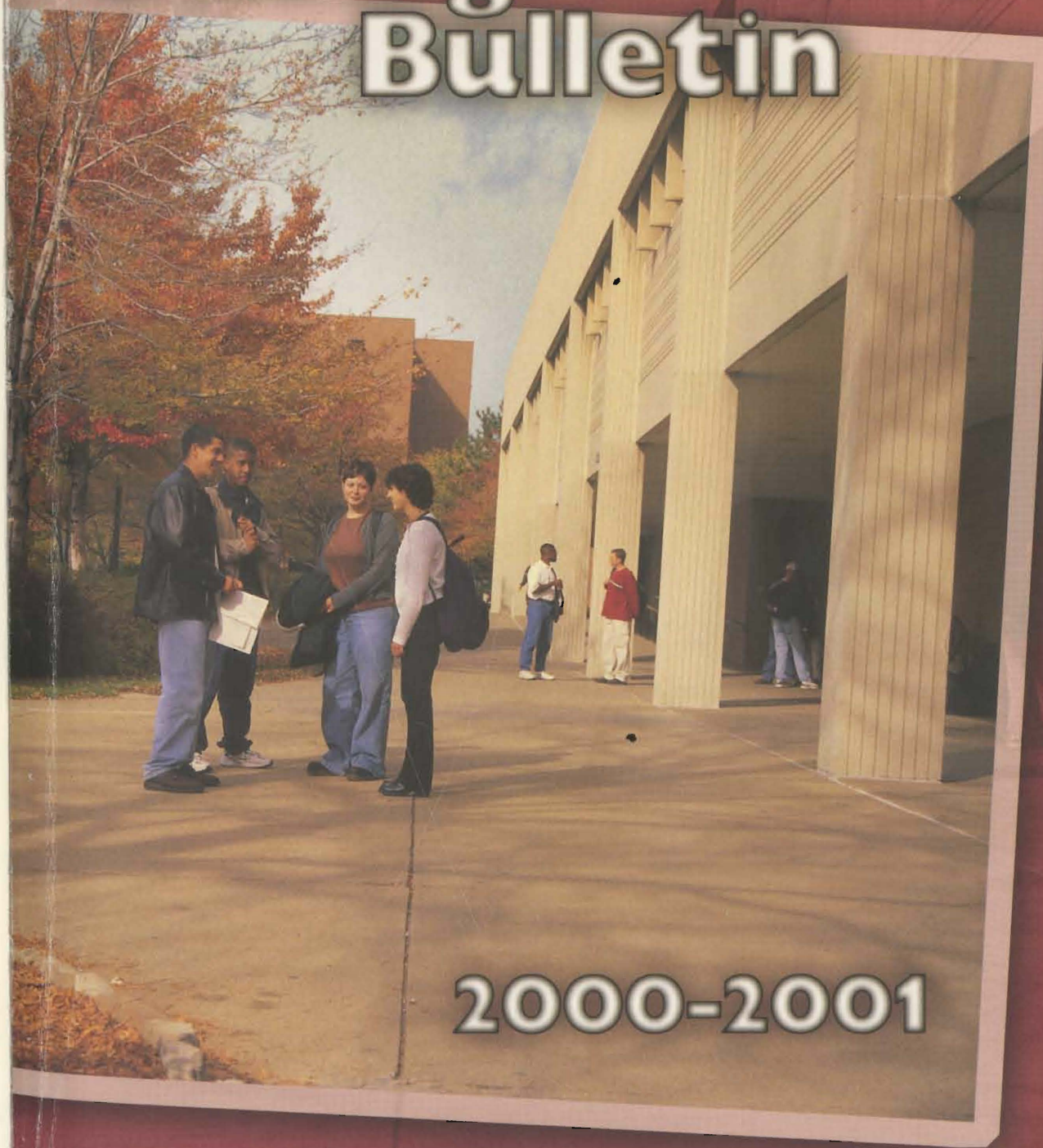
Youngstown State University

Undergraduate Bulletin



2000-2001

Academic Calendar 2000-2001

Fall 2000

DATE	DAY	TIME	EVENT
Aug. 28	Mon.	0800	Classes begin
Sept. 7	Thurs.	until 1800	Last day to add a class
Sept. 15	Fri.	until 1700	Last day to apply for fall term graduation
Oct. 28	Sat.	until 1200	Last day to withdraw with a W
Nov. 10	Fri.		Legal holiday—University closed
Nov. 11	Sat.		Legal holiday—University closed
Nov. 22	Wed.	2300	Thanksgiving academic break begins
Nov. 23	Thurs.		Legal holiday—University closed
Nov. 24	Fri.		Legal holiday—University closed
Nov. 27	Mon.	0800	Thanksgiving academic break ends
Dec. 11	Mon.	0800	Final examinations begin
Dec. 17	Sun.	1700	Final examinations end

Spring 2001

Dec. 25	Mon.		Legal holiday—University closed
Dec. 26	Tues.		Legal holiday—University closed
Jan. 1	Mon.		Legal holiday—University closed
Jan. 15	Mon.		Legal holiday—University closed
Jan. 16	Tues.	0800	Classes begin
Jan. 25	Thurs.	until 1800	Last day to add a class
Feb. 2	Fri.	until 1700	Last day to apply for spring term graduation
Mar. 12	Mon.		Spring Break begins
Mar. 19	Mon.	0800	Spring Break ends
Mar. 24	Sat.	until 1200	Last day to withdraw with a W
May 7	Mon.	0800	Final examinations begin
May 13	Sun.	until 1700	Final examinations end
May 19	Sat.	1000	Commencement

Summer 2001

May 21	Mon.	0800	Classes begin—entire summer term and first term
May 24	Thurs.	until 1800	Last day to add a class—first term
May 28	Mon.		Legal holiday—University closed
May 29	Tues.	until 1800	Last day to add a class—full term
June 8	Fri.	until 1700	Last day to apply for summer term graduation
June 14	Thurs.	until 1800	Last day to withdraw with a W-first term
June 18	Mon.	0800	Classes begin—interim term
June 21	Thurs.	until 1800	Last day to add a class—interim term
June 30	Sat.	until 1700	First term ends (final exams are given during last class session)
July 2	Mon.	0800	Classes begin—second term
July 4	Wed.		Legal holiday—University closed
July 6	Fri.	until 1800	Last day to add a class—second term
July 9	Mon.	until 1800	Last day to withdraw with a W—entire summer term
July 12	Thurs.	until 1800	Last day to withdraw with a W—interim term
July 26	Thurs.	until 1800	Last day to withdraw with a W—second term
July 28	Sat.		Interim term ends
Aug. 11	Sat		Second term and entire summer term ends (final exams are given during last class session)
Aug. 18	Sat.	1000	Commencement

YOUNGSTOWN STATE UNIVERSITY

UNDERGRADUATE BULLETIN 2000–2001

EFFECTIVE JUNE, 2000
Youngstown, Ohio 44555

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

Youngstown State University is committed to a campus environment that values all individuals and groups, and to non-discrimination and equal opportunity for all persons without regard to sex, race, religion, color, age, national origin, sexual orientation, handicap/disability, or identification as a disabled and/or Vietnam Era veteran. The University is also committed to the principles of affirmative action and acts in accordance with state and federal laws.

Inquiries should be directed to Youngstown State University's Director of Equal Opportunity and Disability Services, who is responsible for coordinating the University's programs for compliance with Section 504 of the Rehabilitation Act of 1973 and Title IX of the Education Amendments of 1972. Inquiries can be initiated in writing or by calling (330) 742-3370.

YOUNGSTOWN STATE UNIVERSITY CATALOG NO.
(USPS 697-340)
ISSUE 4
VOLUME 69 AUGUST, 2000 NUMBER 4

Second Class Postage paid at Youngstown, Ohio. Published in February, May, August (2) and November at One University Plaza, Youngstown, Ohio 44555. Change of address notices and undeliverable copies should be mailed to the address above.

UNDERGRADUATE CATALOG ISSUE

EFFECTIVE JUNE, 2000
YOUNGSTOWN, OHIO

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Mission

Youngstown State University strives to create a teaching and learning environment that promotes academic excellence, fosters intellectual growth and scholarship, focuses on the needs of students and the community, and reflects an awareness of cultural and global perspectives and concerns. The University is dedicated to outstanding teaching; to quality research and scholarly activity, both in the traditional sense and as they relate to classroom instruction and needs of the service region; and to responsible public service addressing the employment and economic needs of the region as a whole; providing knowledge, resources, and leadership to assist area schools, businesses, industries, agencies, and governments; and taking measures to enhance the quality of life for the constituencies it serves.

Youngstown State University aspires to provide an environment in which students can enrich their minds, their creativity, and their problem-solving abilities, so that they may become fully developed individuals; informed, conscientious, and productive citizens; and responsible and understanding partners with others in life, family, and work. The University strives to prepare students for the future, that they may play active roles in shaping it. To these ends, the University seeks to integrate the best elements of the long tradition to humanistic, liberal education in the arts and sciences with education in the most significant advancements in technology, health, engineering, education, business, and the applied arts.

The University is committed to fostering an understanding of the connections between and among teaching, scholarship, and service. The University seeks faculty who combine these elements in ways that bring excitement to the classroom, studio, clinic, and laboratory, stimulating enthusiasm and eagerness for learning in students. The University endeavors to enhance the educational experience by providing out-of-class development and support as well as co-curricular opportunities and services. The primary test of the University's effectiveness is the high quality of its graduates, the kinds of lives they lead, their accomplishments and their service to society. In this sense, teaching and learning, research and scholarship, University and public service are seen not only as interrelated but also as fundamental to endeavors both within and outside the University.

As a state-assisted metropolitan university, Youngstown State University provides a wide range of opportunities in higher education primarily, but not exclusively, to the residents of northeastern Ohio and western Pennsylvania. The University espouses the principles of equal opportunity, affirmative action, and broad access to education: academic access through open admission for all Ohio high school graduates to a wide range of programs; economic access through reasonable tuition and a comprehensive program of financial aid; and programmatic access through careful attention to the collective and individual needs of all its various constituencies: degree and nondegree students; transfer students; commuters and noncommuters; traditional and nontraditional students; associate, baccalaureate, masters, and doctoral students; as well as others encompassed by the Youngstown State University mission.

Accreditation

Youngstown State University is accredited by the Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools (30 North LaSalle Street, Suite 2400, Chicago, Illinois 60602-2504; Telephone: 800-621-7440).

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

Affirmative Action Program

Youngstown State University is committed to a campus environment that values all individuals and groups, and to non-discrimination and equal opportunity for all persons without regard to sex, race, religion, color, age, national origin, sexual orientation, handicap/disability, or identification as a disabled and/or Vietnam Era veteran. The University is also committed to the principles of affirmative action and acts in accordance with state and federal laws.

Although the ultimate responsibility for maintaining a viable and effective affirmative action program rests with the President of the University, the key role in its execution is delegated to the Director, Equal Opportunity, who periodically reviews the program, discusses grievances and charges of discrimination, if any, and makes recommendations toward the program's effectiveness.

The University uses all normal means of communication to make known its policies of affirmative action and equal opportunity employment.

Disability Services, located within Equal Opportunity, delivers basic support services to persons with disabilities. Any person affiliated with the University with a documented permanent or temporary disability may register with this office. For more information or to register, call (330) 742-3370 or come to Room 2002 in Jones Hall.

Historical Sketch

Youngstown State University had its beginning in 1908 with the establishment of the School of Law of the Youngstown Association School, an evening school sponsored by the Young Men's Christian Association. In 1920, the State of Ohio empowered the school to grant the Bachelor of Laws degree; in the same year, the school initiated a four-year course in business administration. In 1921, the school changed its name to the Youngstown Institute of Technology, and evening liberal arts courses were offered for the first time. In 1927, the College of Arts and Sciences was established and offered the first daytime classes. In 1928, the institute changed its name to Youngstown College, and in 1930, the college conferred the Bachelor of Arts degree for the first time.

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 the College of Applied Science and Technology were created in the spring of 1968, and in 1974 the College of Fine and Performing Arts was established, comprising the Dana School of Music and the departments of Art and of Speech Communication and Theatre.

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

Today, Youngstown State University consists of the School of Graduate Studies and six undergraduate colleges—the College of Arts and Sciences, the Williamson College of Business Administration, the Beeghly College of Education, the Rayen College of Engineering and Technology, the College of Fine and Performing Arts, and the Bitonte College of Health and Human Services. Degrees offered range from the associate, bachelor's and master's to a doctorate in educational leadership.

Academic Organization

Youngstown State University is organized in the following units:

- The College of Arts and Sciences
- The Beeghly College of Education
- The Rayen College of Engineering and Technology
- The College of Fine and Performing Arts
- The Bitonte College of Health and Human Services
- The Williamson College of Business Administration
- The School of Graduate Studies
- The Northeastern Ohio Universities College of Medicine

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

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

Virtually all departments offer courses during daytime and evening hours, and several majors may be obtained by students who are only able to attend 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 offered at Metropolitan College sites in Boardman, Niles and Austintown. 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 sessions of six weeks each. Courses are also offered in shorter time frames.

The School Of Graduate Studies

The School of Graduate Studies offers programs in economics, English and history leading to the Master of Arts degree; programs in biology, chemistry, criminal justice and mathematics leading to the Master of Science degree; concentrations in accounting, general business, executive, finance, management and marketing of the Master of Business Administration degree; a program in health and human services leading to the Master of Health and Human Services; programs in music education, performance, music theory and composition, and music history and literature leading to the Master of Music degree; a program in chronic illness care leading to the Master of Science in Nursing; a program in public health leading to the Master of Public Health degree; a program in physical therapy leading to the Master of Science Physical Therapy degree; options in chemical, civil and environmental, electrical, industrial and manufacturing systems and mechanical engineering leading to the Master of Science in Engineering degree; and master teacher (elementary or secondary), educational administration, counseling and special education programs leading to the Master of Science in Education degree. The program in educational leadership offered by the Department of Educational Administration, Research, and Foundations leads to the Doctor of Education degree.

Certificate programs are available in bioethics, environmental science, professional writing and editing, teaching of writing English, and teaching of English to speakers of other languages (TESOL). A Certificate in Historic Preservation is also available as part of the master's program in history. Please refer to the latest *Graduate Bulletin* for additional program and admission information, or contact the Office of Graduate Studies at (330) 742-3091.

Degrees

Youngstown State University grants the following baccalaureate and associate degrees: Bachelor of Arts (B.A.), Bachelor of Engineering (B.E.), Bachelor of Fine Arts (B.F.A.), Bachelor of Music (B.M.), Bachelor of Science (B.S.), Bachelor of Science in Applied Science (B.S. in A.S.), Bachelor of Science in Business Administration (B.S. in B.A.), Bachelor of Science in Education (B.S. in Ed.), Bachelor of Science in Nursing (B.S.N.), Bachelor of Science in Respiratory Care (B.S.R.C.), Associate in Arts (A.A.), Associate in Applied Science (A.A.S.), and Associate in Labor Studies (A.L.S.). All bachelor's and associate degrees may be taken as honors degrees. A combined B.S./M.D. degree is offered in conjunction with the Northeastern Ohio Universities College of Medicine.

Majors

Baccalaureate degrees may be earned in the following areas. The college in which each major resides is noted in parenthesis, with colleges coded as follows: Arts and Sciences, AS; Business Administration, WCBA; Education, BCOE; Engineering and Technology, RCET; Fine and Performing Arts, FPA; Health and Human Services, BHHS.

Accounting (WCBA)
Adolescent/Young Adult Education (BCOE)
- Life Sciences
- Physical Sciences
- Language Arts
- Earth Sciences
- Mathematics
- Integrated Science
- Social Studies

Advertising & Public Relations (WCBA)
Africana Studies (AS)
Allied Health (BHHS)
American Studies (AS)
Anthropology (AS)
Art History (FPA)
Biology (AS)
Chemical Engineering (RCET)
Chemistry (AS)
Civil & Environmental Engineering (RCET)
Civil Engineering Technology (RCET)
Clinical Laboratory Science (BHHS)
Combined Science (AS) (B.S.M.D. students only)
Communication Studies (FPA)
Community Health (BHHS)
Computer Information Systems (AS)
Computer Science (AS)
Criminal Justice (BHHS)
Earth Science (AS)
Economics (AS)
Electrical Engineering (RCET)
Electrical Engineering—Computer Option (RCET)
Electrical Engineering Technology (RCET)
Early Childhood Education (BCOE)
English (AS)

Environmental Studies (AS)
Exercise Science (BHHS)
Family & Consumer Sciences Education (BCOE)
Family & Consumer Studies (BHHS)
Finance (WCBA)
Food & Nutrition (BHHS)
- Didactic Program in Dietetics
- Coordinated Program in Dietetics

French (AS)
General Administration (WCBA)
Geography (AS)
Geology (AS)
German (AS)
History (AS)
Hospitality Management (BHHS)
Individualized Curriculum Program
Industrial & Systems Engineering (RCET)
Integrated Business Education (BCOE)
Italian (AS)
Management (WCBA)
- Human Resources
- Management Information Systems

Marketing Management (WCBA)
Mathematics (AS)
Mechanical Engineering (RCET)
Mechanical Engineering Technology (RCET)
Merchandising: Fashion & Interiors (BHHS)
Middle Childhood Education (BCOE)
Multi-Age Education (BCOE)
- Art
- French
- German
- Health
- Italian
- Physical Education
- Spanish

Music (FPA)
- Applied
- History
- Theory
- Accompanying
- Composition
- Non-keyboard
- Instrumental
- Performance—Jazz
- Performance—Vocal
- Performance—Piano
- Performance—Organ
- Instrumental Music Education
- Keyboard Music Education
- Vocal Music Education

Nursing (BHHS)
Nursing Home Administration (BHHS)
Office Information Systems (AS)
Philosophy (AS)
Physical Education (BHHS)
Physics (AS)
Physics/Astronomy (AS)
Political Science (AS)
Pre-dentistry (AS)
Pre-forestry (AS)
Pre-medicine (AS)
Pre-law (AS)
Professional Writing & Editing (AS)
Psychology (AS)
Religious Studies (AS)
Respiratory Care (BHHS)
Social Studies (AS)
Social Work (BHHS)
Sociology (AS)
Spanish (AS)
Special Education, Intervention (BCOE)
- Mild to Moderate
- Moderate to Severe

Studio Art (FPA)
- Painting
- General Fine Arts
- Graphic Design
- Photography
- Printmaking
- Spatial Arts
- Art & Technology

Telecommunication Studies (FPA)
Theater (FPA)
- Musical Theater
- Production/Performance
- Theater Studies

Associate degrees may be earned in:

Accounting (WCBA)
Associate in Arts (AS, WCBA)
Civil Engineering Technology (RCET)
Clinical Laboratory Technology (BHHS)
Computer Information Systems (AS)
Criminal Justice (BHHS)
- Corrections
- Policing
- Loss Prevention

Dental Hygiene (BHHS)
Dietetic Technology (BHHS)
Drafting & Design (RCET)
Electrical Engineering Technology (RCET)
- Electrical
- Computer
- Instrumentation & Process Control

Emergency Medical Technology (BHHS)
Finance (WCBA)
Histotechnology (BHHS)
Hospitality Management (BHHS)
Labor Studies (WCBA)
Management (WCBA)
Marketing (WCBA)
Mechanical Engineering Technology (RCET)
Medical Assisting (BHHS)
Office Information Systems (AS)
Prekindergarten (BHHS)
Social Services Technology (BHHS)

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.

ADMISSION

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

Undergraduate admission is handled by the Office of Undergraduate Recruitment and Admissions (OURA), located in Dana Hall at the corner of University Plaza and Bryson Street. You may contact OURA in any of the following ways:

Phone:	Toll free 877-GO-TO-YSU (877-468-6978)
	330-742-2000
TDD:	330-742-1564
Fax:	330-742-3674
E-Mail:	enroll@ysu.edu
Web Site:	www.ysu.edu

The OURA is open Monday through Friday 8 a.m. to 5 p.m. and Saturdays by appointment. Campus tours are best scheduled a week in advance, but you are welcome to visit the YSU campus and stop in the office any time without an appointment. If you call ahead, we can arrange free parking; otherwise, visitors can park in the M-8 (Bryson Street) lot across from Dana Hall for a $3.00 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.

State Residency Status

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

If you have any question about the appropriate classification, you should immediately bring it to the attention of OURA for review.

Residency Status Appeal

Appeal for a change in residency classification should be made in writing to OURA, which may require the student to complete an "Application for Non-Resident Tuition Surcharge Exemption" form. A decision will be sent in writing to the student, who may then appeal the classification in a personal interview.

The student may ask OURA to arrange an appearance before the Residence Classification Board. Such appearances ordinarily occur within two weeks of the request, if possible. The residence classification board's appellate decision is final.

Please see Appendix A of this catalog for the complete text of the Ohio Board of Regents' Residency Criteria.

Academic Credentials

Academic credentials include high school and college transcripts, test scores, GED scores, College Prep Forms (for Ohio residents) and/or any other records required for admission or granting credit. **Only properly certified and signed credentials received directly from the issuing institution will be accepted.**

Application Requirements

All prospective students must submit their applications for admission and all required credentials to the Office of Undergraduate Recruitment and Admissions (OURA) by the following dates:

Semester	Last Day to Apply**
Fall 2000	July 15, 2000
Spring 2001	Dec. 15, 2000
Summer I and full-term 2001	April 15, 2001
Summer II and III 2001	May 15, 2001
*Fall 2001	July 15, 2001

*Priority Application Deadline — Fall 2001 applicants who apply by February 15, 2001, will be given special consideration for the EARLY registration program.

**Specific programs may have different deadlines; check with OURA if unsure.

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

Application Fee

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

HIGH SCHOOL PREPARATION

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

English	4
Mathematics	3
Science	3

Social Studies	3
Foreign Language††	2
Arts	1
Total Units	**16**

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

††Two units in one language.

In addition, the Bachelor of Engineering (B.E.) 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 (B.M.) 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.

ADMISSION STATUS

New Freshman Applicants

Ohio Residents

Ohio residents must have graduated from high school with a state-approved diploma or successfully completed the General Education Development (GED) Test.

Applicants are required to take the ACT or SAT and have the results sent directly to the Office of Undergraduate Recruitment and Admissions. Those who have been out of school for two or more years and are not pursuing a restricted program are exempt from this requirement. If you are planning to participate in intercollegiate athletics in your first year at YSU, you must take either the SAT or the ACT in high school. Please call the Office of Intercollegiate Athletics for more information about eligibility for athletics participation. If you fail to take a required test, your admission will be postponed until a later semester.

The University is a testing center administering the ACT at announced dates to accommodate applicants to institutions requiring the test for entrance or advisement.

Out-of-State Residents

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

Mercer and Lawrence Counties

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

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. Students interested in the program need to contact the Office of Enrollment Services in sufficient time to schedule appointments for the required testing to determine admissibility. Early Admission also requires a letter of recommendation from high school personnel and an interview and pre-advisement with University staff. Financial responsibility for coursework is solely that of the student. College credit is validated and awarded after the student submits a final transcript upon graduation from high school. Students may not participate in both the EAOP and Post-Secondary Options (Senate 140) Program simultaneously except for the summer term. Interested students should contact the Office of Enrollment Services for further program details.

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. Details may be obtained from local high school guidance offices or the Office of Enrollment Services.

High School Transcripts

Applicants must arrange to have their high schools send to the Office of Undergraduate Recruitment and Admissions (OURA) 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 credit hours as a non-matriculated student may be applied to a degree program at Youngstown State University. Non-matriculated students are able to register after current students have registered.

Applications for non-matriculated admission may be obtained through the Office of Undergraduate Recruitment and Admissions.

TRANSFER

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

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

Conditions for transfer admission to the University are in line with OBOR rules and regulations. More information can be obtained through the Office of Undergraduate Recruitment and Admissions.

Transfer Credit

Transcripts of credits earned are evaluated by the Office of Undergraduate Recruitment and Admissions and a copy of the evaluation is issued to the applicant if she or he is accepted.

1) Per the Articulation and Transfer Module Guidelines developed by the Ohio Board of Regents, any students 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, the Office of Undergraduate Recruitment and Admissions will establish which YSU courses the transferred courses equate to. Advisors, in conjunction with the General Education Office, will determine how many hours remain to be completed and which domains need to be satisfied. Generally speaking, the student needs to complete an oral communication course and the personal and social responsibility domain. The General Education Office will provide a list of courses that satisfy each domain. Except to complete the writing intensive, oral communication intensive, or critical thinking intensive requirements, the student should have to take no more than a total of 15 courses to complete the general education program.

3) For those students who have not completed the Transfer Module at another school, the Office of Undergraduate Recruitment and Admissions will establish which YSU courses the transferred courses equate to. Advisors, in conjunction with 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 and intensive components must be taken to satisfy the general education requirements at this university.

4) Youngstown State University Transfer Module —Students wishing to transfer to another state college or university can complete the transfer module by taking the following:

Writing I, II ..... 6 hours

Mathematics 2623 or other designated courses ..... 3 hours

Natural Science (must include one laboratory science) ..... 9 hours

Arts/Humanities (must include two different disciplines) ..... 9 hours

Social and Behavioral Sciences (must include two different disciplines) ..... 9 hours

Interdisciplinary Studies — Students may substitute one course designated as a special topic course for natural science, arts/humanities or social and behavioral sciences. Consult with an advisor or the General Education Office to determine in which area special topics courses may substitute. No course may count unless it is on the 1500 or 2600 level.

Since these categories do not match the domains at YSU, a student planning to transfer should check with an advisor for a list of General Education courses and which categories they fit. This information will also be available on the General Education Website from a link to the YSU homepage. The student will transfer 36 credits.

Transferring to YSU

Transfer from a Regionally Accredited Two-Year Institution

The University recognizes the associate degree as preliminary to the baccalaureate and admits advanced-standing students possessing the associate degree from an accredited institution. Transfer credit is granted for all work successfully completed for the associate degree.

Youngstown State University has established articulation agreements with a number of 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 institutions with which YSU has agreements are:

Belmont Technical College
Butler County Community College
Community College of Allegheny College
Community College of Beaver County
Cuyahoga Community College
Hocking College
Jefferson Community College
Kent State University—Regional Campuses (Dual Admission)
Lakeland Community College
Lorain County Community College
North Central Technical College
Owens Community College
Penn State—Shenango
Washington State Community College

Similar agreements are pending with several other community colleges in the region.

Applicants who have not completed an associate program are considered on the same basis as other transfer applicants.

Ohio Residents

Transfer applicants who are residents of Ohio and in good standing at the last institution attended and have an aggregate cumulative point average of 2.0 or higher (on a 4.0 system) for all courses taken at other colleges or universities are admitted in good standing. Those with an aggregate cumulative point average of less than 2.0 or on probation may be considered for probationary transfer if their overall academic achievements, including high school grades and test scores, indicate potential success. Applicants suspended or dismissed from other institutions are not eligible for consideration (without appeal to the Office of Undergraduate Recruitment and Admissions) until at least one semester has passed following the term in which the suspension occurred.

Out-of-State Residents

Applicants who are non-residents of Ohio must be in good standing at the last institution attended and have an aggregate cumulative point average of 2.0 or higher (on a 4.0 system) for all courses taken at all colleges or universities to be considered for admission.

Mercer and Lawrence Counties

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

Conditions of Transfer Admission

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

Planning for Transfer Admission

In order to facilitate transfer with maximum applicability of transfer credit, prospective transfer students should plan a course of study that will meet the requirements of a degree program at the receiving institution. Specifically, students should identify early in their collegiate studies an institution and major to which they desire to transfer. Furthermore, students should determine if there are language requirements or any special course re-

quirements 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 the Office of Undergraduate Recruitment and Admissions as well as from their advisor and the college or university to which they plan to transfer.

Credentials for Transfer Students—Transcripts

Pre-baccalaureate. All undergraduate transfer applicants may need to provide the Youngstown State University Office of Undergraduate Recruitment and Admissions (OURA) with an official copy of their high school transcript and must provide an official copy of all undergraduate transcripts.

With 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 OURA.

Pre-baccalaureate. Transfer credit is given for all coursework taken at a regionally accredited college or university, provided that the student has cumulative point average equivalent to at least a 2.0 (on a 4.0 system) at that institution and that the work is credible toward a degree at that institution. A "D" grade accepted in transfer of credit does not satisfy a prerequisite for which a higher grade is needed. A student who has cumulative point average of less than 2.0 (on a 4.0 system) at a regionally accredited institution can transfer only courses in which a grade of "C" or higher has been earned.

Distribution of any accepted course work is determined by the appropriate school or college and /or department in accordance with policies governing the fulfillment of degree requirements.

Transfer students should note the residency requirements under "Candidacy for a Degree."

Appeals. A student disagreeing with the award of transfer credit by the receiving institution has the right to appeal the decision and should contact the Office of Undergraduate Recruitment and Admissions to begin the process. The institution will make the student aware of the entire appeal process at the time of contact.

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

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

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 DD Form 214 (Armed Forces of the United States Report of Transfer or Discharge).

An individual who has served or is serving in the United States Armed Forces and has completed Basic Military Training will receive up to four semester hours of credit. 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, Application for the Evaluation of Learning Experiences During Military Service, must be supplied to the Office of Undergraduate Recruitment and Admissions in order to validate such credit. [AARTS (Army)-CCAF (Air Force) transcripts should be provided if possible]. Granting of credit for A.I.T. will be based on 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.

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)—available through Testing Office, pending advisor approval.

Proficiency Examination Program (PEP)—available only through Sylvan Learning Center, pending advisor approval.

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

Correspondence Courses

The University does not offer correspondence courses. The University will accept correspondence work taken in connection with an accredited college or university 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 evidence that she or he is in good standing at the institution she or he is attending. 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 OURA. 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 in the Enrollment Center or in the Office of Records. Students who have attended any accredited college or university since last attending YSU must contact OURA.

Suspended Students

A former student who was academically suspended must be reinstated by the dean of the college from which he or she was suspended, or in the event the student wishes to change colleges, by the dean of the new college. Reinstatement procedures may vary with the college. For details, consult either the Office of Records or the appropriate dean's office.

See Grade Requirements on p. 34 for rules regarding suspension and reinstatement.

Combined Bachelor of Science/Doctor of Medicine Applicants (B.S./M.D.)

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

It is the intent of the YSU/NEOUCOM Joint Admissions Committee for the BS/MD program to select a class each year that is culturally diverse and representative. To fulfill the mission statements of YSU and NEOUCOM, both qualitative and quantitative data are carefully reviewed by the Admissions Committee in order to promote equity.

Northeastern Ohio Universities College of Medicine 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 NEOUCOM. Upon application, you must have U.S. citizenship or permanent-resident status.

The application deadline and the official transcripts and test results deadline is December 15 preceding the summer in which the program begins.

INTERNATIONAL STUDENT APPLICANTS

Application for undergraduate international applicants is made directly to the Center for International Studies and Programs (CISP), Office of International Admissions and Recruitment.

General Admission Statement

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

International Application Completion Deadlines

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

International Freshmen and Overseas Transfer Students

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

1. A completed application form, a $30 non-refundable application fee (to be drawn on a U.S. bank) and a list of all educational experiences including studies undertaken in the U.S.
2. Official credentials and transcripts from all secondary schools, colleges and universities which

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. 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 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. Certification of financial resources available for education and living expenses while attending the University.

5. Test of English as a Foreign Language (TOEFL) or Michigan English Language Assessment Battery (MELAB). Minimum score of 500 is required on the paper-based TOEFL or 173 on the computer-based TOEFL. A minimum score of 80 is required on the MELAB.

   Applicants should indicate on the registration form that they wish test results to be sent to YSU. **THE TOEFL CODE FOR YSU IS 1975.** The TOEFL must be taken no more than two years before applying to YSU. Official test scores are due by the YSU application deadline.

   A student who does not achieve the minimum required scores on the TOEFL or MELAB will be referred to CISP's English Language Institute.

   Antiqua & Barbuda, Australia, Bahamas, Barbados, Belize, Bermuda, Botswana, the British Caribbean and British West Indies, Canada (except Quebec), Cook Islands, Dominica, Fiji, Gambia, Ghana, Granada, Guyana, Ireland, Jamaica, Kiribati, Liberia, Mauritius, Micronesia, Namibia, Nauru, New Zealand, Nigeria, Niue, Northern Mariannas, Papua-New Guinea, St. Christopher Nevis, St. Lucia, St. Vincent, Seychelles, Sierra Leone, Solomon Islands, Trinidad & Tobago, United Kingdom and the United States (except Puerto Rico), Zambia, Zimbabwe, are native English-speaking countries. Therefore citizens from the above countries are exempt from the TOEFL or MELAB, but must submit the SAT or ACT if they are attending U.S. high schools or international schools that follow the U.S. high school curriculum.

6. Applicants may be required to submit additional materials.

English Proficiency Requirement

Since English is the language of instruction at YSU, proficiency in English is required of all students.

Regardless of nationality, English proficiency is an admissions requirement; therefore, non-native speakers of English are required to be tested for English proficiency (this testing is available through CISP). Depending on their score applicants may be required to attend CISP's English Language Institute (ELI) or take supplementary English as a second language (ESL) courses through the English Department until they have reached the necessary level of proficiency. At that point, they will be placed into the English composition sequence.

The English as a second language courses cannot be used as credit toward a degree. You 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.

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 Publications, P.O. Box 6154, Princeton, NJ 08541-6154, USA. (Telephone 609.771.7760.) **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: University of Michigan, The English Language Institute, Testing and Certification Division, 3020 North University Building, Ann Arbor, MI 48109-1057, USA. (Telephone 313.764.2416 or 313.763.3452.)

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. To assure such competence, the University normally requires you to submit scores from either the Test of English as a Foreign Language (TOEFL) or the Michigan English Language Assessment Battery (MELAB), if your native language is not English. Citizens in countries listed above in No. 5 are exempt from the TOEFL or MELAB requirement because YSU considers these countries to be native English-speaking. You are also

exempt if you have received a bachelor's or higher degree from a university in one of these countries or if you attended a U.S. high school for at least three years and have graduated. Additional testing may be required.

If English is not your native language, and you have been a permanent resident, refugee, or political asylee *less than one year*, you are required to submit scores from either the:

- Test of English as a Foreign Language (TOEFL). Minimum score of 500 is required on paper-based test. Minimum score of 173 is required on computer-based test.
- Michigan English Language Assessment Battery (MELAB). Minimum score of 80 is required.

Based on test results, individual applications may be reviewed on an individual basis.

These tests are recommended for any student who speaks English as a second language, even those who attended high school in the U.S. If you score below the minimum for the test, you must improve your English skills before beginning academic work at YSU. Intensive English study is available through CISP's English Language Institute.

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 and to provide an orientation to college life and culture in the U.S. Courses are available both to international students and to immigrants. ELI also offers specially tailored courses to groups by contract.

The ELI prepares students for academic study in American Universities, using the following curriculum:

Four Levels (Beginning, Low Intermediate, Intermediate and Advanced). There are (8) listening/speaking, (8) reading/writing, (4) grammar, and (3) TOEFL Preparation, for a total of 23 hours weekly. There are two 15 week terms (Fall, Spring) per year. Summer term is 10 weeks.

ELI admission is through CISP's Office of International Admissions and Recruitment. Please look at our website under Center for International Studies and Programs for applications or request one from: cispadm@cc.ysu.edu

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:

College Board ATP
CN6200
Princeton, NY 08541-6200 USA
Telephone: 609.771.7600
Web address: www.collegeboard.org
YSU's SAT reporting code number: 1976

To receive more information about the ACT, contact:

ACT National Office
2201 North Dodge Street
P.O. Box 168
Iowa City, IA 52243-0168
Telephone: 319.337.1000
Fax: 319.339.3021
Web address: www.act.org
YSU's ACT reporting code number: 3368

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

To be considered as a transfer student, applicants must have first completed coursework at a U.S. or foreign accredited college or university.

Transfer applicants must submit the following to be considered for admission:

1. A completed application form, a $30 non-refundable application fee (to be drawn on a U.S. bank) and a list of all educational experiences including studies undertaken in the U.S.
2. Official credentials and transcripts from all secondary schools, colleges and universities which 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 foreign accredited institutions. 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. Proof of successful completion of English composition. If no English composition credit was earned from a prior institution, a TOEFL score of at least 500 on the paper-based or 173 on the computer based, or its MELAB equivalent with a minimum score of 80.
4. Certification of financial resources available for education and living expenses while attending the University.
5. Recommendation from the international student advisor of the previous college or university.
6. Applicants may be required to submit additional materials.

All transfer credit is evaluated by CISP's International Admissions and Recruitment Office to determine eligibility. Credits from accredited or officially recognized institutions in other countries will be evaluated upon presentation of official transcripts, official translations and course descriptions. Students holding undergraduate degrees equivalent to the bachelor's degree may be admitted to the University for post-graduate study upon recommendation of the International Undergraduate Admissions Committee consisting of the dean of the proposed college, CISP's director, and the chair of the relevant department.

If you have successfully completed *more than one full year* of full-time post-secondary study you do not need to submit secondary school records or results of school certificate, matriculation, or certificate of education examinations. However, the following documents are required for all college-level work:

- official transcripts of all previous course work, regardless of length of study or applicability to current field of study; and
- if you are requesting transfer credit for any course taken at a college, university, or institution of higher education outside of the U.S., you should include an official syllabus or course description.

GRADUATE ADMISSION

Application for admission to the University for graduate study is made directly to the dean of Graduate Studies. (For details, consult the Graduate *Bulletin* or the School of Graduate Studies.)

CONTINUING EDUCATION

Individuals interested in a continuing education program or off-campus instruction should consult the director of University Outreach. This program is described under "University/Community Outreach".

FEES, SERVICE CHARGES, AND FINES

Payment of Tuition and Fees

Tuition and fees for the term are due on or before the date published in the *Schedule of Classes* (see "Important Dates"). You may pay your bill in person at the payment windows on the second floor of Meshel Hall or by mail to the Office of the Bursar. You may pay by check (payable to Youngstown State University), or with Visa, MasterCard, or Discover card. Several payment plans are also available that allow you to spread your payments out over a longer period.

All outstanding charges must be paid before you can register for upcoming terms. Graduation and transcripts will also be held until all University bills are paid.

Your enrollment at the University creates an implied contract between you and YSU. If you choose not to attend the University, you must officially withdraw from all courses within the first week of classes to receive 100% refund or reduction of charges (see refund policy).

If you decide to withdraw from the University once you have enrolled, you must access the Complete Withdrawal Option on the Student On-Line Advisement and Registration System (SOLAR) or come to the Office of the Registrar in Meshel Hall.

Fees

Approximately 50 percent of the educational and general fund revenue of Youngstown State University is received as a subsidy from the State of Ohio. The balance must be raised from the students and from other non-appropriated sources. 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

STUDENT FEES AND CHARGES
2000–2001

TUITION		
INSTRUCTIONAL FEE		
Undergraduate		
Part-time, 1 to 11 credits (freshmen and sophomores)	$ 127	per credit
Part-time, 1 to 11 credits (juniors and seniors)	$ 134	per credit
Full-time, 12 to 18 credits (freshmen and sophomores)	$ 1,524	per semester
Full-time, 12 to 18 credits (juniors and seniors)	$ 1,608	per semester
Undergraduate credits in excess of "bulk" rate per quarter	$ 69	per credit
Joint Engineering Program	$ 500	per course
Graduate Students	$ 157	per credit
Master of Public Health	$ 289	per credit
GENERAL FEE		
Students registering for 1-11 credits (freshmen and sophomores)	$ 32	per credit
Students registering for 1-11 credits (juniors and seniors)	$ 32	per credit
Students registering for 12 or more credits (freshmen and sophomores)	$ 384	per semester
Students registering for 12 or more credits (juniors and seniors)	$ 384	per semester
NON-RESIDENT TUITION SURCHARGE		
Regional Service Area†:		
Undergraduate:		
Students registering for 1 to 11 credits	$ 81	per credit
Students registering for 12 to 18 credits	$ 972	per semester
Students registering for excess credits	$ 81	per credit
Graduate:	$ 95	per credit
Non-Regional Service Area:		
Undergraduate:		
Students registering for 1-11 credits	$ 182	per credit
Students registering for 12-18 credits	$ 2,184	per semester
Students registering for excess credits	$ 182	per credit
Graduate Students	$ 195	per credit
Executive MBA Surcharge	$ 1,868	per semester
MULTI-SERVICE FEE		
Students registering for 1-11 credits	$ 24	per semester
Students registering for 12 or more credits	$ 39	per semester
COMPUTING FEE	$ 50	per semester
HOUSING CHARGES		
Room and Board per academic year	$ 4,800	
Payable as follows: $200 room reservation fee; $2,400 fall semester, and $2,200 spring semester. (If a resident does not stay through spring semester, the $200 deposit is forfeited.)		
Residence Hall Security Deposit (paid first semester)	$ 100	
Single Room Surcharge	$ 500	per semester
Residence Hall Summer Session 2000		
Room, per four-week session	$ 540	
University Apartments (room only, per person per academic year)	$ 3,090	
Payable as follows: $200 room reservation fee; $1,545 fall semester and $1,345 spring semester.		
Voluntary Board Plan (Students not rooming in University housing)		
Nineteen-meals/week	$ 970	per semester††
Fifteen-meals/week	$ 840	per semester††
Ten-meals/week	$ 675	per semester††
Five-meals/week	$ 340	per semester††
SPECIAL PURPOSE FEES, SERVICE CHARGES, AND FINES		
ACT Test	$ 32	
Career Planning Program Test	$ 30	per use
Credit by Examination	$ 15	per credit†††
EARLY/SOAR Program Fee	$ 25	

Graduate student application fee	$ 30	
Inoculation Fee:		
Hepatitis series	$ 125	
Measels, Mumps, Rubella	$ 40	
Meningitis	$ 75	
Tetanus	$ 5	
International Student Credential Evaluation Fee	$ 45	
Late Application for Graduation fee (after 3rd wk. of term)	$ 25	
Late Payment Fee	$ 25	
Late Registration Fee	$ 25	
MAT test	$ 40	
Peace Officer Training Academy	$ 1,500	per semester
Performance Music Fee	$ 53	per credit
Parking Permit	$ 68	per semester
Professional Practice Participation Fee	$ 83	per course
Proficiency Examination	$ 45	per course††††
Technology/Laboratory Materials Fee	Level 1 — $ 30	per course
	Level 2 — $ 45	per course
	Level 3 — $ 60	per course
Tuition Loan Late Payment Fee	$ 15	
Late Payment Rebill Fee	$ 15	
Tuition Payment Plan Service Fee	$ 4	per month
Undergraduate Application Fee (first-time applicant)	$ 30	
Former student returning	$ 0	

SERVICE CHARGES

Child Preschool Laboratory Fee	$ 150	per semester
Reading Tutoring Fee	$ 38	per semester
Health & Physical Education Activity : Set by and paid to independent vendor. (variable to cover cost in that course)		
Health & Physical Education Locker & Towel:		
Students registered for HPES course	$ 0	
Campus Recreation (not enrolled in HPES course)	$ 38	per semester
Campus Recreation Lock Replacement	$ 6	
Campus Recreation Towel Replacement	$ 6	
I.D. Replacement Charge	$ 15	
Intramural Team Deposit	$ 10	
Intramural Team Protest	$ 5	
Quantity Food Luncheon	$ 6.50	
Quantity Food Dinner	$ 8	
Returned Check or Credit Card Charge	$ 30	
Student Locker Rental	$ 15	academic year
Thesis Binding	$ 25	

FINES

Library/Curriculum Center:

1.) Overdue book: $.10 per day to maximum of $11, plus cost of book replacement including a $10 processing charge.

