Lessons. 4 s.h.
 4801. *Piano*. Private Music Lessons. 2 s.h.
 4802. *Piano*. Private Music Lessons. 2 s.h.
 4803. *Piano*. Private Music Lessons. 3 s.h.
 4804. *Piano*. Private Music Lessons. 3 s.h.
 4805. *Piano*. Private Music Lessons. 4 s.h.
 4806. *Piano*. Private Music Lessons. 4 s.h.
 5800A. *Piano*. Private Music Lessons. 1 s.h.
 5800B. *Piano*. Private Music Lessons. 1 s.h.

POLITICAL SCIENCE — POL Department of Political Sciences

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.

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 intergovernmental 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 students 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 Peoples Republic of China, emphasizing contemporary issues of domestic governance 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. *United States 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 19th and 20th 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.

4810. *Urban Internship Seminar*. This course is designed to give students firsthand experience working in the field of public management, government, law, and/or urban public service. Intern appointments are for one semester. The intern is scheduled for fifteen (15) hours a week in the sponsor agency on a calendar confirmed with the agency supervisor. Interns are responsible to agency supervisors for satisfactory performance, as indicated by the supervisors signature on the weekly Journal Form, and on the end-of-the-term Summary Sheet. Prereq.: Junior or senior standing; POL 1560; and acceptance into the program by the urban internship coordinator prior to registration. 2-4 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.

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.

PSYCHOLOGY — PSYC

Department of Psychology

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 ones 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 ones 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.

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 ones 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 individuals 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.

RELIGIOUS STUDIES — REL Department of Philosophy and Religious Studies

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 Asian 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.

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 1560 or AFST 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. Cross listed with PHIL 3712. Prereq.: PHIL 1560 or REL 2601. 3 s.h.

3720. *Islam*. The study of the origins and development of classical and modern Islam, including the Prophet Muhammad, the Quran, 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 1560. 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 meditational practices; and Buddhists in America. Prereq.: REL 2601 or 2617. 3 s.h.

3728. *Hindu Traditions*. Examines Yoga, meditation, karma, reincarnation, and major devotional and ceremonial traditions that have developed around Shiva, Vishnu, and the Goddess. A central part of the course is the study of the dynamics between popular worship and the contemplative traditions of Hindu culture. Prereq.: REL 2601, REL 2617 recommended. 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 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. Cross listed with REL 3740. Prereq.: any 2600-level REL course or PHIL 1560. 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 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. Cross listed with REL 3740. Prereq.: any 2600-level REL course or PHIL 1560. 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. Cross listed with PHIL 3740. Prereq.: any 2600-level REL course or PHIL 1560. 3 s.h.

3742. *Islamic Intellectual History*. Introduction to the multi-faceted nature of Islamic intellectual activity in history. Topics include Quranic exegesis, the Prophetic Tradition, law, theology, philosophy, and historiography. Prereq.: any 2600-level REL course. 3 s.h.

3743. *Reform, Revolt, or Revolution in Islam*. Critical examination of the movements of change in Islam intended to (1) reassert the primacy of Islamic religious norms in society (reform); (2) challenge the dominant political structures (revolt); or (3) bring about a radical societal change (revolution). The course examines in depth the use of Islamic motifs and symbols in all these movements. Prereq.: REL 2601 or POL 1550 or permission of instructor. 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 implacement 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.

3750. *Religion and Race*. Examines race theory and its relation to religious studies through consideration of immigration patterns and the ways in which religion has been affixed to markers of identity over the last two hundred years. Cross-listed with SOC 3750 and ANTH 3750. Prereq.: REL 2601 or SOC 1500 or ANTH 1500. 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.

3753. *Religion and Violence*. Examines the various approaches to explaining religiously justified violence, focusing on examples from the Middle East, South Asia, Southeast Asia, and East Asia. A central element of the course explores the gap between religious ideals and practices and the importance of recognizing that distinction. Prereq.: REL 2601 or POL 1550. 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.

4825. *Methods and Study of Religion*. This course explores the principal methodological issues in the scholarly study of religion and enables students to expand and synthesize disciplinary knowledge. Prereq.: REL 2601. 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.