2.) Overdue reserve book: $.55 per day to a maximum of $11, plus cost of book replacement including a $10 processing charge.

3.) Unauthorized removal of closed reserve book: $.55 per day to a maximum of $11, plus cost of book replacement, including a $10 processing charge plus $5.

Parking Violations:

Class I — All violations except those in Class II $10

Class II — Parking in a Handicap Zone without proper permit, $50

Parking at a No Parking sign, Tow Away Zone, Loading Zone, Official Use Only Sign, Fire Lane or in the Campus Core area.

†The Youngstown State University regional service area, for non-resident tuition surcharge purposes, is defined as including the counties of Chautauqua, New York; Allegheny, Armstrong, Beaver, Butler, Clarion, Crawford, Erie, Fayette, Forest, Greene, Indiana, Jefferson, Lawrence, Mercer, Venango, Warren, Washington, and Westmoreland, Pennsylvania; and Brooke, Hancock, Marshall, and Ohio, West Virginia.

††Voluntary Board Plan—Rate subject to change. Food service bids are being evaluated.

†††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.

education. It is intended that fees not be adjusted more often than annually and that fee changes be announced in the spring or early summer. The Board of Trustees does, however, reserve the right to change any fee, charge or fine without notice if conditions warrant.

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

Tuition. The sum of the instructional fee and the general fee is the tuition for the student.

Instructional Fee. This fee is assessed all students each term. The rate is per academic semester hour of credit for one to 12 credits or for more than 18 credits; it is a flat rate for students registering for 12 to 18 credits during one term. Students registering for 19 or more credits pay the flat rate plus the per-credit rate for each credit over 18. 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 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.

Multi-Service Fee. The fee is assessed all students each term; the rate depends upon the number of credits for which the student is registered. This fee is designed to partially offset the expenses associated with various administrative services such as: career services credentials, graduation, transcript, add/drop, diploma mailing, diploma replacement, diploma cover, I.D. validation sticker replacement, withdrawal, and other miscellaneous services.

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

Computing Fee. This fee is charged to all students each term and provides for Internet service, an open computer laboratory in Maag Library, increased computer laboratory reliability and technical assistance, support for Network Services and Electronics Maintenance Services, and partial general support for the cost of maintaining centralized mainframe computing capabilities, including, but not limited to, systems used for admissions, student registration, financial aid, and bursar operations.

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 at $53 per credit.

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

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.

Late Payment Fees. Payment of a bill 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 the assessment of a late fee. This fee is also charged any student who registers after classes begin.

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.

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.

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

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.

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.

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 center for information and to make reservations. An additional fee is charged if a student is allowed to take a test without a reservation.

Service Charges

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

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 University 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 residence contract includes room and 19 meals per week. In addition to the charge for service, a security deposit is required. Payment and refunds are as scheduled in the housing contract. Meal tickets are also available for students who are not residents of University Housing.

Returned Check or Credit Card Charge. A charge is levied on anyone whose check 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 and/or charge within six days; and/or a second check/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. While no charge is made for each transcript issued by the Office of Records, transcripts will not be issued for anyone with outstanding debts owed to the University.

Fines

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

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

Reduction/Refund of Fees and Charges Upon Withdrawal

To withdraw from a single course, or all courses, the student must access the Change of Registration Option or Complete Withdrawal Option on the Student On-line Advisement and Registration System (SOLAR) or complete a change of registration form at the Enrollment Information Counter in Meshel Hall. Nonattendance of class or notification to the instructor or department does not constitute official changes or withdrawals.

A reduction of the instructional, general, performance music, and laboratory materials fees, and the nonresident surcharge, will be provided for all withdrawals in conformity with the following schedule:

Length	100%	85%	70%	No Refund
15 weeks or more	through 6th weekday of the term	through 11th weekday of the term	through 16th weekday of the term	17th weekday of term or later

Students should refer to the *Schedule of Classes* to determine the actual deadline date for each tuition refund period and for courses less than 15 weeks in duration. The dates as listed in the *Schedule of Classes* will be the final reference.

Every day of the week is counted except Saturday and Sunday.

All applicable fees, fines, and penalties will be deducted from any refunds issued.

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 first-time freshmen Title IV recipients who completely withdraw during the first six (6) weeks of the semester.

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.

Tuition charges are based on the total number of hours as of the last date of the tuition refund period plus any hours added after the refund period. Hours dropped after the refund period outlined above do not "exchange" for hours added after the refund period.

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 which creates a direct conflict with the class schedule), the fee charges may be reduced in direct proportion to the number of weeks enrolled.

An application for Involuntary Withdrawal can only be processed for courses in which the student has already received a grade of "W" (withdrawn). Applications for involuntary withdrawal will only be considered 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 the Bursar. Address such correspondence to the Fees and Charges Appeals Board, c/o Bursar, Youngstown State University, One University Plaza, Youngstown, OH 44555.

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 not later than **February 15** each year for which aid is desired. For maximum consideration, students should complete the following forms:

1.) Free Application for Federal Student Aid (FAFSA) or Renewal 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 campus-specific programs.

Funding for most student aid awards is normally exhausted by May of each year, so early application is strongly encouraged. Separate requests are required for summer session assistance.

TYPES OF FINANCIAL AID:

Scholarships (Gift Aid)

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

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

To be considered for scholarships, students should complete all appropriate forms by **February 15** of each year. Contact the Office of Financial Aid and Scholarships and/or your Dean's Office to find out what forms these are.

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

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

Information on the Scholarships for Excellence and other scholarships follows in the next few pages.

Be sure to read the current *Scholarships and Financial Aid 2000-2001* brochure for other detailed information on financial aid. You may find this brochure in the Office of Financial Aid and Scholarships, Meshel Hall; or you may call to request a brochure at 330-742-3505.

Grants-in-Aid (Gift Aid)

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

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

B.) The **Federal Supplemental Educational Opportunity Grant (FSEOG)** is a need-based grant funded by the federal government and awarded by YSU. Students who meet the eligibility requirements for the Federal Pell Grant receive primary consideration for this grant. File the FAFSA as early as possible after January 1, but no later than February 15 each year to be considered for this campus-based aid program.

C.) The **Ohio Instructional Grant (OIG)** is a grant 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.

D.) **Part-time Ohio Instructional Grant** is awarded to students enrolled less than full-time who otherwise would have been eligible for an Ohio Instructional Grant had they been full-time.

E.) The **Pennsylvania Higher Education Assistance Award (PHEAA)** is a program, similar to the Ohio Instructional Grant, that 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.

F.) The **YSU Foundation PHEAA Supplemental Grant** is funded by 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 100% of the PHEAA grant, subject to funding.

H.) The **Martin Luther King Inner-City Achievement Award**, funded by the YSU Foundation, is awarded to graduates of Calvary Christian Academy, Cardinal Mooney, Chaney, East, Rayen, South, Ursuline, Wilson, Youngstown Christian School, Warren Western Reserve, Warren Harding and John F. Kennedy who show academic promise, are making satisfactory progress at YSU (if already attending, this will mean a 2.5 cumulative grade point average and at least half-time enrollment), and who have financial need. To receive maximum consideration for this campus-based aid program, file the FAFSA as soon as possible after January 1 but not later than February 15 each year.

I.) The **Youngstown State University Non-Traditional Student Grant-In-Aid** is awarded to non-traditional students who are not eligible for other grant or scholarship assistance. In cases where students receive other aid, the total of the other aid and the amount of assistance awarded under this grant may not exceed the amount the student would have received from the Non-Traditional Grant alone. A non-traditional student is a person who is at least four years removed from formal education (high school or college) and at least 22 years old whose whole annual family income did not exceed $30,000 for the previous year or a person whose family income was more than $30,000 for the previous year, but who has experienced a drastic reduction in family income for the current year. To be considered for this grant, file the FAFSA and complete YSU's Institutional Aid Application.

J.) The **Veterans' Administration Education Assistance** are educational benefits available for eligible veterans and reservists of the United States Army, Navy, Air Force, Marines, Air and Coast Guard and National Guard. Contact the Veterans' Affairs Office at 1-800-827-1000 for more information.

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

L.) **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 is for tuition and fees.

M.) **Ohio National Guard** provides grants for tuition to members who are full-time undergraduates.

N.) **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. The stipend, or salary, starts at $6,000 per year. Graduate assistants are also entitled to remission of tuition, including, where applicable, the non-resident tuition surcharge.

Employment (Self-help Aid)

To help pay for educational and living costs, students may contact 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. 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.**

Loans (Self-help Aid)

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

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

B.) The **Federal Subsidized Stafford Loan** is a need-based federal loan awarded to students who demonstrate financial need based on the information provided on the FAFSA. Undergraduates, graduates, and professional students attending at least half-time may be considered for this loan. "Subsidized" means the government is responsible for the interest that is accruing during at least half-time enrollment; during the six months grace period after the student stops attending school at least half-time; or during periods of deferment. The student is responsible for the interest at all other times. To be considered for this loan, file the FAFSA.

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

D.) The **Federal Parent Loan for Undergraduate Students (PLUS loan)** is available to the parents of dependent students. These loans are based on educational costs and cannot exceed the cost of attendance less other aid. Since these loans are not subsidized, the parent borrower must repay the amount borrowed plus the interest. Repayment of principal and interest begins no later than 60 days after the student's last disbursement. To be considered for this loan, file the FAFSA.

Part-time Students

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

Financial Aid: Helpful Hints And Important Tips

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

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

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

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

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

—Check with the Office of Financial Aid and Scholarships to determine the status of your financial aid processing. Don't 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 the Bursar at (330) 742-3133 to find out about our convenient payment plans to help pay for tuition and fees.

—Contact the Office of Financial Aid and Scholarships at (330) 742-3505 if you have questions. Mailing Address: Youngstown State University, Office of Financial Aid and Scholarships, One University Plaza, Youngstown Ohio 44555-3505. Email: ysufinaid@ysu.edu

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. To obtain a booklet that explains the formula used to determine your EFC, call 1-800-4-FED-AID.

FAFSA (Free Application for Federal Student Aid): The form that you must complete so that the federal processor can determine your EFC and YSU can determine your financial need.

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; during the grace period after the student stops attending at least half-time; and during periods of deferment (postponement of repayment).

Verification/Documentation: The process by which Youngstown State University confirms the accuracy of the information supplied on a percentage of FAFSA's each year as required by federal regulation. If you are selected for verification/documentation, you and your family will be requested to supply the Office of Financial Aid and Scholarships with additional information and copies of documents.

Unsubsidized: An unsubsidized loan is not based on financial need. The borrower is responsible for all interest which accrues during in-school, grace, and/or any applicable deferment periods.

Satisfactory Academic Progress

Satisfactory academic progress is reviewed annually during the spring term. An appeals process is in place. The standards of satisfactory academic progress for the continuance of federal financial aid is as follows:

Federal regulations require that financial aid recipients maintain satisfactory academic progress to remain eligible for federal financial assistance. Federal programs subject to these requirements include Federal Pell Grants, Federal Supplemental Educational Opportunity Grants, Federal Perkins Loans, Federal College Work Study, and all Federal Stafford Loan Programs.

Youngstown State University's satisfactory academic progress requirements include three components: 1. minimum grade point average, 2. maximum time frame to earn the degree sought, and 3. percentage completion rates. Youngstown State University's Office of Financial Aid and Scholarships assesses compliance with these requirements annually during the Spring term. Students not in compliance with these requirements are suspended from federal financial aid eligibility, effective with the start of the next term.

Grade Point Average

Graduate Programs: Students must be maintaining a cumulative YSU GPA of 3.00 at the time of the annual assessment.

Undergraduate Programs: At the time of the annual assessment, students must be maintaining a cumulative YSU GPA of 1.75 if 32 to 49 credit hours have been attempted, and a cumulative YSU GPA of 2.0 if 50 or more credit hours have been attempted. Attempted hours include accepted transfer hours plus all hours attempted as of the last day to add a class.

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

Time Frame

When a student's attempted hours, as defined above, reach 150% of the maximum hours needed to obtain an associate or a bachelor's degree, federal financial aid eligibility will be suspended as part of the next annual assessment of satisfactory academic progress.

Percentage Completion

At the time of the annual assessment, completed hours as a percentage of attempted hours, as defined above, must meet the following minimum requirements:

Freshmen	65%
Sophomores	70%
Juniors	75%
Seniors and above	80%

Rank is also calculated based on attempted hours.

Credit Hours Not Accepted

For federal financial aid satisfactory academic progress purposes, **attempted hours** exclude audited hours and withdrawals made by the last date to add a class. **Completed hours** exclude the following grades: 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.

Reinstatement of Federal Aid

To reinstate your federal aid eligibility, you must meet the minimum GPA and percentage completion requirements or go through the appeals process. The time frame limit can be extended only with an appeal and Academic Advisor's Evaluation. Credits transferable from other institutions will be included in any recalculations for percentage completion purposes but only YSU grades enter into the GPA calculation.

Students must attend school without federal financial assistance while clearing their satisfactory academic progress, unless an appeal is granted. Appeals must be made to the Office of Financial Aid and Scholarships and supporting documentation may be required. When reinstatement is granted, a student will only be considered for those financial aid funds available at that time. Contact the Office of Financial Aid and Scholarships for an appeal form and for additional information on deadlines and conditions.

SCHOLARSHIPS FOR EXCELLENCE

These are scholarships awarded by the University and largely funded by the **YSU Foundation**. The YSU Foundation, with an endowment of over $125 million, is committed to providing this "edge of excellence" for the University, providing more than $3 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 students should apply for new scholarships before **February 15**. In addition, incoming freshmen should apply for admission by February 15 to be considered for these scholarships automatically.

University Scholars Scholarships: These are four-year full-ride academic scholarships which require a separate application. These scholarships are awarded annually to incoming freshmen based on minimum criteria of an ACT of 28 or SAT of 1260 and upper 15% of the student's high school class. Students who are currently enrolled in a two-year institution with a minimum 3.8 GPA and who have completed an associate degree or at least 60 semester hours before entering YSU may be considered for this.

Trustees' Scholarships: These are $3,000, four-year scholarships awarded to incoming high school valedictorians. Students must attend full-time and maintain at least a 3.5 cumulative GPA.

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

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

Leadership Scholarships: These are $1,000 non-renewable scholarships awarded to the upper 15% of the high school graduating class with a minimum GPA of 3.0 or ACT of at least 23 or SAT of 1070. See Department Scholarship for subsequent years.

Community College Scholarships: These are $1,500, three-year renewable scholarships available to transfer students with a minimum GPA of 3.5 and 24 transferable hours into YSU. Must attend at least half-time and maintain 3.5 to renew.

Department Scholarships: These are $1,500, three-year scholarships awarded to continuing YSU students with minimum criteria of 24 hours completed and a cumulative GPA of 3.5. Must attend at least half-time and maintain 3.5 GPA to renew.

OTHER YSU SCHOLARSHIPS

Appendix B of this *Bulletin* contains a listing of scholarships currently available to YSU students.

ACADEMIC POLICIES AND PROCEDURES

PLACEMENT TESTS

A Composition and Reading Placement Test (CRPT) provided by the University is required of all students unless they have AP credit or transfer credit. This and other placement tests are described below.

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

Composition and Reading Placement Test

All students admitted to the University are required to take the Composition and Reading Placement Test (CRPT). No student is permitted to register for a second semester of classes without having taken the test, except those students placed into English classes for non-native speakers and those with approved transfer credit. Scheduling for the CRPT is handled by the Writing Center.

Any student placing into Education 1510 or English 1540 must complete the specified coursework within the first 36 hours. Otherwise, the student will be limited to enrolling for those courses alone until they are successfully completed.

Please Note: If you are directed to enroll in English 1540 and/or R&SK 1510A or 1510B, you must do so. You may not withdraw from the above-named courses unless you are making a complete withdrawal from the University.

None of the above-named mandatory courses may be taken more than twice. Should you not successfully complete any of these courses or you withdraw from them twice, you will be disenrolled from the University.

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 course work will be prohibited from registering for any additional upper-division courses until the English requirement has been met. Transfer students having completed 60 hours or more are exempt from this policy for their first 12 hours of enrollment at Youngstown State University.

Foreign Language Placement Test

All students taking their first college foreign language course at YSU are required to complete a language-specific placement test (French, German, Italian, Latin, Spanish). A student with no previous foreign language learning may waive the placement test by contacting the Department of Foreign Languages and Literatures. Waiving the placement test automatically places the student in a pre-foreign language course.

A Foreign Language Placement Test (FLPT) is required of all students in the College of Arts and Sciences and those students in the College of Fine and Performing Arts majoring in art history, applied music, music theory, music history, speech communication, telecommunication, and theater.

Students with AP credit in a foreign language or transfer credit for college foreign language courses are not required to take the FLPT.

Additional information about the test and placement choices can be found at the Department web site: http://www.as.ysu.edu/~forlang/FLRFLPT.htm.

Math Placement Test

All incoming students will be tested by the Department of Mathematics and Statistics to assess their competency in mathematics. Students will be placed in appropriate courses based on the Math Placement Test. The Department website explains the Mathematics Placement Test (MPT) and provides a sample copy—with answers—of the MPT. The address is http://www.as.ysu.edu/~math/Placement/.

REGISTRATION

Students register through the SOLAR (Student On-line Advisement and Registration) system. Appointment times are mailed to all students by the Office of the Registrar. Appointment times for current students are also published in the *Schedule of Classes*. Students are able to access the SOLAR system by using a patron and personal identification number (PIN). If a student does not know these numbers, he or she will be required to come to the Enrollment Center in Meshel Hall with photo identification to obtain this information.

Registration is not completed until all tuition and fees are paid. Registration must be concluded no later than the date published for the late and final registration for the particular term. All significant dates are published in the *Undergraduate Bulletin* and in the *Schedule of Classes* for each term.

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 for the student to 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. Students on warning.
4. Students with high school deficiencies.
5. First-semester transfer students.
6. All former students returning to the University.
7. Athletes

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

Students may use the *Schedule of Classes* to determine the specific classes offered in a particular term. The *Schedule of Classes* is published for each term by the Office of the Registrar. For information about future offerings or when a particular course will be offered again, consult the appropriate department chair.

Change of Registration

Registered students may change their registration through SOLAR during scheduled times for change of registration. (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 enter 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 registers for more hours than prescribed by the student's academic dean or is enrolled improperly in a course.

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 respond to an advisor's hold.

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 and should be used for identification purposes only. The student must report the loss or theft of his or her card to the Office of Campus Police. The student is responsible for any charges incurred prior to reporting the loss or theft of the card. 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 (i.e. driver's license) to the Office of Bursar 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.

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.

Extra Hour of Credit

Credit for more than the stated number of credit hours may be obtained for extra work in a course, with the following stipulations:

1. Permission is limited to seniors.
2. Extra credit may not exceed one hour per term.
3. A brief description of the extra work must be given by the instructor.
4. Such extra work may be done only under the supervision of a full-time instructor.
5. An application form must include signatures showing approval by the instructor of the course, the chair of the department in which it is taught, and the dean of the college in which the course is taught.
6. The department must enter an on-line permit for the extra credit prior to registration.

Minimum Credit-Hour Value

Registration is not permitted for less than the approved credit hour value of any course as listed in the catalog.

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. Some variable-credit-hour courses may require an on-line permit from the department offering the course.

The 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; 60 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.

Majors

Declaring or Changing a Major

You may enter the University as an undetermined major.

Although you are not required to declare a major until you file an Intent to Graduate form, early identification of a major will assure timely progress towards a degree.

In order to change or declare a major, you must fill out a form from the department of your desired major. The form will be forwarded to the Office of Records. Approved major changes will be reflected on the next grade report.

If you need help selecting a major, you 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. Double 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 completion of the requirements is certified by the appropriate department chairpersons. The student should indicate each major when filing an Intent to Graduate in the appropriate college. When the student completes more than one major in a given degree, one diploma is awarded. **Multiple majors/multiple degrees**: If a student wishes to complete the requirements for majors which are awarded under different degrees, the student must fulfill all requirements for each major and each degree. Completion of the requirements for each major and degree must then be certified by the appropriate chairpersons and deans. The student must file Intent to Graduate and Graduation Application forms for each major and each degree in the appropriate colleges.

Any student who has received a degree from another institution and desires a second degree from YSU must complete a minimum 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.

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 Northeastern Ohio Universities College of Medicine (NEOUCOM). However, credit of up to 13 s.h. may be granted toward the completion of the B.S. degree to those students who have participated in the 6th year *Human Values in Medicine* Programs of NEOUCOM.

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.

Requirements for Enrolled Nonimmigrant Students

All University requirements apply to nonimmigrant students. In particular, the following rules should be noted:

Tuition and other fees must be paid in full each semester. For students' convenience, the University allows payment by VISA, MasterCard or Discover and also provides a tuition payment plan.

During international 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 University offers very limited scholarship assistance for nonimmigrant undergraduate international students. This fact and employment restrictions mentioned below make it necessary for these students to supply their own financial needs during their entire educational stay in the U.S.

Enrollment in YSU's student health insurance plan is mandatory for all international students, and recommended for their dependents living in the U.S. An exception to this requirement is **granted only** to students who carry separate health insurance paid for **by their scholarship** directly to YSU.

All employment, on or off-campus, must be approved by the Center for International Studies and Programs. Certain types of off-campus employment must also be approved by the U.S. Immigration and Naturalization Service. YSU enrolls students in accord with the provisions of the U.S. Immigration and Naturalization Service, and the U.S. Information Agency Exchange Visitors' Program.

COURSES

Prerequisites

No student may receive credit 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. 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.

Credit will not be given for a course on the semester system if the student has credit for the equivalent course on the quarter system. Students should consult the equivalency tables in the *Q2S Student Information Guide.*

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. The course must have approval from the appropriate department and the dean of the college in which it is offered.
5. The department must enter an on-line conference course permit prior to registration.

Graduate Courses for Undergraduates

An undergraduate student who has senior standing and an unrecalculated grade-point average of at least 2.7, may enroll in 6900-level and 7000-level graduate courses, provided such enrollment does

not cause the total schedule for the term to exceed 16 semester hours. Before registering for courses the student must have the approval of the program director in the program where the credit will be applied, the course instructor, and the dean of Graduate Studies. The credit earned may be used for graduate credit at YSU only after the student is admitted to the School of Graduate Studies and the credit is accepted by the department in which the student continues graduate work. (Such coursework intended for graduate credit 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.

Permission for undergraduates to enroll in graduate courses for undergraduate credit will be granted only to students with proven exceptional academic ability; such permission will be based on a petition prepared by the student's major department containing a statement of criteria used to determine "exceptional" and approved by the chair of the department offering the course and the dean of Graduate Studies. (Such coursework intended for undergraduate credit cannot count toward fulfillment of the requirements for a master's degree.) The department must enter an on-line permit prior to registration.

TRANSIENT STUDENT AUTHORIZATION

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 back of the form.

Credit will be granted for approved course work in which a grade of "C" or better is received. It is the student's responsibility to have an official transcript sent from the other institution to the YSU Office of Records.

COMPLETE WITHDRAWAL FROM THE UNIVERSITY

Procedure: The student who wishes to withdraw from all courses in a particular term must access the Complete Withdrawal Option on the Student On-line Advisement and Registration System (SOLAR) or come to the Office of the Registrar. A complete withdrawal may be executed before classes or after the term starts. The student should consult the *Schedule of Classes* for deadlines, and the Reduction/Refund of Fees section of this *Bulletin* for the refund policy.

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 Undergraduate Recruitment and Admissions (OURA) 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 student withdrawing on or after the first day or prior to the fourteenth day of the term will receive notice of future registrations for one academic year.

Academic Record: If a student withdraws from all courses during the full-refund period, the academic record will contain the statement "Student completely withdrew during the full-refund period." For information regarding how withdrawal after the first two weeks of classes affects a student's academic record, see the paragraph on the W grade under the section entitled "Grading System."

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 dismissal 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

Teachers 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 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 written explanation of the reason for the **I** and a date (which must be within one year) by which all course requirements will be completed must be forwarded by the instructor to the Office of Records for inclusion in the student's permanent record, with copies to the student and department chairperson.

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 one year, the **I** automatically converts to an **F**. If graduation occurs within one-year time period, the Incomplete grade will be converted to an **F** before graduation.

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† 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**. Withdrawal thereafter (or improperly done, at any time) is recorded as **F**. If the grade resulted from circumstances over which the student had no control, the student may petition the appropriate dean for a late withdrawal.

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

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

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

The Point Average and Scholastic Standing

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

For determining this, every grade has a quality point value for each quarter 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 number of quarter hours attempted. Thus a student who attempts 16 quarter hours and earns 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.

†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 quarterly *Schedule of*

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 30 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.

This means that the grade recorded for the student is not a letter grade but either **CR** (credit) or **NC** (no-credit).

Students opting the CR/NC basis are not so identified on the class roster. The instructor assigns grades as usual. If a CR/NC student gets an A, B, or C, 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 in the fall and spring terms and one course in each session of summer.

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 petition for a change in your grading option through the last day to add a class.

Excluding Older Grades (Statute of Limitations)

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

Excluded course credit (including transfer credit) will not count toward the total hours required for graduation. However, courses passed may fulfill basic curriculum requirements and may satisfy prerequisites for higher courses where applicable. Courses excluded from the calculation may be taken again and repeated once without infringing upon repeat privileges specified in catalog course descriptions. Courses excluded are not subject to credit by examination. *A student whose petition has been approved is ineligible for graduation honors.* Only one petition from each student may be approved. Students **may not** petition to exclude older grades after the baccalaureate degree has been awarded.

Grade Reports

A report of the student's grades is sent to every student by the Office of Records as soon as possible after the close of a term.

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 students' 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 *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 "CR", and there is no effect on the student's grade point average. For the examination fee, see "Fees and Expenses". Information on courses for which credit by examination is possible may be obtained from the student's academic dean or the Office of Testing. Registration for departmental tests is done through the specific department.

Recalculation of Point Average

A current undergraduate student may wish to improve his or her cumulative point average by repeating a course in which a grade of 'D' or 'F' was

earned. In order to recalculate the cumulative point average, the repetition must be consistent with the policy on repetition of courses and the student must initiate the recalculation process with the approval of his or her advisor (or the dean, if it is a second repetition). 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. Once a repetition form has been processed for any course with an F grade, an *F to W Petition* may not be processed for that same course. Only undergraduate students currently attending the University may request this recalculation privilege. **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 not the concern of the Department of English alone, but of every member of the University faculty. Inadequate competence in this respect 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.

TRANSCRIPTS

The official transcript is a record of all coursework taken at Youngstown State University. Transcripts may be ordered only by the student. Transcripts may be ordered in person at the Enrollment Center, by mail, or by fax. Mail and fax requests should be sent to the Office of Records and should include the student's name, any former name(s), social security 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 for the two terms.

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.

Class honors certificates are awarded annually at the Honors Convocation.

Honors Convocation

The Honors Convocation recognizes those students who have distinguished themselves academically. Class honors certificates are given on this occasion, and some of the awards listed under *Awards and Prizes* are announced and presented.

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 Limitation* 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 transferred credit — work taken at any time at an institution other than Youngstown State University — is included in the calculation of the point average.

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.

GRADE REQUIREMENTS

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

"Warning" indicates 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.

The minimum cumulative Grade Point Average (GPA) required for **good standing** is 2.00. A student whose cumulative GPA falls below 2.00 is placed on **warning** and this status continues until a 2.00 cumulative GPA is achieved. A student on **warning** is restricted to no more than 16 hours per term, although the student's college may set a lower limit. A student on **warning** may participate in university activities. When a student reaches **warning** status, registration for the succeeding term will be put "on hold" immediately and not be reactivated until an advisor's approval for course selection is acquired.

A student who fails to achieve a cumulative GPA of at least 2.00 after two consecutive terms on **warning** will be **suspended** for one academic term before reinstatement on **warning**. Students with less than 32 semester hours will not be suspended and will continue on **warning** if their cumulative GPA is at least 1.75.

A second **suspension** will have a duration of at least one full year before reinstatement on **warning**. 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 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.

Any student receiving a semester GPA of less than 1.0 is required to have advising for the succeeding semester. Registration for the succeeding term will be put "on hold" immediately and not be reactivated until an advisor's approval for course selection is acquired.

Transfer students are to be admitted in **good standing** or on **warning** according to their status at the university from which they are transferring.

ACADEMIC DISCIPLINE

Academic Honesty

Academic honesty and personal integrity are the foundation upon which a quality education is built. To maintain high scholastic standards and to ensure each student the right to obtain a quality education, the University cannot tolerate academic dishonesty, e.g. cheating or plagiarism.

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 is requested;
- 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 should discuss the circumstances of the incident with the student prior to taking any action.

The student may appeal any actions affecting the grade. The Student Academic Grievance Subcommittee will handle such appeals.

A report of any action will be filed in the Office of the Vice President for Student Affairs, or designee. 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 disciplinary action are found in *The Code.* A copy of this publication may be obtained from the Office of Student Life, the Office of the Vice President for Student Affairs, or the Center for Student Progress.

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 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 Office of Student Life, Room 2099, Kilcawley Center. Further information may be found in Article VII of *The Code* which is available in the Office of Student Life, the Office of the Vice President for Student Affairs, or the Center for Student Progress.

STUDENT RECORDS

Notification of Rights under FERPA

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

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

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

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

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

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

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

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

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

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

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

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

a. name;

b. address (campus and home);

c. telephone listing (campus and home);

d. e-mail address (campus and home);

e. date and place of birth;

f. field of study;

g. participation in officially recognized activities and sports;

h. weight and height of members of athletic teams;

i. dates of attendance;

j. degrees and awards received;

k. the most recent previous educational institution attended; and

l. photographic, video or electronic images of student.

Any student wishing to exercise this right must inform the Office of Records in writing within the first seven (7) calendar days of any academic term 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 executive director of Enrollment Management 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
400 Maryland Avenue, S.W.
Washington, D.C. 20202-4605

Any questions about this notification should be directed to the executive director of Enrollment Management.

GRADUATION REQUIREMENTS

Catalog of Entry

Each undergraduate student entering Youngstown State University is entitled to a copy of the *Undergraduate Bulletin*. This catalog 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. Readmitted students will use the catalog in effect at their last readmission or any one subsequent catalog as the guide to graduation requirements. For the academic year 2000-2001, however, a transfer or a readmitted student may, after consultation with an advisor, opt to take the old general education requirements explained in the 1999-2000 *Undergraduate Bulletin*, or the new general education requirements detailed in this bulletin. 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, the following three requirements must be fulfilled:

Application. You must file a Notice of Intention to Apply for Graduation 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 with the Office of the Bursar by the deadline indicated in the University Academic Calendar published on the inside front cover of this *Bulletin*. The application form is available at the dean's office in your college, from the Records Office, or from the Enrollment Center in Meshel Hall.

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

Residency. The last 20 semester hours leading to an associate degree and the last 30 semester hours leading to a baccalaureate degree must be completed at Youngstown State University. (In the pre-forestry, pre-law, and pre-medical curriculums, 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 comprising 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 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.

For additional requirements peculiar to the associate or baccalaureate degree, further details follow.

Baccalaureate Degree

In addition to requirements stated under Candidacy for a Degree, the following requirements must also be fulfilled for a baccalaureate degree:

Pre-College Requirements. It is the student's responsibility to fulfill any high school unit deficiency(ies) for the desired degree. The preparatory units are not the same for all degrees; they are listed in the High School Preparation section and should be read carefully. This is especially important if the student changes the degree for which he or she is studying, as his or her high school preparation, even though satisfactory for the original objective, may not be satisfactory for the new one. A student admitted to the University to study for one degree does not mean that he or she is equally qualified to become a candidate for all other degrees offered by the University.

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 and Minors. Each student must complete a major. Each must also complete a minor, unless a combined major is elected or enrollment occurs in a college offering approved professional or technical curricula which do not require a delineated minor.

A department major consists of at least 30 semester hours in one department with grades of "C" or better. A combined major, in which courses are given by more than one department, consists of at least 48 semester hours with grades of "C" or better. A minor consists of at least 15 semester hours with grades of "C" or better in a department other than that of the major, unless the department includes more than one discipline. If the department includes more than one discipline, the minor may be in the same department in a discipline other than that of the major. Certain approved inter-disciplinary programs are exceptions to the above definitions. In approved interdisciplinary minors, courses from a discipline can be counted in the minor provided that the same courses are not counted toward the major in the same discipline.

Each department determines the course requirements for its own major or majors. A department may also establish a pattern of courses to be recommended for students seeking a minor in that department. However, responsibility for certifying that a student has completed a major and minor rests with the chairperson of the major department in which the student completes the major. 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. While no student is compelled to declare a major before completing an Intent to Graduate form, early consultation with the department chair is strongly recommended, since in some departments the student must begin course work related to the major during the freshman year or risk a delay in graduation.

General Education Requirements

The purpose of the general education requirements is to foster:

- qualities such as curiosity, intellectual honesty, fairness, civility, and an openness to ideas and the sharing of knowledge;
- thinking that is critical, independent and objective;
- integration of knowledge across disciplines;
- the ability to function effectively in a technological society;
- understanding of the importance of studying the past and present;
- appreciation of literature and the arts as expressions of human culture;
- recognition of the importance of acting as informed, responsible, democratically-minded citizens and members of the global community.
- and an attitude that learning is a personal and a collaborative process exercised over a lifetime.

Upon completing the General Education Requirements and all other degree requirements, the student should be able to:

- 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.
- Understand the personal and social importance of ethical reflection and moral reasoning.
- Comprehend mathematical concepts and reason mathematically in both abstract and applied contexts.
- Understand the scientific method; forming and testing hypotheses as well as evaluating results.
- Realize the evolving interrelationships among science, technology and society.
- Grasp and appreciate artistic expression in multiple forms and contexts.
- Understand the relationships between physical, mental, and emotional well-being and the quality of life of the individual, the family and the community.
- Understand the development of cultures and organizations of human societies throughout the world and their changing interrelationships with Western society.
- Evaluate the impact of theories, events and institutions on the social, economic, legal and political aspects of society.
- Comprehend and appreciate the development of diversity in America in all its forms.
- Understand and appreciate the natural environment and the processes that shape it.

Choosing Old or New General Education Requirements

Listed below are the options for students at different points in their academic careers:

1) **Incoming freshmen for the fall of 2000**—must take the new general education requirements.

2) **Transfer students for the fall of 2000**— students coming from another university may take either the old or new general education options, but may claim up to 36 hours of transfer credit toward general education if they have completed the transfer module offered by that university. A student who has completed a transfer module must check with an advisor to determine which courses must be taken beyond the 36 hours to complete the YSU program.

Students who have not completed a transfer module will be allowed to transfer some of their credits if they match either YSU model. See an advisor to determine which courses equate, and can be counted.

3) **Students enrolled before fall 2000**—these students have the option of continuing with the old model or switching to the new general education model. It is easiest for such students to continue with the old program; there will be plenty of courses available to do so. In order to determine the number of courses remaining in an area, such as social studies, subtract the number of credit hours already taken from the number required and multiply by two-thirds to determine the number of semester hours to be taken (round the result down to the next highest whole number).

Those students who choose the new general education program must have an advisor evaluate the courses they have already taken to see if they equate to any of the certified general education courses under the new program. A general education bulletin is available with the list of newly certified general education courses and their equates under the former system. Under the new system students must take a math course, an oral communication course, 2 writing intensive courses, 2 oral communication courses, and 2 critical thinking intensive courses, which were not required by the old system.

4) **Students re-enrolling after four quarters of absence; students who combine re-enrolling and transferring**—these students may also choose the best option after consulting with an advisor.

General Education Model—please note that the courses listed as fulfilling requirements may be added to. Check with an advisor or with the General Education Website link to Certified Courses for General Education.

Baccalaureate Degree

A. Basic Skills

1) Writing

To learn the skills of effective writing, students will take two courses: Writing 1—the standard introductory writing course, and Writing 2 —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. Students may be placed into Writing 2 based on the Composition and Reading Placement Test (CRPT) or receive credit for Writing 1 and/or Writing 2 through AP testing. The approved Writing 1 and Writing 2 courses are ENGL 1550 and 1551, as well as ENGL 1550H and 1551H.

Additionally, students must take two courses with a writing intensive component. Both writing intensive courses must be taken at the upper division level, preferably in the major or minor. To be certified as a writing intensive course for GER purposes, a course must be at the 700 or 800 level.

The writing-intensive courses may be satisfied in a foreign language, provided that other criteria established in the general education program are met.

Writing intensive courses have a "W" appearing after the course code in the schedule of classes.

2) Speaking

To become effective speakers, students will take an introductory Oral Communications course. The approved courses are COMM 1545 and 1545H, Communication Theory and Practice.

In addition, students must take at least two oral communication intensive courses which are not regular speech courses; rather they include a speaking assignment. Any GER course meeting designated requirements may include an oral communication intensive component, but it is also possible for faculty to include such a component in upper division courses for the major or minor. Students are permitted to take one of the two courses required as oral communication intensive as an upper division course in the major or minor.

The oral communication-intensive courses may be satisfied in a foreign language, provided that other criteria established in the general education program are met.

Oral communication-intensive courses have a "O" appearing after the course code in the schedule of classes.

3) Critical Thinking

To meet Goal 3, students must take at least two critical thinking- intensive courses.

Critical thinking-intensive components may be included in general education courses, in the major, in the minor, or in elective courses. They may be lower division or upper division courses.

Critical thinking-intensive courses have a "T" appearing after the course code in the schedule of classes.

4) Mathematics

Students must take one course that teaches mathematical and statistical skills. A student may satisfy this requirement by passing an approved course, by passing a mathematics placement exam, or by passing a higher-level mathematics course. The current approved course is MATH 2623, Survey of Mathematics; however there are several higher-level approved substitute courses: MATH 1549, College Business Mathematics 2; 1570, Applied Calculus 1; 1571, Calculus 1; 1572, Calculus 2; 1581H, Biomathematics 2; 1585H, Calculus Honors; 2652, Mathematics for Early Childhood Teachers 2; and 2665, Foundations of Middle School Mathematics 2.

B. Knowledge Domains

Students must take two or three courses from each area. The approved courses are so noted with each area. The total number of courses taken in natural science, artistic & literary perspectives, and societies & institutions must total eight; hence, the pattern of number of courses taken in these three domains may be 2-3-3, 3-2-3, or 3-3-2.

1. Natural Science

Students must take a minimum of two, and no more than three, courses from the following list of approved courses. At least one course must have a laboratory component.

A&S 2600	Exploration in the Sciences—all students must take this course unless they fulfill the laboratory requirement through substitute courses.
ASTRO 1504	Descriptive Astronomy
BIOL 1505	Biology and the Modern World
CHEM 1500	Chemistry in Modern Living
GEOG 1503	Introduction to Physical Geology
GEOG 2630	Weather
GEOL 1504	The Dynamic Earth
GEOL 1510	Geology of National Parks
GEOL 2602	Introduction to Oceanography
PHYS 1500	Conceptual Physics
PHYS 2608	Sound

The following courses have been approved as substitutes in the Natural Science domain. They are high-level courses; students should consult their advisors about the appropriateness of selecting them.

BIOL 1545	Allied Health Anatomy/Physiology
BIOL 1551	Anatomy and Physiology 1
BIOL 1552	Anatomy and Physiology 2
BIOL 2601	Principles of Biology 1
BIOL 2602	Principles of Biology 2
CHEM 1505	Allied Health Chemistry 1
CHEM 1506	Allied Health Chemistry 2
CHEM 1515	General Chemistry 1
CHEM 1516	General Chemistry 2
GEOL 1505	Physical Geology
GEOL 1513	Physical Evolution of North America
GEOL 1514	Life of the Geologic Past
GEOL 2611	Geology for Engineers
PHYS 1501/L	Fundamentals of Physics 1
PHYS 1502/L	Fundamentals of Physics 2
PHYS 2601/2610L	General Physics for Applied Medical Studies 1
PHYS 2602/2611L	General Physics for Applied Medical Studies 2
PHYS 2610/L	General Physics 1
PHYS 2611/L	General Physics 2

2. Artistic and Literary Perspectives

Students must take a minimum of two, and no more than three, courses from the following list of approved courses.

AFRST 2601	Black Studies 2
ART 1541	Survey of Art History 1
ART 1542	Survey of Art History 2

ENGL 1590	Introduction to Literature
ENGL 2610	World Literature
ENGL 2617	Women in Literature
ENGL 2618	American Literature and Diversity
ENGL 2631	Mythology
ENGL 2665	Introduction to Film Study
FNLG 2605	Topics in Foreign Drama
MUSED 2621	Musical Literature and Appreciation
MUSHL 2616	Survey of Jazz
MUSHL 2618	Rock 'n Roll to Rock
THTR 1560	Understanding Theater
THTR 1590	History of Motion Pictures
THTR 2690	The Art of Motion Pictures

Substitute courses for THTR 1560 and 1590:

THTR 4860	Dramatic Texts
THTR 4891	History of Theater

3. Societies and Institutions

Students must take a minimum of two, and no more than three, courses from the following list of approved courses.

AFRST 2600	Black Studies 1
AMER 2601	American Identity
ANTHR 2602	Introduction to Anthropology
ECON 1501	Economics in Action
ECON 1502	Panic and Prosperity: US Economic Policy Since the Great Depression
ECON 1503	Rich and Poor: Diversity and Disparity in the U.S. Workplace
ECON 2610	Principles 1
ECON 2630	Principles 2 Students may take only one course from among Econ 1501, 1502, and 1503; they may take both 2610 and 2630, but can not combine either one of them with 1501, 1502, 1503.
GEOG 2626	World Geography
GEOG 2640	Human Geography
HIST 1511	World Civilizations to 1500
HIST 1511H	World Civilizations to 1500
HIST 1512	World Civilizations since 1500
HIST 1512H	World Civilizations since 1500
HIST 2605	Turning Points in US History 1
HIST 2606	Turning Points in US History 2
POLIT 1550	Politics and Globalization
POLIT 1560	American Government
POLIT 2640	Comparative Governments
RELIG 2601	Introduction to World Religions
RELIG 2617	Introduction to Eastern Religions
SOCIO 1500	Introduction to Sociology
WMST 2601	Introduction to Women's Studies

4. Personal and Social Responsibility

Students must take two courses from the following list of approved courses.

COUNS 1587	Introduction to Health and Wellness in Contemporary Society
FNUTR 1551	Normal Nutrition
HSC 1568	Healthy Lifestyles
PHIL 2609	Technology and Human Values
PHIL 2625	Introduction to Professional Ethics
PSYCH 1560	General Psychology
PSYCH 3707	Psychology of Intimate Relationships
PSYCH 3758	Lifespan Development
RELIG 2621	Religion and Moral Issues
RELIG 2631	Religion and the Earth

5. Selected Topics and Electives

Students must take one course in this area from a list of approved interdisciplinary courses. Alternatively, a student may select one additional general-education approved course from mathematics, natural science, artistic and literary perspectives, and societies and institutions. The approved courses are the following.

BIOL 3718	Women, Science, and Technology
PHIL 2600	Introduction to Philosophy
PHIL 2619	Introduction to Logic
PHIL 2630	Critical Thinking
RELIG 2605	Myth, Symbol, and Ritual
SPED 2630	Individuals with Exceptionalities in Society

6. Capstone

Students must take one upper division capstone course in the major or from another area that satisfies general education criteria.

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, artistic and literary perspectives, societies and institutions, and personal and social responsibility. 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.

Summary of General Education Model

I. Baccalaureate Degree

Basic Skills

Writing I & II	2 courses
Speech	1 course
Mathematics	1 course

Knowledge Domains

Natural Science	2 - 3 courses*
Artistic & Literary Perspective	2 - 3 courses*
Societies and Institutions	2 - 3 courses*
Personal & Social Responsibility	2 courses
Selected Topics and Electives	1 course
	15 Courses total.

* A total of eight courses must be taken in natural science, artistic & literary perspectives, and societies & institutions; hence, the pattern may be 2-3-3, 3-2-3, or 3-3-2.

Writing-intensive components are to be integrated in other courses at the upper division level. Oral communication-intensive components may be at the lower or upper division level; the student is

New General Education Requirements—(Knowledge Domain)

The University is implementing a new general education program beginning with the Fall 2000 Semester. The new program has two components: Knowledge and Basic Skills. Current and former/returning/transfer students may continue with the old general university requirements and are encouraged to do so. (See p. 38 in 1999-2000 YSU Catalog). However, students enrolling for the first time in the fall of 2000 must take the new general education model; other students may also choose this option. Below is a table that outlines the new requirements for general education. **All students should see an advisor before registering for general education credit.**

BACCALAUREATE DEGREE						ASSOCIATE DEGREE
Natural Science=NS **2-3 courses**	**Artistic & Literary Perspectives=AL** **2-3 courses**	**Societies & Institutions=SI** **2-3 courses**	**Personal & Social Responsibility=PS** **2 courses**	**Selected Topics=ST** **Interdisciplinary** **1 course**	**Capstone=CA** **1 course**	In-coming students or those choosing the new general education requirement option must take a minimum of six (6) general education courses. These include: ENGL 1550 ENGL 1551 Four additional courses are needed from at least three of the following areas: Math (no more than one course) Speech Natural Science Artistic and Literary Perspectives Socities and Institutions Personal and Social Responsibility For a list of courses in these areas, see Baccalaurate Chart.
A & S 2600 required of all students not taking substitute courses. ASTRO 1504 BIOL 1505 CHEM 1500 GEOG 1503 GEOG 2630 GEOL 1504 GEOL 1510 GEOL 2602 PHYS 1500 PHYS 2608	AFRST 2601 ART 1541 ART 1542 ENGL 1590 ENGL 2610 ENGL 2617 ENGL 2618 ENGL 2631 ENGL 2665 FNLG 2605 MUSED 2621 MUSHL 2616 MUSHL 2618 THTR 1560 THTR 1590 THTR 2690	AFRST 2600 AMER 2601 ANTHR 2602 CH&HS 1510 ECON 1501 ECON 1502 ECON 1503 ECON 2610 ECON 2630 GEOG 2626 GEOG 2640 HIST 1511 HIST 1511 H HIST 1512 HIST 1512 H HIST 2605 HIST 2606 POLIT 1550 POLIT 1560 POLIT 2640 RELIG 2601 RELIG 2617 SOCIO 1500 WMST 2601	COUNS 1587 FNUTR 1551 HSC 1568 PHIL 2609 PHIL 2625 PSYCH 1560 PSYCH 3707 PSYCH 3758 RELIG 2621 RELIG 2631	BIOL 3718 PHIL 2600 PHIL 2619 PHIL 2630 RELIG 2605 SPED 2630 Or Students may take an additional course in the **NS, AL, SI** or **MS** areas. Check with advisor.	Upper division in the major or area that satisfies general education requirement	
BIOL 1545 BIOL 1551 BIOL 1552 BIOL 2601 BIOL 2602 CHEM 1505 CHEM 1506 CHEM 1515 CHEM 1516 GEOL 1505 GEOL 1513 GEOL 1514 GEOL 2611 PHYS 1501/L PHYS 1502/L PHYS 2601 PHYS 2610L PHYS 2602 PHYS 2611L	***Possible substitute courses = (LS). Check with advisor.*** THTR 4860 THTR 4891					

Possible substitute courses = (SS). Check with advisor.

New General Education Requirements—(Basic Skills)

The University is implementing a new general education program beginning with the Fall 2000 Semester. The new program has two components: Knowledge and Basic Skills. Current and former/returning/transfer students may continue with the old general university requirements and are encouraged to do so. (See p. 38 in 1999-2000 YSU Catalogue). However, students enrolling for the first time in the fall of 2000 must take the new general education model; other students may also choose this option. Below is a table that outlines the new requirements for general education.

All students should see an advisor before registering for general education credit.

BACCALAUREATE DEGREE					ASSOCIATE DEGREE
Writing **2 courses +** *2 Writing (W) Intensive Courses**	**Speaking** **1 course +** ***2 Oral (O) Intensive Courses****	**Critical Thinking** ***2 courses*** ***Intensive only (T)****	**Math (MA)** **1 course**	**Foreign Language**	In-coming students or those choosing the new general education requirement option must take a minimum of six (6) general education courses. These include: ENGL 1550 ENGL 1551 Four additional courses are needed from at least three of the following areas: Math (no more than one course) Speech Natural Science Artistic and Literary Perspectives Socities and Institutions Personal and Social Responsibility For a list of courses in these areas, see Baccalaurate Chart.
Composition & Reading Placement Test (CRPT) required. (unless comparable credit is awarded from another source i.e. transfer hours, CLEP, AP, etc.)			**Math Placement Test required** (unless comparable credit is awarded from another source i.e. transfer hours, CLEP, AP, etc.)	**Foreign Language Placement Test (FLPT) required of all students in the College of Arts and Sciences.**	
1550, 1551 1550H, 1551H	COMM 1545, COMM 1545H	Taken as intensive only	Math 2623	**For specific requirements for your YSU College and major, see an advisor.**	
Intensive	***Intensive***	***Intensive***			
Both W Intensive courses must be upper division, preferably in major or minor. Courses must be outside the list of other general education courses. Foreign Language (FL) may satisfy requirement provided other criteria for FL are met.*	*O* Intensive (other than speech). Can be in major or minor with intensive component. Usually designated as upper division. Foreign Language (FL) may satisfy requirement provided other criteria for FL are met.*	*T* Intensive may be included in the list of general education courses, may be in major or minor, lower or upper division.*	Possible substitute courses (MS). Check with advisor. MATH 1549 MATH 1570 MATH 1571 MATH 1572 MATH 1581H MATH 1585H MATH 2652 MATH 2665		

Writing intensive components are to be integrated in other courses at the upper division level. Oral communication intensive components may be at the lower or upper division level; the student is allowed to take one on the upper division level. Critical thinking intensive components may be integrated at the lower or upper division level.

allowed to take one on the upper division level. Critical thinking-intensive components may be integrated at the lower-division or upper-division level.

An upper division capstone course is required, and preferred in the major.

II. Associate Degree ..... 6 courses

Includes Writing I & II and four additional courses from at least three of the following areas: Mathematics, Speech, Natural Science, Artistic and Literary Perspectives, Societies and Institutions, and Personal & Social Responsibility. 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.

Additional Course Requirements

In addition to the University's general degree requirements, there are specific requirements for each degree. These are described in the appropriate college section of the *Bulletin*.

Associate Degree Requirements

Requirements for each associate degree are listed in the appropriate college section. All associate degrees require completion of at least 60 semester hours of credit including 15 hours of general education.

Commencement

There are three graduation ceremonies each year: Fall Commencement (December), at the end of the first semester of the academic year; Spring Commencement (May), at the end of the second semester of the academic year; and Summer Commencement, at the end of the summer session.

STUDENT SERVICES

Center for Student Progress

The Center for Student Progress is designed to intervene actively in the lives of students to help them achieve academic and social success in college. Its primary purpose is to help students successfully complete their university experience. It offers a help desk that can make connections to campus resources and "work the system" for students. It also offers an intervention process that can assist students with setting and attaining their educational goals.

In addition, the Center houses the following services: Adult Learner Services, First Year Student Services, Student Tutorial Services, Multicultural Student Services, and Supplemental Instruction Services. For more information about the Center for Student Progress, please call (330) 742-3538, or stop in. The Center for Student Progress is located in Kilcawley West below the Bookstore.

Adult Learner Services

Adult Learner Services is an educational support service that focuses on the needs of students age 25 and older. It provides direct assistance to students while supplementing and complementing the work of other units and departments within the University.

Adult Learner Services provides programming, individual assistance, and information for adult students in order to promote and improve student success and integration in the campus community.

Workshops in reading and study skills, goal setting, and decision making are also offered to support adult learners as they move through the University. Adult Learner Services also functions as a referral to and from other support and service offices on campus; and assists in forming and promoting adult learner math classes for older students who may have anxieties regarding math. Adult Learner Services assists individuals and campus departments in relating more effectively to this population.

Adult Learner Services is located in the Center for Student Progress, in Kilcawley West directly underneath the YSU Bookstore. For more information regarding these programs or for any assistance regarding college, call (330) 742-3538. Individual and/or after-hours appointments are easily made.

First-Year Student Services

The First-Year Student Services (FYSS) reflects the cooperative effort of Youngstown State University administrators, faculty and students to assist all first-year students in adjusting to YSU.

FYSS's primary purpose is to aid students in their transition to college, help them build self-confidence, identify opportunities for growth, develop a sense of direction, and achieve their educational goals.

Students participating in FYSS prepare an educational plan to guide them through their first year of college. This involves setting realistic academic, career and personal goals based on the student's interests and abilities. Participants are assisted in this activity by FYSS staff who meet with them individually or in groups on a regular basis to offer guidance, support and referrals.

Peer Assistants, specially trained student employees, serve as helpers and friends of new students during their first year of college study or their first year at YSU. They review academic progress and guide students in developing a plan for improvement.

Mentoring service is available to any first-year student who wants support and encouragement from a volunteer faculty or staff member. The relationship focuses on career issues, educational success, as well as advice on requirements and procedures.

FYSS is located in the Center for Student Progress in Kilcawley Center West below the YSU Bookstore. First-year students are encouraged to drop in, call and make an appointment, or call for information at (330) 742-3746.

Multicultural Student Services

Multicultural Student Services has general responsibility for assessing the needs of multicultural students and recommending appropriate programs and services. Emphasis is placed on serving the following student populations: American Indian or Alaskan Native, Asian or Pacific Islander, African American and Hispanic Americans.

The office provides a variety of services including personal counseling, information, referral and assistance in resolving educationally related difficulties.

In cooperation with other administrative offices, MSS offers workshops in study skills, leadership development, college survival skills, race relations, and community information. In addition, annual events such as Native American Expo and Hispanic Awareness Week are sponsored by this office.

Students seeking further information and/or assistance are encouraged to visit Multicultural Student Services, located in the Center for Student Progress in Kilcawley Center West, or telephone (330) 742-7175.

Student Tutorial Services

Student Tutorial Services has as its primary goal the provision of supplementary academic help through tutoring in the 1500- and 2600-level courses. This tutoring assistance for lower-division courses— exclusive of those served by the Writing Center, the Math Lab, Reading and Study Skills, and the Foreign Language Laboratory—is available to students referred by faculty or academic advisors, or to students applying as self-referrals.

Student Tutorial Services also offers regularly scheduled group sessions, independent study materials, computer-assisted instruction, and review sessions for exams. For more information about Student Tutorial Services, please phone (330) 742-7253 or stop in. Student Tutorial Services is located in the Center for Student Progress in Kilcawley West. These services are free to all students currently enrolled at YSU.

Supplemental Instruction Services

Supplemental Instruction is a series of voluntary, weekly review sessions for students in selected courses. SI study sessions are informal seminars in which students may compare notes, discuss readings, develop organizational study tools, predict test items, and learn how to learn as well as what to learn in a specific course. Sessions are staffed by SI Leaders. Leaders are undergraduate students who have previously and successfully taken the course and then sit through the course again. The SI leader is trained as a learning facilitator by the Center for Student Progress.

SI is available to students in selected courses beginning as early as the first week of the semester. For more information about Supplemental Instruction Services, please phone (330) 742-2956. Supplemental Instruction Services is part of the Center for Student Progress located below the bookstore in Kilcawley West.

Career Services

The Office of Career Services is a centralized career services facility that provides programs, resources, and services for students and alumni to achieve the following: explore career and work possibilities and make informed decisions regarding options; develop and refine the employment search skills required to successfully compete in an ever more competitive job market; and foster positive relationships with employers that will generate a broad range of employment opportunities for YSU students and graduates.

Employers consistently note that excellent employment candidates are individuals who can articulate a focus to their preparation for a career and demonstrate that they have followed a carefully developed plan. The office's Career Information Center contains an extensive collection of resources that individuals can access to research possible career options and to investigate employment opportunities with a variety of organizations. The resource collection includes FOCUS II, a very popular computer-based career and educational planning software package. The office's staff of experienced program coordinators meets with students and alumni in individual appointments to assist them in exploring career options and developing plans to achieve their occupational and career goals.

To be successful in today's competitive job market, one must have well developed job-search skills. Throughout the year the Career Services staff conducts workshops and seminars that are designed to foster effective employment search skills. The staff also works individually with students and alumni to assist them in establishing effective job-search plans; review and provide feedback on resumes and marketing letters; and help them prepare for future job interviews. Individuals can schedule appointments to participate in simulated interviews that are videotaped and reviewed to provide feedback on strengthening individual interviewing skills.

Regional, local, and national organizations send representatives to the YSU campus to recruit graduating students and recent alumni, and to promote employment opportunities with their organizations. Graduating students registered with Career Services are eligible to interview with employers visiting the campus during the academic year. Annually in Oc-

tober a job fair is held on campus, and during the October 1999 Job Fair almost 80 employers came to the YSU campus and nearly 850 individuals attended the event. Registering for employment services will also enable Career Services to get your resume to employers not recruiting on campus that are seeking candidates matching your background and qualifications. The office also serves as a resource for students seeking employment, either on campus or with area employers, while attending YSU.

The Office of Career Services is located in 1034 Jones Hall. During the fall and spring semesters, office hours are 8:00 a.m.-7:00 p.m. on Monday, and 8:00 a.m.-5:00 p.m. Tuesday-Friday. During the summer, office hours are 8:00 a.m.-5:00 p.m. Monday-Friday. Our phone number is 330-742-3515, and our web site address is www.cc.ysu.edu/career-services.

University Counseling Center

The University Counseling Center (UCC) is staffed by psychologists, counselors, and trainees. We offer a warm, relaxed (and confidential) place to talk things out. Admittedly, there are few simple answers to problems, but often a counselor can offer new ways of looking at your situation as well as suggestions for change. Often, just talking with someone who asks the right questions is all it takes to get going on a fresh start.

Counseling is available at no cost to YSU students, faculty, and staff. The Counseling Center staff addresses such issues as test anxiety, loss and grief, eating disorders, alcohol and drug problems, career indecision, sexuality, and self-esteem and relationship problems.

The University Counseling Center does not release information to University administrators or faculty, to parents, family members, or to outside agencies without the client's written authorization. Exceptions to confidentiality include: as required by Ohio law, when the counselor determines that a person is at risk for child or elder abuse/neglect, suicide, or homicide.

Class presentations, workshops, and training programs are offered to the campus and community on a variety of psychological/self-help topics. Please call the director at 742-3057 in advance to arrange a presentation.

The UCC also has a resource library providing information on mental health, wellness, and alcohol/drug issues. Books, tapes, and literature are available to the campus community for research purposes, class projects, or personal use.

You may arrange appointments by telephone at (330) 742-3056, or in person at the University Counseling Center, third floor Beeghly Hall (College of Education). Visit our website at http://www.cc.ysu.edu/UCC.

The University Counseling Center (UCC) is a unit of the Department of Counseling in the College of Education.

Disability Services

Disability Services in the Office of Equal Opportunity provides students, faculty, and staff with assistance and information regarding accommodations for people with disabilities. Compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 involves providing reasonable accommodations to qualified individuals with disabilities. These accommodations are provided in order to ensure equal access to people with disabilities regarding educational opportunities, programs, and activities.

Common accommodations include providing extra time to take exams in a quiet location; scribing for exams; tape recording class lectures; arranging sign-language interpreters, special seating and early registration; and providing note takers, readers, and adaptive computers. Equipment loans of tape recorders and a personal amplification device are also available. A resource library provides information on various disability issues. Books, tapes, and literature are available for use by the campus community.

To inquire about receiving disability services, please contact the office at (330) 742-3370 (voice), (330) 742-1564 (TDD), or (330) 742-3108 (fax). A confidential appointment will be set up to discuss your accommodation needs. The Office of Equal Opportunity and Disability Services is located in Jones Hall, Room 2002.

Student Health Clinic

The Student Health Clinic is located in Beeghly Center, Room 200. The Health Clinic, staffed by licensed physicians and registered nurses, provides first aid and both sick and well care. Sick care includes diagnosis and treatment of illness or injury. Well care encompasses preventive medical care such as health maintenance screenings, which include physical exams for sports or programs such as nursing or respiratory therapy; gynecological exams; consultations; and referrals to appropriate outside services or physicians. Required immunizations are administered here. Information is available about student health insurance.

Physicians are available 20 hours per week when classes are in session and four hours weekly during break periods and the summer. Students are seen on an appointment basis and can make arrangements by phoning (330) 742-3489. Nurses are available daily, year-round.

All services provided for students are strictly confidential.

The YSU Women's Center

The Women's Center at Youngstown State University creates a positive and supportive environment for women students within the university community by enriching their educational experience. The Women's Center promotes growth and development through the creation of programs and services which provide women with information, skill development, life planning, and personal enrichment.

In keeping with the mission of the Women's Center, the Office of Women's Programs was established to promote programs of interest to all women. Through its programs and services, the Women's Center fosters an understanding of women's issues, promotes the exchange of ideas and mutual support, encourages retention and academic success for women students, and addresses the inequities women encounter.

The YSU Women's Center offers a wide range of services and programs designed to educate and assist women students. The Center is located on the upper level of Kilcawley Center, next to the YSU Bookstore. The programs and activities are designed to provide five primary functions: support, education, advocacy, referral services, and a resource center.

Support. Several support groups are currently being organized that will address issues ranging from adjusting to college to surviving the breakup of a relationship to eating disorders. Some of the women we hope to reach through support groups are: sexual assault and rape survivors, non-traditional/adult learners, women of color, lesbians, single mothers, and women with disabilities.

In addition to the support groups, the staff of the Women's Center fosters a supportive environment that is open and welcoming to all women on campus regardless of their race or ethnicity, sexual orientation, age, or political philosophy.

Education. The Women's Center has a strong outreach function designed to educate the YSU community on a variety of issues that affect the lives of women. The Women's Center sponsors lectures, films, visual displays, and performance art designed to educate and enlighten students. We also sponsor awareness weeks throughout the year that focus on various issues, such as eating disorders, rape prevention, sexual harassment, self-esteem, parenting skills, safer sex, and fitness and nutrition.

Advocacy/Referral. The Women's Center also provides advocacy and referral services. We have an extensive list of local and campus agencies that provide services ranging from legal assistance and mental health counseling to a shelter for battered women and children. The Center also maintains an updated list of local daycare providers.

Resource Center. The Women's Center houses a resource library that students can use to research issues related to women for papers and presentations.

ACADEMIC RESOURCES

The Writing Center

The Writing Center is operated by the Department of English to provide individualized and group instruction in writing skills for all YSU students. The Writing Center staff includes members of the English faculty, undergraduate tutors, and a full-time coordinator. Services include evaluation of writing strengths and weaknesses, tutoring, writing workshops for specific course needs, assistance with the World Wide Web, on-line tutorial assistance, and consultation for writing projects in all disciplines. The Writing Center also maintains a computer lab component for English 1540.

Writing Center services are free of charge to all registered YSU students. Located in Coffelt Hall, the center is open from 9 a.m. to 3 p.m. weekdays and from 4:30 to 7:30 on Monday and Thursday evenings. Drop-in hours are also on Mondays and Thursdays, from 3 p.m. to 4 p.m. For further information, contact the Writing Center, telephone (330) 742-3055.

Mathematics Assistance Center

The Mathematics Assistance Center is an academic support service which is integrated with the Department of Mathematics and Statistics. Its mission is to assist YSU students in the strengthening of the fundamental mathematics skills which are necessary for success in the study of mathematics and to provide resource materials for independent study.

The Center, located in 3090 Cushwa Hall, operates on a walk-in basis. Tutoring is provided to any student who is currently enrolled in one or more math courses ranging from Elementary Algebraic Models through Calculus 2. Call the Center at (330) 742-3274 for a list of math courses for which tutoring is offered.

Among the other services offered by the Mathematics Assistance Center to any student of the University are computer-assisted instruction, video-assisted instruction and hand-outs on selected mathematics topics. Workshops are offered as needed and as resources permit.

The staff of the Mathematics Assistance Center consists of a coordinator, program assistant, graduate assistants, undergraduate tutors, and student receptionists. The Center maintains business hours as follows: Monday through Thursday from 9:00 a.m. to 8:00 p.m., and Friday from 9:00 a.m. to 1:00 p.m. (Call for hours for summer.) For additional information, contact the Mathematics Assistance Center at (330) 742-3274.

Reading and Study Skills Center

The Reading and Study Skills Center is operated by the Department of Counseling in the Beeghly College of Education to provide individualized and group instruction in improving reading rate and comprehension as well as study strategies. The Reading and Study Skills Center is staffed by faculty, graduate assistants, undergraduate tutors, and a full time coordinator. The Reading and Study Skills Center also maintains a laboratory component for R&SK 1510A and 1510B–courses mandated for students based on the Composition and Reading Placement Test. A more advanced course in critical thinking and study strategies is available through R&SK 1570. Services include individual tutoring, reading and study skills workshops and assistance with preparation for standardized tests such as PRAXIS, MCAT and MAT.

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 3312 Beeghly College of Education and is open from 8:00 a.m. to 5:00 p.m., Monday through Thursday, and 8:00 a.m. to 3:00 p.m., on Friday. For further information contact the Reading and Study Skills Center, telephone (330) 742-3099.

Maag Library

MaagNet, Maag Library's online public access catalog (Innovative Interfaces, Inc.) provides access to the library's collection linking over 100 computers within the library, and hundreds of computers linked each day via the WWW from throughout the world (http://www.maag.ysu.edu/).

Maag Library is a member of OhioLINK, a consortium of Ohio's college and university libraries and the State Library of Ohio. Serving more than 500,000 students, faculty and staff at over 75 institutions, OhioLINK offers access to over 31 million library items statewide. OhioLINK also provides access to over 75 research databases, including a variety of full-text resources.

OhioLINK offers user-initiated online borrowing through its statewide central catalog. Users have the ability to electronically request items while searching the OhioLINK central catalog. It also provides a delivery service among member institutions to speed the exchange of library items. To date, the OhioLINK central catalog contains over 7 million bibliographic resources from the Ohio institutions, encompassing a spectrum of library material including law, medical and special collections. OhioLINK provides access to more than 4,500 simultaneous users at over 100 locations, serving more than half a million patrons.

Maag Library maintains collections of instructional and research materials in books, databases, phonograph records, audio tapes, compact discs, videotapes, periodicals and microforms. These holdings exceed a million volumes. The Serials and Microforms collections are located on the lower level of Maag Library. Microform readers also are on the lower level, as are coin/card operated copy machines. On the main level are public services (e.g. Reference and Circulation) and the library offices. The book collection is on the third through sixth floors in open stacks, with split-level design between stacks and reading levels. The computer lab is on the fourth floor. This lab supports over 30 simultaneous users and provides access to patrons with disabilities. The Multi-media center is on the fifth floor. This area provides a comfortable environment for library patrons to listen to recordings or view videotapes. The Government Documents area on the sixth floor provides a large collection of depository items for research and instruction. There are study rooms and carrels on each floor. Maag Library also extends to the College of Education where it operates the Curriculum Resource Center (CRC) on the main floor of Beeghly Hall.

Maag Library and the CRC provide opportunities for bibliographic instruction classes, group study and discussion, as well as individual development.

The Computer Center

The Computer Center is a centralized computational facility housing the Computer Services and Network Services Departments, along with Customer Support Services personnel. The facility, which provides decentralized access to faculty, staff and students, occupies the fourth floor of Meshel Hall, an 87,000 square-foot technology center. Serving both academic and administrative needs, the Computer Center operates an IBM 9672 Model R42 CMOS processor with one gigabyte (over one billion characters) of main memory (RAM). The IBM 9672 supports two state-of-the-art production environments via the OS/390 and VM/ESA operating systems. These environments provide online access to a high-performance RAID-5 disk array, providing a data storage capacity in excess of 180 gigabytes. Application development uses the MODEL204 relational database and VSAM files accessed through CICS/ESA. A UNIX environment is accessible to students, faculty, and staff via IBM's AIX operating system executing on a network-attached RS/6000 workstation. More than 3,000 online devices, including terminals, personal computers, printers, and projection systems are located on campus. Telephone lines are provided for remote access off campus. Lines are available at 56Kb to access Netscape and UNIX services and are serviced in digital mode. Additional lines providing menu-based text service are available at 33.6Kb.

An Ethernet backbone runs through campus and connects workstations, personal computers, Maag Library's computer system, and the IBM 9672 to the Internet. Intra- and Internet access to the IBM 9672 is provided through a high-speed Open Systems

Adapter. All campus buildings are linked with an ATM optical fiber network consisting of 5 high-speed core switches fully meshed with OC12 (622Mb/sec) single-mode fiber. Each building is connected to the core with ATM building switches at OC3 (155Mb/sec) speed. 100Mb Ethernet is emulated to the desktop over Category 5 copper cabling. Over 10,000 network locations have been wired with electronics to activate 4,600 concurrent connections. Campus Intranet and Internet access is available at each of these locations including all residence hall rooms. Selected classrooms are equipped with fiber optic access to facilitate broadcast quality, full-motion video distribution, and distance-learning opportunities.

Personal computers are available on campus for instruction and research. Currently, more than 50 labs are available within the 14 campus buildings and Metropolitan College sites. Networked personal computers allow access to local software, as well as to other facilities on campus, such as Maag Library, and to Internet sites worldwide. Implementation of the Electronic Campus computing plan is currently in the final phases, establishing network connections throughout the entire campus. The Electronic Campus provides faculty, staff, and students the opportunity to use global and local computer networks and current-generation computer hardware and software via this state-of-the-art network infrastructure.

Laboratories

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

Located in 561 DeBartolo Hall, the Language Learning and Resource Center is designed for both classroom use and individual study. The individual-study section has 44 carrels, used mainly for web browsing, professor's assigned homework and quiz taking, self-study with specific software in various languages, and general word processing. The LLRC includes an extensive video collection of documentaries, instructional videos, and commercial films in the languages taught on campus. The classroom section has 31 student stations equipped with individual cassette recorders, coordinated with a multi-channel console through which audio programs are transmitted to the students, as well as a VCR projector with auxiliary feed into the console to provide individual listening to movie soundtracks. Student assistants are hired to provide direction on a variety of homework assignments and test preparations.

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 for recording neural activity, a surgery room for investigating brain-behavior interactions, animal housing areas, a child observation room with mirropane glass, equipment for the control of animal behavior, and a complete audio-visual system to record the different behaviors possible in the laboratory setting.

The physical anthropology and archaeology laboratory has a wide range of special equipment including research microscopes, analytical balances, and spectrophotometers. The Department of English has six computer labs in DeBartolo primarily for the use of students enrolled in English composition classes.

Williamson Hall houses two student computer laboratories with a total of 43 workstations and direct Internet access and a teaching laboratory with 32 workstations.

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

Laboratories in the Engineering Sciences Building are described in the College of Engineering and Technology section of the catalog.

The Bookstore

The Youngstown State University Bookstore is located at the west end of the Kilcawley Center complex. The bookstore is a full-service operation that carries required textbooks and supplies as well as a wide array of emblematic apparel, software, gifts, stationery, specialty items, and an extensive trade and general book area. You can reach the Bookstore by calling (330) 742-3589 or visit our website at www. ysubookstore.com.

Testing Office

The Testing Office in the Enrollment Center in Meshel supervises and administers national admission, certification and some credit-by-exam tests. These include The American College Test, the College Level Examination Program, the Graduate Record Exam, the Miller Analogies Test, the Law School Admissions Test, the Medical College Admissions Test, and the Praxis Exam. See the specific department for departmental exams.

Center for International Studies and Programs (CISP)

The Center for International Studies and Programs (CISP), as the University's clearinghouse for international activities, is responsible for supporting the internationalization of the YSU campus through continued support to faculty for incorporating international perspectives into their classes.

The Center supports international faculty development and coordination of international studies. The Center is also responsible for the institution's study-abroad activities and interinstitutional exchange agreements; international student affairs; immigration services for international students, faculty, and staff; community outreach for matters international; for the English Language Institute (ELI); international undergraduate admissions; and for international recruitment.

The International Resource Library

The International Resource Library provides a collection of references and advising overseas study, work, internship and volunteer opportunities. Youngstown State University is a member of the Institute of International Education (IIE), and has access to the programs offered by the Council on International Education Exchange (CIEE). YSU is also a member of the Ohio International Consortium, which is formed by membership from the Ohio state institutions; the College Consortium for International Studies (CCIS). In addition the Center continues to develop study abroad programs sponsored by YSU. All of these memberships provide YSU students with the opportunity to study in more than seventy countries throughout the world on a short-term or academic-year basis. The Center also coordinates advising for the Fulbright, National Security Education (NSP, Rhodes Scholars Scholars, and the American Institute for Foreign Study (AIFS). The Center also issues the CIEE International Identity Cards for faculty and students.

In addition to study abroad information the library also contains country specific information, Fulbright videocassettes, information on the Test of English as a Foreign Language (TOEFL), International directories, information for international students, and other topics relevant to the international area.

Community Outreach

One of the Center's active committees is the Community Outreach committee. This committee's membership consists of faculty, staff, students, and community individuals and organizations.

This committee's main charge is to become the primary vehicle from the Center to draw community peoples into closer relationships with the many faculty and students who are international or who have strong international interests.

International Student and Scholar Programs

The Office of International Student and Scholar Programs of the Center for International Studies and Programs (CISP) provides a wide variety of services to international students, faculty, and staff at YSU. This program provides assistance with cultural adjustment for new students as well as special programs regarding cross-cultural interactions for both international and U.S. students. This office offers immigration and general education advising and also greets students on arrival and conducts orientation.

International Student Association (ISA)

The purpose of the International Student Association is to provide a forum for international students to gather and meet each other and other students at the University.

International Undergraduate Admissions

Students applying for international undergraduate admissions and the English Language Institute (ELI) apply directly to the Center for International Studies and Programs (CISP). For more information see International Undergraduate Applicants.

International Recruitment

All international recruitment activities are coordinated through the Center for International Studies and Programs (CISP). The director of CISP, in conjunction with CISP's Office of Admissions and Recruitment, provide appropriate information to the campus. Should you need information, please call CISP at (330) 742-2336.

HOUSING SERVICES

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 the Wick and Weller Houses on Wick Avenue. On-campus options for students range from traditional residence hall-type 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 Houses have full-time professional and part-time student staff that oversee the operation of the Houses and assist students with the problems 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 computer center are never very far away.

Kilcawley House

Kilcawley House was constructed in 1965. All areas of this facility have been refurbished recently. Public areas, bathrooms and student rooms are at-

tractive and modern. This seven-story building can accommodate 238 students. Kilcawley residents live in double occupancy rooms, complete with bunk beds, wall to wall carpeting, built-in desks, telephones with voicemail access, cable TV, internet access, and plenty of closet and drawer space. Lounges are available on each floor, with two formal study lounges located on the ground level. A computer lab with Internet access is located on the first-floor study lounge. The basement contains a game room equipped with a TV and VCR, ping-pong, pool and foosball tables, kitchenette with vending machines, fitness equipment, 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 National City Bank, computer center, and copying service, without going outdoors.

Lyden House

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

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

Rooms also feature individually room controlled heating as well as air conditioning units, cable TV, telephone with voicemail access, decorator vertical window blinds, overhead lighting and tiled floors. Each room has internet access. All rooms in Lyden are designed to be handicapped accessible.

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

Cafaro House Honors Residence

Cafaro House, our new residential honors facility, is coed, housing 274 students. The facility, which opened fall 1995, houses participants in the University Scholars Program, B.S.M.D. program, and Honors Program.

Enclosed suites rather than traditional rooms accommodate 6-18 residents, with individual rooms branching off each suite area which house 2-3 residents. Each room has cable TV, internet access, and telephones with voicemail 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 with internet access, and music practice rooms.

Weller House
Wick House

Both Wick and Weller Houses are located along Wick Avenue next to the Arms Family Museum of Local History and near the Butler Institute of American Art. Both of these houses were purchased by the University, and were then completely renovated. Weller House accommodates 38 upperclass, junior, senior and graduate tenants. Wick House accommodates 36 women. Complete renovations of these houses included all new energy-efficient windows, heating and air conditioning units, carpeting, and lighting. 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, and a kitchen furnished with modern cabinets, telephones with voicemail access, cable TV, an electric range, refrigerator/freezer, garbage disposal and a dining table. Apartments vary in size and are designed to accommodate two to five students.

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

Wick House, constructed in 1906, offers the traditional architecture style of the turn of the century. This four-story former mansion features an impressive, historically preserved dual staircase. It offers women students a wide variety of housing options, ranging from single-occupant rooms to rooms accommodating four students. Rooms vary in size and share showers and restroom facilities.

Wick House residents enjoy security monitoring, a conversation lounge, computer lab, cable TV, telephones with voicemail access, and laundry facilities.

Christman Dining Commons

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

This gracious single-floor dining facility architecturally compliments 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 from the Housing Services Office. You can request an application by mail, by phone, or in person, or print the application from YSU's website. If you indicate an interest in housing on your application for admission, an application 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 Undergraduate Recruitment and Admissions (OURA) at (330) 742-2000.

Private Housing

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 the Housing Services, cooperation and regular communication ensures 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 75 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. 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 transportation 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 Housing Services Office at (330) 742-3547 for more information.

Lockers

A full-time student may rent a locker on campus for $15. All items stored must be removed at the end of each academic year. The University assumes no responsibility for property stored in a locker. Information about these lockers is available in the Kilcawley Center Bytes 'n Pieces.

CAMPUS SAFETY

University Police Department

A well-trained and well-equipped campus police force is maintained by Youngstown State University. The department is located in the YSU Police Department Building on University Plaza, just west of Wick Avenue.

The staff consists of 23 sworn police officers, 6 support employees, and an intermittent staff of 130 sworn officers. The department is a personal-service, technology-efficient law enforcement unit. The staff is supported by a sophisticated communication system, closed circuit television, well-equipped cruiser/patrol vehicles, and computer-based record keeping.

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

The University Police Department is open 24 hours a day. The general business telephone number is 742-3527. The emergency service number is extension 911. Campus emergency telephones are located throughout campus that will connect you directly to the YSU Police Department in the event of an emergency.

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 University's Campus Safety brochure. Crime statistics are also published each quarter in the *Schedule of Classes*.

YSU Escort Service (YES)

YES 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. Escorts are available Monday through Thursday from 7:00 a.m. to 11:00 p.m. and on Friday from 7:00 a.m. to 7:00 p.m., every day school is in session. The exception is summer quarter, when escorts are available with advance notification. 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) 742-1515 for more information or to schedule an escort. After hours, on holidays and weekends, call the YSU Police Department at (330) 742-3527 if you need an escort.

PARKING

Parking for students, faculty, and staff is available close to all major campus buildings. You must secure a parking permit on either a semester or a daily basis to be able to park in these lots.

Some short-term metered parking is available on the streets surrounding campus, in the parking lot adjacent to the University Police building, and beside Meshel Hall.

Parking areas are designated as follows:

S — Student Parking
R — Resident Parking
F — Faculty/Staff Parking
M — Mixed Parking (faculty, staff, and students)

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, all parking areas (except spaces posted as No Parking, Handicap, etc.) are available for use by anyone with a current permit.

The current parking regulations brochure contains additional information about University-controlled parking. The brochure is available from Parking Services in Room 2000, 318 Fifth Avenue. 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 starts, jump starts, and lockouts. The MAP will also lend out lug wrenches, jack stands, and gas cans.

STUDENT ACTIVITIES

The Office of Student Activities seeks to support and compliment the University's academic mission through encouraging and offering social and educational experiences, programs, and services that contribute to student learning and increase students' satisfaction with their life experiences. We are dedicated to providing a challenging and supportive campus environment that promotes a variety of learning and leadership opportunities for increasing knowledge, skills and personal development.

The University is committed to the belief that students have a right to organize and participate in groups whose purpose centers on the interests and goals of the individuals involved. Students interested in forming an organization should consult with a staff person in this office for procedural information and resources.

The Office of Student Activities also fosters ethical leadership and encourages involvement in leadership opportunities to promote personal identity, intellectual, spiritual, social, cultural, and physical development. Through collaborative efforts, a campus environment is promoted which affirms our common humanity, values each individual, and respects the expression of others' view of the world.

The Office of Student Activities strives to incorporate the following programmatic areas:

- **Campus-Wide Program Development**—To increase student involvement in programs and activities, the Office of Student Activities will initiate, encourage, and coordinate campus-wide programming efforts between academic, administrative and student units.
- **Community Development**—The Office of Student Activities is committed to sponsoring and supporting programs which enhance a sense of community on the YSU campus.
- **Advising and Communication**—The office is dedicated to providing superior advising and support to students and student groups including special student populations (e.g., culturally diverse, commuters, Greeks, etc.); to encourage and enable students to actively participate in administrative decision making and in the planning, implementation and delivery of quality co-curricular programs.
- **Leadership Development and Recognition**—Through programming and direct support, the Office of Student Activities will provide opportunities for Youngstown State University students to develop leadership skills and recognize those individuals who have made contributions to improve the co-curricular life of the campus.
- **Student Advocacy**—Consistent with the educational mission of Youngstown State University, advocacy for organizations and individuals and active involvement in student life is critical to create an atmosphere that promotes belonging, satisfaction and retention of YSU students.

The University believes that involvement and participation in co-curricular activities can make a significant difference in the quality of a student's college experience. Involvement offers you the opportunity to explore and pursue a wide range of interests outside the formal classroom setting. Other benefits of involvement include the development of leadership skills, self-confidence and social poise, and expanded friendships.

In order to facilitate involvement in student activities, YSU has provided the Student Activities Office with staff to assist students in finding areas of involvement to meet your interests and needs. The office is located on the second floor of Kilcawley Center.

Kilcawley Center

Kilcawley Center is the community center of the University, for all the members of the University family—students, faculty, staff and alumni. It is not just a building; it is also an organization and a program. Together they represent a well-considered plan for the community life of the University.