4869. *Capstone Cooperative Seminar*. The course aids capstone students in developing and

following a schedule for timely completion of a major research project, provides general direction on effective methods for working on such a project, and encourages and facilitates cooperative work among advanced students by providing peers with whom to discuss their ideas, exchange drafts, and provide constructive comments on ongoing written work. Must be taken concurrently with REL 4871. 1 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

1503. *Respiratory Procedures 1*. Appropriate use of selected respiratory care procedures. Three hours lecture, three hours lab. Prereq.: RESC 1531. 4 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. 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 Respiratory Care Diagnostics. C*. Diagnostics. The study of the fundamentals of advanced respiratory care diagnostics. Three hour lecture. Prereq.: RESC 3708 or permission of instructor. 3 s.h.

4801. *Special Topics in Respiratory Care*. Focused research of a special problem/issue related to respiratory care. The topic of interest allows the student to participate in focused investigation of aspects of administration, clinical specialization, or research. May be repeated up to a total of 3 s.h. Prereq.: acceptance in BSRC completion program, junior standing, or permission of instructor. 1-3 s.h.

4810. *Advanced Neonatal and Pediatric Case Management*. This course is designed to strengthen the students knowledge of Neonatal/Pediatric disorders by incorporating evidence-based practices into case management. Current protocols will also be discussed. Prereq.: acceptance in BSRC completion program, junior standing, or permission of instructor. 3 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. *Sleep Diagnostics 1*. 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 s.h.

4847. *Sleep Clinics 1*. Polysomnographic techniques in the clinical setting. Approximately 80 contact hours for each course. Prereq.: Senior standing and RESC 4846 for 4847, RESC 4848 and 4847 for 4849. 1 s.h.

4848. *Sleep Diagnostics 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 s.h.

4849. *Sleep Clinics 2*. Polysomnographic techniques in the clinical setting. Approximately 80 contact hours for each course. Prereq.: Senior standing and RESC 4846 for 4847, RESC 4848 and 4847 for 4849. 1 s.h.

4860. *Advanced Management of the Ventilator Patient*. Course will present current classifications, evidence-based research and application of mechanical ventilator concepts in critical care areas. Technical capabilities of modes will be described along with optimal settings. Current protocols in RC will also be discussed. Prereq.: acceptance in BSRC completion program, junior standing, or permission of instructor. 3 s.h.

4862. *Professional Pathways for Respiratory Care Practitioners*. This course will explore select professional pathways available to the RCP. The foundations and role of the RCP are examined in four key areas: the sleep center, home care, PFT lab and HBO centers. The RCP will be introduced to the standards of care and practical application for each area. Prereq.: acceptance in BSRC completion program, junior standing, or permission of instructor. 3 s.h.

4867. *Fundamentals of Leader Development*. This course will form the necessary core of self-awareness in relation to leader development. Through introducing concepts and examples of leadership and awareness of how one leads as an expression of self, RCPs will enhance leadership

awareness and personal expression within their discipline. Prereq.: acceptance in BSRC completion program, junior standing, or permission of the instructor. 3 s.h.

4870. *Advanced Cardiopulmonary Case Management*. This course is designed to strengthen the students knowledge of C-P disorders by incorporating evidence-based practices into C-P case management. The student will learn to apply these strategies in acute care, transitional and long-term care settings. Current protocols will also be discussed. Prereq.: acceptance in BSRC completion program, junior standing, or permission of instructor. 3 s.h.

4872. *Technology Applications for RCPs*. Exploration of technology applications for education, presentations, communications and management. Creation of digital media such as audio and/or video files, e-portfolios and web-based application of various technologies will be required. Application of technology to education or management will be evaluated through completions of a technology-enhanced project. Prereq.: acceptance in BSRC completion program, junior standing, or permission of instructor. 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.

RUSSIAN — RUSS

Department of Foreign Languages and Literatures

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 Russian*. 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. Assignments in the Language Learning and Research Center (LLRC). Prereq.: Placement test or RUSS 1550. 4 s.h.

2605. *Advanced Intermediate Russian 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 Russian 2*. Reading and listening. Focus on morphology and syntax. Topics will vary according to the students major area of interest. May be repeated if topic is different. Prereq.: Placement test or RUSS 2605. 3 s.h.