As the "living room" or the "hearthstone" of the University, the Center provides the services, conveniences, and amenities the members of the University family need in their daily life on campus and for getting to know and understand one another through informal association outside the classroom.

Through its various committees and staff, it provides a cultural, social, and recreational program aimed at making free-time activity an integral part of a YSU education.

The Center contains several study lounges, 19 conference and multipurpose rooms for the use of the University community, a commercial bank and ATM machine, copy services, a travel agency, fax service, U. S. mail drop and stamp vending machines, catering offices, and the Center's staff offices.

In addition, Kilcawley Center offers a computer room equipped with PCs. Use of the computers is free, and a small fee is charged for laser output. The Graphic Center employs a full-time professional and student graphic designers to produce flyers, banners, and other graphics for students and campus organizations at reasonable cost. Student Government offices, student organization mailboxes, and the Women's Center are all housed in Kilcawley. The Student Progress Center and the YSU Bookstore are both located in the Center's west wing.

Kilcawley Center strives to meet the diversified needs of the University community in its food-service program. Arby's, which contracts space in the Center, is located on the lower level of Kilcawley and offers a variety of fast foods. Breakfast is served beginning at 7:00 am with a varied menu available for both day and evening students. Peaberry's provides students with a wide variety of pizza choices, snack foods, hot sandwiches, salads, refreshments, and fruity yogurt "smoothie" drinks. Peaberry's stage and large screen TV make eating and entertainment a popular form of relaxation.

University Dining's Market Place Café offers a casual atmosphere with lots of food choices. Inside the Café there are a variety of menu options including fresh homemade soups, freshly baked pastries and muffins, chargrilled chicken sandwiches and fresh cut, homestyle french fries at Pecks Grille, Subversions sub sandwiches, Mesa Jake's Southwest tacos and burritos, and grab-'n-go fresh, prepackaged cut salads. Pete's Arena serves large slices of pizza, hot sides such as pastas and vegetables. Early mornings, the Café serves hot breakfast meals where you can also enjoy a cup of Starbucks coffee.

Noodles Restaurant, located on the upper level of Kilcawley, features an Italian menu with homemade sauces, soups, pasta dishes and antipasto bar with a variety of marinated salads. Located inside Noodles is their wood-fired brick oven where Noodles specialty pizzas are cooked. Crayons and butcher paper are on the tables for a fun and creative lunch break.

On the lower level of Kilcawley is The Bagel Stop, Youngstown's New York-style bagel shop. It features a menu of fresh bagels with homemade flavored cream cheeses and Starbucks coffee for the mornings and delicious bagel sandwiches, cookies, snacks and beverages for the afternoon.

Students who are not residents may sign up for the Penguin Card, which is a cash debit card used in all of University Dining's operations. All University Dining operations are open Monday through Friday with the exception of Christman Dining Commons, located adjacent to Lyden and Cafaro housing. Christman offers a variety of menu selections and is open for breakfast, lunch, and dinner Monday through Sunday for resident students.

University Dining Service and catering offices are located on the upper level of Kilcawley near the University Plaza lobby entrance. A full catering guide menu is available for small group functions to large dinner buffets for up to 450 persons.

Information about Kilcawley Center events and services is available at the Bytes 'n Pieces counter, upper level Kilcawley, or by calling (330) 742-3516.

Student Government

The student body of Youngstown State University is represented by Student Government, which operates under constitutional powers granted by the University. The legislative branch of Student Government is composed of representatives from the six undergraduate colleges, the College of Arts and Sciences, the College of Business Administration, the College of Education, the College of Engineering and Technology, the College of Fine and Performing Arts, the College of Health and Human Services, and the School of Graduate Studies, in proportion to the enrollment of each. All meetings of student government representatives are open to the student body.

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

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

Student Organizations

Students at YSU have formed over 130 student organizations around various interests and commitments. Contact the Office of Student Activities in Kilcawley Center at (330) 742-3575 for a current list of student organizations or information about starting a student organization or group.

Student Publications

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

Theater

All students in the University are invited to participate in theater production. As a cultural offering of the Department of Communication and Theater in the College of Fine and Performing Arts, the University Theater presents five major productions and three second-stage productions during each academic year, plus a dance recital and numerous student-directed one-act plays. Each summer, a dinner theater production is also presented in conjunction with Kilcawley Center or other regional theater groups.

The co-curricular production program is designed to support the theater training mission of the Department. As such, its staged performances reflect a wide range of dramatic expression, from historical masterpieces to representative works from the contemporary theater. Major productions are so selected that during a four-year span at YSU, a theater student will have the opportunity to work on a balanced blend of modern and classical plays and musicals. Recent productions have included *The Tempest*, *Evita*, *Lysistrata*, *Big River*, *An Enemy of the People*, and *Fool for Love*.

Membership in the Eta Phi cast of Alpha Psi Omega, the country's largest and most active honorary dramatics fraternity, is open to YSU students who distinguish themselves in theater and scholarship.

Major University Theater productions are presented in Bliss Hall, the performing arts complex which contains Ford Theater, a 410-seat standard proscenium theater, and the Spotlight Arena Theater, which affords a variety of production formats including arena and thrust staging. Besides accommodating some of the major productions, the Spotlight Theater serves as a laboratory for student-directed plays, acting and oral interpretation recitals, and various workshop activities.

With an emphasis on "learning by doing," YSU theater students apply classroom-learned theories and techniques in numerous campus productions. In recent years YSU students have also been able to meet with theater professionals such as makeup artist Irene Corey, Edward Albee, Robert E. Lee (who attended the opening performance of his *Inherit the Wind*), Fred Voelpel (who taught an advanced seminar in design and designed costumes, scenery, and lighting for YSU'S production of *Tartuffe*), stage combat master David Boushey, Richard Raether, Earl Hyman (who played the title role in YSU'S production of *Othello*), playwright Barry Stavis, and Christopher Martin (who directed Stavis' *Harpers Ferry*). Marni Nixon, (who did a workshop on vocal crossover techniques from opera to musical comedy), Barb Anderson (taught workshop on costume design) well-known lighting designer, David Segal, (conducted workshops and design for production of *Ring Round the Moon*), dialect coach, David Stern, and Neil Vipond who played Prospero in *The Tempest*.

Musical Organizations

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

Art Exhibits

Student and faculty exhibits, including two annual senior exhibits for graduating studio majors, are periodically held in the John J. McDonough Museum of Art. The McDonough Museum also exhibits works of nationally and regionally known artists. The Butler Institute of American Art sponsors two annual competitive exhibits, the area annual and the national mid-year, which are available to the students.

The Student Art Association has for many years sponsored an annual exhibition of the work of Youngstown State University students. The work is displayed at the McDonough Museum of Art during the month of May, with awards given from various donors. Other area venues also exhibit student work, such as The Oakland Center for the Arts or Trumbull Art Gallery.

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. Participation is 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 Athletics Offices in the Stambaugh All-Sports Complex.

Campus Recreation/Intramural Sports

A program of recreation and intramural sports provides YSU students, faculty, and staff an opportunity to spend their leisure time in physical activity which encourages one component of a healthy lifestyle. Campus Recreation consists of organized intramural sports leagues and tournaments, "drop-in" organized fitness programs, organized club sports, and a comprehensive open recreation schedule, using the shared facilities of the outdoor activity complexes, the Beeghly Physical Education Center, and the Stambaugh All-Sports Complex. Your active participation will enhance your campus life experience and offer you the opportunity to develop many new friendships.

Intramural Sports

The Department of Campus Recreation and Intramural Sports exists primarily to provide YSU students, faculty, and staff an opportunity to spend their leisure time in organized sports and recreational activities. The program now offers over 85 different activities designed to help meet the physical, social and recreational needs of the University community. This is accomplished by fitness, coordination, and endurance.

"Drop-in" Fitness for Life Program

The programs and activities are fun and easy to join. Your currently validated YSU ID card and a completed Par-Q questionnaire are your pass to unlimited choice and attendance to all "drop-in" aerobic and fitness sessions offered by the Department of Campus Recreation and Intramural Sports. The Fitness for Life program features a wide variety of aerobic offerings, from beginning to advanced sessions, which combine different aerobic techniques. The Fitness for Life Program also offers high intensity, high energy, low impact aquatic fitness sessions for those who dare to venture off land. So take advantage of the fitness opportunities and get in shape for life.

The Campus Recreation Department issues program schedules on a semester basis.

Informal "Open" Recreation

The Beeghly Physical Education Center and the Stambaugh All-Sports Complex have racquetball courts, basketball courts, an outdoor tennis complex, volleyball courts, activity fields, outdoor track complex, free weight room, fitness center, and natatorium, in addition to activities, such as wallyball, badminton, and floor hockey are available to students, faculty, and staff. Participants must have a validated YSU ID card to use the facilities, equipment, and services of the program.

Club Sports

Club Sports have been established to promote and develop the interests and skills of members in a particular sport activity.

The most important concept is that a club sport is a student organization. Traditionally, club sports have been composed of all men, all women, both men and women, students only, or a combination of students and staff. Normally, only those individuals possessing very high interest and/or skill in a particular sports activity are members.

Club Sports are organized for the primary purpose of providing extramural/ intercollegiate competition. The competition experiences provided are with representative teams from other clubs, schools, colleges, or universities. There are some club sports, which have been organized solely for recreational or instructional objectives.

The YSU Campus Recreation/Intramural Sports Department is located in Room 103 of the Beeghly Physical Education Center, (330) 742-3488.

Honorary Organizations

Established to recognize outstanding academic achievement by University students, Youngstown State University provides several honorary organizations related to academic fields and departments. Many of these honorary organizations are local chapters of national honor societies, which provide national recognition and local scholarships.

For more information on honorary organizations in your area of academic concentration, contact the faculty department chairperson of that area, or the Student Activities Office, second floor, Kilcawley Center.

Alpha Delta Sigma—Advertising

Alpha Epsilon Delta—Honorary Premedical Society

Alpha Epsilon Lambda—Honor Society of Graduate and Professional School Students

Alpha Epsilon Rho—Broadcasting 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

Alpha Tau Gamma—Accounting Honorary

Centurians Freshman Honorary

Chi Sigma Iota—Counseling Honorary

Delta Mu Delta—Business Honor Society

Delta Phi Alpha—National German Honor Society

Eta Sigma Gamma—Health Education Honorary

Golden Key—National Honor Society for achievement in all undergraduate fields of study

Gould Society—Liberal Arts Honor Society

Jazz Society—Jazz Education Society

Kappa Delta Pi—Education Honor Society

Lambda Tau—Medical Technicians Honor Society

Omega Delta Epsilon—Economics Honorary

Omicron Delta Epsilon—Economics Honor Society

Omicron Delta Kappa—Leadership Honor Society

Omicron Lambda—Biology Honorary

Order of Omega—Greek Letter Honor Society

Phi Alpha Theta—History Honorary

Phi Kappa Phi—National Honor Society for achievement in all fields

Pi Kappa Delta—National Forensics Honorary

Pi Mu Epsilon—Mathematics Honorary

Psi Chi—Honorary Psychology

Sigma Delta Pi—Spanish Honor Society

Sigma Pi Alpha—Human Resource Management

Sigma Pi Sigma—Physics Honor Society

Sigma Tau Delta—International English Honor Society

Sigma Theta Tau—International Nursing Honor Society

Sigma Xi—Scientific Honor Society

Tau Beta Pi—Engineering Honor Society

Upsilon Pi Epsilon—The Honor Society for the Computing Sciences

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.

The YSU Pin—Outstanding Graduating Seniors

Instituted more than 40 years ago, the YSU Pin rewards students for their academic achievement, leadership, innovation, and creativity in University and community activities. This award is open to all students who are graduating this year.

Arby's Leadership Scholarship—Outstanding Undergraduate Leaders

Scholarships will be presented to recognize outstanding participation in student activities, particularly during the last year. Candidates must have been full-time undergraduate students during the current year and must be planning to attend school next year. Candidates will be judged on the basis of involvement, leadership and scholarship. Recipients will receive a voucher to be used toward tuition and fees. Nominated students will be mailed an application for the scholarship. Each year students, faculty, and staff are invited to nominate outstanding individuals for the Arby's Leadership Scholarship.

The Orion Award—Outstanding Student Organizations

Organizations which have had exemplary success in one or more of the following areas are eligible for the Orion Award:

- Service to the University and Community
- Programs/Events
- Leadership Development
- Membership Recruitment and Orientation
- Members' Scholarship

The Libra Award—Outstanding Advisor

Groups will nominate a faculty or staff advisor who has had extraordinary impact on the organization she or he advises and on its members. An application will be given to the organization after nomination of the advisor.

The Constellation Award—Outstanding University-Wide Programs

Each year, organizations sponsor programs or events that use creative approaches to publicity and promotion and generate excitement within the University community and beyond. Awards will be given to organizations that sponsor events. These programs must be University-wide, student-generated and -run, and responsive to student needs and desires. Nominated organizations will be asked to apply for the award.

The Nova Award—Most Promising New Organization

Any newly registered organization that has made significant progress during its first year is eligible for the Nova Award.

Basis for selection will be success in one or more of the following areas:

- Service to the University and Community
- Leadership Development
- Membership Recruitment and Orientation
- Programs/Events
- Members' Scholarships
- Fellowship/Social Activities

Student Services Award—Gillespie-Painter Award

Awards to recognize outstanding achievement in serving, motivating, and supporting the students of YSU. All faculty, staff, and members of the YSU community are eligible for the awards. Nominations will be reviewed, and recipients will be selected by the Student Services Awards Task Force.

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.

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 as vice president. She 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.

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.

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.

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.

Other Awards and Prizes

The **Youngstown Vindicator** *Awards*—Four cash awards are made annually as follows:

- To the best all-around student, on the basis of academic achievement and extracurricular activity through four years of college: $200
- To the student ranking first in the humanities, on the basis of four years of study: $100
- To the student ranking first in English, on the basis of four years of study: $100
- To the student ranking first in the social science sequence courses: $100

The Interfraternity Council Awards for Scholarship

Given annually to the fraternity 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 Greek Sing.

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 ASSOCIATION

Serving a constituency of over 60,000 alumni, the YSU Alumni Association continues the tradition of excellence and pride among YSU graduates and serves as a life-long connection to the University. The Association provides services to members, sponsors a variety of special events and publishes numerous publications.

The YSU Alumni Association is housed in the oldest building on campus, originally the home of the Myron Israel Arms Family. It is located on the corner of Wick Avenue and University Plaza.

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 150 acres. The University also has 16.3 acres in Liberty Township and 118.4 acres in Hartford Township.

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 devoted 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, Payroll, Accounting, Human Resources, Budget, Internal Audit, Enrollment Management, Records, and Equal Opportunity and Disability Services.

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, Executive Vice President, Vice President for Student Affairs, Vice President of Development and Community Affairs, Graduate School, Grants and Contracts, Associate Degree and Tech Prep Programs, *English Journal*, University Relations, Telephone Services, the YSU Credit Union; and the Board of Trustees' meeting room.

318 Fifth Avenue

A medical building purchased in 1992 at 318 Fifth Avenue currently houses the Youngstown Employment and Training Corporation (YETC), the Dr. James Dale Ethics Center, the Center for Working Class Studies, American Studies program and Parking and Janitorial Services.

William F. Maag, Jr. 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 interlibrary 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.

Harry 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 27 faculty offices. The Bursar's Office, the Office of Financial Aid and Scholarships, the Enrollment Center, and the Testing Office 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.

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 48 laboratories, including a planetarium and a greenhouse, 11 classrooms, 60 academic offices, 32 faculty-research rooms, and a conference-seminar room.

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 three-story stucco Alumni House on the corner of Wick Avenue and University Plaza, originally constructed in 1865 and renovated in 1910 and 1982, was remodeled and restored to house the Youngstown State University Alumni Association and the Youngstown State University Foundation. The Alumni House is the oldest building on campus.

COFFELT HALL This two-story brick building, which houses the Writing Center, is located on the north side of University Plaza, was constructed in 1933, remodeled in 1978 and renovated in 1986.

Fedor Hall

Fedor Hall, is located on the west side of Elm Street. It was constructed in 1951 and purchased from the Youngstown Board of Education in September 1965. A $1,100,000 renovation project included the replacement of existing windows with a new energy efficient window system, new brick veneer and various minor interior renovations was completed in 1992.

Kilcawley Center

Kilcawley Center is the community center of the University. The Center's facilities and services include numerous dining rooms with a variety of diversified food service programs, lounges, 19 conference and multi-purpose rooms, bank, ATM machine, graphic services, candy counter, copy services, stage and entertainment areas, and a billiards recreation area, as well as a travel agency, FAX service, campus locker rentals, the University's lost and found, and the Center's reservations and conference services office. Kilcawley Center also includes the YSU Bookstore, a computer/word processing access center, U.S. mail drop, stamp machines, campus information center, catering offices, and the Center's staff offices. Student organization mailboxes, and offices for Student Life, Student Government, and student organizations are located in Kilcawley, as are the Women's Center and the Center for Student Progress.

Beeghly Hall

The four-story, $14,000,000, 92,500 square foot Beeghly Hall opened in the fall of 1998 to serve as the College of Education building.

Located between Rayen Avenue on the South and Lincoln Avenue on the North, Beeghly Hall will ultimately be linked with the rest of campus with pedestrian-oriented access, all consistent with the proposed closing of Lincoln Avenue.

On the main floor are the main North/South entrance and access, dean's suite, Curriculum Resource Center, Child Study Center and a 400 seat multi-purpose and multi-media auditorium.

The new 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

Engineering Science Building

The Engineering Science Building, a five-level structure completed in 1967, houses the Rayen College of Engineering and Technology and the Department of Geology. In addition to 57 laboratories, 12 classrooms, 2 research and development rooms, 10 conference rooms, and 70 offices, it contains the 197-seat state-of-the-art Schwebel Auditorium. A $6,873,000 renovation project began in spring 1995 and was completed in fall 1996.

Williamson Hall

Williamson Hall houses the three departments of the College of Business Administration. Williamson Hall, built in 1970, has 23 classrooms, computer labs, and 74 faculty and staff offices. The Cafaro Suite on the fifth floor offers a well-appointed meeting and classroom space with a business ambience.

Bliss Hall

Housing the College of Fine and Performing Arts, Bliss Hall, completed in 1977, was named in memory of William E. Bliss, a prominent area industrialist. Its facilities include the 410-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 studio or grand pianos; a Schlicker performance organ and two Flentrop practice organs; 30 faculty office-studios which can be used for music instruction; a band/orchestra room with a library; a photography studio with 32 enlargers; a metals studio; fully equipped drawing, printmaking, sculpture, and painting studios; a MIDI/graphics computer lab; a video editing suite; a Mac-based graphic design laboratory with dye-sublimation printer; ceramics studios with gas, electric, raku, and salt kilns; a complete shop with heavy equipment for working in three-dimensional design; art faculty office-studios; a student lounge/art gallery; and conference and seminar rooms. Bliss Hall has recently seen major renovations to administrative offices. A new jazz rehearsal room, video production studies, and upgrades to art and sculpture areas were part of same renovation project.

John J. McDonough Museum of Art

The John J. McDonough Museum of Art, located on Wick Avenue between Bliss Hall and Meshel Hall, opened for the fall quarter of 1991. The 14,000 sq. ft. multi-level building exhibits faculty and student art work, which in the past has been displayed in the Bliss Art Gallery and the Kilcawley Center Art Gallery. It also exhibits works by artists from other universities as well as local and regional artists, and serves the academic program of the Art Department with shows and competitive exhibits. The museum has the following spaces and functions: installation gallery, traditional galleries, art lecture hall, work/preparation area, storage (vault area), public lobby and restrooms, offices, loading dock and receiving area, and the necessary mechanical and electrical equipment spaces.

Dana Hall

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 Office of Undergraduate Recruitment and Admissions. An addition to Dana Hall will include a Campus Welcome Center.

Beeghly Physical Education Center

In this building, first occupied in 1972, is the Department of Human Performance and Exercise Science and the olympic sports offices and facilities. In addition to a gymnasium with seating for over 7,000 spectators and an Olympic-size swimming pool, it contains faculty offices; 10 classrooms including laboratories for research and kinesiology; separate gymnasiums for wrestling, weight-lifting, gymnastics, and physical education for handicapped; racquetball and squash courts, dance studio, a rifle range, and a fitness center.

All-Sports Complex

Located on an 18-acre site adjacent to Beeghly Physical Education Center, the All-Sports Complex includes Arnold D. Stambaugh Stadium and Beede Field, an artificial-turf sports field for football and soccer, with seating for more than 20,000 spectators; officials' dressing rooms; varsity athletic offices; classrooms, racquetball courts, gymnasiums, weight rooms and facilities for various other health and physical education activities.

Atop the stadium and overlooking the city of Youngstown is the DeBartolo Stadium Club. The club provides meeting and dinner/party seating for 200 people and is available to campus and community organizations or individuals. For reservation information, please call the Office of Events Preparation at (330) 742-1585.

The complex also includes an all-weather 400-meter track with 1500 bleacher seats; facilities for all other track and field events; outdoor courts for basketball, handball and volleyball; and 10 hard-surfaced and lighted tennis courts.

Other Sports Facilities

Currently, in addition to Beeghly Center and the All-Sports Complex, the physical education, athletic and intramural programs use the athletic fields and well-equipped sports centers in Mill Creek Park; Evans Field, Pemberton Park, and Cafaro Field for baseball; Harrison Field in Smokey Hollow for softball; and for other activities, the McGuffey Bowling Lanes on North Garland Avenue and the Avalon South golf course.

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, the Department of Geography, and the Department of Mathematics and Statistics. One of the largest buildings on campus, it contains 31 classrooms, 49 laboratories, 194 offices, and two lecture halls. Many of the classrooms have been renovated as part of a campus-wide classroom improvement project.

DeBartolo Hall

First occupied in 1978, DeBartolo Hall houses the departments of Economics, English, Foreign Languages, History, Philosophy and Religious Studies, Political and Social Science, Psychology, Sociology and Anthropology, and the Black Studies Program Office. Also housed in DeBartolo Hall is the Women's Studies Center, and the Center for Peace and Conflict studies. In this six-story structure are over 160 offices for faculty and staff, 5 student lounge and study areas, 14 classrooms, 17 laboratories, a computer terminal room, a 200-seat lecture hall with stage, and special varied laboratories for the Department of Psychology.

Phelps Building

The Phelps Building, located on the corner of Lincoln Avenue and Phelps Street on campus houses the Center for International Studies and Programs, including the English Language Institute; the Center for International Business; and the Public Service Institute, including the Center for Urban Studies and the Center for Human Resources Development.

Service Buildings

The buildings at various locations on campus that house specific services include:

SALATA FACILITIES COMPLEX, located on Rayen and Wood Streets, houses university planning and construction, maintenance, administration staff, grounds department staff, personnel and equipment, central receiving, key control, motor pool, central stores, various repair shops, and printing services.

CENTRAL UTILITY PLANT, is located south of a 400 meter track 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.

MATERIALS MANAGEMENT BUILDING, located on the corner of Fifth and Rayen, houses the University Purchasing and Material Inventory activities.

127 LINCOLN, this two story building houses the Center for Engineering Research and Technology Transfer and the Mailroom.

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 Studies, the Cushwa Center for Entrepreneurship, and the Center for Human Services Development.

The Institute works with community organizations, as well as with University departments, to facilitate the extension of University resources into the community where they might be needed. In order to accomplish this, the Institute's executive director is responsible for identifying public service needs in the community not now being met by University programs; assisting in developing public service programs to meet community needs; helping coordinate public services delivered to the community when two or more University departments are involved; promoting the Institute as a clearinghouse for disseminating information about University public service programs; and serving as a point of contact for the community when seeking University services.

Center for Urban Studies

The Center for Urban 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 towards 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.

Within the Center for Urban Studies are two subcenters: the Youngstown Crime Prevention Resource Center, a program carried out in cooperation with the City of Youngstown, working with neighborhood groups, schools, and the local police; and the AmeriCorps program, designed to provide community development activities.

The Center for Urban 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 to the public. In addition, the Data Services Office conducts spatial market research and public opinion surveys.

The Center for Urban 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.

YSU, through the Center for Urban Studies, is one of eight universities that participates in the Ohio Board of Regents' Urban University Program (UUP). The UUP supports individual research projects for the Center, and has served as the impetus for establishing research networks that address various urban challenges in the state of Ohio. The YSU Center for Urban Studies participates in four such networks: Urban Development Research Network, Neighborhood Development Research Network, Environmental Research Network, and Criminal Justice 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) 742-3355.

Cushwa Center for Entrepreneurship

The Cushwa Center for Entrepreneurship was created in 1978 with matching endowments from Mrs. Charles B. Cushwa, Jr., wife of the late president and chairman of commercial Intertech of Youngstown, and from the Commercial Intertech Foundation The Center is located in the Youngstown Business Incubator at 241 Federal Plaza West in downtown Youngstown. The telephone number is (330) 746-3350.

The Cushwa Center's primary objective is to promote job creation in the private sector by providing professional advice and consultation to inventors, entrepreneurs, businesses, and industry. The Center provides services to commercially viable business ventures by taking full advantage of the University's technical, professional, and academic expertise in developing plans and recommendations. In cases where the University's resources are unavailable, the Cushwa Center employs the services of private firms and consultants.

The Center's scope of activities include:

1. Identifying and assisting in the development of new products and processes that offer commercial promise.

2. Providing expertise to test, develop, and market these products and processes.
3. Assisting in raising capital to develop and expand viable business ventures.
4. Engaging in specialized training for management and their workforces.
5. Facilitating the sharing of University and corporate expertise, technology, and resources with promising business ventures.

The Cushwa Center serves clients in the Ohio counties of Ashtabula, Mahoning, Trumbull and Columbiana; Lawrence and Mercer counties in Pennsylvania are also served.

Within the Cushwa Center for Entrepreneurship is the Youngstown-Warren Small Business Development Center (SBDC). 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. YSU, through the Cushwa Center, serves as a host for the SBDC whose mission it is to help entrepreneurs realize their goals of business ownership. The SBDC also 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 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.

Both the Cushwa Center and its SBDC protect client identities and all information remains strictly confidential.

Center for Human Services Development

In 1985, the University Board of Trustees established the Center for Human Services Development to serve as a community resource for health and human service organizations, and community leaders. Staff at the Center work with a community-wide spectrum of people to identify community problems and needs, develop solutions, and evaluate activities in the health and human services field.

The Center offers a variety of services, including: 1) establishing and maintaining networks or linkages among service providers and the broader community; 2) offering technical assistance for social service program evaluation; 3) providing training for agency directors, boards and staff members; 4) conducting community-wide needs assessments and sharing information; 5) helping organizations to develop strategic plans; 6) identifying and obtaining grants for community organizations who are working collaboratively to address community needs.

The Center is housed in the Phelps Building; the phone number is (330) 742-3113.

The Public Health Testing Laboratory

The Public Health Testing Laboratory, operated by YSU's Department of Environmental and Occupational Health and Safety, provides laboratory testing of public health significance to over 60 nonprofit state and local public agencies. The laboratory is certified by the Ohio Environmental Protection Agency and the Ohio Department of Health for the microbiological testing of public water supplies. In addition, the laboratory analyzes food products for microbiological contaminants and is certified by the Ohio Department of Agriculture for the analysis of dairy products. The Public Health Testing Laboratory frequently hosts seminars on topics of public health significance for local health agencies to keep them abreast of changes occurring in the field of environmental and community health. It has become a focal point for the distribution of public health information in the local area.

The laboratory is located in Room 2046 Cushwa Hall, at (330) 742-3700.

Center for Engineering Research and Technology Transfer (CERTT)

The Center for Engineering Research and Technology Transfer (CERTT) was created in 1995 to do research; to create new knowledge; to help develop applications for this new knowledge; and to apply state-of-the-art technologies to business and industry. CERTT also cooperates to provide training and workforce programs to employees of business and industry.

CERTT is located at 127 Lincoln Avenue in Youngstown. It can be reached by calling (330) 742-2742.

Center for Engineering Services

The Engineering Services Center provides convenient access to the significant technical and engineering expertise of the faculty and staff of the College of Engineering and Technology. The services offered to organizations outside the University do not duplicate those provided by engineering consultants in the area. Both development and testing services are available. The Center is located in Room 2200 Engineering Science Building.

METROPOLITAN COLLEGE

—coordinates the off-campus delivery of credit classes and on- and off-campus delivery of noncredit 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 at Metro College community-based sites and for forming partnerships with regional workplaces by creating and delivering 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 by using distance learning technologies to supplement other learning experiences.

The main office of the Metropolitan College and the Office of University Outreach is located at Southwoods Commons, just south of the Southern Park Mall at 100 DeBartolo Place, Youngstown. For information about Metro College or any of the University Outreach programs listed, please call (330) 965-5800.

Current Metropolitan College sites are:

- Metro College Service Center at Austintown Plaza, 6000 Mahoning Avenue, Youngstown (330) 270-2919;
- Metro College Service Center at Eastwood Mall, 5555 Youngstown-Warren Road, Niles, (330) 652-2828;
- Metro College Service Center at Southern Park Mall, 7401 Market Street, Youngstown, (330) 965-4711;
- Metro College Classroom Site at Youngstown Business Incubator, 241 Federal Plaza West, Youngstown, (330) 965-5800.

OFFICE OF UNIVERSITY OUTREACH

The Office of University Outreach develops and administers courses and programs outside the traditional degree programs through Continuing Education, Edutravel, Contract Training, and the Center for Creative Retirement programs. Through both credit and 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 the Office of University Outreach, YSU seeks to make the lifelong process of education possible for the adult with family and work obligations.

The Office, in accordance with the Board of Trustees and Senate policy, 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 noncredit post-secondary courses.

CONTINUING EDUCATION

The Continuing Education noncredit 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 noncredit 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.

The Continuing Education function is manifested in several series of noncredit offerings described below.

Community Education Programs

—provide noncredit 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 noncredit courses, seminars, and conferences developed to meet the needs of local, county, state and federal government, public and community agencies, allied health, criminal justice, family and consumer science, nursing home administration, day care centers, social work, education, mental health, food service and related areas.

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 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.

YSU's Office of University Outreach is also responsible for the administration of:

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.

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 Ohio Elderhostel and Elderhostel. Weeklong 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.

Workforce Education

In addition to the activities of the Metropolitan College, the University's educational resources are connected to the community through a new workforce-based education initiative. Credit and non-credit classes are offered to businesses for on-site training of employees.

Telecommunication Services

WYSU-FM, 88.5 MHz

The University owns and operates WYSU-FM, a 50,000 watt stereo radio station with a range of approximately 55 miles. The station operates at 88.5 MHz from Youngstown, at 90.1 MHz from Ashtabula, and at 97.5 MHz in New Wilmington, PA., providing more than 4,000,000 people in northeastern Ohio, western Pennsylvania, and northern West Virginia with fine arts programs from its studios in Cushwa Hall. The primary purpose of the station is to serve the cultural and educational needs of the area by providing an alternative listening service, emphasizing serious music and intellectually stimulating public affairs programs not provided by commercial stations in the area.

YSU's broadcast services attempt to bring to all audiences the University's and community's best energies, resources and talents, and thus to enhance the quality of the area's cultural environment.

The core of the radio operation is a full-time professional staff, but students are also employed if their qualifications meet professional broadcasting standards.

FM-SCA Programs

The University transmits special educational programs for the handicapped 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

University Scholars

University Scholars are those students who have achieved an ACT score of at least 28 or SAT of at least 1260 and have been selected to receive a full tuition, room-and-board scholarship for one year. The University also awards full-ride scholarships to high-achieving students from accredited community and technical colleges. All University Scholars may retain full support for the next year by earning a GPA of 3.5 for the current year.

All University Scholars are honors students and will follow the requirements of the Honors Program (see page 67). 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) 742-2772.

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 degree.

(2) Departmental honors programs are available in selected departments.

See p. 67 for more information about the Honors Program.

Individualized Curriculum Program

The student whose needs are not met by existing conventional programs may wish to investigate and apply for the Individualized Curriculum Program (ICP). This requires a student to design the curriculum suited to his or her particular background and needs, allowing alternative paths for reaching the currently offered undergraduate degrees.

A student admitted to the program will have the help of a committee of faculty advisors selected by the student. This committee will help to develop a program that will serve a valid educational goal not attainable within the regular curricular structure of the University. To receive approval, the overall program needs to be of a scope and intensity comparable to conventional programs leading to the degree being sought.

Students wishing to develop an individualized curriculum must meet the following requirements:

1. Sophomore standing (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.

The Northeastern Ohio Universities College of Medicine

The Northeastern Ohio Universities College of Medicine (NEOUCOM), was established under the sponsorship of a consortium formed in 1972 by Youngstown State University, Kent State University and the University of Akron. Students admitted into the NEOUCOM BS/MD program are able to complete both their BS and MD degrees in as few as six years. Students spend two to three years of full-time study at one of the three consortium universities, complete the basic medical science coursework at the NEOUCOM Rootstown campus and beginning clinical coursework at consortium teaching hospitals, and complete two years of clinical clerkships 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 is designed to foster 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. Secondly, it is designed to prepare students for success within a premier medical school curriculum, and to enhance the foundation necessary for an effective career as a physician in the 21st century.

Prospective YSU students interested in the NEOUCOM program can refer to the catalog under Admissions and under Combined B.S./M.D. Program in the College of Arts and Sciences section. A detailed description of the curriculum is available from the office of the dean of the College of Arts and Sciences, the office of the dean at the College of Health and Human Services, or from the Office of Undergraduate Recruitment and Admissions.

Interdisciplinary Programs

The University offers a number of interdisciplinary programs. More information on these programs may be found in the College of Arts and Sciences section of this *Bulletin*.

Africana Studies

American Studies

Environmental Studies

Peace and Conflict Studies

Women's Studies

Center for International Studies and Programs

Study Abroad

Study abroad for all YSU students and faculty is coordinated through the Center as a "one-stop shop." Students initiate their study-abroad experience by stopping at the Center and asking for a packet that will give them details on how to plan their study abroad. Planning for study abroad must be initiated at least one academic year prior to the study abroad experience.

In addition to several YSU-sponsored programs overseas, the Center works with consortial groups to advise and place students in most countries throughout the world on a short-term or academic year basis.

All YSU students, faculty, and staff who are studying abroad with the University are required to comply with YSU's Risk Management Plan for Health and Safety Abroad.

International Program Development

Faculty pursuing the establishment of new inter-institutional agreements and study-abroad programs are supported by the Center. These include inter-institutional agreements with overseas institutions and programs sponsored by other countries and governments are approved and directed by the Center. See CISP's website (www.ysu.edu) for links to international universities' guidelines.

The Center's Advisory Board consists of faculty members from all the colleges in the University, and administrators in the Division of Student Affairs. This advisory board has input in policy guidance and the development of international studies areas.

International Development Efforts

The Center belongs to the University's Development Council; all development efforts for the international area are coordinated through the Council and the representative of the Center in the Council.

All grants for institutional international projects are coordinated through the Center and the Office of Grants and Sponsored Programs.

Phi Beta Delta

The Beta Sigma Chapter of Phi Beta Delta International Honor Society is headquartered at the Center. Faculty, staff, and students with outstanding records of international scholarship and service are eligible for nomination. Information is available on CISP's website.

The English Language Institute

The English Language Institute was established through the Center for International Studies and Programs 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 and to provide an orientation to college life and culture in the United States. Students must be at least 17 years old or have completed high school. The ELI welcomes all students as well as professionals who wish to increase their English language proficiency.

Off-site Degree Program

The University offers a degree-completion program in allied health on the campus of Lorain County Community College in Lorain, Ohio. Students in this program are registered at Youngstown State University but are provided student support services through LCCC. LCCC provides a University Connections Center, where students receive assistance with any issues related to their enrollment at partnership universities. They have access to all facilities such as computer labs and the library, including OhioLINK on-line research services.

Students are advised by an academic advisor from YSU during his or her regular visits to the LCCC campus, and faculty hold office hours prior to class sessions. In addition, students communicate with their advisors and faculty via e-mail.

University Honors Program

Nathan P. Ritchey, 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:

A. All University Scholars are enrolled in the Honors Program.

B. 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 1140)
- 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.

C. 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 1140), as well as other interested students, are encouraged to apply to the Honors Program.

II. To take honors courses, students enrolled in or eligible to enter the Honors Program and others approved by the instructor and director of Honors may take honors courses. All students are encouraged to enroll in honors courses.

III. To remain in good standing in the Honors Program, students must maintain a GPA or at least 3.4. Students falling below this level for two consecutive semesters will be dropped from the program. Reapplication to the Honors Program may be made once the GPA is restored to at least a 3.4.

IV. Students who complete no honors work for two consecutive semesters will be suspended from the program unless they can demonstrate, to the satisfaction of the director of Honors, continuing progress toward the completion of Honors graduation requirements.

V. Completing the Honors Program requires an average of three semester hours of Honors work per term. In order to complete the program in a timely manner, Honors students are expected to take:

(i) a minimum of six semester hours of Honors within their first 30 undergraduate hours;

(ii) at least 12 total hours within their first 60 hours;

(iii) at least 18 accumulated hours within their first 90 hours;

Any student unable to complete work in Honors 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:

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) categories A, B, C, D, and E.
   (b) At least six hours from the same GER that are not included in the requirements of the major program.
2. At least six hours our honors work must be upper-division.
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 only have to complete one thesis and 24 semester hours of honors course work. However, requirement (1b) above still needs to be satisfied as follows:

1. 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 categories A,B,C, or E.
2. A student dual majoring in a different general education area, for example Chemistry and English, would meet requirement (1b), by completing 6 hours of honors credit in any of the general education categories, A,B,C, D, or E.

Baccalaureate Honors Curriculum

(for students who enroll in the program before March 1, 2000)

Note: Students who joined the Honors Program prior to March 1, 2000 may elect to follow the new requirements.

Completion of the Honors Program requires a total of 24 semester hours of honors work, as well as a senior thesis/project.

Further requirements include:

1. Nine hours of honors credit must be related by department or topic (i.e. MATH 1585H, 1586H, 2687H, or MUSIC 3710H, 3711H, and ART 1522H) and approved by the Honors Director.
2. Regardless of major, nine hours of honors credit must be taken outside of the major. These hours should be distributed as follows, including both courses and seminars:
   - Engineering or Science Majors: The requirement is fulfilled by taking classes in the humanities and social sciences.
   - Social Science Majors: The requirement is fulfilled by taking classes in the humanities and sciences. Humanities Majors: The requirement is fulfilled by taking classes in the social sciences and sciences.
   - Other Majors: The requirement is fulfilled by taking any combination of classes in the social sciences, sciences, and humanities.
3. At least 6 semester hours of credit in 4700- or 4800-level honors courses must be earned outside whichever one of the four broad areas above includes the student's major.
4. At most 18 semester hours of Contract Honors credit will be counted toward the requirements of the Honors Program.

It is also strongly recommended that:

- By the end of the first year, at least 9 hours of honors work should be completed.
- By the end of the second year, at least 18 total hours of honors work should be completed.
- The remaining hours should be completed by the end of the junior year.
- Requirements 2 & 3 above be combined by completing 6 hours of honors credit at the 3700- and 4800-level.

Senior Year Honors

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 electromagnetically 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 Program in their second or third year. However, the same requirements outlined above stand.
- Students with multiple majors only have to complete one thesis and 24 semester hours of honors course work. However, requirements 2 & 3 above still need to be satisfied as follows:

3. A student dual majoring in the same general education area*, for example Psychology and Political Science, would have to complete 12 hours of honors credit in the Humanities or Science.

4. A student dual majoring in a different general education area*, for example Psychology and English, would meet the breadth requirement, #2, by completing any 12 hours of honors credit. The depth requirement, #3, would automatically be satisfied with the combined requirements of both majors.

*(Social Science, Humanities, and Science)

Associate Honors 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 1140.
- Current YSU students having completed at least 9 semester hours of college-level study (not to include remedial courses) with a cumulative GPA of at least 3.4.
- Students having competed at least 15 semester hours of college-level study accepted for credit at YSU (not to include remedial courses) with a cumulative GPA of at least 3.4

First semester students who have met the criteria delineated above are encouraged to apply to the Honors Associate Program. To remain in good standing, students must maintain a GPA of at least 3.4.

Associate Honors 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 categories A, B, C, D, and E.
2. At least three hours of course work 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 21 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, i.e., 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 quarter they are actively participating;
- Honors students are eligibility 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;
- 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

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.

4899. Special Topics. An advanced examination of some topic appropriate for honors study. Typically team-designed. In certain cases, students may arrange to have the course counted toward their major by negotiation with the major department. With approval of the director of Honors, may be repeated for credit with different topics. Prereq.: Admission to the Honors Program or permission of instructor and director of Honors. 3 s.h.

Contract Honors Courses

Any course other than remedial or high school remedial courses may be taken for honors credit with the concurrence of the faculty teaching the class and the approval of the honors subcommittee.

This option does not involve more credit hours for a course, but rather credit of a different kind. Proposals should involve not simply more work on the part of the student, but rather work in greater depth. Proposals are initiated by the student and instructor, then carefully reviewed by the department chair. Chairs certify that by the standards of the discipline, proposals meet the criteria listed on the contract form. The further approval process is outlined on the form "Request for Contract Honors Credit" available in the Honors Office and on the Honors homepage

Remedial courses are not suitable for contract honors. Contracts are not normally approved when an honors section exists for the same course (e.g. English 551). Projects in the historiography of any discipline are acceptable.

Contract proposals must be submitted with proper signatures by Wednesday of the third week of a semester (and preferably before registration).

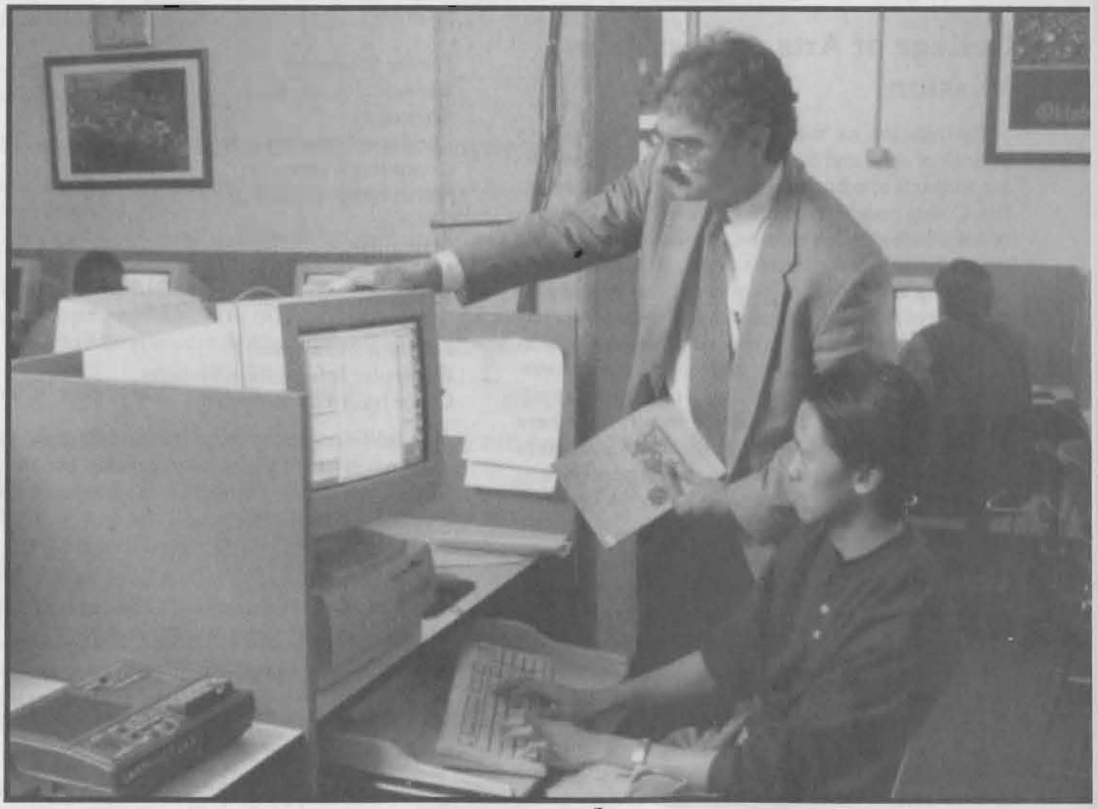
Grades are reported to the Honors director, using the form "Grade Report for Contract Honors." This form, along with the document "Contract Honors Approval," will be mailed to the sponsoring faculty member after the project has been accepted by all appropriate individuals.

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.

The College of Arts and Sciences

Barbara Brothers, Dean
James Mike, Faculty Associate to the Dean
Charles Singler, Faculty Associate to the Dean



The College grants three bachelor's degrees: Bachelor of Arts (B.A.), Bachelor of Science (B.S.) and Bachelor of Science in Applied Science (B.S. in A.S.). Additionally, two associate degrees are offered: Associate in Arts (A.A.) and the Associate in Applied Science (A.A.S.).

Included in the College are:
Africana Studies
American Studies
Department of Biological Sciences
Department of Chemistry
Department of Computer Science and Information Systems
Department of Economics
Department of English
Environmental Studies
Department of Foreign Languages and Literatures

Department of Geography
Department of Geology
Department of History
Department of Mathematics and Statistics
Peace and Conflict Studies
Department of Philosophy and Religious Studies
Department of Physics and Astronomy
Department of Political Science and Social Science
Department of Psychology
Department of Sociology and Anthropology
Women's Studies
Working Class Studies

College of Arts and Sciences Mission

The mission of Youngstown State University's College of Arts and Sciences embraces interdependent aspects of education, scholarship, and service. The College seeks to meet the specialized educational needs of the students enrolled in its associate, bachelor's, and master's degree programs while providing a substantial portion of the liberal arts component in the education of all YSU students. The College seeks to provide a basis of knowledge upon which to build as it simultaneously involves students in the process of discovery and in the application of learned skills. College faculty members serve as advisors, mentors, and career counselors to students and use their expertise in the service to the University, their professions, and the community.

Youngstown State University's College of Arts and Sciences, through its general education and major requirements, seeks to prepare students for full and productive lives by helping them develop skills of critical thinking, judgment, and communication. The College strives to impart knowledge of science and culture and to produce educated citizens who value learning. It also helps students develop 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 requiring intensive study in disciplines within the liberal arts and sciences.

Programs

For the BA degree:
Africana Studies
American Studies
Anthropology
Biological Sciences
Chemistry
Earth Science
Economics
English
French
Geography
Geology
German
History
Italian
Mathematics
Philosophy
Physics
Political Science
Professional Writing and Editing
Psychology
Religious Studies
Social Studies
Sociology
Spanish

For the BS degree:
Biological Sciences
Chemistry
Combined Sciences (BS/MD)
Computer Science
Environmental Studies
Geology
Mathematics
Physics
Physics and Astronomy

For the BSAS degree:
Computer Information Systems
Office Information Systems

In addition to the baccalaureate degree, an **AA degree** is offered in selected programs, and the **AAS degree** in computer information systems and office information systems.

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 are available in all of the program areas listed above, as well as in Journalism, Linguistics, Peace and Conflict Studies, Professional Ethics, Statistics, and Women's Studies.

Certificate programs exist in German-American Translation and Historic Preservation.

Prospective Teachers. Prospective elementary or secondary teachers may work toward a B.A., B.S., or B.S. in Ed. degree. Prospective high school teachers major in the Arts and 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.

Courses of Instruction and Curricula

In the following department sections, the course requirements for the various majors are given, but other requirements are not repeated from the list above.

Course descriptions can be found in a separate section in the back of this *Bulletin*.

Degree Requirements

Requirements for completion of a baccalaureate degree within the College of Arts and Sciences include all University requirements detailed in the **Academic Policies and Procedures** section of the *Bulletin* (i.e., requirements regarding total university credits, course levels, majors and minors, grade point average, residency and degree applications). Specific requirements for each major in the College of Arts and Sciences are listed by department. However, all Arts and Sciences baccalaureate degrees require completion of the following general requirements:

	Semester Hours of Credit	
	B.A.	**B.S.**
Writing I and Writing II	6	6
Mathematics	3	Included in the major
Speech	3	3
Personal and Social Responsibility	6	6
Students are to choose eight courses (25 hours) from the following three areas:		
Artistic and Literary Perspectives (AL)	6-9	6-9
Natural Sciences (NS)		
(At least one course must be in laboratory science)	7-10	Included in the major*
Societies and Institutions (SI)	6-9	6-9
Selected Topics and Electives (ST)	3	3
An additional course in AL, NS or SI, or an approved ST course.		
	46	36

**except for computer science and mathematics*

Other courses (In addition to those under Academic Policies and Procedures)

Foreign Language		
For the B.A. and B.S. degrees, the requirement is the successful completion of intermediate level (2600)	0-8	0-8
Balance required for graduation	78-70	88-80

Foreign Language Requirement for the B.A. and B.S. Degrees	
Foreign Language Requirement (FLR)	Successful completion of 2600 Intermediate. (The prerequisite for 2600 is placement by test or 1550 Elementary) (Students may place out of the requirement)
Foreign Language Placement Test (FLPT)	The foreign language placement test is required for entry into the first foreign language course.
Credit by Exam	Available for Elementary and Intermediate Apply at National Testing Program—MESH242
Guide for Transitional Students	
If the student has credit for 501, the student enrolls in 1550 Elementary If the student has credit for 502, the student may enroll in 2600 Intermediate If the student has credit for 503, the student enrolls in 2600 Intermediate If the student has credit for 505, the student enrolls in 1550 Elementary If the student has credit for 506, the student enrolls in 1550 Elementary If the student has credit for 601, the requirement is satisfied If the student has credit for 602, the requirement is satisfied If the student has credit for 610, the requirement is satisfied	
Two Year Associate Degrees	
FLR	None

AFRICANA STUDIES

Professor Madison, Coordinator.

The Black Studies Program, now Africana Studies, 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 multiracial 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

Rosemary D'Apolito	Sociology
Mark Shutes	Sociology
Sherri Lovelace-Cameron	Chemistry; Advisor to Pan African Student Union
Ndinzi Masagara	Foreign Languages
Daniel Ayana	History
Victor Wan-Tatah	Phil./Religious Studies
Christian Onwudiwe	Criminal Justice

Major in Africana Studies

The major in Africana Studies is part of a program leading to the Bachelor of Arts degree, and students electing the major must satisfy all other requirements for that degree. The major must include a minimum of 32 hours in Africana Studies courses and other courses approved for Africana Studies. At least 48 hours must be in upper-division courses. A grade of C or better is required in every course counted toward either the major or a minor in Africana Studies.

All Africana Studies majors must complete the following courses:

Core Courses

Africana Studies 2600 ..... 3 s.h.
Introduction to Africana Studies I
Africana Studies 2601 ..... 3 s.h.
Introduction to Africana Studies II
Africana Studies 3700
Colloquium 1 ..... 3 s.h.
Africana Studies 3701
Colloquium 2 ..... 3 s.h.
History 2663 African Civilization ..... 3 s.h.
African Civilization

Social Studies Courses

American Studies 4801, 4802, 4803 ..... 9 s.h.
Perspectives on America (total)
History 2630 ..... 3 s.h.
The Black Experience in American History
History 4801 ..... 3 s.h.
Select Problems in American History
History 3750 ..... 3 s.h.
History of Modern South Africa in the Sahara
History 4860 ..... 3 s.h.
Select Problems in Third World History
Political Science 3706 ..... 3 s.h.
Minority Group Politics
Psychology 3745 ..... 3 s.h.
The Minority Individual
Social Work 3726 ..... 3 s.h.
The African-American Family
Social Work 3727 ..... 3 s.h.
The African-American Community
Sociology 3700 ..... 3 s.h.
Minority Groups
Religious Studies 3751 ..... 3 s.h.
Liberation Theologies and Revolutionary Change

Humanities

Art 3742 ..... 3 s.h.
African Art
Art 3744 ..... 3 s.h.
African-American Art
English 2620 ..... 3 s.h.
Introduction to African Literature
English 4871 ..... 3 s.h.
The Black Experience in American Literature
Music 2616 ..... 3 s.h.
Survey of Jazz
Religious Studies 3708 ..... 3 s.h.
African American Religion
Religious Studies 3710 ..... 3 s.h.
African and Neo-American Religion

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

Professor of English Linkon (Coordinator).

American Studies offers students the opportunity to examine the central themes and issues in American life using materials and approaches from a variety of disciplines. Through an 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 Arts and 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.

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 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.
6. The Coordinator has a list of courses that have been approved for each of the learning goals below.

Required Core Courses—12 hours

2601. *American Identity*

3701. *Approaches to American Studies*

4801. *American Studies Research Seminar*

4810. *Independent Project on American Culture*

Literacy and Competency Goals—21 hours (one 3-hour course for each of seven learning goals)

The coordinator has a list of approved courses for the following areas.

Literacies:

Textual—incudes all kind of "texts," including visual arts, media, literary texts, material artifacts, maps, historical documents, and so on.

Social—includes knowledge about theories of culture and social processes, difference, and interactions between Americans as individuals and as members of groups as well as interactions between Americans/America and other countries and peoples.

Historical—emphasizes awareness of historical narratives of the U.S., both in general and within specific fields. This area would include American history courses as well as courses focusing on history within other disciplines.

Philosophical—concerned with the study of how ideas have influenced and developed out of American culture.

Cultural Pluralism—focus on the diversity of American culture, with particular attention to ethnicity, race, gender, class sexuality, language, and region. This area also includes attention to the politics of difference, concepts of identity, history of immigration, and other theoretical paradigms for thinking about difference in U.S. culture and life.

Competencies:

Quantitative—The ability to use appropriate quantitative data gathering and analysis techniques, including statistics, opinion polls, demographics, content analyses, and other methods.

Qualitative—the ability to use appropriate qualitative data gathering and analysis techniques, including interviewing, close reading of a variety of texts and artifacts, aesthetic interpretations, use of primary historical documents, and other methods.

Focus Area—15 hours

The coordinator has a list of approved courses for the following focus areas: multiculturalism, popular culture, work in America.

Students may also choose to design their own focus areas, with the approval of the American Studies Advisory Committee.

ANCIENT LANGUAGES AND LITERATURE

See Greek; Latin; Philosophy and Religious Studies.

ANTHROPOLOGY

See Sociology and Anthropology.

ASTRONOMY

See Physics and Astronomy.

DEPARTMENT OF BIOLOGICAL SCIENCES

Professors Peterson (Chair), Chuey, Leipheimer, Toepfer; Associate Professors Asch, Fagan, Krontiris-Litowitz, Walker, Womble; Assistant Professors Johnston, Lorimer, Mandrak, Willis.

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, nursing, medicine, veterinary medicine, medical technology, microbiology, molecular biology, biomedical research and biotechnology. Advisement is available concerning course selection appropriate for a specific field. These degrees may be earned in eight semesters if students average 16 hours per semester.

Requirements for the Bachelor of Science Degree in Biological Sciences

The Bachelor of Science degree is recommended for those who wish to pursue careers in the Biological Sciences, medicine, dentistry or other related health fields. The B.S. degree in Biological Sciences requires a minimum of 37 semester hours from within the Department of Biological Sciences. (Courses at the 1000 level are not applicable to a Bachelor's of Science degree).

All Biological Sciences majors must take the following courses:

1) *Principles of Biology I* and *II* (BIOL. 2601 and 2602) 10 s.h.

2) Core Courses: One or two courses must be taken from two of the following groups: (7-9 s.h.)

   Group A—either *Cell Biology: Fine Structure* (BIOL. 2610) or *Genetics* (BIOL 2621)

   Group B—*Human Physiology* (BIOL 2630)

   Group C—either *Plant Diversity* (BIOL 2640) or *Animal Diversity* (BIOL 2641)

3) 16-18 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. The *Principles of Biology* sequence and the two core courses are prerequisites for all upper division Biology courses.

4) Capstone course (BIOL 4861) 2 s.h.

Additional course work in the sciences.

Chemistry—Chem. 1515 and 1516, General Chemistry I and II; 3719 and 3720, Organic Chemistry I and II. (Chem. 3785, Biochemistry, strongly recommended)

Physics—Physics 1501, 1501L, 1502, and 1502L (Fundamentals of Physics I and II and Fundamentals of Physics I and II Labs)

Math—Math 1570, Applied Calculus I, or Math 1571 (Calculus I) and Math 3770 (Statistics)

Requirements for the Bachelor of Arts Degree in Biological Sciences

The Bachelor of Arts is recommended for those who plan careers in business or secondary education careers related to the Biological Sciences. The B.A. degree in Biological Sciences requires a minimum of 32 semester hours from within the Department of Biological Sciences. (Courses at the 1000 level are not applicable to a Bachelor of Arts degree.)

All Biological Sciences majors must take the following courses:

5) *Principles of Biology I* and *II* (BIOL 2601 and 2602) 10 s.h.

6) Core courses: One course from two of the following groups: (7-9 s.h)

   Group A—either *Cell Biology: Fine Structure* (BIOL 2610) or *Genetics* (BIOL 2621)

   Group B—*Human Physiology* (BIOL 2630)

   Group C—either *Animal Diversity* (BIOL 2640) or *Plant Diversity* (BIOL 2641)

7) 11-13 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. The *Principles of Biology* sequence and the two core courses are prerequisites for all upper division Biology courses.

8) Capstone course (BIOL 4861) 2 s.h.

Students seeking admission to medically related professional schools should complete the B.S. program. Elective courses under either degree may be in any discipline; however, advanced chemistry, mathematics and psychology are particularly recommended.

The mathematics, physics and chemistry courses may not be taken under the credit/no credit option. (For general University requirements, see the Academic Policies and Procedures section of this *Bulletin*).

Recommended core curriculum meeting science requirements of medically related and other professional schools.

Biology

2601 Principles of Biology I
2602 Principles of Biology II

Core courses
2610 Cell Biology: Fine Structure
2621 Genetics
2630 Human Physiology

Additional courses
3702 Microbiology
3703 Clinical Immunology
3705 Introduction to Human Gross Anatomy
3713 Vertebrate Histology
3775 Comparative Vertebrate Anatomy
3790 Molecular Genetics
5832 Principles of Neurobiology
5836 Cell Biology: Molecular Mechanisms

Chemistry
1515 General Chemistry I
1516 General Chemistry II
3719 Organic Chemistry I
3720 Organic Chemistry II
(Biochemistry recommended)

Physics
1501 Fundamentals of Physics I
1502 Fundamentals of Physics II

Mathematics
1570 Applied Calculus I or 1571 Calculus I
3717 Statistical Methods

BOTANY

See Biological Sciences.

DEPARTMENT OF CHEMISTRY

Professors Hunter, Koknat, Mettee, Mike, Mincey (Chair), Schildcrout; Associate Professors Curtin, Jackson, Norris, Serra, Smiley, Wagner; Assistant Professors Kim, Lovelace-Cameron.

The Bachelor of Science degree is recommended for those who plan to make a career in chemistry; a recommended program which meets the standards of the American Chemical Society is provided below. The Bachelor of Arts degree is recommended for those who plan to go into a medical, pre-pharmacy, or dental field and for those who plan to enter business or secondary education careers related to chemistry. The required courses for a B.S. degree with a major in chemistry are listed in the B.S. curriculum. The courses required for a B.A. degree are those listed in the B.A. curriculum below. Chemistry majors may not count Chemistry 1500 toward the major. These degrees may be earned in eight semesters if students average 16 hours per semester.

Students in pre-professional programs such as pre-optometry may obtain appropriate curricula and advisement in the Department of Chemistry.

Credit may not be received for more than one course or sequence of the following pairs: CHEM 3737, 3739.

The segments of all chemistry courses extending through more than one semester must be taken in sequence unless otherwise indicated.

Eye protection and lab coats must be worn in all 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 all the general requirements for the degree sought (see Degree Requirements). German is strongly recommended for meeting the foreign language requirement in the B.S. curriculum.

Recommended Curriculum Leading to a B.S. Degree with a Major in Chemistry

Core Courses

YEAR ONE
FALL I

Courses	s.h.
CHEM 1515+1515L	4
MATH 2671	4

SPRING I

CHEM 1516+1516L	4
MATH 2672	4

YEAR TWO
FALL II

CHEM 2719 + 2719L	5
CHEM 2604	5
PHYS 2610+2610L	5

SPRING II

CHEM 2720 + 2720L	4
PHYS 2611 + 2611L	5

YEAR THREE
FALL III

CHEM 3737 or 3739	4
CHEM 3785	3

SPRING III

CHEM 3740	4
CHEM 3729	3

YEAR FOUR

In addition to BS core, BS majors must complete twelve (12) hours of upper-level chemistry electives (from the list below), four (4) hours of which must be in upper-level laboratory. All majors must also complete the capstone sequence (2 hours in fall and 2 hours in spring).

Credit Hour Summary

Chemistry Hours in BS-CORE:	31
Chemistry Elective Hours:	12
Capstone Course Hours:	+4
Total Hours in Chemistry:	**47**

Other major-required hours: ..... +22
(Math/Physics)
Total Hours in Major: 69

B.S. CHEM Electives

5804	Chemical Instrumentation	4
5821	Intermediate Organic Chemistry	3
5822	Advanced Organic Lab	3
5830	Intermediate Inorganic Chemistry	2
5831	Inorganic Lab	2
5832	Solid State Structural Methods	3
5836	Chemical Bonding and Structure	3
5861, 5862	Polymer Science 1, 2	3 + 3
5876	Enzyme Analysis	2

Recommended Curriculum Leading to a B.A. Degree with a Major in Chemistry

Core Courses

YEAR ONE
FALL I

Courses	s.h.
CHEM 1515+1515L	4
MATH 2671	4

SPRING I

CHEM 1516+1516L	4
Math Elective	4

YEAR TWO
FALL II

CHEM 2719 + 2719L	5
CHEM 2604	5
PHYS 2610+2610L	5

SPRING II

CHEM 2720 + 2720L	4
PHYS 2611+2611L	5

YEAR THREE
FALL III

CHEM 3737 or 3739	4

In addition to BA core, BA majors must complete nine (9) hours of upper-level chemistry electives (from the list below). All majors must also complete the capstone sequence (2 hours in fall and 2 hours in spring).

Credit Hour Summary

Chemistry Hours in AB-CORE:	26
Chemistry Elective Hours:	9
Capstone Course Hours:	+4
Total Hours in Chemistry:	**39**

Other major-required hours: ..... +18
(Math/Physics)
Total Hours in Major: 57

B.A. CHEM Electives

3729	Inorganic Chemistry 1	3
3740	Physical Chemistry II	4
3764	Chemical Toxicology	2
3785, 3786	Biochemistry 1, 2	3, 3
5804	Chemical Instrumentation	4
5821	Intermediate Organic Chemistry	3
5822	Advanced Organic Lab	3
5830	Intermediate Inorganic Chemistry	2
5831	Inorganic Lab	2
5832	Solid State Structural Methods	3
5836	Chemical Bonding and Structure	3
5861, 5862	Polymer Science 1, 2	3, 3
5876	Enzyme Analysis	2

COMBINED B.S./M.S. PROGRAM IN CHEMISTRY

This is a five-year program. Prospective students seeking admission to the program may submit an application to the Department of Chemistry during their senior year in high school. Students in the program start graduate studies after three years. They will normally receive the B.S. degree in chemistry after 3 years and the M.S. degree after 5 years.

COMBINED B.S./M.D. PROGRAM

This is a six- or seven-year program. Students enroll as candidates for the combined B.S./M.D. program and are so identified during their first two or three years. After 2-6 semesters of college-level work they are eligible for admission to the second or medical-school phase of the program. Each student successfully completing the program will be awarded the B.S. degree in combined science from this institution and the M.D. degree from the College of Medicine. See: The Northeastern Ohio Universities College of Medicine, and Combined Science.

A student completing the combined B.S./M.D. program normally receives the Bachelor of Science degree with the major in combined science. This special program satisfies all the requirements listed above but follows a prescribed curriculum.

DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION SYSTEMS

Professors Chrobak, Duda, Phillips, Santos; Associate Professors Mullins, Schueller, Shih, Sullins; Assistant Professors Bodnovich, Gaydos, Hogue, Kramer, Kunar.

The Department of Computer Science and Information Systems offers a wide range of education programs in computer and information systems. 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 Office Information Systems 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 our web site at http://www.cis.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 operating systems analysts or systems programmers; and finally, 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.

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, 2617, 3701, and 3740.
2. CSCI 5806, 5814, 5870, and 5890.
3. At least 12 Semester Hours of upper-division CSCI or CSIS courses not including CSCI 4885 or 4886. CIS or OIS courses numbered 5800 and above may also be used as electives with advisor approval.
4. A minor in mathematics comprising 17 semester hours to include MATH 1571, 1572, 3725, either 3760 or 3743, and one upper division elective.
5. An additional concentration of at least 9 semester hours of advisor approved technical electives. At least 3 semester hours of this concentration must be at the 3700 level or above.
6. ENGL 3743, PHIL 2619, and PHIL 2625.
7. University General Education requirements in Essential Skills, Knowledge Domains, and Skill Intensive courses.
8. College requirements of study in a foreign language equivalent to 2600.

COMPUTER INFORMATION SYSTEMS

The Computer Information Systems program leads to the two year Associate in Applied Science and the four year Bachelor of Science in Applied Science degrees.

Associate Degree Program

The Computer Information Systems associate degree program emphasizes the use of computers to solve business or science problems. The graduate will 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's in Applied Science in Computer Information Systems must complete the following:

1. CSIS 1590, 2610, 2617, 3722, and 3723.
2. CIS 2640.
3. At least 6 semester hours of upper-division CIS elective courses.
4. BUS 1500, ACCTG 2602 and 2603.
5. ENGL 3743.
6. PHIL 2619.
7. MATH 1548.
8. University General Education requirements in Essential Skills and one General Education course in each of the areas of Artistic and Literary, 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 simple single user to complex, interactive, and multiuser distributed systems. This degree may be earned in eight semesters if students average 16 hours per semester.

Students wishing to receive the Bachelor of Applied Science in Computer Information Systems must complete the following:

1. CSIS 1590, 2610, 2617, 3722, and 3723.
2. CIS 2640 and 4840.
3. At least 15 Semester Hours of upper-division CIS or CSIS courses. CSCI or OIS courses numbered 5800 and above may also be used as electives with advisor approval.
4. An unspecified minor in of 15 or more semester hours.
5. A business concentration consisting of BUS 1500, ACCTG 2601 and 2602.
6. MATH 1549.
7. ENGL 3743, PHIL 2619, and PHIL 2625.
8. University General Education requirements in Essential Skills, Knowledge Domains, and Skill Intensive courses.

OFFICE INFORMATION SYSTEMS

Office information systems provides systematic foundations that include methodologies and models for conceptualizing the complex dynamics of the office environment and applying them to office information systems design and implementation. It supports work processes and employee performance. It aims to improve overall effectiveness and productivity of individuals and work groups. It addresses the creation, distribution, storage, and use of information in all its formats. Office information systems encompasses office automation, end-user computing, information centers, computer-supported work, performance support, multimedia, and executive information systems.

Associate Degree Program

Graduates of the two-year associate degree program can pursue careers as Office Information Specialists in publishing, legal, financial, and medical fields, as well as continuing on to a four-year bachelor's degree in Office Information Systems. This degree may be earned in four semesters if students average 16 hours per semester.

Students wishing to receive the Associate's in Applied Science in Office Information Systems must complete the following:

1. CSIS 1590 and either 1560 or 2610.
2. OIS 1575, 2600, 2663, 2676, 2699, 3714, and 3775.
3. CSIS 3720, 3722, and 3723.
4. ENGL 3743
5. An advisor-approved concentration area of at least 9 semester hours.
6. University General Education requirements in Essential Skills and one General Education course in each of the areas of Artistic and Literary, Societies and Institutions, and Speech.

Bachelor's Degree Program

The Office 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 simple single user to complex, interactive, and multiuser 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 Office Information Systems must complete the following:

1. CSIS 1590 and either 1560 or 2610.
2. OIS 1575, 2600, 2663, 2676, 2699, 3714, and 4880.
3. CSIS 3720, 3722, 3723, and 3726.
4. ENGL 3743 and PHIL 2619.
5. At least 9 semester hours of upper-division OIS or CSIS courses. CSCI or CIS courses numbered 5800 and above may also be used as electives with advisor approval.
6. An unspecified minor of 15 or more semester hours.
7. University general education requirements in Essential Skills, Knowledge Domains, and Skill-Intensive courses.

Minors: The following course sequences are recommended for students who desire a computer-related minor:

Computer Science: CSIS 2610, CSIS 2617, CSIS 3701, CSIS 3740 one of CSIS 3722, CSIS 3723, CSIS 3720, CSIS 3726, CSIS 3740, CSCI 4805, CSCI 5806, or CSCI 5814;

Computer Information Systems: CSIS 1590, CSIS 2610, CIS 2640, and two of CIS 2613, CSIS 3722, CSIS 3723, or CSIS 3726;

Office Information Systems: CSIS 1590, OIS 1575, OIS 2676, and two of CSIS 3720, CSIS 3722, CSIS 3723, OIS 3714, or OIS 3775.

EARTH SCIENCE

Professor I. Khawaja (Supervisor).

Earth science may be the major for the Bachelor of Arts degree or the Bachelor of Science in Education degree.

It is designed to meet the needs of students desiring a broad background in earth science. The major also provides the necessary background for graduate students and for a teaching field in earth science. Interested students should consult the chair of the Department of Geology.

Curriculum for the Bachelor of Arts—Earth Science

An Earth Science major consists of 47 semester hours of science courses distributed as follows: 28 hours of specified courses, and 19 hours of elective courses. Elective courses must be taken from at least three (3) disciplines

I. Specified: (28)			s.h.
ASTRO	1504	Descriptive Astronomy	3
ASTRO	2609	Moon & Planets	3
GEOG	2630	Weather	3
GEOL	1505	Physical Geology	4
GEOL	1513	Physical Evolution of North America	4
GEOL	1514	Life of the Geologic Past	3
GEOL	2602	Introduction to Oceanography	3
GEOL	2615	Geology & Environment I	3
GEOL	5815	Geology & Environment II	2

II. Electives: (19)

BIOL	2601	Principles I	5
CHEM	1515	General Chemistry I	4
ENST	2600	Foundations of Environmental Studies	4
GEOG	3730	Global Climates	3
GEOG	3737	Soils & Land Use	3
GEOL	3700	Mineralogy	4
GEOL	3701	Geomorphology	3
GEOL	3702	Glacial Geology	3
GEOL	3704	Structural	2
GEOL	3704L	Structural Lab	1
GEOL	3706	Geology of Economic Mineral Deposits	3
GEOL	3714	Principles of Paleontology	4
GEOL	3718	Igneous & Metamorphic Petrology	4
GEOL	4804	Ground Water	3
GEOL	5802	Sedimentology & Stratigraphy	4

DEPARTMENT OF ECONOMICS

Professors Bee, Kermani, Liu, Mehra, Milley Petruska, Porter (Chair), Riley, Usip; Associate Professors Morris and Ruffer.

The Department of Economics offers a Bachelor of Arts degree in Economics. This 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.

A major in economics compromises 32 semester hours of courses from the Department of Economics. Required courses are: 2610, 2630, 3780, 3781, 3710, 3712, and 4880. Students must take a course in calculus (MATH 1549, 1570, or 1571) prior to taking ECON 3710 and 3712. Students intending to apply for Ph.D. programs in economics should consider taking MATH 1571, 1572, 2673, and 3720.

Specializations:

The following are suggested curricula for students wishing to concentrate their studies in a specific area of economics.

Specialization in International Economics

Recommended economics electives: ECON 3701, 3720, 5809, 5811, and 5812. Students should also consider taking electives outside the major in accounting, marketing, and international relations.

Specialization in Labor Markets

Recommended economics electives: ECON 4843 and 5831. Students should also consider taking electives outside the major such as labor law and other courses offered by the Department of Management.

Specialization in Money and Banking

Recommended economics electives: ECON 3701, 3702, 5809, and 4810. Students should also consider taking electives in accounting and finance.

Specialization in Quantitative Economic Methods

Recommended economics electives: ECON 5824, 5853, and 5856. Suggested non-economics electives are MATH 1571, 1572, 2673, and 3720, as well as introductory courses in computer programming.

DEPARTMENT OF ENGLISH

Professors Attardo, Bowers, Brady, Copeland, Gergits, B. Greenway, W. Greenway, McCracken, Monseau, Linkon, Nelson, Salvner (Chair), Schramer, Shale, Sniderman, Tingley; Associate Professors, Barnhouse, Brown, Brown-Clark, Finney, Isaac, Leonard, Okawa, Reese, Strom; Assistant Professors Harrison, Shaker.

Beyond the freshman sequence, the English major comprises at least 36 hours, including the following distribution. Degrees offered by the Department of English may be earned in eight semesters if students average 15-16 hours per semester.

Required (9 s.h.)

ENGL 3701—British & American Literature I: Beginnings to the Enlightenment or

ENGL 3702—British & American Literature II: Enlightenment to the Present

ENGL 3755-Principles of Linguistics ..... 3 s.h.
ENGL 4890-Senior Seminar ..... 3 s.h.

Other Studies (6 s.h.)

(at least one language or advanced writing course required)

_____ 3 s.h.

_____ 3 s.h.

2610—World Literature
2617—Women in Literature
2618—American Literature & Diversity
2620—African Literature
2631—Mythology in Literature
2665—Introduction to Film Study
3703—Children's Literature
3704—Middle School Literature
3705—Young Adult Literature
3716—Feature Writing*
3717—Editorial Writing*
3732—Images of Women

3738—Topics in World Literature
3740—Advanced Writing*
3741—Advanced Writing for Teachers*
3743—Professional and Technical Communication*
3744—Proposal and Report Writing*
3746—Fiction Writing Workshop*
3747—Poetry Writing Workshop*
3750—Language and Culture*
3757—Development of the English Language*
3765—Film Genres
4849—Professional and Technical Editing*
4850—Sociolinguistics*
4851—Language Acquisition*
4855—Advanced Linguistics*
4856—TESOL Methods*
4857—TESOL Practicum*
4858—English Grammar*
4859—Selected Topics in Discourse*
4865—Selected Topics in Film

*denotes a language or advanced writing course

American Literary Studies (6 s.h.)

chosen from:

3770—American Literature in Historical Perspective
3780—American Genres
4862—Themes in American Literature
4864—Selected Topics in American Literature
4871—The Black Experience in American Literature

British Literary Studies (9 s.h., of which at least one course must be before 1800)

4830—Major Figures in British Literature
4831—Genres, Circles, and Movements in British Literature
4860—The Medieval World
4881—Shakespeare and His World
4882—The English Renaissance
4886—Restoration and Eighteenth-Century British Literature
4887—The Romantic Period
4892—Nineteenth-Century British Literature Studies
4895—Early Twentieth-Century British Studies
4896—British Literature from World World II to the Present

Advanced Writing (3 s.h.)

Courses that fulfill this requirement may not also be counted toward Other Studies
3716—Feature Writing
3717—Editorial Writing
3740—Advanced Writing
3741—Advanced Writing for Teachers
3743—Professional and Technical Communication
3744—Proposal and Report Writing
3746—Fiction Writing Workshop
3747—Poetry Writing Workshop

Multicultural Studies (3 s.h.)

Courses that fulfill this requirement may not also be counted toward Other Studies or British Literary Studies
2617—Women in Literature
2620—African Literature
3732—Images of Women
3790—Selected Topics in Multicultural Studies
4850—Sociolinguistics
4871—The Black Experience In American Literature

Minor (15 s.h.)

Credit Hours needed for major:

	Credit Hours Completed
Required Courses	9
Other Studies	6
American Literature	6
British Literature	9
Advanced Writing	3
Multicultural Studies	3
Total	**36**
General Degree Requirement	**124**

English 3705 and English 3741 are required of all English majors planning to apply for teacher licensure. English 3741 is offered each fall as part of the English education block (TERG 2601 and English 3741). Check with an English education advisor. English majors preparing to teach should take the Education 4800E methods course.

For requirements for the Professional Writing And Editing major, see below.

Because the discipline of English involves study of the controlled use of the language, students are expected to demonstrate their writing skills in all English courses.

The Department of English maintains the Writing Center for supplemental, noncredit instruction in writing. English majors may apply for student employment as peer tutors in the Center. (See the Student Services section for details.)

PROFESSIONAL WRITING AND EDITING

Professor Bowers, Nelson, Salvner (Chair); Associate Professors Gergits, Schramer; Assistant Professors Harrison, Shaker.

A major in professional writing and editing requires 61-63 semester hours, distributed as follows:

REQUIRED (6 s.h.)

3701 or 3702-Brit. and Amer. Lit. I or II ..... 3 s.h.

(prerequisite to all upper-division literature courses)

3755—Principles of Linguistics ..... 3 s.h.

OTHER LITERARY STUDIES (3 s.h.)

Choose 1:
1590—Introduction to Literature
2610—Introduction to Classic World Literature
2617—Women in Literature
2618—American Literature and Society
2620—Introduction to African Literature
2631—Mythology in Literature
2632—Images of Women
2665—Introduction to Film Study
3738—Topics in World Literature
3765—Film Genres
3790—Selected Topics in Multiculturalism
4871—Black Experience in American Literature

Plus any new literature courses instituted for general education purposes

AMERICAN LITERARY STUDIES (3 s.h.)

3770—Am. Literature in Historical Perspective
3780—American Genres
4862—Themes in American Literature
4864—Selected Topics in American Literature
4871—The Black Experience in Am. Literature

BRITISH LITERARY STUDIES (3 s.h.)

Choose 1:
4830—Major Figures in British Literature
4831—Genres, Circles, and Movements in Brit. Lit.
4860—The Medieval World
4881—Shakespeare & His World
4882—The English Renaissance
4886—Restoration and 18th-Century Brit. Lit.
4887—The Romantic Period
4892—19th-Century British Studies
4895—Early 20th-Century British Studies
4896—British Literature from WWII to the Present

SUPPORT COURSES (13-15 s.h.)
4-6 hours from within the department:

3716-Feature Writing ..... 3 s.h.
3717-Ed. and Opinion Writing ..... 3 s.h.
3721L-Journalism Workshop ..... 3 s.h.
3740-Advanced Writing ..... 3 s.h.
3746-Fiction Writing Workshop or
3747-Poetry Writing Workshop ..... 3 s.h.
4898-Prof. Writing Internship ..... 1-3 s.h.

9 hours from:
Engl 3745L-Online Text Workshop ..... 2 s.h.
Approved Courses in Speech
Approved Courses in Art
Approved Courses in Office Information Systems/Desktop Publishing
Approved Courses in Computer Science
STAT 2601-Introductory Statistics ..... 3 s.h.
STAT 3717-Statistical Methods ..... 3 s.h.
Approved Engineering Courses
Approved Marketing Courses
Approved Public Relations Courses
Approved Advertising Courses

You must meet any prereqs. for these courses. Specific course numbers/titles will be added after other departments complete semester conversion.

PWE CORE COURSES (18 s.h.)
2622-Basic Journalism ..... 3 s.h.
3723-Newspaper Editing/Design ..... 3 s.h.
3743-Professional & Tech Comm. ..... 3 s.h.
3744-Proposal and Report Writing ..... 3 s.h.
4849-Professional & Tech Editing ..... 3 s.h.
4899-Prof. Writing Senior Project* ..... 3 s.h.

PROFESSIONAL AREA (15 s.h.)

*Take 15 approved semester hours in journalism, desktop publishing, graphics, advertising/public relations, computer science, chemistry, or engineering. Courses and degrees from CHHS may also meet the requirement. Ask your advisor for approved-curriculum sheet(s). See the PWE coordinator to propose any other area.

PWE Advisors: Bege Bowers, Julia Gergits, Dale Harrison, Chuck Nelson, and James Schramer

Credit Hours Needed for Major:

Required Courses 6
Literary Studies 9
Support Courses 13-15
PWE Core Courses 18
Professional Area 15

TOTAL: 61-63 s.h.

(See A&S Advisement Sheet for graduation requirements)

Required for Graduation: 124 total hours (48 semester hours must be 3000 or 4000 level).

Professional Area (15 hours)

Students seeking a major in professional writing and editing must also take 15 hours in a professional area such as computer science, chemistry, engineering, journalism, graphics, or advertising/public relations. Courses and degrees in the College of Health and Human Services may also meet this requirement.

Students should choose a professional writing area early in their degree work since this preparation will provide the content for much of the writing in the professional communication courses or will provide ancillary professional writing expertise to be used in projects assigned. Each professional area sequence must be approved by an English department advisor working with the Professional Writing and Editing major.

Students must successfully complete an extensive writing and/or editing project, to be approved and evaluated by a professional writing and editing advisor.

JOURNALISM

Professor Salvner (Chair); Assistant Professors Harrison, Shaker; English Faculty.

The University offers a journalism minor; a professional writing and editing major with a concentration in journalism; an Individualized Curriculum Program major that combines journalism with nonwriting skills such as graphic design, desktop publishing or photography; and journalism coursework to satisfy various teaching licensure requirements. All programs include practical experience with the University's student newspaper, *The Jambar.*

LINGUISTICS

Attardo (Program Director), Barnhouse, Brown, McCracken, Okawa, English; Becerra, Corbé, Masagara, Foreign Languages; Smith, Philosophy, Kestner, Psychology.

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.

ENVIRONMENTAL STUDIES PROGRAM

Associate Professor Jacobs (Director), Assistant Professor Johnston, and staff.

Governing Board

Arts and Sciences: Buckler (Geography), Jacobs (Environmental Studies), Khawaja (Geology), Mincey (Chemistry), Usis (Biological Sciences).

Engineering: Martin (Civil, Environmental, and Chemical Engineering)

Health and Human Services: Benner (Health Professions)

The environmental studies program leading to a Bachelor of Science (B.S.) degree will prepare students to enter the job market as environmental specialists or to continue in their education in a graduate program. Students in Environmental Studies will complete 31 s.h. of Environmental Studies courses, 27-28 s.h. of support courses in science and mathematics, and a prescribed minor of 15 s.h.

The minor may be in chemistry, biological sciences, geology, physical geography, technology, economics, political science, or allied health, and must include 5 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.

REQUIRED ENVIRONMENTAL STUDIES COURSES

ENST Courses (all, 31 s.h.)	**Semester Cr. Hrs.**
ENST 2600 Foundations of ENST	3
ENST 3700 Environmental Chem.[a]	3
ENST 3710 Environmental Safety	1
ENST 3730 Air Quality	3
ENST 3750 Seminar	1
ENST 3751 Water Quality	2
ENST 3760 Environmental Regulations	3
ENST 3780 Research	2
ENST 3781 Environmental Sampling[b]	3
ENST 3790 Internship	4
ENST 4800 Environ. Impact Assessment[c]	3
ENST 5830 Risk Assessment[d]	3

a- Critical Thinking Intensive
b- Writing Intensive
c- Oral Intensive
d- Capstone

Support Courses in Science and Mathematics (all, 21 s.h. +2 s.h. optional)

BIOL 2601/L Principles 1[1]	5
CHEM 1515/L Principles 1[1]	4
CHEM 1516/L Principles 2[1]	4
CHEM 1515R/1516R Recitation (optional)	1+1
GEOL 1505/L Physical[1]	4
MATH 1570 Applied Calculus[2] or MATH 1571 Calculus[2] (Recommended for Technology minors)	4

Plus two of the following support courses (6-7 s.h.)