3700. *Directed Study in Russian*. Reading 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 students 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 years advance planning. Prereq.: Sophomore status and approval of the chair of Foreign Languages. 1-15 s.h.

SAXOPHONE — SAX

Dana School of Music

1500A. *Saxophone*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Saxophone*. Private Music Lessons. 1 s.h.

1501. *Saxophone*. Private Music Lessons. Audition required. 2 s.h.

1502. *Saxophone*. Private Music Lessons. 2 s.h.

2600A. *Saxophone*. Private Music Lessons. 1 s.h.

2600B. *Saxophone*. Private Music Lessons. 1 s.h.

2601. *Saxophone*. Private Music Lessons. 2 s.h.

2602. *Saxophone*. Private Music Lessons. 2 s.h.

2603. *Saxophone*. Private Music Lessons. 3 s.h.

2604. *Saxophone*. Private Music Lessons. 3 s.h.

2605. *Saxophone*. Private Music Lessons. 4 s.h.

2606. *Saxophone*. Private Music Lessons. 4 s.h.

3700A. *Saxophone*. Private Music Lessons. 1 s.h.

3700B. *Saxophone*. Private Music Lessons. 1 s.h.

3701. *Saxophone*. Private Music Lessons. 2 s.h.

3702. *Saxophone*. Private Music Lessons. 2 s.h.

3703. *Saxophone*. Private Music Lessons. 3 s.h.

3704. *Saxophone*. Private Music Lessons. 3 s.h.

3705. *Saxophone*. Private Music Lessons. 4 s.h.

3706. *Saxophone*. Private Music Lessons. 4 s.h.

4801. *Saxophone*. Private Music Lessons. 2 s.h.

4802. *Saxophone*. Private Music Lessons. 2 s.h.

4803. *Saxophone*. Private Music Lessons. 3 s.h.

4804. *Saxophone*. Private Music Lessons. 3 s.h.

4805. *Saxophone*. Private Music Lessons. 4 s.h.

4806. *Saxophone*. Private Music Lessons. 4 s.h.

5800A. *Saxophone*. Private Music Lessons. 1 s.h.

5800B. *Saxophone*. Private Music Lessons. 1 s.h.

STRING BASS — SBSS

Dana School of Music

1500A. *String Bass*. Private Music Lessons. Audition required. 1 s.h.

1500B. *String Bass*. Private Music Lessons. 1 s.h.

1501. *String Bass*. Private Music Lessons. Audition required. 2 s.h.

1502. *String Bass*. Private Music Lessons. 2 s.h.

2600A. *String Bass*. Private Music Lessons. 1 s.h.

2600B. *String Bass*. Private Music Lessons. 1 s.h.

2601. *String Bass*. Private Music Lessons. 2 s.h.

2602. *String Bass*. Private Music Lessons. 2 s.h.

2603. *String Bass*. Private Music Lessons. 3 s.h.

2604. *String Bass*. Private Music Lessons. 3 s.h.

2605. *String Bass*. Private Music Lessons. 4 s.h.

2606. *String Bass*. Private Music Lessons. 4 s.h.

3700A. *String Bass*. Private Music Lessons. 1 s.h.

3700B. *String Bass*. Private Music Lessons. 1 s.h.

3701. *String Bass*. Private Music Lessons. 2 s.h.

3702. *String Bass*. Private Music Lessons. 2 s.h.

3703. *String Bass*. Private Music Lessons. 3 s.h.

3704. *String Bass*. Private Music Lessons. 3 s.h.

3705. *String Bass*. Private Music Lessons. 4 s.h.

3706. *String Bass*. Private Music Lessons. 4 s.h.

4801. *String Bass*. Private Music Lessons. 2 s.h.

4802. *String Bass*. Private Music Lessons. 2 s.h.

4803. *String Bass*. Private Music Lessons. 3 s.h.

4804. *String Bass*. Private Music Lessons. 3 s.h.

4805. *String Bass*. Private Music Lessons. 4 s.h.

4806. *String Bass*. Private Music Lessons. 4 s.h.

5800A. *String Bass*. Private Music Lessons. 1 s.h.

5800B. *String Bass*. Private Music Lessons. 1 s.h.