PHYS 1501 Principles 1[3] (Recommended for Technology minors)	4
GEOG 2630 Weather (Recommended for Geography minors)	3
STAT 2601 Statistics or STAT 3717 Statistics (Recommended for upper division credit)	3

1—Satisfies General Education Science or Science Lab. Domain

2—Satisfies General Education Mathematics Domain

3—Satisfies General Education Science Domain

Suggested courses for minors (subject to advisor approval):

CHEM: 1515/L/R, 1516/L/R, 3719/L, 3720/L
BIOL: 2601/L, 2602/L, 3780/L
GEOL: 1505/L, 2615, 5815, 4804, and 3709 or 5817
GEOG: 2603, 2630, 2610, 3731, and 3732 or 3737
Technology: CEEGR 3736, 4837, 5884, CHEGR 2683, and 2684 or CEEGR 2610
ECON: 2610, 2630, 2650, 4813, 5810
POLIT: 1560, 3701, 3714, 5865, and 3721 or 3722
AHLTH: 3708, 5807, 4808, 4831, 3704.

Recommended Curriculum Leading to a B.S. Degree with a Major in Environmental Studies*

FIRST YEAR

CHEM 1515/L, 1516/L	8
WRITING I, II	6
MATH 1570 or 1571	4
ENST 2600	3
Gen. Ed.	12
	33

SECOND YEAR

BIOL 2601/L	5
GEOL 1505/L	4
ENST 3700, 3760, 3751, 3730	11
PHYS 1501 or STAT 2601/3717 or GEOG 2630	3-4
Gen. Ed.	9
	32-33

THIRD YEAR

ENST 3750, 3710, 3790, 3781	9
PHYS 1501 or STAT 2601/3717 or GEOG 2630	3-4
Gen. Ed.	9
Minor	9-12
	30-34

FOURTH YEAR

ENST 3780, 4800, 5830	8
Gen. Ed./electives	3-9
Electives	6-12
Minor	0-9
	29-31

* 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.) Writing intensive, oral intensive, critical thinking intensive, and capstone courses can be satisfied within this program.

Environmental Studies Minor

Students interested in choosing environmental studies as a minor may inquire in the department of their major program. Requirements will be established by the department of their major program in consultation with the environmental studies director.

DEPARTMENT OF FOREIGN LANGUAGES AND LITERATURES

Professors Smith, Viehmeyer (Chair); Associate Professors Becerra, del Pozo, Masagara, Sarkissian; Assistant Professors Checcone, Corbé.

See requirements for Degrees at the beginning of the College of Arts and 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.

Bachelor's Degree Programs

FRENCH

Assistant Professor Corbé, Associate Professor Masagara.

A major in French requires 32 semester hours beginning with French 2600. The following French courses are required: 2600, 2603, 2605, 2610, FNLG 2615, 3710, 3715, 3750 plus 2 of the following 3720, 3725, 3730, 3740 and 1 of the following 4874, 4885.

GERMAN

Professor Viehmeyer.

A major in German requires 32 semester hours beginning with German 2600. The following German courses are required: 2600, 2605, 2610, FNLG 2630, 2603, 3735, 3740, 3750, 3751, 4861 and 4880.

ITALIAN

Assistant Professor Checcone.

A major in Italian requires 31 semester hours beginning with Italian 2600. The following Italian courses are required: 2600, 2605, 3708, 3720, 3725, 3730, 4801, 4802, 4830, 4840.

SPANISH

Associate Professors Becerra, del Pozo.

A major in Spanish requires 30 semester hours beginning with Spanish 2605. The following Spanish courses are required: 2605, 2655, 3735, 3755, plus 1 of the following 3724, 3736, plus 1 of the following 3752, 3753, plus one of the following 3756, 3757 plus one of the following 3737, 3740, 3758, plus 2 of the following 5855, 5885, 5870, 5890.

Certificate Program

The Certificate in German-English Translation requires 24 semester hours beginning with German 2600. The following German courses are required: 2600, 2605, 2610, 3725, 3740, 3765, 4865, 4875.

Foreign Language Minors

Minors are available in Ancient Greek, French, German, Italian, Latin, Russian, and Spanish. Each minor requires 18 semester hours beginning with 2600.

Foreign Language Education

For curricula leading to a Multi-Age license for teaching French or German or Italian or Spanish, see the Beeghly College of Education section of this bulletin.

DEPARTMENT OF GEOGRAPHY

Professors Maraffa (Chair), Stephens; Associate Professors Campbell, Shaklee; Assistant Professor Buckler.

Students majoring in geography earn the Bachelor of Arts degree. In addition to the usual University requirements, a student must complete a minimum of 33 semester hours in geography following the 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.

Required of all geography majors: GEOG 1503, GEOG 2610, GEOG 2640, GEOG 4890 and

One course from: GEOG 3715, GEOG 3717, GEOG 3719, GEOG 3721 or GEOG 3750.

Two courses from: GEOG 3710, GEOG 3732, GEOG 3765 or GEOG 4813.

The department offers specialized areas of study that provide information and skills needed by students planning to enter the fields of cartography, climatology and meteorology, city and regional planning, elementary and secondary education, earth sciences, environmental studies, retail location, and to prepare for graduate studies in either geography or a variety of professional fields.

DEPARTMENT OF GEOLOGY

Professors Khawaja (Chair), A. Harris, Singler; Associate Professors Beiersdorfer, Dick, Jacobs; Assistant Professor Straffin.

Geology may be the major for the degree of Bachelor of Science or Bachelor of Arts.

The major in geology provides the student with a background for professional work, teaching, and graduate study in geology, environmental science, and related fields. This degree may be earned in eight semesters if students average 16 hours per semester.

Curriculum for the Bachelor of Science—Geology

For the Bachelor of Science degree, the student majoring in geology must complete a minimum of 40 s.h. in geology (32 Specified, 8 Elective), including a course in field geology, an additional 24-26 s.h. in science support courses.

I. Required Courses (32 s.h.)		s.h.
GEOL 1505	Physical Geology	4
GEOL 1513	Physical Evolution of North America	4
GEOL 1514	Life of the Past	3
GEOL 3700	Mineralogy	4
GEOL 3701	Geomorphology	3
GEOL 3704	Structural Geology	2
GEOL 3704L	Structural Geology Lab	1
GEOL 3718	Igneous & Metamorphic Petrology	4
GEOL 5802	Sedimentology & Stratigraphy	4
GEOL 48XX	Field Camp (Minimum)	3
		32

II. Geology Electives (Minimum 8 s.h.)		
GEOL 2602	Introduction to Oceanography	3
GEOL 2615	Geology & the Environment I	3
GEOL 3702	Glacial Geology	3
GEOL 3706	Geology of Economic Mineral Deposits	3
GEOL 3709	Subsurface Investigations	3
GEOL 3714	Principles of Paleontology	3
GEOL 3716	Environmental Impact of Abandoned Mines	3
GEOL 4804	Ground Water	3
GEOL 5815	Geology & the Environment II	2
GEOL 5817	Environmental Geochemistry	3

III. Required Science Courses (24-26 s.h.)		
CHEM 1515, 1516	General Chemistry 1, 2	8 + 2
MATH 1571, 1572	Calculus 1, 2 (or)	8
MATH/STAT 1571/3717	Calculus I/Statistical Methods	7
PHYS 1501, 1502	Fundamentals of Physics 1,2	7
PHYS 1501L, 1502L	Fundamentals of Physics Lab 1,2	2
	(or)	
PHYS 2610, 2611	General Physics 1,2	8
PHYS 2610L, 2611L	General Physics Lab 1,2	2

Curriculum for the Bachelor of Arts with a major in Geology

For the Bachelor of Arts degree, the student majoring in geology must complete a minimum 33 s.h. of required courses and a minimum of 18 s.h. in either Option I (Geoscience Option) or Option II (Environmental Option) for a total of 51 s.h. A minor is not required.

Required		s.h.
GEOL 1505	Physical Geology	4
GEOL 1513	Physical Evolution of North America	4
GEOL 1514	Life of the Past	3
GEOL 3700	Mineralogy	4
GEOL 3701	Geomorphology	3
MATH 1525	Precalculus Mathematics	3
	(or)	
MATH 1571	Calculus I (or)	4
STAT 3717	Statistical Methods	3
Science Electives		12

12 s.h. from the following science electives:		
GEOL 2602	Introduction to Oceanography	3
GEOL 2615	Geology & the Environment I	3

CHEM	1515, 1516	General Chemistry I, 2	4+4
PHYS	1501, 1502	Fundamentals of Physics 1, 2	4+4
BIOL	1509, 1510	Principles of Biology I, II	5+5
ASTRO	2609	Moon & Planets	3
GEOG	2630	Weather	3
GEOG	3737	Soils and Land Use	3
ENST	2600	Foundations of Environmental Studies	3

I. Geoscience Option

GEOL	3718	Igneous & Metamorphic Petrology	4
GEOL	3704/ 3704L	Structural Geology/Lab	3
GEOL	4802	Sedimentology & Stratigraphy	4
*Upper-Division Geology Courses			7
(Including a minimum of one geology capstone course)			
		Total	**18**

II. Environmental Option

GEOL	3706	Geology of Economic Mineral Dep	3
GEOL	3709	Subsurface Investigations	3
GEOL	4804	Ground Water	3
*Upper-Division Geology Courses			9
		Total	18

*GEOL Field Camp may count up to 3 s.h.

The field camp is chosen in consultation with the advisor and the Department's curriculum committee.

GERMAN

See Foreign Languages.

GREEK

See Foreign Languages.

DEPARTMENT OF HISTORY

Professors Berger, Blue, Domonkos, Friedman, Jenkins, Kulchytsky, Satre; Associate Professors Pallante (Chair), Viehe, York; Assistant Professors Ayana, DeBlasio, Leary.

The student majoring in history must complete, in addition to the general University requirements (see Degree Requirements, at the beginning of the College of Arts and 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.

Group A: History 1511, 1512, 2605, 2606 or 1511H, 1512H, 2605H, 2606H.

Select eight courses from the following with no more than three from each group:

Group B: 2601, 2630, 3700, 3702, 3704, 3706, 3710, 3712, 3713, 3715, 3717, 3723, 3726, 3732, 3733, 3734, 3736, 3740, 3741, 3742, 3743, 3744, 3748, 3762, 4801, 4811, 4812, 4815, 5808, 5809, 5810.

Group C: 3752, 3753, 3755, 3757, 3758, 3759, 3760, 3761, 3762, 3763, 3765, 3766, 3767, 3769, 3778, 3779, 3780, 3782, 3785, 3787, 3788, 3790, 3791, 3792, 3794, 4850, 4851.

Group D: 2611, 2661, 2662, 2663, 3700, 3727, 3728, 3740, 3749, 3750, 3751, 3770, 3772, 3776, 3779, 3781, 3789, 3795, 3797, 3798, 4850, 4860.

CAPSTONE: 4870

NOTE: No course can count in more than one group. Six courses in Groups B, C, and D must be at 3700 level or higher.

A history major must provide an essay examination, a book review, a research paper, and one additional paper for a portfolio (all produced in history classes) that will be maintained in the History Department. The essay examination should be from an upper-division course. The book review should include a title page, bibliographic entry at the beginning, content analysis and evaluation with a minimum of 1,000 words, typed in a 10-12 font, double-spaced, and one-inch margins. The research paper will be based on primary or secondary sources with a minimum of 1,000 and a maximum of 2,500 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.

Students transferring 20 or more semester hours in history to Youngstown State University from another institution must meet the group requirements listed above to obtain a major in History for graduation. At least five of the courses in Groups B, C, and D must be taken at Youngstown State University.

It is recommended that the student in choosing electives should acquire as broad a background as possible in the social sciences and the humanities. Particular attention is called to courses offered by the Departments of English, Economics, Political Science, Philosophy, Art, Music, Geography, and Sociology, and to the humanities courses. Students contemplating graduate work in history should consider taking more foreign language courses than the minimum necessary to meet the general degree requirement. Finally, the student is reminded that the Department of History takes seriously the University's emphasis on the importance of adequate competence in the English language (See Proficiency in English, in the Academic Policies and Procedures section of the *Undergraduate Bulletin*); when there is need, students majoring in history should include in their programs advanced composition courses and courses in speech.

Certificate in Historic Preservation

Historic preservation specialists encourage the renovation and re-use of America's built environment—buildings and bridges, farms and factories, battlefields and business districts, even entire neighborhoods. Professionals in this fast-growing field find employment with consulting firms, or with local, state, or national preservation groups, museums, or government agencies.

Youngstown State University offers a Certificate in Historic Preservation for students at either the undergraduate or graduate level. Six courses from the undergraduate Preservation Course, beginning with American Architectural History (HIST 5808) and Introduction to Historic Preservation (HIST 3715), then advancing to specialized instruction in Documentation and Interpretation of Historic Sites (HIST 5809) 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: History 3736, 3748, 4815; Geography 3726, 3765, Anthropology 4890, 4825; Art 2671, 4883.

In addition, hands-on instruction in preservation technology is available through arrangement with nationally renowned Belmont Technical College.

Undergraduates may earn the certificate as part of a history major, or as a minor supplementing work in a related field such as art history, anthropology, geography, or engineering.

ITALIAN

See Foreign Languages.

LABOR RELATIONS

See Economics.

LATIN

See Foreign Languages.

LINGUISTICS

See English / Foreign Languages.

DEPARTMENT OF MATHEMATICS AND STATISTICS

Professors Altinger, Barger, Brown, Buoni (Chair), Burden, Faires, Kent, Piotrowski, Ritchey, Rodabaugh, Wingler; Associate Professors Burris, Chang, Pollack, Smotzer, Stanek; Assistant Professors Flowers, Goldthwait.

Mathematics may be the major subject for the following degree programs: Bachelor of Science (B.S.), Bachelor of Arts (B.A.), and Bachelor of Science in Education (B.S. in Ed.). The B.A. and B.S. degrees may be learned in eight semesters if students average 16 hours per semester.

In addition to satisfying the general University requirements, all students majoring in mathematics must complete the following core courses: Mathematics 1571, 1572, 2673, 2683, 3720, 3721, 3751, 4896 or 4897H; also STAT 3743 and CS 2610.

Additional requirements specified for the individual degree programs in mathematics include:

BS Degree Program: Selection of one of the following four tracks:

Traditional Mathematics Track: In addition to the core, MATH 5852, 5822, 5880, 5875 and one of 3760, 3705, or 5845 . The minor course of study must be selected from one of the following disciplines: biology, chemistry, computer science, economics, geology, physics, psychology, statistics, one engineering specialty (from chemical, civil, electrical, industrial, mechanical), or a computer science statistics minor consisting of STAT 3743, 5817, 5843, and CS 2610, 2617, and one more additional CS course with 2610 as a prerequisite. The total number of required semester hours of credit in mathematics for this track is 41.

Statistics Track: In addition to the core, MATH 3760, 5845, 5843, 5844 and minor course of study in statistics that would consist of STAT courses 3743, 5817, 5840, 5848 and one of 5846, 5847, or 5849. The total number of required semester hours of credit in mathematics for this track is 38.

Applied Mathematics Track: In addition to the core, MATH 3705, 3760, 5835, 5845 and minor course of study consisting of STAT 3743, 5843, and CS 2610, 2617, one computer science course with 2610 prerequisite and one more course in statistics or one more computer science course with 2610 prerequisite. This will give a total of 6 courses in the minor course of study with at least 2 in statistics and at least 3 in computer science. The total number of required semester hours of credit in mathematics for this track is 38.

Quantitative Business Track: In addition to the core, MATH 5845 and 3760; STAT 5817; MGT 3789, ACCT 2602, FIN 3720, MIS 3761, PHIL 2625, CS 2610 and 2617, and ECON 2610 and 2630 or ECON 3710 and 3712. These courses also fulfill the requirements of a minor course of study and a portion of the general education requirement. The total number of required semester hours of credit in mathematics for this track is 32.

BA Degree Program: In addition to the core, 12 additional semester hours of mathematics at the upper division, 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.

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 constantly occur. Generally, new results in mathematics are developed and proven by those with a Ph.D. in mathematics. Students planning to pursue a Ph.D. will be well prepared for graduate school with this track and should also study at least one of the languages French, Russian, or German.

The **Applied Mathematics Track** emphasizes areas of mathematics used as for applications 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 masters 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 ease 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 and statistics to study financial and business situations should enroll in this track. By enrolling in this track and careful planning of electives, students will be well prepared to pursue an MBA degree from many programs across the country. Students can also pursue a career in actuary science where they work at such things as assessing pension plans, mortality rates, and accident rates. Students from this program can find employment in banks, insurance firms, public accounting firms, investment firms, labor unions, government, and large corporations.

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, including possibly a double major.

Students receiving transfer credit from another institution for courses in mathematics should consult the department chair to determine how this credit will apply toward the major requirements.

Mathematics Minors. Recommended mathematics courses for students who minor in mathematics are as follows:

For scientific applications: MATH 1571, 1572, 2673, and one or more of, 2683, 3705, 3720, 3721, 3751, 3760, or STAT 3743.

Statistics Minors. At least fifteen hours from the following courses. STAT 3743, 5843, 5844, 5817, 5840, 5846, 5847, 5848, 5849, 4896, and 4893. For a non-mathematics major, STAT 3743 can be replaced by STAT 3717 or 2601.

With the advice and approval of the chair of the major department, other statistics-based courses can be substituted as appropriate. It is required, however, that at least two courses be taken from the Department of Mathematics and Statistics for the minor requirement to be fulfilled.

PEACE AND CONFLICT STUDIES

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:

History 1512. *World Civilization From 1500.* 3 s.h.

Religious Studies 2617. *Introduction to Eastern Religions.* 3 s.h.

Geography 2626. *World Geography.* 3 s.h.

Political Science 2660. *International Relations.* 3 s.h.

Psychology 4804. *Conflict and Group Dynamics.* 3 s.h.

Sociology 3708. *Political Sociology.* 3 s.h.

Students interested in further study in the program may design and pursue an Individualized Curriculum Program (ICP) in consultation with program directors. Currently, Peace and Conflict Studies has an approved ICP that allows interested students to pursue coursework in areas of Global and Regional Studies, Communications and Dispute Resolution, and Peace Strategies. The ICP offers the possibility of a comprehensive and focused major and is especially useful to students considering graduate studies, or employment with non-profit organizations that need individuals with appropriate background in conflict resolution and cross-cultural knowledge and skills.

DEPARTMENT OF PHILOSOPHY AND RELIGIOUS STUDIES

Professors Bache, Minogue, Mir, Palmer-Fernandez, Shipka (Chair), Smith, Tessier, Waller; Associate Professor Wan-Tatah.

PHILOSOPHY

A major in philosophy is available for students who plan to enter the field of philosophy, law, professional or medical ethics, the ministry, or other fields requiring a liberal arts background.

The major consists of 30 semester hours, including PHIL 2600; 2619; 3700 or 3705; 3702; 3711 or 3780; 4820; and 4861. This program can be completed in eight semesters if students enroll in 16 hours per semester and enroll in a combination of day and evening classes. The hours for the degree could increase depending upon the student's foreign language placement upon entering YSU.

The department also offers minors in philosophy, religious studies and professional ethics, as well as a graduate certificate in bioethics. Contact the department for details. The department also houses the Dr. James Dale Ethics Center and the Center for Islamic Studies.

RELIGIOUS STUDIES

A major in religious studies is available for students who desire to prepare for a career in the ministry, counseling, religious education, social work or any field requiring a liberal arts background. The major consists of 30 semester hours, no more than 9 of which can be taken at the 2600-level. Majors must take at least one upper-level course in each of the following areas: (1) History of Religion: 3708, 3710, 3720, 3722, 3724, 3726, 3741, 3743; (2) Methodologies in the Study of Religion: 3751, 3754, 3756, 3758, PHIL 3712, ANTHRO 4815; (3) Scriptural Studies: 3731, 3732; and RELIG 4850 and 4871. It is assumed that the remaining hours will be selected in religious studies. In some cases, courses outside religious studies may be accepted as part of the religious studies major if they deepen the student's understanding of religion. All such courses must have the approval of the chair. This program can be completed in eight semesters if students enroll in 16 hours per semester and enroll in a combination of day and evening classes. The hours for the degree could increase depending upon the student's foreign language placement upon entering YSU.

The department offers minors in religious studies, philosophy, and professional ethics, as well as a graduate certificate in bioethics. Contact the department for details. The department also houses the Dr. James Dale Ethics Center and the Center for Islamic Studies.

DEPARTMENT OF PHYSICS AND ASTRONOMY

Professors Bishop, Hanzely, Sturrus, Tabak, Young (Chair); Associate Professors Andrews, Carroll.

Courses are organized with the following aims: (1) To provide well-rounded training in physics and astronomy for those needing it for graduate study, industry, or for secondary school teaching; (2) To provide basic training for engineering and pre-professional students; (3) To acquaint the non-specializing student with scientific methods and with the place of physics and astronomy in the modern world.

Following the course descriptions below are the curricula and minimum requirements for the degrees of Bachelor of Arts and Bachelor of Science with a major in physics and a Bachelor of Science degree with a combined major in physics and astronomy. These degrees may be earned in eight semesters if students average 15.5 hours per semester.

The B.A. degree program in physics is designed for students who are interested in fields that benefit from a strong background in physics or for students planning to terminate their education at the bachelor's degree level. The B.S. degree program in physics is designed for students who plan to pur-

sue graduate studies in physics. The B.S. degree program with a combined physics-astronomy major is designed for students who plan to pursue graduate studies in astronomy or space science.

A student desiring to teach physics or astronomy in secondary schools should consult the dean of the College of Education.

Shown below are suggested curricula for complete four-year programs. Students are urged to come to the department office early in their first year to select, and consult with, an advisor from the teaching staff.

Suggested Curriculum for Majors With a Minor in Mathematics

FIRST YEAR

Courses	s.h.
PHYS- 2610, 2610L, 2611, 2611L	10
MATH- 1571, 1572	8
CHEM- 1515, 1516	8
ENGL- 1550, 1551	6
	32

SECOND YEAR

PHYS- 3704, 3704L, 3705, 3705L	8
MATH- 2673, 3705	7
Electives (See note)	15
	30

THIRD YEAR

PHYS- 3701, 3702	6
PHYS- 3741, 3742	6
PHYS- 3750	3
Electives (See note)	16
	31

FOURTH YEAR

PHYS- 5810, 5811	6
PHYS- 3730	3
Electives (See Note)	22
	31

Note: The electives must satisfy the general University and/or College requirements, and the foreign language requirement of the College of Arts and Sciences.

Minimum requirements for the B.A. degree in physics with a minor in mathematics: Physics courses 30 s.h.: 2610, 2610L, 2611, 2611L, 3701, 3702, 3704, 3704L, 3705, 3705L, 3741, 4805. Mathematics courses, 15 s.h.: 1571, 1572, 2673, 3705.

Minimum requirements for the B.S. degree in physics with a minor in mathematics: Physics courses, 45 s.h.: Same as the B.A. above plus 3730, 3742, 3750, 5810, 5811. Mathematics courses 15 s.h.: Same as B.A. degree.

Minimum requirements for the B.S. with a combined major in physics and astronomy and a minor in mathematics: physics courses, 37 s.h.: Same as the B.A. above, plus 10 s.h. of upper division physics courses. Astronomy courses 18 s.h.: 2609, 3711, 3712, 4811, 4812. Mathematics courses 15 s.h.: Same as B.A. degree.

DEPARTMENT OF POLITICAL SCIENCE

Professors Binning (Chair) Eichenberger; Associate Professors Lepak, Porter, Sracic.

POLITICAL SCIENCE

A major in political science comprises 33 semester hours with the requirement that the student complete at least two courses in American Government, two courses from Comparative Government and International Relations, one Political Thought course and a capstone course. This degree may be earned in eight semesters if students enroll in 16 hours per semester and take both day and evening classes.

Related minors in history, economics, geography, and sociology are valuable to the political science major preparing for graduate study in political science, or for a career in journalism, law, public administration or the Foreign Service. The student who plans to do graduate study in political science or who expects to apply to the Foreign Service should achieve proficiency in at least one modern foreign language.

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 fulfill requirements for teacher licensure in the social sciences.

History 2605 and 2606 are required for the social studies major in addition to courses in economics, geography, history, political science, sociology and anthropology 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 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-FORESTRY

See Biological Sciences advisor.

PRE-LAW

Political Science Faculty, Advisors.

Pre-law advisement is available at the beginning of the student's college study to acquaint the student with the various fields of legal practice which require specialized undergraduate study, and in the junior year to arrange for law school entrance examinations and interviews.

There are no prescribed majors for the pre-law student. The options of a single discipline major, the American studies major, or the combined major in social studies exist.

Law school admission standards generally require an undergraduate point average of at least 3.00 and placement above the 50th percentile in the Law School Admissions Test, which is designed to measure capacity for analytic thought and for precision in the use of language. Regional and national law schools may have more rigorous requirements. Students are advised to consult The Official Guide to U.S. Law Schools, a publication of the Law School Admissions Council and the Association of American Law Schools, copies of which are available for use in the offices of the Department of Political Science.

PRE-CHIROPRACTIC
PRE-MEDICAL
PRE-OPTOMETRY
PRE-PODIATRY
PRE-DENTISTRY
PRE-OSTEOPATHY
PRE-VETERINARY

See the University pre-health professions advisor for details about these programs.

The primary aim of pre-professional students is to satisfy entrance requirements for their respective professional schools. The requirements are listed in bulletins from those schools and should be carefully studied. The American Association of Medical Colleges has published a book entitled Medical School Admission Requirements, which summarizes entrance requirements for medical schools in the United States and Canada. These and other professional school resources are available through the University PreHealth Professions advisor.

Pre-medical students may elect either of the following programs:

(1) A biology major with a chemistry minor

(2) A chemistry major with a biology minor

One of these programs is taken by the majority of students accepted into medical school. A student may elect any other major and minor if desired, but this is recommended only for students who can maintain extremely high grade averages.

See also *The Northeastern Ohio Universities College of Medicine.*

PRE-PHARMACY

See Chemistry.

DEPARTMENT OF PSYCHOLOGY

Professors Beckett, Ellyson, Fry, Gittis, Graf, Gray, Haynes, Kestner, Masaki, Morrison (Chair), Small, Stringer, Sweeney, White; Associate Professors Coldren, Flora; Assistant Professors Hampston, Thomas.

Psychology offers a major leading to the Bachelor of Arts degree. The Bachelor of Arts degree may be appropriate for students seeking (1) a general liberal arts degree; (2) paraprofessional employment; (3) certification with a B.A. degree to teach psychology in the secondary schools; (4) preparation for graduate study in psychology. These degrees may be earned in eight semesters if students average 16 hours per semester.

Honors Program in Psychology: Requirements for admission are: (1) completion of a minimum of 30 s.h. at YSU with a minimum GPA of 3.4; (2) completion of PSYCH 1560, 2617 and 2618, preferably by the end of the sophomore year, with a minimum GPA of 3.50. Eligible students should consult an advisor and chair of Honors Committee for the application and further information.

BACHELOR OF ARTS—PSYCHOLOGY

38 Hours:

A. PSYCH 1560 (General); 2617 & 2618 (Research Methods and Statistics 1 & 2).

B. At least one course must be taken from each of the following areas: (1) Clinical: PSYCH 3702 or 4802. (2) Social/Developmental: PSYCH 3700 or 3755 or 3756. (3) Learning/Cognition: PSYCH 3705 or 3761. (4) Physiological: PSYCH 3728.

C. Two laboratories attached to any psychology course.

D. Capstone course PSYCH 4890 or 4891H.

E. An additional 9 hours in courses applicable to the psychology major, excluding 3770, 3790, 3785H.

F. The remaining 3 hours in coursework may be taken in any course applicable to the major – 38 s.h.

RELIGIOUS STUDIES

See Philosophy and Religious Studies.

RUSSIAN

See Foreign Languages.

DEPARTMENT OF SOCIOLOGY AND ANTHROPOLOGY

Professors Fry, Gilmartin, White (Chair); Associate Professors D'Apolito, Gartland, Jiang, Shutes and Weaver.

The Department of Sociology and Anthropology offers majors and/or minors in both of its areas including a minor in gerontology.

SOCIOLOGY

The concentrations in sociology are useful to the professional study of law, teaching, research, and other fields requiring work beyond the bachelor's level.

Sociology majors are employed in a variety of settings, such as schools, institutions, urban affairs, social security and personnel.

A major in sociology comprises of 30 semester hours. Majors must take SOCIO 1500, 3701, 3749, 4850, and 4851, in addition to at least 15 semester hours of sociology courses. The program can be completed in eight semesters if students enroll in 16 hours per semester and take both day and evening classes.

Suggested Course Schedule for Sociology Majors

YEAR ONE
FALL SEMESTER

	s.h.
Writing I - English 1550	3
GER Math—Math 2363	3
GER Societies and Institutions (SI)	3
Foreign Language	3
Introduction to Sociology - Socio 1500	3
Total	15

SPRING SEMESTER

	s.h.
Writing II—English 1551	3
GER Speech—Comm 1545	3
Natural Sci Lab—A&S 2600 (NS)	4
Foreign Language	3
Sociology Elective	3
Total	16

YEAR TWO
FALL SEMESTER

	s.h.
GER Societies and Institutions (SI)	3
GER Natural Science (NS)	3
GER Art and Lit. Perspectives (AL)	3
Foreign Language	3
GER Pers and Soc Respons (PS)	3
Total	15

SPRING SEMESTER

	s.h.
GER Elective	3
GER Elective	3
Sociology Elective	3
GER Art. And Lit. Perspectives (AL)	3
GER Pers and Soc. Respons (PS)	3
Total	15

YEAR THREE
FALL SEMESTER

	s.h.
Social Theory—Socio 3749	3
Sociology Elective	3
Minor	3
Elective	3
Elective	3
Total	15

SPRING SEMESTER

	s.h.
Social Statistics I - Socio 3701	3
Sociology Elective	3
Minor	3
Minor	3
Elective	3
Total	15

YEAR FOUR
FALL SEMESTER

	s.h.
Research Methods—Socio 4850	3
Sociology Elective	3
Minor	3
Minor	3
Elective	3
Total	15

SPRING SEMESTER

	s.h.
Social Research—Socio 4851	3
Elective	3
Elective	3
Elective	3
Minor	3
Capstone	3
Total	18

Total Hours For Graduation **124**

ANTHROPOLOGY

A major in anthropology can take several directions. A background in anthropology can be immediately useful in many professional fields such as law, elementary and secondary education, urban affairs, administration, business and industry. Others can use the bachelor's degree as a first step in acquiring an advanced degree and ultimately teaching and doing research at the college or university level. Recent evidence indicates that a large number of corporate managers have degrees in anthropology.

A major in anthropology comprises 30 semester hours. Majors must take Anthropology 2602, 3701, 3702, 3703, 3705, 4801, 4850, 4851 and two area courses (6 semester hours). This program can be completed in eight semesters if students enroll in 16 hours per semester and take both day and evening classes.

Suggested Course Schedule for Anthropology Majors

YEAR ONE
FALL SEMESTER

	s.h.
Writing I—English 1550	3
GER Math–Math 2363	3
GER Societies and Institutions (SI)	3
Foreign Language	3
Introduction to Anthropology —Anthro 1602	3
Total	15

SPRING SEMESTER

Writing II—English 1551	3
GER Speech—Comm 1545	3
Natural Sci Lab—A&S 2600 (NS)	4
Foreign Language	3
Cultural Anthropology—Anthro 3705	3
Total	16

YEAR TWO
FALL SEMESTER

GER Societies and Institutions (SI)	3
GER Natural Science (NS)	3
GER Art and Lit. Perspectives (AL)	3
Foreign Language	3
GER Pers and Soc Respons (PS)	3
Total	15

SPRING SEMESTER

GER Elective	3
GER Elective	3
Archaeology—Anthro 3702	3
GER Art. And Lit. Perspectives (AL)	3
GER Pers and Soc. Respons (PS)	3
Total	15

YEAR THREE
FALL SEMESTER

Biological Anthropology—Anthro 3703	3
Anthropology Elective	3
Minor	3
Elective	3
Elective	3
Total	15

SPRING SEMESTER

Social Statistics I—Anthro 3701	3
Anthropology Elective	3
Minor	3
Minor	3
Elective	3
Total	15

YEAR FOUR
FALL SEMESTER

Research Methods—Anthro 4850	3
Anthropological Thought—Anthro 4801	3
Minor	3
Minor	3
Elective	3
Total	15

SPRING SEMESTER

Elective	3
Elective	3
Elective	3
Minor	3
Social Research - Anthro 4851	3
Capstone	3
Total	18

Total Hours For Graduation **124**

SPANISH

See Foreign Languages.

WOMEN'S STUDIES

L.J. "Tess" Tessier (Director), Philosophy and Religious Studies; Brothers, Brown-Clark, Belanger, Budge, Fagan, Falconer, Fitzgerald, Garr, Gergits, Gilmartin, Gittis, Jenkins, Leck, Linkon, Litowitz, Lorimer, Lovelace, McMahon, McNierney, Mullins, S. Russo, Sarkissian, Schramer, Shillington, Sniderman, Stephan, Stringer, Strom, Thomas, Tingley, Willis.

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 14 hours, including Women's Studies 2601, Women's Studies 4850, and at least two additional courses in different departments from the following options, one of which must be at the 3700-4800 level.

Lower-Division Courses

Women's Studies 2601. *Introduction to Women's Studies.* 3 s.h.

English 2617. *Women in Literature.* 3 s.h.

Foreign Languages 2660. *Women in the Ancient World.* 3 s.h.

Sociology 2640. *Women in Society.* Prereq.: SOCIO 1500. 3 s.h.

Upper-Division Courses

Biology 3718. *Women, Science, and Technology.* Prereq.: ENGL 1550; one Societies and Institutions General Education course, one Natural Sciences General Education course, or substitutes. 3 s.h.

English 3732. *Images of Women.* Prereq.: ENGL 1551. 3 s.h

History 3726. *History of Women in the United States.* Prereq.: HIST 2605 or 2606. 3 s.h.

History 3787. *History of Women in Europe.* Prereq.: HIST 1512. 3 s.h.

Philosophy 3709. *Feminist Philosophy.* Prereq.: PHIL 2600 or WMST 2601. 3 s.h.

Psychology 3730. *Psychology of Women.* Prereq.: PSYCH 1560. 3 s.h.

Psychology 3730L. *Psychology of Women Laboratory.* Concurrent: PSYCH 3730. 1 s.h.

Religious Studies 3754. *Feminism, Ecology and Religion.* Prereq.: RELIG 2601 or 2631 or WMST 2601. 3 s.h.

Women's Studies 4850. *Senior Research Project.* Prereq.: Senior standing and completion of a minimum of 10 s.h. in Women's Studies. 1-3 s.h.

The student may select one of the following courses when offered with the appropriate focus to complete the 14 hours for a minor.

Africana Studies 3700. *Black Studies Colloquium 1.* Prereq.: AFRST 2600. 3 s.h.

Africana Studies 3701. *Black Studies Colloquium 2.* Prereq.: AFRST 2601. 3 s.h.

American Studies 3701. *Approaches to American Studies.* 3 s.h.

Art History 4880. *Special Topics in Art History.* Prereq.: ART 1541, 1542, or consent of instructor. 3 s.h.

English 3790. *Selected Topics in Multicultural Studies.* Prereq.: ENGL 1551. 3 s.h.

Foundations of Education 5880. *Special Topics in Foundations of Education.* Prereq.: Permission of chairperson. 2 s.h.

History 4801. *Select Problems in American History.* Prereq.: Consent of instructor. 3 s.h.

Management 3755. *Managing Diversity.* Prereq.: Junior standing and a declared major. 3 s.h.

Music History 5878. *Selected Topics in Music History.* May be repeated once with different topic. Prereq.: MUSTC 2632 and MUSHL 3774. 3 s.h.

4820. *Seminar in Philosophy.* Prereq.: One 2600-level PHIL course. 3 s.h.

Psychology 4850. *Seminar in Psychology.* Prereq.: Senior standing in psychology. 2 s.h.

Religious Studies 4850. *Seminar in Religious Studies.* Prereq.: One 3700-level RELIG course. 3 s.h.

Sociology 4851. *Social Research.* Prereq.: SOCIO 4850. Listed also as ANTHR 4851. 3 s.h.

ZOOLOGY

See Biological Sciences

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

Betty Jo Licata, Dean

The mission of the Williamson College of Business Administration is to create a learning environment that provides a high-quality professional business education which, in turn, prepares students for productive and fulfilling careers. That education is the foundation for self-development and progress toward positions of increasing responsibility.

WCBA programs are designed to prepare students for careers in general areas of business as well as public and non-profit enterprise. Education in business emphasizes the development of analytical, decision-making, and communication skills as the foundation for positions of responsibility and leadership within organizations. While working toward professional competency in career-related fields, business students also receive a broad-based liberal education. Over one-half of their academic course work is taken outside the WCBA.

The WCBA emphasizes a student-centered, teaching/learning process with an emphasis on application of theory to practice. The WCBA is committed to the integration of teaching, scholarship, and service. The WCBA offers associate, bachelor's, and master's degrees in business and strives to offer a selected group of niche programs which meet the needs of stakeholders. The WCBA is committed to serving the regional business community. Recognizing that many students are working and going to school, the WCBA is committed to maximizing accessibility to education. As a primarily undergraduate college, teaching is the first priority—followed by applied scholarship/instructional development and service.

Accreditation

The Williamson College of Business Administration's bachelor's and master's programs are fully accredited by the AACSB—The International Association for Management Education, the premier accrediting agency for programs in business administration.The college is also accredited by the Association of Collegiate Business Schools and Programs.

Degrees

The Williamson College of Business Administration offers courses leading to the Bachelor of Science in Business Administration degree, with a major in accounting, advertising and public relations, finance, general administration, management (human resource management, management information systems, tracks), or marketing management.

The WCBA also offers an Associate in Labor Studies and Associate in Arts in Business Administration. At the graduate level, the WCBA offers the Master of Business Administration (MBA) degree.

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:

General Knowledge

1. A sense of the diversity of perspectives concerning ideas, issues, and events in history as reflected in various cultures of the world. Such perspectives address contrasting economic, political, social, and technological forces; personal and social values; and art, literature, and science.

2. A basic understanding of behavioral social science, economics, mathematics, and statistics.

Intellectual Skills

3. An ability to identify and solve problems using various capacities for thinking and reasoning, including sensitivity to the ethical dimensions of the problem. Such problems are typically characterized by uncertainty and the need for timely decision-making.

4. An ability to obtain, organize, and use information from various sources (human, print, electronic) for decision-making.

Interpersonal Skills

5. An ability to work as both leader and follower with diverse people in a productive manner.

Communication Skills

6. An ability to present and interpret information in writing with clarity and conciseness.

7. An ability to effectively express views orally and to carefully listen and interpret the orally-expressed views of others.

Organizational/Business Knowledge

8. A knowledge of the activities of business, government, and nonprofit organizations and of the environments in which they operate.

9. A knowledge of the internal dynamics of business, including interpersonal and group interaction and methods of dealing with change.

10. A knowledge of customer markets and the adjustment to change in those markets.

11. A knowledge of the functional areas of business (accounting, finance, management, and marketing) and their interrelationships.

12. An ability to apply academically-gained information and skills in the context of the "real world."

The emphasis in the business programs is on developing analytical, problem solving, and communication skills necessary for informed decision making within the context of an organization. The moral and ethical components of business as a profession are stressed throughout each program.

Individualized Curriculum Program

Students seeking more specialization in a learning program may investigate and apply for an Individualized Curriculum Program (ICP). This program enables interested students to design the

course of study best suited to their particular background and career goals and thereby create alternative pathways to currently offered degrees.

ICP in International Business

Students interested in careers in international business may pursue the Individualized Curriculum Program in international business. This program consists of general education requirements, business core courses, and courses such as international marketing, international management, international accounting and finance, comparative management, international trade, and international finance. Students are also required to complete a functional specialization in accounting, finance, management or marketing, and a foreign language sequence.

Williamson Center for International Business

The Williamson Center for International Business is a resource for students, faculty, and the Youngstown business community. Located directly adjacent to Williamson Hall in the Phelps Building, the Center provides a focal point for activities related to global business. The Center's primary goals are to integrate global business issues into the business curriculum, to promote international business expansion by area firms through cooperative work with YSU, and to expand international exchange opportunities in business schools to more than 25 countries.

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, 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 Scholars in Residence Program, students are able to interact with business people who are leaders in their fields. These programs provide a forum for the exchange of ideas and give an added dimension to the education of our students.

Rigorous academic preparation, career-related work experience, and involvement in activities beyond the classroom create a valuable combination that positions business majors for success in the business world.

Professional Practice Program

In addition to broad academic training through the WCBA degree programs, students can acquire professional experience through the Professional Practice Programs. 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 business experience.

With hundreds of applications for every job opening, today's graduates cannot rely on their college degrees alone to acquire the positions they desire. Employers spend less than 30 seconds scanning a resume. They look for key words like "internship" and "cooperative education" in addition to the college degree when determining which students to interview for full-time positions. In fact, many employers will not hire anyone who does not have internship or co-op experience prior to graduation.

Through internships and cooperative education, students can earn academic credit toward their degrees and, in most cases, be paid for their work. Students work for public accounting firms, state and local government, public relations firms, Fortune 500 corporations, marketing agencies, brokerage firms, banks, investments groups, nonprofit agencies, and retail establishments.

To be eligible for internship positions, students must have a minimum grade point average, junior standing, and completed at least one course in their major beyond the core. Internships are typically fifteen weeks in length or a minimum of 225 hours. To be eligible for co-op positions, students must have completed their freshman year of study, be in good academic standing, and meet the requirements of the sponsoring organization. Cooperative education students work for an employer a minimum of two separate times before graduation. Additional information concerning programs and sponsoring organizations is available from the WCBA coordinator of Professional Practice Programs located in the WCBA Advisement Center.

Career Services

YSU maintains a Career Services office to help students plan and explore careers, aid them in resume and letter-writing and help them prepare for job interview and job placement. Job openings are posted daily for current students and alumni; these include full-and part-time, seasonal and summer employment opportunities. Several hundred corporations, business, schools, agencies and governmen-

tal units visit the Career Services office yearly to hold job interviews.

The business career advisor focuses on assisting business majors with their job search plans and has an office in Jones Hall.

Facilities

The Williamson College of Business Administration is located in Williamson Hall, a six-story classroom and office building that houses the Advisement Center, the Professional Practice office, the Business Career/Advisor's office, the Small Business Institute/Service Corp. of Retired Executives, the National Association of Purchasing Managers–Youngstown, Inc., and the student organizations' office. Also located in Williamson Hall are the college's computer facilities, which consist of two student computer laboratories with a total of 43 workstations and direct Internet access, and a teaching laboratory with 32 workstations.

Requirements for Pre-Business Admission to Baccalaureate Program

New Applicants

First-quarter freshmen who are admitted to Youngstown State University will be accepted into the Williamson College of Business Administration as pre-business majors.

Transfer students both within and outside of Youngstown State University must have a minimum grade point average of 2.00 to transfer into the WCBA as a pre-business major.

Satisfactory progress toward the completion of the pre-business course requirements must be made before the completion of 33 semester hours of course work in order to retain pre-business status in the WCBA. Students who have not made satisfactory progress within this period of time must consider transferring to another college within the University. An advisor is available for consultation regarding other majors within the University.

Upper-Division Requirements/ Declared Business Major

Upon the completion of 53 semester hours of course work (inclusive of Writing 1551, Mathematics 1548, 1549, Economics 2610, 2630, 3780, 3781, and Accounting 2602, 2603 with grades of "C" or better), students who wish to be considered for upper-division standing in the WCBA must apply with an academic advisor in Room 408 of Williamson Hall. Students must have a 2.5 cumulative grade point average to be admitted to upper-division standing.

Students are restricted from registering for upper-division business courses until a major has been declared.

Requirements for the Degree

ASSOCIATE IN ARTS IN BUSINESS ADMINISTRATION

The Associate in Arts degree is intended for students not seeking other associate or baccalaureate degrees. To pursue an Associate in Arts degree, consult the Advisement Center in the College of Business Administration, Room 408 of Williamson Hall.

Associate in Arts Business Administration Requirements - AA Degree

FIRST YEAR

Course	Sem. Hrs.
ENGL 1550 Writing I	3
ENGL 1551 Writing II (Engl 1550)	3
†BUS 1500 Dynamics of U.S. & Global Bus	3
†MATH 1548 College Business Math 1 (MPT)	3
†ECON 2610 Principles I (MPT)	3
†ECON 2630 Principles II (Econ 2610)	3
Science Elective	3
General Education Requirements	14

SECOND YEAR

Course	Sem. Hrs.
†MGT 2604 Legal Environment of Business I	3
†ACCTG 2602 Financial Accounting (Soph Stdg)	3
†ACCTG 2603 Managerial Accounting (Acctg 2602)	3
†ECON 3780 Business & Econ Stat (MPT)	4
†ECON 3781 Business & Econ Stat II Workshop	1
Science Elective	3

WCBA Core Courses

MGT 3725 Fund of Management (Permit Required)	3
MKTG 3703 Mktg Concepts/Pract (Permit Required)	4

Area of Concentration (9 semester hours)
Accounting, Finance, Management, Marketing

Proper prerequisites must be completed before registering for courses in the area of concentration. For specific courses, see curriculum for area of concentration.

Total Hours **68**

†WCBA tool courses and English 1551 must be completed with a grade of "C" or better and an overall GPA of 2.5 or higher before core course permits are issued. CR/NC options may not be used in tool and core courses.

ASSOCIATE IN LABOR STUDIES

Associate in Labor Studies Requirements - ALS Degree - Labor Studies

FIRST YEAR

Course	Sem. Hrs.
ENGL 1550 Writing I	3
ENGL 1551 Writing II (Engl 1550)	3
†BUS 1500 Dynamics of U.S. & Global Bus	3
†MATH 1548 College Business Math 1 (MPT)	3
†ECON 2610 Principles I (MPT)	3
†ECON 2630 Principles II (Econ 2610)	3
Science Elective	3
General Education Requirements	7

SECOND YEAR

Course	Sem. Hrs.
†MGT 2604 Legal Environment of Business I	3
†ACCTG 2602 Financial Accounting (Soph Stdg)	3
†ACCTG 2603 Managerial Accounting (Acctg 2602)	3
†ECON 3780 Business & Econ Stat (MPT)	4
†ECON 3781 Business & Econ Stat II Workshop	1
Science Elective	3
General Education Requirements	3

WCBA Core Course

MGT 3725 Fund of Management (Permit Required)	3
LABOR STUDIES CONCENTRATION (For specific courses, see curriculum.)	17
Total Hours	68

††See course listings prefixed LSTEC under Management in the Courses section of this *Bulletin*.

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

The student has the responsibility for seeing that all graduation requirements for the degree are satisfied. For the Bachelor of Science in Business Administration degree, these are:

1. Pre-college or preparatory courses, taken in high school. See the Academic Policies and Procedures section.

2. Courses and other requirements of the University. These are explained in the Academic Policies and Procedures section, and are listed below.

The curricula leading to a degree in business require a minimum of 124 semester hours. This degree may be earned in eight semesters if students average 16 hours per semester.

Admission to Pre-Business does not guarantee admission to upper-division status with a major in business.

The student whose needs are not completely met by existing programs may wish to investigate and apply for the Individualized Curriculum Program. See the Academic Policies and Procedures section.

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

Pre-Business Course Requirements

FIRST YEAR

Course	Sem. Hrs.
ENGL 1550 Writing I	3
ENGL 1551 Writing II (Engl 1550)	3
††BUS 1500 Dynamics of U.S. & Global Bus	3
††MATH 1548 College Business Math 1 (MPT)	3
††MATH 1549 College Business Math 2 (MPT)	3
††ECON 2610 Principles I (MPT)	3
††ECON 2630 Principles II (Econ 2610)	3
General Education Requirements	9

SECOND YEAR

Course	Sem. Hrs.
††ACCTG 2602 Financial Accounting (Soph Stdg)	3
††ACCTG 2603 Managerial Accounting (Acctg 2602)	3
††MGT 2604 Legal Environment of Business I	3
††ECON 3780 Business & Econ Stat (MPT)	4
†† ECON 3781 Business & Econ Stat II Workshop	1
COMM 1545 Comm Theory & Practice	3
PHIL 2625 Intro to Professional Ethics	3
PSYCH 1560 General Psychology	3
General Education Requirements	6

Upper-Division Requirements/ Declared Major

THIRD YEAR

Course	Sem. Hrs.
FIN 3720 Business Finance (Permit Required)	3
MGT 3725 Fund of Management (Permit Required)	3
MKTG 3703 Mktg Concepts/Pract (Permit Required)	4
Major Requirements and electives, see major.	
Non-Business electives, semester hours vary according to major.	

FOURTH YEAR

Course	Sem. Hrs.
MGT 4850 Strategic Management (Permit Required)	3
Major Requirements and electives, see major.	
Non-Business electives, semester hours vary according to major.	

Total Hours	**124**

††WCBA tool courses and English 1551 must be completed with a grade of "C" or better and student must possess an overall GPA of 2.5 or higher before core course permits are issued. Tool and core courses may not be used to satisfy any other degree requirement. CR/NC options may not be used in tool and core courses.

Courses for the major must exclude all courses used to satisfy general university, WCBA tool, and WCBA core requirements.

A grade of "C" or better must be earned in all courses taken in the major. The CR/NC option may not be used for major courses or core courses.

Other Degree Requirements

- Completion of the appropriate number of semester hours.
- Upper-division status (completion of 53 semester hours of credit; completion of all tool courses with a grade of "C" or better; application must be made in the advisors' office).
- Minimum cumulative GPA of 2.5.
- Major requirements (a grade of "C" or better must be earned in all courses taken in the major).
- 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 (60 hours) of the total degree requirements must be taken in nonbusiness courses. Up to 9 hours of economics courses can be counted as nonbusiness.
- Point index requirement.
- Residence requirement.
- Application for graduation.

Requirements for the Major

The courses required for the various majors are listed by each department. The combined majors in art, advertising and public relations, and the interdisciplinary requirements for fashion retailing are described in the Department of Marketing listings. The combined major in general administration is described in the Department of Management listings.

Requirements for the Minor

A suggested business minor (business foundations) for nonbusiness students would include ACCTG 2602 and 2603, FIN 3720, MGT 2604 and 3725, MKTG 3703 and at least six additional hours of credit from the Williamson College of Business Administration for which proper prerequisites have been met.

Courses of Instruction and Curricula

Course descriptions can be found in a separate section in the back of this *Bulletin*.

Each student is charged with the responsibility of checking the catalog for prerequisites for each course he or she wishes to take. This will ensure minimum changes of registration on the student's behalf and will alleviate many problems associated with scheduling.

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.

DEPARTMENT OF ACCOUNTING AND FINANCE

Professors Antenucci, Bensinger, Chen, Claypool, Heal, Ross, Savage, Shaffer, Tackett, Volpe; Associate Professors, Law, McMath, Wolf, Woodlock (Chair).

ACCOUNTING

Accounting can be described as a service activity, a descriptive/analytical discipline, and an information system. As a service activity, it provides users with quantitative financial information to aid in making business-related decisions. As a descriptive, analytical discipline, it identifies those economic transactions affecting an economic entity and describes—through measurement, classification summarization, and reporting—the impact of the transactions on the entity. As an information system, accounting communicates financial information to interested parties. Accountants are involved in one or more of these areas.

Career Opportunities

The demand for accounting graduates continues to grow as corporations develop, tax laws change, and new government regulations are introduced.

All types of organizations, public and private, require accounting services in their operations. Private accounting includes such areas of specialization as financial accounting, cost accounting, systems, managerial accounting, internal auditing, tax accounting, budgeting, and financial analysis. In public accounting, the major specializations include external auditing, management advisory services, tax accounting, and planning.

Employers of accountants include banks, retail and wholesale businesses, manufacturers, labor unions, tax firms, pension funds, foundations, hospitals, universities, churches, government agencies,

and consulting companies. Self-employed accountants may set up their own offices and work for private clients.

Student Organizations

The Institute of Management Accountants Student Chapter at YSU operates under the sponsorship of the Institute of Management Accountants, the world's largest association of management accountants and financial managers. Beta Alpha Psi, the national honors fraternity for financial information professionals, is open to accounting/finance majors with a 3.00 or higher GPA. Accounting students are actively involved in public service such as the Voluntary Income Tax Assistance (VITA) program.

Requirements to sit for the Certified Public Accountants (CPA) Exam

Effective with the year 2000, Ohio residents wishing to sit for the Certified Public Accountants (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 specialization in accounting is strongly recommended in conjunction with the bachelor's degree. With proper planning and coordination, a student can complete both a B.S. and MBA in five years (for example, students may take MBA courses in their senior year which would be counted towards the graduate degree).

In order to complete both undergraduate and graduate degrees in a timely manner, undergraduate students should apply to the MBA program (which includes successful completion of the GMAT exam) upon completion of 90 semester hours (approximately 135 quarter hours) including intermediate accounting courses. Please consult any of the following: Undergraduate Advisement office, MBA office, or the Department of Accounting and Finance.

Curricula

For University requirements, lower-division tool requirements, and upper-division core requirements, see pre-business course requirements at the beginning of the WCBA section.

Accounting Major

(186 Hours for the Degree)

Accounting 3701, 3702, 3709, 3711, 4801, 4808, 4813

Management 3714

Business upper-division electives

Accounting Minor

Suggested courses include:

Accounting 2602, 2603, 3701, 3702, 3711 or 4813

FINANCE

Due to rapid technological change, finance is one of the most exciting areas of business as well as an expanding career choice. A career in finance offers flexibility, security, and a wide choice of specializations. Corporations, governments, nonprofit institutions, and individuals all require the expertise that a financial professional can offer. During this era of restructuring, the unique analytical skills that a financial specialist provides can translate into job security as well as additional opportunity.

The role of finance professionals is to provide information and analyses to organizations and individuals that will result in superior decision making. A career in finance requires careful preparation, an aptitude for practical analytical skills, and the ability to recognize and communicate potential remedies and solutions to a wide variety of problems.

Career Opportunities

Areas of specialization in finance include investment analysis, insurance, financial planning and analysis, banking, credit analysis, cash management, and corporate finance. The rapid expansion of international business and investments has led to a shortage of finance professionals to work in this area both domestically and abroad. The aging of the "Baby Boom" generation together with changing pension regulations increases the demand for professionals specializing in retirement planning and investments.

Finance Major

(186 Hours for the Degree)

Finance 3721, 3730, 4835, 4836, 4853

Business upper-division electives

Finance Minor

Suggested courses include:

Finance 3720, 3721, 3730, 4835, 4836, or 4853

DEPARTMENT OF MANAGEMENT

Professors Arlow, Daly, Guzell, Karpak, Kasuganti (Chair), Katz, McMahon, Psenicka, Russo, Sellaro; Associate Professors Granito, Rakestraw, Vendemia; Assistant Professor Kos.

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 (management information systems, or human resource management tracks), and general administration. An Individualized Curriculum Program in international management is also offered.

The programs in the department are designed to prepare individuals for careers as managers/supervisors in business/industrial/transportation/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 two-year associate degree programs in Management and Labor Studies.

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 learn how to increase organizational effectiveness through the best use of personnel.

Information Systems Management - Management Information Systems (MIS) manager, vice president of information systems, systems analyst, data base administrator, network manager, programmer. Courses in this area will focus on the personal, organizational, and technical aspects of the MIS function.

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.

Student Organizations

The American Society for Quality (ASQ) helps students enhance their professional skills and employability by connecting them with the resources they need. Sigma Pi Alpha is the YSU student affiliate of the Society for Human Resource Management (SHRM) and is open to students who have an ongoing interest in human resource management. The Management Information Systems student organization enables students to learn about management information systems and related technologies.

Curricula

All students in management must take the department core requirements and the courses listed in their respective major. For University requirements, lower- division tool requirements, and upper-division core requirements, see Pre-Business Course Requirements on page 103.

Management Department Core Requirements

Management 3750, 3789, or 4890

Management Major

Information Systems Track

Management 3761, 5835, 5865, and
MIS elective, CIS electives, Mgt. elective,
Business upper-division electives

Management Major

Human Resource Track

Management 3761, 3734, 3715, 4810
Management upper-division electives*
Business upper-division electives
*One of these could be an economics course

General Administration (Combined) Major

(186 Semester Hours for the Degree)
Mgt. 3761
Accounting/Finance electives
Marketing upper-division electives
Management upper-division electives
Business upper-division electives

Management Minor

(18 Semester Hours)

Suggested courses include:
Management 3725, 3735, 3737, 3750, 3734, 3789, 4815, 3755, 4890, 3761

DEPARTMENT OF MARKETING

Professors Burns (Chair), Decker, Reid, Wilkinson; Associate Professors Anderson, Kohut, Warren; Assistant Professor Kittle.

MARKETING

Marketing deals with processes that provide products and services to buyers with the goal of satisfying their needs and wants. Buyers can be consumers like you or businesses. Determining buyers' needs and wants and developing ways to meet them is the fundamental role of business – both for-profit and not-for-profit. Indeed, it was recently stated in the *Harvard Business Review* that, within the context of business, "Marketing is everything" — the success of an organization's marketing determines the success of the organization. It is no wonder then, that marketing is the central activity of business organizations in market economies.

Marketing addresses a number of business issues, including deciding what products to offer, to whom, at what price, and at what location. Marketing majors in the Williamson College of Business Administration (WCBA) enroll in a wide variety of courses that examine these areas in great detail to provide them with the tools and knowledge to succeed in the world of business. For those not majoring in marketing, the course offerings provide a knowledge of how businesses function and how other business operations, such as finance and management, provide the inputs necessary for successful decision making and strategy implementation.

Although the Department of Marketing offers only one major in marketing, the curriculum is flexible enough to allow students to focus their attention in areas of interest. For instance, in addition to *marketing management*, the curriculum allows study in such areas as *retail marketing* (management of retail businesses who sell directly to consumers), *shopping center and property management* (management of shopping and mixed-use developments), *industrial marketing* (business-to-business marketing programs and practices), and others. The marketing major leads to a Bachelor of Science in Business Administration degree.

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, e-tailers, 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 potentially very rewarding career option.

Student Organizations

Alpha Mu is a national professional business society affiliated with the American Marketing Association (AMA); it 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 at the beginning of the WCBA section.

Marketing Major Requirements

(124 Semester Hours for the Degree)

Marketing 3726, 3740, 4815, 4825 and five Marketing or Advertising and Public Relations electives
Business upper-division electives

Marketing Minors

Several minors in marketing exist, including retail marketing, shopping center and property management, industrial marketing, international marketing, entrepreneurship, and general marketing. See the Marketing Department chair for more information and course requirements.

ADVERTISING AND PUBLIC RELATIONS

Advertising and public relations are mainly concerned with communications by organizations to their various audiences. Organizations have public images which 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 communicationss. Students then have the flexibility to focus on areas of their interest. For University requirements, lower-division tool requirements, and upper-division core requirements, see prebusiness course requirements at the beginning of the WCBA section.

Advertising and Public Relations Major Requirements

(124 Semester Hours for the Degree)

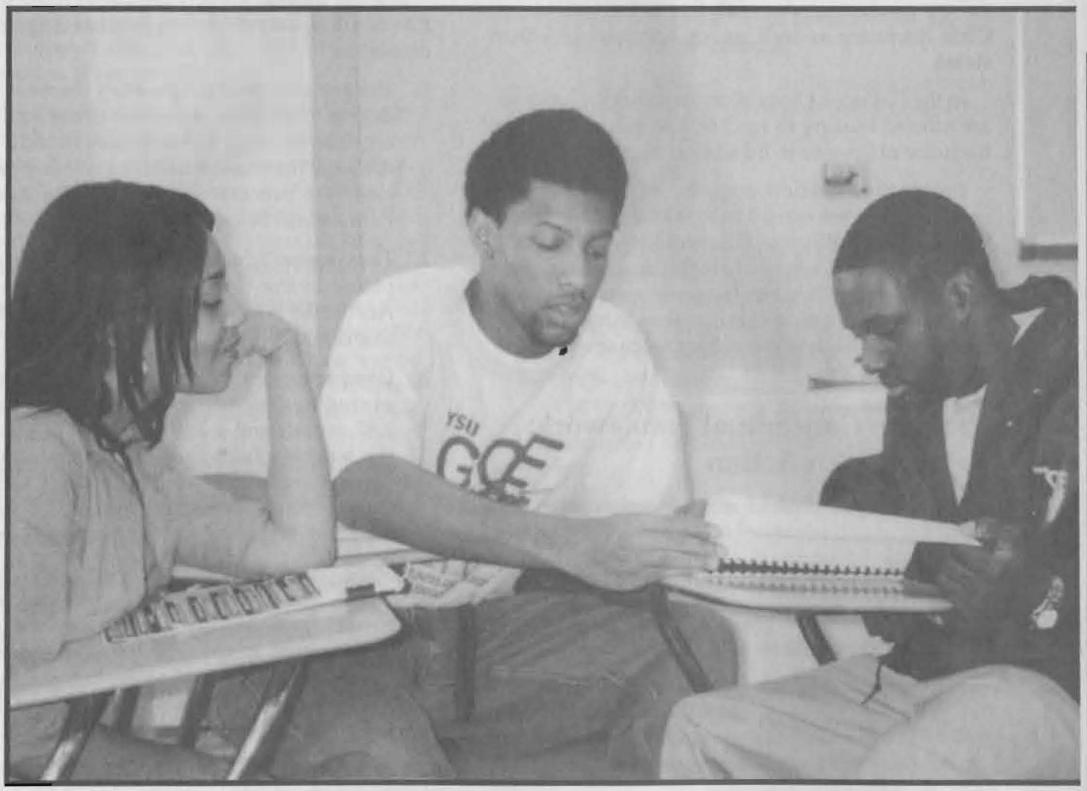
Marketing 3726, 4815, 4825 or Advertising 855
Advertising 3711, 3712, 3717 and three Advertising and Public Relations or Marketing electives
Business upper-division electives

Advertising and Public Relations Minor

An advertising and public relations minor can be a valuable addition to any degree. See the Marketing Department chair for more information and course requirements.

The Beeghly College of Education

Clara Jennings, 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: Teacher Education; Educational Administration, Research, and Foundations; and Counseling. It cooperates with the College of Arts and Sciences, the Bitonte College of Health and Human Services, and the College of Fine and Performing Arts in preparing teachers for both public and private schools.

Youngstown State University teacher education programs are accredited by the Ohio Department of Education, 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 Arts and Sciences, the College of Fine and Performing Arts, and the Bitonte College of Health and Human Services, providing they meet requirements for admission to upper-division status in the College of Education and complete the proper teacher education programs.

Program Conceptual Framework: Reflection in Action

The College's professional education programs at the initial and advanced levels are defined within a conceptual framework referred to as **Reflection in Action**. This is translated into six program goals to develop teachers who are

- critical thinkers
- problem solvers
- decision makers
- discerning counselors
- lifelong learners
- active learners

The framework is intended to produce a parallel set of six significant outcomes, i.e., teachers who can

- analyze educational policy
- solve pedagogical and professional problems
- make instructional and professional decisions
- demonstrate effective interaction
- show personal development
- establish professional development

The courses, practices, and management strategies used in educational programs must create and support a consistent image of what the philosophy of the programs means in classroom life. The College of Education uses the Reflection in Action conceptual framework to provide this consistent image. This conceptual framework functions to inform, to guide, and inspire faculty and students by providing a central core of related ideas from which programs evolve, are explained, and are evaluated.

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.
3. Completion of a minimum of 124 semester hours of credit with a grade point average of at least 2.67 overall and a 2.67 grade point average in the teaching field and professional education courses (each computed separately including transfer hours) with no less than a C grade in all major, licensure, and professional education courses.
4. The Bachelor of Science in Education degree is earned by all students enrolled in the College of Education. It is awarded only 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-kindergartenthrough grade three). For teaching children whoare 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) reading and language arts; b) mathematics; c) science; d) social studies.
3. Secondary Education — (Grades seven through twelve). For teaching learners in a curriculum

area named on the teaching license. Students may choose from: a) Life Sciences Educ.; b) Earth Sciences Educ.; c) Physical Sciences Educ; d) Integrated Sciences Educ.; e) Integrated Language Arts Educ.; f) Integrated Mathematics Educ.; g) Integrated Social Studies Educ.

4. Vocational Education — (grades four and beyond). For teaching in a subject area named on the teaching license. Students may choose from: a) Integrated Business Educ.; b) 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) Drama/Theater Educ.; c) French Educ.; d) German Educ.; e) Italian Educ.; f) Spanish Educ.; g) Health Educ.; h) Physical Educ.; i) Music Educ.
6. Special Education — (Intervention specialist, pre-kindergarten through grade twelve). For teaching learners named on the teaching license. Students may choose from: a) Mild/Moderate Disabilities; b) Moderate/Intensive 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.* Application information and materials are available in the BCOE Office of Student Services, Room 2101. Each completed application must be reviewed for approval by the Admissions Subcommittee of the Professional Education Committee (PEC).

Admission to Teacher Education is obtained upon satisfactory completion of the following requirements:

1. Minimum completion of 60 semester hours prior to the term for which application is made.
2. Minimum overall grade point average (GPA) of 3.00.

   OR

   Minimum 3.00 GPA in last 60 semester hours.

   OR

   Minimum 2.67 overall GPA and the following minimum scores on the Pre-Professional Skills Test (PPST) through the Educational Testing Service and officially reported to YSU: 175 Writing, 179 Reading, 179 Mathematics.
3. Minimum grades of "C" in the following two courses with a "B" average or better across the two (defined as B-B or A-C):

   a. ENGL 1550.

   b. ENGL 1551.

   Note: Students who fail to achieve the "B" average as defined above may enroll in ENGL 1601 and achieve a "B" or better in that course to meet this requirement.
4. Minimum grades of "C" in the following three courses with a "B" average or better across the three (defined as B-B-B or A-B-C):

   a. FOUND 1501.

   b. COMM 1545.

   c. One content area course as designated by the faculty in the program area. (See the latest editions of the *Beeghly College of Education Orientation Booklet* and/or the *Beeghly College of Education Guidelines for Field Experience and Student Teaching* for the list of approved courses by program area.)
5. Completion of Good Moral Character Statement.
6. Submission of an Approved Portfolio.

   (See the latest editions of the *Beeghly College of Education Orientation Booklet* and/or the *Beeghly College of Education Guidelines for Field Experience and Student Teaching* for the list of artifacts required for inclusion in the portfolio.

Candidates for degrees outside the College of Education are enrolled in the college awarding the particular degree, nonetheless these students must meet the above requirements and be admitted to Teacher Education in order to enter the junior and senior level courses offered in the College of Education leading to teaching licensure. All B.S. in Ed. candidates are enrolled in the College of Education and must meet these requirements for admission. Transfer students who were in good standing in an NCATE approved teacher education program at the previous school and who were admitted to the Teacher Education Program there, may be admitted to the Teacher Education Program at Youngstown State University with appropriate documentation.

Students are encouraged to plan to meet the requirements for admission to Teacher Education by the end of their sophomore year. Later qualification does not justify waiving any course prerequisites or planned sequences, and usually results in prolonging the period of study beyond the usual four years.

Requirements for Student Teaching

Application for a student teaching assignment must be filed with the Student Field Experiences Office during fall semester of the year preceding the academic year in which student teaching is to be completed. The student must register for the proper number of hours for the respective student teaching course(s) 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: 1) senior status; 2) an overall G.P.A. of at least 3.00; 3) completed prescribed prerequisites for student teaching and 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) with the course sequence substantially completed. No other coursework may be taken concurrently with student teaching. 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 3.00 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) prior to receiving YSU's recommendation for licensure.**

For more information regarding additional fields, validations or endorsements, consult the academic advisors in the College of Education.

Post-Baccalaureate Alternative Licensure. Post-baccalaureate students desiring Youngstown State University's recommendation for licensure in Ohio and any other state must be admitted to the University and 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. In addition, they must satisfy the general education, 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.

Post-baccalaureate students seeking initial high school licensure *not* desiring Youngstown State University's recommendation and who are part of a **State-approved Internship Certificate** Program of an Ohio public board of education may take courses from the College of Education to satisfy the requirements. The College of Education and the intern's school district will determine the specific courses. Eighteen semester hours of course work will be required, none of which can be met by program equivalency or previous class work. The internship begins with 6 semester hours in the summer, followed by one to two internship years during which the remaining courses are taken. Successful internship completion leads to recommendation for high school certification by the school system's superintendent and is good in Ohio only.

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 are also advised in the department in which their major is located.

Curricula and Courses of Instruction

Each curriculum leads to an Ohio provisional license. Minimum requirements for teachers' licenses are determined by the Ohio Department of Education; if those requirements change, they become effective immediately at Youngstown State University. State department minimal requirements may be, and usually are, exceeded by University requirements.

Courses will be found in the back of this *Bulletin* in alphabetical order by course prefix.

DEPARTMENT OF TEACHER EDUCATION

Professors Angle, Beary, Funk, Glasser, Hoover, Kim, Longmuir, McCracken, Pullman, Salvner; Associate Professors Bailey, Feist-Willis, Ginnetti (Chair), Hauschildt, McNierney, Schaiper, Shillington, Sweeney; Assistant Professors Ausmann, Briley, DaRos, DiPillo, Dove, Matanin; Instructor Kunar.

EARLY CHILDHOOD EDUCATION

IMPORTANT NOTICE: All teacher education program, course, and credit information provided below is pending completion of all formal review processes at Youngstown State University and the Ohio Department of Education. Contact the Beeghly College Education academic advisors to be advised of any changes in information provided here regarding these teacher licensure programs in early childhood education, middle childhood education, secondary education, and special education.

In cooperation with the Department of Human Ecology, the Department of Teacher Education offers a four-year early childhood education program approved by the Ohio Department of Education. Advisement is provided by the faculty in Child and Family and Early Childhood Education, as well as the academic advisors in the College of Education. Majors in this program must complete general education requirements, professional education requirements, reading course requirements, and curriculum content requirements totalling a minimum of 126 s.h.

Prior to student teaching, all early childhood majors must complete a Teacher Education Center (TEC) experience. A TEC, conducted in local schools, is defined as University faculty presenting theory and supervising the students' teaching of lessons. This program requires students to spend the entire day at a school site for the semester. Because TEC 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. TEC is scheduled during the fall and spring semesters. Applications for TEC are due two semesters prior to participation and may be obtained from the Department of Teacher Education. Contact the Beeghly College of Education academic advisors to determine the current courses included in TEC and the minimum prerequisites.

Early Childhood License

The B.S. in Ed. degree requires the courses listed below to total 134 s.h. Licensure also requires passing the Ohio Praxis II Exams.

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

General Education Requirements (45 s.h.)

The specific course work required in general education for early childhood education majors is as follows:

Writing:
ENGL 1550 Writing 1 3
ENGL 1551 Writing 2 3

Oral Communication:
COMM 1545 Comm Theory & Practice 3

Math:
MATH 2651 Math for Early Child Tchrs 1 3
MATH 2652 Math for Early Childhood Teachers 2 3

Natural Science:
A&S 2600 Exploration in Science 3

One of the following Natural Science:
ASTRO 1540 3
BIOL 1505 3
GEOG 1503 3
GEOL 1504 3
PHYS 1500 3

Societies & Institutions:
HIST 2605 or 2606 3
GEOG 2640 3

One of the following Societies & Institutions:
ECON 1501 3
SOCIO 1500 3

Artistic & Literary:
MUSED 1621 3
ART 1541 or 1542 3

Personal & Social Responsibility:
PSYCH 1560 3
Personal & Social Responsibility Elective 3

Selected Topics:
SPED2630 Individuals w/ Excpt. in Society 3

GER NOTES:
—Writing Intensive (2 courses)
—Oral Communication Intensive (2 courses)
—Critical Thinking Intensive (2 courses)

Professional Education Requirements in Early Childhood Education

The specific course work required in professional education is as follows:
FOUND 1501 Intro to Education 3
FOUND 3708 Education & Society 3
FOUND 3771 Tech for Teaching 3
ENGL 2651 Intro to Language 3

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

ART 3737 Pre-K4 Visual Arts Ed 3
CHFAM 1532 Early Child: Int Dev & Educ 3
CHFAM 3750 Parent and Prof Relationships 3
CHFAM 3770 Wellness in Early Childhood 3
EMCE 2630 learning in Early Childhood 3
ENGL 3703 Children's Literature 3
HPES 2624 PE Child in EC Settings 3
MUSED 3722 Music Settings 3
PSYCH 3709 Psych of Education 3
PSYCH 3755 Dev Psych 3
SPED 5831 Asses in Early Childhood
OR CHFAM 650 Intro to Asses of
Young Child 3

Reading Course Requirements in Early Childhood Education (12 s.h.)

The specific course work required in reading is as follows:
TERG 3701 Phonics in Rdg Instruction 3
TERG 3702 Dev Rdg Inst & Lit Strat P-9 3
TERG 3703 Assess & Inst in Reading, P-9 3
TERG 2601 Rdg Appl in Content Areas, P-12 3

TEC BLOCK: (16 s.h.)
ECE 3713 Teaching Math: Early Years 3
ECE 3715 Tchng Sci 3
ECE 3760 Cross Curr Application 4
ECE 3780 Social Studies for Young Children 3
ECE 4814 Lang Arts Methods in the
Early years (3-8) 3

STUDENT TEACHING BLOCK:
SPED 2631 Intervention Strategies W/ Special Needs Children in Early Childhood 3
SPED 5835 Classroom Mgmt for Excp Ind. **OR**
CHFAM 664 Managing Clsrm Beh in ECE 3
EMCE 4841 Student Teaching: Early childhood
Education 10

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. 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) reading and language arts; b) mathematics; c) science; d) social studies. While total credit hour requirements depend on student's choice of concentration areas, the middle school program requires approximately 138 s.h.

Prior to student teaching, all middle childhood majors must complete a Teacher Education Center (TEC) experience. A TEC, conducted in local schools, is defined as University faculty presenting theory and supervising the students' teaching of lessons. This program requires students to spend the entire day at a school site for the semester. Because TEC 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. TEC is scheduled during the fall and spring semesters. Applications for TEC are due two semesters prior to participation and may be obtained from the Department of Teacher Education. Contact the College of Education academic advisors to determine the current courses included in TEC and the minimum prerequisites.

Middle Childhood License

The B.S. in Ed. degree requires the courses listed below to total a minimum of 124 s.h. Licensure also requires passing the Ohio Praxis II Exams.

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

General education requirements in Middle Childhood Education

(Subject to Change upon GER completion) (45 s.h.) The specific course work required in general education is as follows:

Writing:
ENGL 1550 Writing 1 3
ENGL 1551 Writing 2 3

Oral Communication:
COMM 1545 Comm Theory & Practice 3

Math:
MATH 2623 3
(If Math is one of the concentrations see the concentration area.)

Natural Science:
A&S 2600 Exploration in the Sciences 3
Course from Natural Sciences 3
Course from Natural Sciences 3

Artistic & Literary:
Choose from the following:
ENGL 1590,2618,2665 3
Choose from the following:
ENGL 2610,2617 2631 3

Societies & Institutions:
Course from Societies & Institutions 3
Course from Societies & Institutions 3
Course from Societies & Institutions 3

Personal & Social Resp:
PSYCH 1560 General Psychology 3
Elective from Personal & Social Responsibility ... 3

GER NOTES:
—Writing Intensive (2 courses)
—Oral Communication Intensive (2 courses)
—Critical Thinking Intensive (2 courses)

Professional Education Requirements in Middle Childhood Education (9-12 s.h.)

The specific course work required in professional education is as follows:
FOUND 1501 Intro to Education 3
EDTEC 3771 Tech for Teaching 3
SPED 2630 Indv w/ Excp in Society 3
FOUND 3707 Science & Technology in Society ... 3
(Required in Science area of concentration. Recommended in Math & Social Studies areas of concentration.)

TEC BLOCK (14 s.h.)

All students will take the following two courses:
TEMC 3701 Charac of Early Adolescents & Implications for C&I 3
TEMC 3702 Meth of Tchng Early Adol 3

Depending on the student's teaching concentrations, **two** or more of the following:
TEMC 3703 Thematic Inst &Assess Meth in Soc St 4
TEMC 3704 Tchng Math in the Mid Sch 4
TEMC 3705 Tchng Sci in the Mid Sch 4
TEMC 3706 Tchng Lang Arts in the Mid School . 4

Reading Course Requirements in Middle Childhood Education (12 s.h.)

The specific course work required in reading is as follows:
TERG 3701 Phonics in Reading Instruction 3
TERG 3702 Dev Rdg Instr & Lit Strat P-9 3
TERG 3703 Asses. & Inst in Reading, P-9 3
TERG 2601 Rdg Appl in Content Areas, P-12 3

STUDENT TEACHING (13 s.h.)
TEMC 4801 the Middle Sch Learning Comm 4
TEMC 4802 Student Teaching in Middle Child Edu 6
TEMC 4803 Senior Capstone Experience 3

Curriculum Concentration Requirements in Middle Childhood Education

(48-70 s.h.: 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 course work required in the curriculum content areas is as follows:

A. Language Arts, 30 s.h. required

Choose **one** of the courses from **Group A** and **one** of the courses form **Group B** (6 s.h.):

Group A: (This group will fulfill one Gen. Ed. elective.)
ENGL 1590 Introduction to Literature ..... 3 s.h.
ENGL 2618 American Literature & Diversity ..... 3 s.h.
ENGL 2665 Introduction to Film Study ..... 3 s.h.

Group B: (This group will fulfill one Gen. Ed. elective.)
ENGL 2610 World Literature ..... 3 s.h
ENGL 2617 Women in Literature ..... 3 s.h.
ENGL 2631 Mythology in Literature ..... 3 s.h.

All of the following courses (24 s.h.):
ENGL 2651 Introduction to Language ..... 3 s.h.
ENGL 3701 British and American Lit I ..... 3 s.h.
ENGL 3702 British and American Lit II ..... 3 s.h.
ENGL 3704 Lit. for Middle School Readers 3 s.h.
ENGL 3705 Young Adult Literature ..... 3 s.h.
COMM 2656 Interpersonal Communication ..... 3 s.h.
JOUR/ ENGL 2602 Media Writing ..... 2 s.h.
TERG 3703A Assess & Instr in Rdg Pre K-9: Practicum ..... 1 s.h.

One of the following:
ENGL 2622 News Reporting ..... 3 s.h.
ENGL 3740 Advanced Writing ..... 3 s.h.

B. Mathematics, 24 s.h. required.
MATH 2653 Foundations of Middle School MATH 1 ..... 3 s.h.
MATH 2654 Foundations of Middle School MATH 2 ..... 3 s.h.
MATH 2665 Foundations of Middle School MATH 3 ..... 3 s.h.
MATH 2666 Integrated Algebra for Middle School Teachers ..... 3 s.h.
MATH 3767 Geometry for Middle School Teachers ..... 3 s.h.
MATH 3768 Calculus for Middle School Teachers ..... 3 s.h.
MATH 4869 Int Probability & Stats for Middle School Teachers ..... 3 s.h.
MATH Elective ..... 3 s.h.

C. Science, 32 s.h. required.
ASTRO 1504 Descriptive Astronomy ..... 3 s.h.
BIOL 1505 Biology & the Modern World .. 3 s.h.
CHEM 1500 Chemistry & Modern Living ... 3 s.h.
GEOG 1503 Introduction to Physical Geography ..... 3 s.h.
GEOL 1505 Physical Geology ..... 4 s.h.
PHYS 1500 Physics & Man ..... 3 s.h.

13 s.h. of courses currently being developed specifically for middle school teachers:
Biology and Biology Laboratory
Environmental Science and Environmental Science Laboratory

Earth/Space Science and Earth/Space Science Laboratory
TEMC 3707 Science/Technology/Society ... 3 s.h.

D. Social Studies, 36 s.h. required.
PSYCH 1560 General Psychology ..... 3 s.h.
PSYCH 3755 Developmental Psychology ..... 3 s.h.
HIST 1511 Introduction to World History 1 3 s.h.
HIST 1512 Introduction to World History 2 3 s.h.
HIST 2605 United States History 1 ..... 3 s.h.
HIST 3748 History of Ohio ..... 3 s.h.
A & S 4805 Integrated Social Studies Seminar ..... 3 s.h.

Fifteen semester hours electives in **each** of the following discipline areas; each discipline must be selected once; **two** discipline areas must be selected twice:

GEOGRAPHY:

GEOG 2626	GEOG 2650	GEOG 3715
GEOG 3717	GEOG 3719	GEOG 3721
GEOG 3722	GEOG 3741	GEOG 3745
GEOG 4813	GEOG 4850	

POLITICAL SCIENCE:
POLIT 1560 American Government ..... 3 s.h.

One course from the following:

POLIT 2640	POLIT 2660	POLIT 3700
POLIT 3704	POLIT 3706	POLIT 3722

ECONOMICS:
ECON 2610 Principles 1: Microeconomic Theory & Policy ..... 3 s.h.
ECON 2630 Principles 2: Microeconomic Theory & Policy ..... 3 s.h.

SOCIOLOGY/ANTHROPOLOGY:
ANTHR 2602 Introduction to Anthropology3 s.h.

SECONDARY, MULTI-AGE, AND VOCATIONAL 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 vocational teaching fields approved by the Ohio Department of Education. Advisement in these areas is provided by faculty in the academic disciplines of the teaching fields, the professional secondary education faculty in the Department of Teacher Education, and the academic advisors in the Beeghly College of Education. The College of Education assumes full responsibility for approval of matters dealing with licensure requirements (regardless of teaching field or degree involved) and for graduation requirements for the Bachelor of Science in Education degree.

Majors in these programs must complete general education requirements, professional education requirements, and teaching field requirements. The total credit hours required depend on choice of teaching field(s); students in programs with less than 124 s.h. must add electives to reach 124 s.h. for the B.S. in Ed. degree. Applications for SEDUC 706 are due two semesters prior to participating and may be obtained from the Department of Teacher Education.

Adolescence, Multi-age And Vocational License

The B.S. in Ed. degree requires the courses listed below in addition to the courses required for the major/licensure field with a minimum to total 124 s.h. Licensure also requires passing the Ohio Praxis II Exams.

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

General education requirements in Adolescent Education (45 s.h.)

The specific course work required in general education is as follows:

Writing:
ENGL 1550 Writing 1 3
ENGL 1551 Writing 2 3

Oral Communication:
COMM 1545 Comm Theory & Practice 3

Math:
MATH 2623 or a higher math course 3

Natural Science:
Natural Science Course 3
Natural Science Course 3

Artistic & Literary:
Artistic & Literary Course 3
Artistic & Literary Course 3

Societies & Institutions:
Societies & Institutions 3
Societies & Institutions 3

Personal & Social Responsibility:
PSYCH 1560 General Psychology 3
Personal & Social Responsibility Course 3

Selected Topics:
SPED 2630 Individuals w/Except in Society 3

Two choices from GER courses either from Natural Sciences, Artistic & Literary Perspectives and/or Societies & Institutions

GER Notes:

Writing Intensive pending GER approval (2 courses)

Oral Communication Intensive pending GER approval (2 courses)

Critical Thinking Intensive pending GER approval (2 courses)

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 recommended alternatives within these general education requirements that are particularly relevant to the teaching field.

Professional Education Requirements in Secondary Education (35 s.h.)