SOCIAL WORK — SCWK

Department of Social Work

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. 3 s.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.

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 childrens 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. CR/NC 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.

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.

SOCIOLOGY – SOC

Department of Sociology, Anthropology, and Gerontology

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.

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.

3750. *Religion and Race*. Examines race theory and its relation to religious studies through consideration of immigration patterns and the ways in which religion has been affixed to markers

of identity over the last two hundred years. Cross-listed with REL 3750 and ANTH 3750. Prereq.: REL 2601 or SOC 1500 or ANTH 1500. 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 subcultures, 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.

SPANISH — SPAN

Department of Foreign Languages and Literatures

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.

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 2605. 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 US*. 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.

3780. *Spanish Composition and Conversation Review*. Review course emphasizing impromptu conversations and in-class essay writing. Intended for students who need additional coursework to achieve the level of Advanced Low on the ACTFL Oral Proficiency Interview and/or ACTFL Writing Proficiency Test. May not be counted toward the major. Grading is CR/NC. Prereq.: 15 s.h. in Spanish at the 3700 level or above and permission of Chair. 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 consorial agreement. A written statement detailing the students 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 years advance planning. Prereq.: Sophomore status and approval of the chair of Foreign Languages. 1-15 s.h.

4880. *Spanish Conversation and Composition Capstone*. Capstone course emphasizing impromptu conversation and in-class essay writing. Student must achieve a level of Advanced Low on both the ACTFL Oral Proficiency Interview and the ACTFL Writing Proficiency Test. Prereq.: 15 s.h. in Spanish at the 3700 level or above and permission of Chair. 3 s.h.

4881. *Spanish Composition and Conversation 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 Spanish at the 3700 level or above and permission of Chair. 3 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.

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

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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 teachers 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 for Children and Youth with Emotional and Behavior Needs*. Instruction, curriculum and program development for youth who are identified with emotional disturbance and as a result are often in conflict with educational and social systems. Successful completion of 30-hour field experience is required. Prereq.: BCOE upper-division status. 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 persons 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.

5852. *Prog Development Instructional Strategies Learners with Moderate to Intensive Exceptional Learn Nee*. This course is designed to expand technical terminology and applied practices for candidates working towards licensure for students with moderate to intensive exceptional learning needs. Candidates will create individualized objectives, apply evidence-based practices, and report progress. Successful completion of a 30 hour field experience is required. Prereq.: Admission to BCOE Upper Division, SPED 5834. 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.

5872. *Assessment and Referral for Children and Youth with Exceptionalities for Intervention Specialist*. Development of skills in referral and assessment techniques for the special educator in the areas of moderate/intensive disabilities. Emphasis will be given to informal and formal methods such as observation, authentic assessment, alternate assessment, rubrics, inventories, interviewing, task analysis, functional behavioral analysis, curriculum based measurement, DIBELS/SWIS, and formal standardized measures. Prereq.: Admission to BCOE Upper Division Status. 3 s.h.

5873. *Communication and Literacy Skills for Learners with Significant Disabilities*. This course focuses on enhancing functional communication and literacy skills of students with severe disabilities. Assessment and strategies to increase communication form, function and literacy are covered. The course addresses aided and non-aided augmentative systems and alternative communication systems with an emphasis on using a multi-modality approach. Prereq.: Admission to BCOE 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.

2601. *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.

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

STATISTICS — STAT

Department of Mathematics and Statistics

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 both 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.

5857. *Statistical Consulting*. The objective of this course is to cultivate the skills necessary to competently engage in statistical consulting. Topics include problem solving, study design, power and sample size, data management, selection and application of statistical methods, ethical practice, and effective visual and literal communication of results. Prereq.: STAT 5817 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.

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATH — STEM College of Science, Technology, Engineering, and Math

1505. *Safety Principles in the STEM College*. Topics pertaining to safety in STEM College laboratories with applications to industry, including chemical safety, electrical safety, planning for emergencies, etc. No prerequisite. 1 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 1510 and/or MATH 1511. 3 s.h.

1520. *STEM First Year Orientation*. The course is designed to enhance the transition and adjustment of first-year students in the College of Science, Technology, Engineering, and Mathematics by exploring key concepts and issues that support student motivation and academic persistence. 1 s.h.

1530. *Design in Practice*. Cross-listed as ART 1530. Introduction to the visual and organizational components of two and three dimensional design, development of ideas and creative critical thinking as applied to tangible form. The course leads to an understanding of design as a verb and encourages inventiveness and collaboration to generate ideas. 3 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.

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 students department chair. May be repeated for a maximum of 8 s.h. 1-4 s.h.

3790. *STEM Internship Experience*. Apply theory in professional practice experience overseen by working professional and STEM faculty mentor for part-time assignment at approved employer. Students see Coordinator of STEM Student Professional Services (SSPS) and faculty advisor, receive professional practice training, submit assignment proposal for approval, file weekly work logs for faculty mentor review, make public presentation, and write final project paper. Prereq.: at least sophomore standing, 2.00 GPA in STEM program, and approval by Coordinator of SSPS in consultation with students department chair. May be repeated. 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 students 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 students 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.

SWAHILI – SWAH

Department of Foreign Languages and Literatures

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.

TEACHER EDUCATION — TCED

Department of Teacher Education

1509. *Orientation to On-Line Learning*. This course provides an introduction and orientation to on-line learning, while acquainting students with the platform of BB9, distance education technologies, YSU and BCOE. CR/NC. Coreq.: DE ECE 2629.1 s.h.

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.

5888. *Topical Seminar*. Examination of issues related to the teaching of early childhood education, middle childhood education, special education, multi-age education, family and consumer vocational education, or adolescent/young adult education 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.

TELECOMMUNICATION STUDIES — TCOM

Department of Communication

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. *Sports Field Production 1*. Assignment to one or more production crews in conjunction with YSU Athletics and Horizon League Sports. Student responsibilities will be determined in light of skills and interests, as well as the production need. May be repeated. 1 s.h.

1555L. *Radio Workshop*. Application of the principles of radio production and broadcasting

skills in student media. 3 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. *Sports Field Production 2*. Assignment to one or more production crews in conjunction with YSU Athletics and Horizon League Sports. Student responsibilities will be determined in light of skills and interests, 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.

3710. *Sports Field Production 3*. Assignment to one or more production crews in conjunction with YSU Athletics and Horizon League Sports. Student responsibilities will be determined in light of skills and interests, 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 announcers 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 and editing. Production values of composition, transition, and sequence explored from a communication perspective. Students produce 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.

3790. *Broadcast News Lab*. Study and lab in news programs for TV, radio and web. Requirements of broadcast media and newsroom operation. Students create the weekly webcast, Light the Wick, or similar content. Two hours lecture and two hours lab per week. Prereq.: JOUR 2622 or TCOM 2682 or TCOM 2683. 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 and Editing*. 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 telecommunications and permission of internship coordinator. 6 s.h.

4890. *Producing Broadcast News*. Supervision of news programs for TV, radio and web. Story development, shooting/editing, script management, graphics creation, studio operations, and on-camera performance. Creation and marketing of the webcast, Light the Wick, or equivalent. Two hours lecture and two hours lab per week. Prereq.: TCOM 3790. 3 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.

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. 3 s.h.

3704. *Teaching Mathematics in the Middle School*. 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. 3 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. 3 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. 3 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. Prereq.: TEMC 3702, BCOE upper-division status, and approval of chairperson. Coreq.: Two of TEMC 3703, 3704, 3705, or 3706. 3 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.

4804. *Middle Level Instructional Design and Student Outcomes.* Presents teacher candidates with skills in predicting, understanding, and controlling the fundamental principles of learning. Classroom assessment, test administration, construction, scaling, norming, reliability, validity, and interpretation of individual and group tests will be covered. Attention will be paid to how these impact instruction and assessment in middle grades. Prereq.: TEMC 3702, BCOE upper division status, approval of chair. To be taken concurrently with TEMC 4801. 3 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.

MUSIC, THEORY — THRY

Dana School of Music

1501. *Applied Theory.* Private Music Lessons. Audition required. 2 s.h.

2601. *Applied Theory.* Private Music Lessons. 2 s.h.

3701. *Applied Theory*. Private Music Lessons. 2 s.h.

THEATER — THTR

Department of Theater and Dance

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 performers 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.

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. *Childrens 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 playmaking, 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.

TROMBONE — TROM **Dana School of Music**

1500A. *Trombone*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Trombone*. Private Music Lessons. 1 s.h.

1501. *Trombone*. Private Music Lessons. Audition required. 2 s.h.

1502. *Trombone*. Private Music Lessons. 2 s.h.

2600A. *Trombone*. Private Music Lessons. 1 s.h.

2600B. *Trombone*. Private Music Lessons. 1 s.h.

2601. *Trombone*. Private Music Lessons. 2 s.h.

2602. *Trombone*. Private Music Lessons. 2 s.h.

2603. *Trombone*. Private Music Lessons. 3 s.h.

2604. *Trombone*. Private Music Lessons. 3 s.h.

2605. *Trombone*. Private Music Lessons. 4 s.h.

2606. *Trombone*. Private Music Lessons. 4 s.h.

3700A. *Trombone*. Private Music Lessons. 1 s.h.

3700B. *Trombone*. Private Music Lessons. 1 s.h.

3701. *Trombone*. Private Music Lessons. 2 s.h.

3702. *Trombone*. Private Music Lessons. 2 s.h.

3703. *Trombone*. Private Music Lessons. 3 s.h.

3704. *Trombone*. Private Music Lessons. 3 s.h.

3705. *Trombone*. Private Music Lessons. 4 s.h.

3706. *Trombone*. Private Music Lessons. 4 s.h.

4801. *Trombone*. Private Music Lessons. 2 s.h.

4802. *Trombone*. Private Music Lessons. 2 s.h.

4803. *Trombone*. Private Music Lessons. 3 s.h.

4804. *Trombone*. Private Music Lessons. 3 s.h.

4805. *Trombone*. Private Music Lessons. 4 s.h.

4806. *Trombone*. Private Music Lessons. 4 s.h.

5800A. *Trombone*. Private Music Lessons. 1 s.h.

5800B. *Trombone*. Private Music Lessons. 1 s.h.

TRUMPET — TRUM **Dana School of Music**

1500A. *Trumpet*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Trumpet*. Private Music Lessons. 1 s.h.

1501. *Trumpet*. Private Music Lessons. Audition required. 2 s.h.

1502. *Trumpet*. Private Music Lessons. 2 s.h.

2600A. *Trumpet*. Private Music Lessons. 1 s.h.

2600B. *Trumpet*. Private Music Lessons. 1 s.h.

2601. *Trumpet*. Private Music Lessons. 2 s.h.

2602. *Trumpet*. Private Music Lessons. 2 s.h.

2603. *Trumpet*. Private Music Lessons. 3 s.h.

2604. *Trumpet*. Private Music Lessons. 3 s.h.

2605. *Trumpet*. Private Music Lessons. 4 s.h.

2606. *Trumpet*. Private Music Lessons. 4 s.h.

3700A. *Trumpet*. Private Music Lessons. 1 s.h.

3700B. *Trumpet*. Private Music Lessons. 1 s.h.

3701. *Trumpet*. Private Music Lessons. 2 s.h.

3702. *Trumpet*. Private Music Lessons. 2 s.h.

3703. *Trumpet*. Private Music Lessons. 3 s.h.

3704. *Trumpet*. Private Music Lessons. 3 s.h.

3705. *Trumpet*. Private Music Lessons. 4 s.h.

3706. *Trumpet*. Private Music Lessons. 4 s.h.

4801. *Trumpet*. Private Music Lessons. 2 s.h.

4802. *Trumpet*. Private Music Lessons. 2 s.h.

4803. *Trumpet*. Private Music Lessons. 3 s.h.

4804. *Trumpet*. Private Music Lessons. 3 s.h.

4805. *Trumpet*. Private Music Lessons. 4 s.h.

4806. *Trumpet*. Private Music Lessons. 4 s.h.

5800A. *Trumpet*. Private Music Lessons. 1 s.h.

5800B. *Trumpet*. Private Music Lessons. 1 s.h.

TUBA — TUBA **Dana School of Music**

1500A. *Tuba*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Tuba*. Private Music Lessons. 1 s.h.

1501. *Tuba*. Private Music Lessons. Audition required. 2 s.h.

1502. *Tuba*. Private Music Lessons. 2 s.h.

2600A. *Tuba*. Private Music Lessons. 1 s.h.

2600B. *Tuba*. Private Music Lessons. 1 s.h.

2601. *Tuba*. Private Music Lessons. 2 s.h.

2602. *Tuba*. Private Music Lessons. 2 s.h.

2603. *Tuba*. Private Music Lessons. 3 s.h.

2604. *Tuba*. Private Music Lessons. 3 s.h.

2605. *Tuba*. Private Music Lessons. 4 s.h.

2606. *Tuba*. Private Music Lessons. 4 s.h.

3700A. *Tuba*. Private Music Lessons. 1 s.h.

3700B. *Tuba*. Private Music Lessons. 1 s.h.
 3701. *Tuba*. Private Music Lessons. 2 s.h.
 3702. *Tuba*. Private Music Lessons. 2 s.h.
 3703. *Tuba*. Private Music Lessons. 3 s.h.
 3704. *Tuba*. Private Music Lessons. 3 s.h.
 3705. *Tuba*. Private Music Lessons. 4 s.h.
 3706. *Tuba*. Private Music Lessons. 4 s.h.
 4801. *Tuba*. Private Music Lessons. 2 s.h.
 4802. *Tuba*. Private Music Lessons. 2 s.h.
 4803. *Tuba*. Private Music Lessons. 3 s.h.
 4804. *Tuba*. Private Music Lessons. 3 s.h.
 4805. *Tuba*. Private Music Lessons. 4 s.h.
 4806. *Tuba*. Private Music Lessons. 4 s.h.
 5800A. *Tuba*. Private Music Lessons. 1 s.h.
 5800B. *Tuba*. Private Music Lessons. 1 s.h.

VIOLA — VIOL **Dana School of Music**

1500A. *Viola*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Viola*. Private Music Lessons. 1 s.h.

1501. *Viola*. Private Music Lessons. Audition required. 2 s.h.

1502. *Viola*. Private Music Lessons. 2 s.h.

2600A. *Viola*. Private Music Lessons. 1 s.h.

2600B. *Viola*. Private Music Lessons. 1 s.h.

2601. *Viola*. Private Music Lessons. 2 s.h.

2602. *Viola*. Private Music Lessons. 2 s.h.

2603. *Viola*. Private Music Lessons. 3 s.h.

2604. *Viola*. Private Music Lessons. 3 s.h.

2605. *Viola*. Private Music Lessons. 4 s.h.

2606. *Viola*. Private Music Lessons. 4 s.h.

3700A. *Viola*. Private Music Lessons. 1 s.h.

3700B. *Viola*. Private Music Lessons. 1 s.h.

3701. *Viola*. Private Music Lessons. 2 s.h.

3702. *Viola*. Private Music Lessons. 2 s.h.

3703. *Viola*. Private Music Lessons. 3 s.h.

3704. *Viola*. Private Music Lessons. 3 s.h.

3705. *Viola*. Private Music Lessons. 4 s.h.

3706. *Viola*. Private Music Lessons. 4 s.h.

4801. *Viola*. Private Music Lessons. 2 s.h.

4802. *Viola*. Private Music Lessons. 2 s.h.

4803. *Viola*. Private Music Lessons. 3 s.h.

4804. *Viola*. Private Music Lessons. 3 s.h.

4805. *Viola*. Private Music Lessons. 4 s.h.

4806. *Viola*. Private Music Lessons. 4 s.h.

5800A. *Viola*. Private Music Lessons. 1 s.h.

5800B. *Viola*. Private Music Lessons. 1 s.h.

VIOLIN — VION **Dana School of Music**

1500A. *Violin*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Violin*. Private Music Lessons. 1 s.h.

1501. *Violin*. Private Music Lessons. Audition required. 2 s.h.

1502. *Violin*. Private Music Lessons. 2 s.h.

2600A. *Violin*. Private Music Lessons. 1 s.h.

2600B. *Violin*. Private Music Lessons. 1 s.h.

2601. *Violin*. Private Music Lessons. 2 s.h.

2602. *Violin*. Private Music Lessons. 2 s.h.

2603. *Violin*. Private Music Lessons. 3 s.h.

2604. *Violin*. Private Music Lessons. 3 s.h.

2605. *Violin*. Private Music Lessons. 4 s.h.

2606. *Violin*. Private Music Lessons. 4 s.h.

3700A. *Violin*. Private Music Lessons. 1 s.h.

3700B. *Violin*. Private Music Lessons. 1 s.h.

3701. *Violin*. Private Music Lessons. 2 s.h.

3702. *Violin*. Private Music Lessons. 2 s.h.

3703. *Violin*. Private Music Lessons. 3 s.h.

3704. *Violin*. Private Music Lessons. 3 s.h.

3705. *Violin*. Private Music Lessons. 4 s.h.

3706. *Violin*. Private Music Lessons. 4 s.h.

4801. *Violin*. Private Music Lessons. 2 s.h.

4802. *Violin*. Private Music Lessons. 2 s.h.

4803. *Violin*. Private Music Lessons. 3 s.h.

4804. *Violin*. Private Music Lessons. 3 s.h.

4805. *Violin*. Private Music Lessons. 4 s.h.

4806. *Violin*. Private Music Lessons. 4 s.h.

5800A. *Violin*. Private Music Lessons. 1 s.h.

5800B. *Violin*. Private Music Lessons. 1 s.h.

VOICE — VOIC **Dana School of Music**

1500A. *Voice*. Private Music Lessons. Audition required. 1 s.h.

1500B. *Voice*. Private Music Lessons. 1 s.h.

1501. *Voice*. Private Music Lessons. Audition required. 2 s.h.

1501T. *Voice Musical Theater 1*. Voice Musical Theater 1. 2 s.h.

1502. *Voice*. Private Music Lessons. 2 s.h.

1502T. *Voice Musical Theater 2*. Voice Musical Theater 2. 2 s.h.

2600A. *Voice*. Private Music Lessons. 1 s.h.

2600B. *Voice*. Private Music Lessons. 1 s.h.

2601. *Voice*. Private Music Lessons. 2 s.h.

2601T. *Advanced Musical Theater 1*. Advanced Musical Theater 1. 2 s.h.

2602. *Voice*. Private Music Lessons. 2 s.h.

2602T. *Advanced Musical Theater 2*. Advanced Musical Theater 2. 2 s.h.

2603. *Voice*. Private Music Lessons. 3 s.h.

2604. *Voice*. Private Music Lessons. 3 s.h.

2605. *Voice*. Private Music Lessons. 4 s.h.

2606. *Voice*. Private Music Lessons. 4 s.h.

3700A. *Voice*. Private Music Lessons. 1 s.h.

3700B. *Voice*. Private Music Lessons. 1 s.h.

3701. *Voice*. Private Music Lessons. 2 s.h.

3702. *Voice*. Private Music Lessons. 2 s.h.

3703. *Voice*. Private Music Lessons. 3 s.h.

3704. *Voice*. Private Music Lessons. 3 s.h.

3705. *Voice*. Private Music Lessons. 4 s.h.

3706. *Voice*. Private Music Lessons. 4 s.h.

4801. *Voice*. Private Music Lessons. 2 s.h.

4802. *Voice*. Private Music Lessons. 2 s.h.

4803. *Voice*. Private Music Lessons. 3 s.h.

4804. *Voice*. Private Music Lessons. 3 s.h.

4805. *Voice*. Private Music Lessons. 4 s.h.

4806. *Voice*. Private Music Lessons. 4 s.h.

5800A. *Voice*. Private Music Lessons. 1 s.h.

5800B. *Voice*. Private Music Lessons. 1 s.h.

WOMEN'S STUDIES – WMST Interdisciplinary

2601. *Introduction to Womens 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 Womens Studies*. May be repeated for a maximum of 6 s.h. with different topics. Prereq.: WMST 2601; or ENGL 1551 and permission of director. 3 s.h.

4850. *Senior Research Project*. Research and writing of a paper on a topic in womens studies, under the supervision of full-time faculty. Prereq.: Senior standing, completion of 15 s.h. in Womens Studies, and permission of program director. Grading is Traditional/PR. 1-3 s.h.