†Indicates Upper Division Status Required

The specific course work required in professional education is as follows:

FOUND 1501 Introduction to Education 3
FOUND 3708 Education and Society 3
PSYCH 3709 Psychology of Education 3
EDTEC 3771 Technologies for Teaching 3
†TERG 2601 Rdg Appl Content Area, P-12 3
†SEDUC 3706 Principles of Teaching Adolescents 5
†*SEDUC4800 Reflective Teaching Methods 3
†SEDUC4842 Student Teaching 10
†SEDUC4842A Student Teaching Seminar 2

Note #1: Several professional education courses have field components which require the student to spend various amounts of time in local elementary, middle, and secondary schools, as well as in meetings on campus. FOUND 1501, 3708, SEDUC 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: 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.

Adolescent, Multi-age, and Vocational Teaching Fields in Secondary Education

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 train the student 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 enhance ultimate "salability."

The State of Ohio adopted new teacher licensure standards effective September 1, 1998 and YSU's programs below reflect these changes. Students who began work in a secondary teaching field prior to September 1, 1998, and can complete that program by August 2002, may seek to qualify under the certification standards that are being phased out. See an academic advisor in the Beeghly College of Education to make this determination.

VISUAL ARTS (P-12)
Multi-Age License

Art 1520 Intro to Visual Arts ..... 1 s.h.
Art 1521 Foundation Drawing ..... 3 s.h.
Art 1522 Intermed Drawing ..... 3 s.h.
Art 1501 Fund. of 2-D Des ..... 3 s.h.
Art 1502 Fund of 3-D Des ..... 3 s.h.
Foundation Portfolio Review
Art 3721 Expressive Drawing ..... 3 s.h.
Art 2691 Intro to Digit Imaging ..... 3 s.h.
Art 2661 Intro to Graph Design ..... 3 s.h.
Art 2631 Intro to Ceramics ..... 3 s.h.
Art 2611 Intro to Sculpture ..... 3 s.h.
Art 2671 Intro to B&W Photo ..... 3 s.h.
Art 2650 Intro to Painting ..... 3 s.h.
Art 2653 Watercolor ..... 3 s.h.
Art 2615 Intro to Metals ..... 3 s.h.
Art 1541 Sur of Art Hist ..... 3 s.h.
Art 1542 Sur of Art Hist ..... 3 s.h.
Art 3788 Theory of Art ..... 3 s.h.
Art 5882, 20th C. from 1960 ..... 3 s.h.
Art 37xx, Art history electives ..... 3 s.h.
One of the following:
Art 2625 Woodblock ..... 3 s.h. or
Art 2626 Silkscreen ..... 3 s.h. or
Art 3724 Lithography ..... 3 s.h.
Art Methods:
Art 3737 Pre-K—4, Vis Arts Ed ..... 3 s.h.
Art 4837 Prof Prac/Middle Sch ..... 3 s.h.
Art 4838 Prof Prac/Sec Sch ..... 3 s.h.
Art 4839 Art Education Seminar ..... 1 s.h.

INTEGRATED BUSINESS (4-Adult)
Vocational License

OIS 1575 ..... 4 s.h.
OIS 2663 ..... 3 s.h.
OIS 3704 ..... 3 s.h.
OIS 3714 ..... 3 s.h.
CSIS 3720 ..... 3 s.h.

CSIS 3722 ..... 3 s.h.
OIS 2676 ..... 3 s.h.
OIS 3775 ..... 3 s.h.
ACCTG 2602 ..... 3 s.h.
ACCTG 2603 ..... 3 s.h.
ACCTG 3701 ..... 4 s.h.
CSIS 1590 ..... 3 s.h.
CIS 3723 ..... 3 s.h.
MGT 2604 ..... 3 s.h.
MKTG 3703 ..... 4 s.h.

SEDUC 4800B ..... 3 s.h.
SEDUC 4800I ..... 3 s.h.

DRAMA THEATER (P-12)
Multi-Age License

All of the following:
THTR 1561, Stagecraft ..... 3 s.h.
THTR 1559, Play Production ..... 3 s.h.
THTR 2662, Practicum in Theater ..... 1 s.h. + 1 s.h.
THTR 2668, Acting 1, Fundamentals ..... 3 s.h.
THTR 2761, Stage makeup ..... 3 s.h.
THTR 3762, Directing 1 ..... 3 s.h.
THTR 3765, Lighting Design ..... 3 s.h.
THTR 4868, Children's Theater ..... 3 s.h.
THTR 4869, Creative Dramatics ..... 3 s.h.
THTR 4895, Theater in Education Internship ..... 3 s.h.
Other Electives in Theater ..... 3 s.h.
ENGL 3703, Children's Literature ..... 3 s.h.
Both of the following:
THTR 4860, Dramatic Texts ..... 3 s.h.
THTR 4891, History of Theater ..... 3 s.h.

One of the following two blocks for specialty expertise (6 s.h. minimum):
Acting/ Directing:
THTR 3791, Rehearsal and Performance (may be repeated for a total of 6 s.h.)
THTR 2667, Acting 2: Movement and Voice . 3 s.h.
THTR 4863, Acting 3: Styles ..... 3 s.h.
THTR 4866, Summer Theater Workshop ... 1-3 s.h.
Or
Design/ Technical:
THTR 3763, Scene Design ..... 3 s.h.
THTR 3769, Costume Design ..... 3 s.h.
THTR 3792, Projects in Production ..... 3 s.h.
THTR 4866, Summer Theater Workshop ... 1-3 s.h.

EARTH SCIENCE (7-12)
Adolescent License

GEOL 1505 ..... 4 s.h.
GEOL 1513 ..... 4 s.h.
GEOL 1514 ..... 3 s.h.
GEOL 2606 ..... 3 s.h.
GEOL 2615 ..... 3 s.h.
GEOL 5815 ..... 2 s.h.
GEOG 2630 ..... 3 s.h.
ASTRO 1504 ..... 3 s.h.
ASTRO 2609 ..... 3 s.h.

EARTH SCIENCE Electives selected form the following: 6 s.h.
GEOG 3730 ..... 3 s.h.
ENST 2600 ..... 3 s.h.
GEOLOGY (any upper division course)

The following required:
PSYCH 2613 ..... 3 s.h.

One of the following four:
MATH 1525 ..... 2-semester equivalent
MATH 1549 ..... 2-semester equivalent
MATH 1570 ..... 2-semester equivalent
MATH 1571 ..... 2-semester equivalent

Select 15 s.h. from the following three areas with at least 1 course in each area:
BIOLOGY, CHEMISTRY, PHYSICS

FRENCH (P-12)
Multi-Age License

FRNCH 1550 Elementary is waived if student starts with 2600 Intermediate
A FRNCH 3700 or 4800 level course must be substituted
FRNCH 1550 Elementary ..... 4 s.h.
FRNCH 2600 Intermediate is waived if student starts with 2605 Advanced Intermediate
A FRNCH 3700 or 4800 level course must be substituted
FRNCH 2600 Intermediate ..... 4 s.h.

All eleven (11) courses listed below are required:
FRNCH 2603 Directed Reading (concurrent with FNLG 2615) ..... 1 s.h.
FRNCH 2605 Advanced Intermediate (C or better required for Admission to Teacher Education Program) ..... 3 s.h.
FRNCH 2610 Translation ..... 3 s.h.

FNLG 2615 Introduction to French Literature ..... 3 s.h.
FRNCH 3710 Applied Phonetics ..... 3 s.h.
FRNCH 3715 Conversation and Composition ..... 3 s.h.
FRNCH 3720 Literature and Culture: France ..... 3 s.h.
FRNCH 3750 Civilization and Culture ..... 3 s.h.
*FNLG 4801 Methods of Foreign Language Teaching ..... 3 s.h.
*FNLG 4850 Sociolinguistics ..... 3 s.h.
*FNLG 4851 Language Acquisition ..... 3 s.h.

Select one (1) of the following courses:
FRNCH 3725 Literature and Culture: Africa ..... 3 s.h.
FRNCH 3730 Literature and Culture: America ..... 3 s.h.
FRNCH 3740 Business French ..... 3 s.h.

Select one (1) of the following courses:
FRNCH 4874 Advanced Writing ..... 3 s.h.
FRNCH 4885 Special Topics ..... 3 s.h.

Studying abroad in a French-speaking country is highly recommended
*Courses marked with * are taken only once when acquiring license in multiple languages.

GERMAN (P-12)
Multi-Age License

GERMN 1550 Elementary is waived if student starts with 2600 Intermediate
A GERMN 3700 or 4800 level course must be substituted
GERMN 1550 Elementary ..... 4 s.h.
GERMN 2600 Intermediate is waived if student starts with 2605 Advanced Intermediate
A GERMN 3700 or 4800 level course must be substituted
GERMN 2600 Intermediate ..... 4 s.h.

All eleven (11) courses listed below are required:

GERMN 2603 Directed Reading 1 (concurrent with FNLG 2630) ..... 1 s.h.
GERMN 2605 Advanced Intermediate (C or better required for Admission to Teacher Education Program .. 3 s.h.
GERMN 2610 Translation 1 ..... 3 s.h.
FNLG 2630 German-Americans ..... 3 s.h.
GERMN 3725 Phonetics and History of the Language ..... 3 s.h.
GERMN 3740 Conversation and Composition ..... 3 s.h.
GERMN 3750 Cultural Heritage 1 ..... 3 s.h.
GERMN 3751 Cultural Heritage 2 ..... 3 s.h.
GERMN 4861 Modern Literature ..... 3 s.h.
*FNLG 4801 Methods of Foreign Language Teaching ..... 3 s.h.
*FNLG 4850 Sociolinguistics ..... 3 s.h.
*FNLG 4851 Language Acquisition ..... 3 s.h.

Select one (1) of the following courses:

FNLG 2625 Contemporary Germany ..... 3 s.h.
FNLG 3766 Amish Culture ..... 3 s.h.
GERMN 3765 Translation 2 ..... 3 s.h.
GERMN 4865 Translation 3 (GERMN 4875 Directed Project concurrent - 2 s.h.) ..... 3 s.h.
GERMN 4880 Research and Writing ..... 3 s.h.

Studying abroad in a German-speaking country is highly recommended
*Courses marked with * are taken only once when acquiring license in multiple languages.

HEALTH (P-12)
Multi-Age Licensure

HSC 1568 Healthy Lifestyles 3
HSC 2692 Human Sexuality 3
HSC 3702 Foundations of Health Ed Theory & Methods 3
HSC 3703 Health Ed for Grades Pre-K - 4 ... 3
HSC 3704 Health Ed for Grades 4 - 6 3
HSC 3705 Health Ed for Grades 7 - 12 3
HSC 3731 Drug Use and Abuse 3
HSC 3757 Health and Disease 4
HSC 3791 Community Health 3
HSC 4899 Senior Seminar 3
ALHTH 4804 Stress Management 3
ALHTH 4808 Environmental Health Concerns . 3
HPES 2605 Sports and Injury Prevention 3
FNUTR 1551 Normal Nutrition 3
CHEM 1505 Chemistry for Allied Health I 3
ALHTH 4804 Epidemiology 3

One of the following groups:

ALHTH 1550 Applied Pathophysiology I 3
ALHTH 1551 Applied Pathophysiology II 3
OR
BIOL 1560 Paramedical Microbiology 4
BIOL 1550 Human Anatomy & Physiology for Allied Health Majors 5

FAMILY AND CONSUMER SCIENCES
(4-Adult)
Vocational License

FNUTR 1551 ..... 3 s.h.
FNUTR 1553 ..... 3 s.h.
FNUTR 1553L ..... 1 s.h.
FNUTR ELECTIVE ..... 3 s.h.
MERCH 3705 ..... 3 s.h.
MERCH 3730 ..... 3 s.h.
MERCH 3764 ..... 3 s.h.
CHFAM 1532 ..... 3 s.h.
CHFAM 3731 ..... 3 s.h.
CHFAM 3750 ..... 3 s.h.
HMEC 1550 ..... 1 s.h.
HMEC 3771 ..... 2 s.h.
HMEC 3780 ..... 3 s.h.
HMEC 3799 ..... 1 s.h.
HMEC 4800 ..... 3 s.h.
HMEC 4850 ..... 1 s.h.
HMEC 4852 ..... 3 s.h.
HMEC 4893 ..... 3 s.h.
BIOL 1560 ..... 3 s.h.
HSC 2692 ..... 3 s.h.

INTEGRATED LANGUAGE ARTS (7-12)
Adolescent License

The following four required:

ENGL 3701 ..... 3 s.h.
ENGL 3702 ..... 3 s.h.
ENGL 3705 ..... 3 s.h.
ENGL 4890 ..... 3 s.h.

Two of the following (American Literature):

ENGL 3770 ..... 3 s.h.
ENGL 3780 ..... 3 s.h.
ENGL 4862 ..... 3 s.h.
ENGL 4864 ..... 3 s.h.
ENGL 4871* ..... 3 s.h.

One of the following (Early British Literature):

ENGL 4860 ..... 3 s.h.
ENGL 4881 ..... 3 s.h.
ENGL 4882 ..... 3 s.h.
ENGL 4886 ..... 3 s.h.
ENGL 4830 ..... 3 s.h.
ENGL 4831 ..... 3 s.h.

One of the following (Later British Literature):
ENGL 4887 ..... 3 s.h.
ENGL 4892 ..... 3 s.h.
ENGL 4895 ..... 3 s.h.
ENGL 4896 ..... 3 s.h.
ENGL 4830 ..... 3 s.h.
ENGL 4831 ..... 3 s.h.

One of the following (World/Multicultural Literature):
ENGL 2610 ..... 3 s.h.
ENGL 2617 ..... 3 s.h.
ENGL 2620 ..... 3 s.h.
ENGL 2631 ..... 3 s.h.
ENGL 3732 ..... 3 s.h.
ENGL 3738 ..... 3 s.h.
ENGL 3790 ..... 3 s.h.

Linguistics—
ENGL 2651 ..... 3 s.h.
One of the following:
ENGL 3750 ..... 3 s.h.
ENGL 3755 ..... 3 s.h.
ENGL 3757 ..... 3 s.h.

Writing—
ENGL 3741 ..... 3 s.h.
COMM 2653 ..... 3 s.h.
COMM 2656 ..... 3 s.h.
COMM 2670 ..... 3 s.h.
JOUR 2622 ..... 3 s.h.
JOUR 4824 ..... 3 s.h.
JOUR 5820 ..... 3 s.h.

One of the following:
ENGL 2665 ..... 3 s.h.
ENGL 3743 ..... 3 s.h.
ENGL 3765 ..... 3 s.h.
ENGL 4865 ..... 3 s.h.
TCOM 1581 ..... 3 s.h.
THTR 1590 ..... 3 s.h.
JOUR 3723 ..... 3 s.h.

INTEGRATED MATHEMATICS (7-12)
Adolescent License

MATH 1571 ..... 4 s.h.
MATH 1572 ..... 4 q.h.
MATH 2673 ..... 4 q.h.

MATH 2683 ..... 1 s.h.
MATH 3721 ..... 3 s.h.

MATH 3720 ..... 3 s.h.
MATH 3743 ..... 3 s.h.
MATH 3750 ..... 3 s.h.
MATH 3751 ..... 3 s.h.

MATH 5835 ..... 3 s.h.
MATH 4830 ..... 3 s.h.
MATH 4896 ..... 2 s.h.
CSIS 2610 ..... 3 s.h.

INTEGRATED SCIENCES (7-12)
Adolescent License

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

1. BIOLOGY
BIOL 2601 ..... 5 s.h.
BIOL 2602 ..... 5 s.h.
Select 20 s.h. from the following:
BIOL 2641 ..... 4 s.h.
BIOL 3702 ..... 4 s.h.
BIOL 2621 ..... 3 s.h.
BIOL 3762 ..... 4 s.h.
BIOL 3780 ..... 4 s.h.
BIOL 3790 ..... 3 s.h.
BIOL 3790L ..... 1 s.h.
BIOL 2630 ..... 5 s.h.

2. CHEMISTRY
CHEM 1515 ..... 4 s.h.
CHEM 1516 ..... 4 s.h.
CHEM 2604 ..... 5 s.h.
CHEM 3719 ..... 5 s.h.
CHEM 3720 ..... 4 s.h.
Select a minimum of 7 s.h. in CHEMISTRY from the following:
CHEM 2604 ..... 5 s.h.
CHEM 3785 ..... 3 s.h.
CHEM 3785L ..... 1 s.h.
CHEM 3786 ..... 3 s.h.
Any 5000 level CHEMISTRY course ..... 3 s.h.
2-semester equivalent

3. PHYSICS
PHYS 2608 ..... 3 s.h.
PHYS 2610 ..... 4 s.h.
PHYS 2610L ..... 1 s.h.
PHYS 2611 ..... 4 s.h.
PHYS 2611L ..... 1 s.h.
Select a minimum of 17 s.h. in PHYSICS from the following:
PHYS 3701 ..... 3 s.h.
PHYS 4890 ..... 3 s.h.
PHYS 3704 ..... 4 s.h.
PHYS 3705 ..... 3 s.h.
PHYS 3705L ..... 1 s.h.
PHYS 3722 ..... 3 s.h.
PHYS 3722L ..... 1 s.h.
PHYS 4805 ..... 1-4 s.h.
PHYS 4890 ..... 1-4 s.h.

4. EARTH/SPACE SCIENCE
All of the following:
GEOL 1505 ..... 3 s.h.
GEOL 1514 ..... 3 s.h.
GEOL 2602 ..... 3 s.h.
GEOG 2630 ..... 3 s.h.
ASTRO 1504 ..... 3 s.h.
Select one from the following:
GEOL 1513 ..... 3 s.h.
GEOG 2603 ..... 3 s.h.

The following required:
GEOG 3730 ..... 3 s.h.

Then take three (3) remaining science fields of the following course sequences as secondary concentrations:

a. BIOLOGY
BIOL 2601 ..... 5 s.h.
BIOL 2602 ..... 5 s.h.
Select six (6) s.h. from the following:
BIOL 2641 ..... 4 s.h.
BIOL 3702 ..... 4 s.h.
BIOL 2621 ..... 3 s.h.
BIOL 2762 ..... 4 s.h.
BIOL 3780 ..... 4 s.h.
BIOL 3790 ..... 3 s.h.
BIOL 3790L ..... 1 s.h.
BIOL 2630 ..... 5 s.h.

b. CHEMISTRY
CHEM 1515 ..... 4 s.h.
CHEM 1516 ..... 4 s.h.
CHEM 3719 ..... 5 s.h.
CHEM 3720 ..... 4 s.h.
Select one course from the following:
CHEM 2604 ..... 5 s.h.
CHEM 3785 ..... 3 s.h.

c. PHYSICS
PHYS 2610 ..... 4 s.h.
PHYS 2610L ..... 1 s.h.
PHYS 2608 ..... 3 s.h.
PHYS 2611 ..... 3 s.h.
PHYS 2611L ..... 1 s.h.
Select three (3) from the following:
PHYS 3701 ..... 3 s.h.
PHYS 3702 ..... 3 s.h.
PHYS 3704 ..... 4 s.h.
PHYS 3704L ..... 1 s.h.
PHYS 3705 ..... 3 q.h.
PHYS 3705L ..... 1 s.h.
PHYS 3722 ..... 3 s.h.
PHYS 3722L ..... 1 s.h.
PHYS 4805 ..... 1-4 s.h.
PHYS 4890 ..... 1-4 s.h.

d. EARTH/SPACE SCIENCE
GEOL 1505 ..... 4 s.h.
GEOL 2602 ..... 3 s.h.
GEOG 2630 ..... s.h.
ASTRO 1504 ..... 3 s.h.
Select one (1) of the following:
ENST 2600 ..... 3 s.h.
GEOG 2603 ..... 3 s.h.
The following required:
GEOG 3730 ..... 3 s.h.
The following statistics course:
PSYCH 2613 ..... 3 s.h.
All of the following mathematics courses:
MATH 1571 ..... 4 s.h.
MATH 1572 ..... 4 s.h.
A course in computer science is recommended but not required.

INTEGRATED SOCIAL STUDIES (7-12)
Adolescent License

These hours include 17 s.h. taken to fulfill area requirements in general ed.
PSYCH 1560 ..... 3 s.h.
PSYCH 3709 ..... 3 s.h.
HIST 1511 ..... 3 s.h.
HIST 1512 ..... 3 s.h.
HIST 2605 ..... 3 s.h.
HIST 2606 ..... 3 s.h.
HIST 3748 ..... 3 s.h.
History Upper Division Electives ..... 6 s.h.

ECON 1510 ..... 3 s.h. OR
ECON 2610 ..... 3 s.h.

GEOG 2640 ..... 3 s.h.
POLIT 1560 ..... 3 s.h.
SOCIO 1500 ..... 3 s.h. OR
ANTHRO 2600 ..... 3 s.h.
A & S 4805 ..... 3 s.h.

Twelve (12) s.h. electives in each of **two** of the following disciplines: political science, economics, sociology/anthropology, geography

Three (3 s.h.) electives in each of the **remaining two** of the following disciplines: political science, economics, sociology/anthropology, geography

ITALIAN (P-12)
Multi-Age License

ITALN 1550 Elementary is waived if student starts with 2600 Intermediate
An ITALN 3700 or 4800 level course must be substituted
ITALN 1550 Elementary ..... 4 s.h.
ITALN 2600 Intermediate is waived if student starts with 2605 Advanced Intermediate
An ITALN 3700 or 4800 level course must be substituted
ITALN 2600 Intermediate ..... 4 s.h.

All twelve (12) courses listed below are required:
ITALN 2605 Advanced Intermediate ..... 3 s.h.
(C or better required for Admission to Teacher Education Program) ..... 3 s.h.
ITALN 3708 Civilization ..... 3 s.h.
ITALN 3720 Advanced Grammar and Composition ..... 3 s.h.
ITALN 3725 Phonetics ..... 3 s.h.
ITALN 3730 Conversation ..... 3 s.h.
ITALN 4801 14th Century Literature ..... 3 s.h.
ITALN 4802 16th Century Literature ..... 3 s.h.
ITALN 4830 19th Century Literature ..... 3 s.h.
ITALN 4840 20th Century Literature ..... 3 s.h.
*FNLG 4801 Methods of Foreign Language Teaching ..... 3 s.h.
*FNLG 4850 Sociolinguistics ..... 3 s.h.
*FNLG 4851 Language Acquisition ..... 3 s.h.
Studying abroad in Italy is highly recommended
*Courses marked with * are taken only once when acquiring licensure in multiple languages.

LIFE SCIENCES (7-12)
Adolescent License

BIOL 2601 ..... 5 s.h.
BIOL 2602 ..... 5 s.h.
BIOL 2641 ..... 4 s.h.
BIOL 3702 ..... 4 s.h.
BIOL 2621 ..... 3 s.h.
BIOL 3762 ..... 4 s.h.
BIOL 3780 ..... 4 s.h.
BIOL 3790 ..... 3 s.h.
BIOL 3790L ..... 1 s.h.
BIOL 2630 ..... 5 s.h.
BIOL 5853 ..... 3 s.h.

One of the following four: 3 s.h.
MATH 1525 ..... 3 s.h.
MATH 1549 ..... 3 s.h.
MATH 1550 ..... 3 s.h.
MATH 1571 ..... 3 s.h.

Select 12 s.h. from the following three areas with at least 1 course in each area:
CHEMISTRY, EARTH/SPACE SCIENCE, PHYSICS

A course in computer science is recommended but not required.

PHYSICAL EDUCATION (P-12)
Multi-Age License

HPES 1595 Intro. & Concepts in HPES ..... 2 s.h.
HPES 2605 Sports First Aid ..... 3 s.h.
HPES 2628 Movement for Early Childhood 2 s.h.
HPES 2661 Games Analysis ..... 2 s.h.
HPES 2671 Princ & Analysis of Motor Dev 3 s.h.
HPES 3750 Principles of Coaching ..... 2 s.h.
HPES 3765 Athletic Training ..... 2 s.h.
HPES 3720 Kinesiology & Applied Anatomy ..... 3 s.h.
HPES 4851 Hist. & Phil. of Physical Education/Sport ..... 2 s.h.
HPES 4852 Psychosocial Aspects of Phys Ed/Sport ..... 2 s.h.
HPES 4855 Organization & Admin. of HPES Programs ..... 3 s.h.
HPES 4808 Assess Instruments & Strategies in Phys Ed ..... 3 s.h.
HPES 4895 Adapted Physical Activity ..... 2 s.h.
HPES 4899 Physiology of Exercise for Phys Ed ..... 2 s.h.
HPES 4899L Physiology of Exercise for Phys Ed Lab ..... 1 s.h.
HPES 3767 Teaching Behaviors in P-12 P.E. 4 s.h.
HPES 3780 Methods of Teaching Dance ..... 2 s.h.
HPES 4876 Teaching of Elementary P.E. ..... 3 s.h.
HPES 4878 Teaching of Middle/Secondary P.E. ..... 3 s.h.
HPES 1506 Perf./Anlys. of Track & Field ... 1 s.h.
HPES 1567 Perf./Anlys. of Team Sports 1 .. 2 s.h.
(soccer, team handball, hockey, football)
HPES 1568 Perf./Anlys. of Team Sports 2 .. 1 s.h.
(softball, volleyball, basketball)
HPES 1574 Perf./Anlys. of Lifetime Sports 1 s.h.
HPES 1575 Perf./Anlys. of Racket Sports ... 1 s.h.
HPES 1577 Perf./Anlys. of Aquatic Activities ..... 1 s.h.
HPES 1589 Scientific Basis of Fitness ..... 2 s.h.
HPES 2610 Introduction to Outdoor Pursuits ..... 1 s.h.

BIOL 1545 + 1545L ..... 4 s.h. + 1 s.h.

PHYSICAL SCIENCES (7-12)
Adolescent License

All of the following:
CHEM 1515 ..... 4 s.h.
CHEM 1516 ..... 4 s.h.
CHEM 2604 ..... 5 s.h.
CHEM 3719 ..... 5 s.h.
CHEM 3720 ..... 4 s.h.
Select a minimum of 7 s.h. in Chemistry from the following:
CHEM 3785 ..... 3 s.h.
CHEM 3785L ..... 1 s.h.
CHEM 3786 ..... 3 s.h.
Any 3000 or 4000 level chemistry course ..... 3 s.h.

All of the following:
PHYS 2608 ..... 3 s.h.
PHYS 2610 ..... 3 s.h.
PHYS 2610L ..... 1 s.h.
PHYS 2611 ..... 3 s.h.
PHYS 2611L ..... 1 s.h.
Select a minimum of 17 s.h. in Physics from the following:
PHYS 3701 ..... 3 s.h.
PHYS 3702 ..... 3 s.h.
PHYS 3704 ..... 4 s.h.
PHYS 3705 ..... 3 s.h.
PHYS 3705L ..... 1 s.h.
PHYS 3722 ..... 3 s.h.
PHYS 4805 ..... 1-4 s.h.
PHYS 4890 ..... 1-4 s.h.
All of the following:
BIOL 2601 ..... 5 s.h.
BIOL 2602 ..... 5 s.h.
GEOL 1505 ..... 4 s.h.
GEOL 2602 ..... 3 s.h.
GEOG 2630 ..... 3 s.h.
ASTRO 1504 ..... 3 s.h.
The following statistics course:
PSYCH 2613 ..... 3 s.h.
All of the following mathematics courses:
MATH 1571 ..... 4 s.h.
MATH 1572 ..... 4 s.h.
MATH 2673 ..... 4 s.h.
A course in computer science is recommended but not required.

SPANISH (P-12)
Multi-Age License

SPAN 1550 Elementary is waived if student starts with 2600 Intermediate
A SPAN 3700 or 4800 level course must be substituted
SPAN 1550 Elementary ..... 4 s.h.

SPAN 2600 Intermediate is waived if student starts with 2605 Advanced Intermediate
A SPAN 3700 or 4800 level course must be substituted
SPAN 2600 Intermediate ..... 4 s.h.

All eight (8) courses listed below are required:
SPAN 2605 Advanced Intermediate
(C or better required for Admission to Teacher Education Program) ..... 3 s.h.
SPAN 2655 Conversation for Proficiency 1 3 s.h.
SPAN 3724 Pronunciation ..... 3 s.h.
SPAN 3735 Advanced Grammar and Composition ..... 3 s.h.
SPAN 3755 Conversation for Proficiency 2 ..... 3 s.h.

*FNLG 4801 Methods of Foreign Language Teaching ..... 3 s.h.
*FNLG 4850 Sociolinguistics ..... 3 s.h.
*FNLG 4851 Language Acquisition ..... 3 s.h.

Select one (1) of the following courses:
SPAN 3752 Spanish Culture and Literature 1 ..... 3 s.h.
SPAN 3753 Spanish Culture and Literature 2 ..... 3 s.h.

Select one (1) of the following courses:
SPAN 3756 Spanish-American Culture and Literature 1 ..... 3 s.h.
SPAN 3757 Spanish-American Culture and Literature 2 ..... 3 s.h.

Select one (1) of the following courses:
SPAN 3736 Introduction to Spanish Linguistics ..... 3 s.h.
SPAN 3737 Translation and Composition . 3 s.h.
SPAN 3758 Culture and Literature of Hispanics in the U.S.A. ..... 3 s.h.

Select one (1) of the following courses:
SPAN 5855 Topics in Spanish Language and Linguistics ..... 3 s.h.
SPAN 5870 Topics in Spanish Literature: Spain ..... 3 s.h.
SPAN 5885 Topics in Hispanic Literature and Cinema ..... 3.s.h.
SPAN 5890 Topics in Spanish Literature: Latin-America ..... 3 s.h.
Studying abroad in a Spanish-speaking country is highly recommended
*Courses marked with * are taken only once when acquiring license in multiple languages.

SPECIAL EDUCATION

The Department of Teacher Education offers undergraduate programs leading to licensure in Intervention specialist, kindergarten through grade twelve, in two areas as approved by the Ohio Department of Education. Students may choose from: a) Mild/Moderate Disabilities; b) Moderate/Intensive Disabilities. A Mild/Moderate Intervention Specialist serves grades K-12 relative to educational needs of students with learning disabilities and developmental handicaps. A Moderate/Intensive Intervention Specialist serves grades K-12 relative to educational needs of students with multiple handicaps and severe behavior handicaps. Advisement in these areas is provided by the special education faculty in the Department of Teacher Education and the academic advisors in the Beeghly College of Education.

Majors in this program must complete general education requirements, professional education requirements, reading course requirements, and curriculum content requirements. The Mild/Moderate Disabilities program requires 126 s.h.; the Moderate/Intensive Disabilities program requires 130 s.h.

Intervention Specialist License

Mild/Moderate Disabilities program requires 124 s.h.

Moderate/Intensive Disabilities program requires 124 s.h.

The B.S. in Ed. degree requires the courses listed below. Licensure also requires passing the Ohio Praxis II Exams.

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

General education requirements in Special Education (45 s.h.)

The specific course work required in general education for both Mild/Moderate and Moderate/Intensive is as follows:

Writing:
ENGL 1550 Writing 1 3
ENGL 1551 Writing 2 3

Oral Communication:
COMM 1545 Comm Theory & Practice 3

Math:
MATH 2651 Math for Early Child Tchrs 1 3
MATH 2652 Math for Early Childhood Teachers 2 3

Natural Science:
A&S 2600 Exploration in Science 3
Natural Science Course 3

Societies & Institutions:
HIST 2605 or 2606 3
Societies & Institution Course 3

Artistic & Literary:
Mused 2621 3
Artistic & Literary Course 3

Personal & Social Respon:
PSYCH 1560 3
PSYCH 3758 3

* Elective from GER 3
* Elective from GER 3
*These choices must be made from Natural Sciences, Artistic and Literary Perspective and/or Societies and Institutions knowledge domains

GER NOTES:
—Writing Intensive (2 courses)
—Oral Communication Intensive (2 courses)
—Critical Thinking Intensive (2 courses)

***Professional Education Requirements in Early Childhood Education* (44 s.h.)**

The specific course work required in professional education for both Mile/Moderate and Moderate/Intensive is as follows:
FOUND 1501 Intro to Education 3
FOUND3708 Education & Society 3
PSYCH 3709 Educ Psychology 3
FOUND 3771 Tech for Teaching 3
SPED 4867 intervention & Remediation of Recept/Express Lang Dysfunction 3
SPED5802 Educ of Except Children 3
SPED 5828 Educ of Emotionally Disturbed Children 4
SPED 5866 Asses & Ref except Childn/Youth 3
SPED 5853 Diagnosis 7 Intervention math SpEd 3
SPED 5863 Char & Needs Children & Youth W/ MMD Lrng Dis 4

***Reading Course Requirements in Early Childhood Education* (12 s.h.)**

The specific course work required in reading is as follows:
TERG 3701 Phonics in Rdg Instruction 3
TERG 3702 Dev Rdg Inst & Lit Strat P-9 3
TERG 3703 Assess & Inst in Reading, P-9 3
TERG 2601 Rdg Appl in Content Areas, P-12 3

STEP BLOCK: (16 s.h.)
SPED 5838 Clsrm Mgmt Except Children & Youth 4
SPED 5851 Trns Plf Social Skills Dev & Hlth Rel Issues 4
SPED 5854 Coss Curricular Application 4
SPED5864 Serv Coor Coll & Consult Student W/ Special Needs 4

Curriculum Content Requirement for Teaching Students w/ Mild/Moderate Disabilities (7 s.h.)
ENGL 4708 Child Lit OR ENGL 4709 Adol Lit ... 3
SPED5868 M/M Prac 4

Curriculum Content Requirement for Teaching Students w/ Moderate/Intensive Disabilities (7 s.h.)
SPED 5834 Educational Strategies for Children & Youth w/M/I 4
SPED 5836 Char & Needs of Exceptional Children & Youth w/M/I 3

STUDENT TEACHING
SPED 4839 for M/I 10
SPED 4849 for M/M
SPED 4869 Student Teaching Seminar (GER Capstone course) 2

Effective Fall 2000 Ohio Praxis II is required: Special Ed - Application of Core Principles (10352) with a qualifying score of 147 and Special Ed - Knowledge Based Core Principles (20351) with a qualifying score of 151.

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 the fall and spring semesters and 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 available in the office of the Department of Teacher Education. Applications for Fall STEP are accepted beginning on the second Monday of the previous fall semester. Applications for Spring STEP are accepted beginning on the second Monday of the previous spring semester. It is best to take STEP one or two semesters prior to student teaching. Contact faculty advisors in the Special Education program area or the Beeghly College of Education academic advisors to determine the current courses included in STEP and the minimum prerequisites for STEP.

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 endorsement areas:

Computer/Technology
Early Education of Handicapped Children
Pre-kindergarten
Reading
Teaching English to Speakers of Other Languages (TESOL)

Some of these endorsements are offered at both the graduate and undergraduate level. 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.

DEPARTMENT OF EDUCATIONAL ADMINISTRATION, RESEARCH, AND FOUNDATIONS

Professors Beebe, Leck, McEwing, Pullman, Tokar, Vergon; Associate Professors Alley, deBlois, Pusch, Wesson (Chair); Assistant Professor Levin.

The Department of Educational Administration, Research, and Foundations, through its foundations 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, and cultural perspectives. Undergraduate foundations courses, which include tests and measurements, are designed to help develop interpretive, normative, and critical perspectives on education, both inside and outside the schools.

Graduate courses offered by the Department appear in the Graduate School *Bulletin*.

DEPARTMENT OF COUNSELING

Professor Gill-Wigal; Associate Professors Gallagher Warden, Martin (Chair); Assistant Professors Carney, Evans.

Counseling Courses

The department offers work toward the M.S. in Education degree with specialization in higher education/student services, school counseling and community counseling. Students may qualify for state licensure in school counseling and meet the educational requirements for National Counselor Certification. Students desiring a career in mental health services or as a private practitioner may qualify for Ohio licensure as a Professional Counselor or Professional Clinical Counselor. A complete listing of program options and course descriptions is presented in the YSU Graduate *Bulletin*.

The Department of Counseling offers a limited number of undergraduate elective courses for students planning to become teachers or counselors.

Reading and Study Skills (R&SK)

The Reading and Study Skills Center operated by the Department of Counseling in the Beeghly College of Education provides individualized and group instruction in improving reading rate and comprehension as well as study strategies. The Reading and Study Skills Center is staffed by faculty, graduate assistants, undergraduate tutors, and a full-time coordinator. The Center maintains a laboratory component for R&SK 1510A and 1510B–courses mandated for students based on the Composition and Reading Placement Test. A more advanced course in critical thinking and study strategies is available through R&SK 1570. Services include individual tutoring in study strategies and reading rate, and reading comprehension, study skills workshops and assistance with preparation for standardized tests such as NTE, MCAT, and MAT.

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 3312 Beeghly College of Education and is open from 8:00 a.m. to 5:00 p.m., Monday through Thursday, and 8:00 am to 3:00 pm, on Friday. For further information contact the Reading and Study Skills Center, telephone (330) 742-3099. www.cc.ysu.edu/rdg-studyskills/

School Nurse Licensure

The Department of Counseling collaborates with the Department of Nursing to recommend students for the School Nurse professional pupil services license. This is not a degree program. Nurses interested in attaining this recommendation must complete an identified curriculum of course work, must hold a baccalaureate degree, and must have a current Ohio license to practice as a registered nurse in order to meet all Ohio Board of Education criteria. While the curriculum is listed under the Department of Nursing, the College of Education assumes full responsibility for the processing and all approval of matters dealing with School Nurse licensure requirements.

The William Rayen College of Engineering and Technology

Charles A. Stevens, Dean

The William Rayen College of Engineering and Technology is committed to furthering the mission of Youngstown State University by providing quality programs in engineering and engineering technology which encompass the mathematical and physical sciences, engineering sciences, social sciences and humanities. Application of these fundamentals prepares students for careers in both engineering and engineering related fields, educates students for living more abundantly, advances technology and supports, as well as challenges, industry and government, both locally and nationally, through research and public service integrated with teaching.

The Rayen College of Engineering and Technology offers the Bachelor of Engineering degree in chemical, civil & environmental, electrical, industrial & systems, and mechanical engineering; the Associate in Applied Science degree in civil, electrical and mechanical engineering technology and in drafting and design. The Bachelor of Science in Applied Science degree is offered in civil, electrical, and mechanical engineering technology.

Accreditation

Programs in the William Rayen College of Engineering and Technology accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology include chemical engineering (jointly accredited by the American Institute of Chemical Engineers), civil engineering, electrical engineering, industrial engineering, and mechanical engineering. The associate and bachelor's programs in civil, electrical, and mechanical engineering technology are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology.

Facilities

The Engineering Science Building is the home of the engineering and engineering technology programs. It includes classrooms, laboratories, research and development rooms, and high-tech computer facilities. The college's spacious laboratories have modern equipment for standard experiments at the baccalaureate level as well as for advanced study at the graduate level in many engineering fields. The college operates a machine shop for the preparation of materials and equipment used in classroom and research activities.

A $6.8 million renovation project during 1995-1996 enhanced offices and classrooms, upgraded the computer facilities with state-of-the-art technology and equipment, and transformed the 208 seat auditorium into a 21st century classroom.

Center for Engineering Research and Technology Transfer

The mission of the Center for Engineering Research and Technology Transfer (CERTT) is to do research; to create new knowledge; to help develop applications for this new knowledge; and to apply state-of-the-art technologies to business and industry. The Center for Engineering Research and Technology Transfer also cooperates in training programs through University Outreach.

Scholarships and Loans

Scholarships, loans and various awards available to engineering students are listed in Appendix B.

Admission

Engineering

For those seeking a Bachelor of Engineering (B.E.) degree, first-time college students from high school are admitted to one of the following entry-level majors based on academic preparation.

First-Year Engineering:
Minimum ACT Math score of 23
or Minimum SAT Math score of 530
or YSU Math Placement of Math 1571 (Calculus I)
Note: Students deficient in high school trigonometry are required to enroll in Math 1513.

Pre-Engineering & Technology:
For those who do not meet the above criteria

To transfer into the First-Year Engineering major from another major, a student must:

- Be qualified to enroll in Math 1571 and English 1550
- Have a GPA of at least 2.30
- Not be disqualified (See Disqualification Policy below)

To transfer into a degree-granting engineering major, a student must:

- Have earned a minimum 12 semester hours or equivalent
- Have earned "C" or better grades in Math 1571, Chemistry 1515/1515L and English 1550
- Have a GPA of at least 2.30
- Not be disqualified (See Disqualification Policy below)

Engineering Disqualification Policy:

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, English 1540, English 1550, Chemistry 1515, and Physics 2610.

Policy on Enrollment in Restricted Engineering Courses:

Enrollment in most College of Engineering courses is restricted to those admitted to a degree-granting engineering major. A few engineering courses are not restricted. They are: ENGR 1550, 1560, 1560L; CEEGR 2610 and 2610L; ECEGR 1521, 1521L, and 1555. All others require admission to a professional engineering major unless approved by the Chair of the Engineering Department and Coordinator of the Engineering Program offering the course *and* by the Engineering College Dean. Students will be administratively withdrawn from restricted courses in which they are improperly enrolled.

Engineering Technology

For those seeking a Bachelor of Science in Applied Science (B.S.A.S.) or an Associate in Applied Science (A.A.S.) degree in Engineering Technology, first time college students from high school are admitted to one of the following majors based on academic preparation.

Engineering Technology:
Minimum ACT Math score of 18
OR Minimum SAT Math score of 460
OR YSU Math Placement of Math 1504 or better

Pre-Engineering & Technology:
For those who do not meet the above criteria

To transfer into a degree-granting Engineering Technology major, a student must:

- Be qualified to enroll in Math 1504
- Have a GPA of at least 2.00

Requirements for the Bachelor of Engineering Degree

It is the student's responsibility to complete the graduation requirements for his or her specific engineering program. It is recommended, however, that the student consult with his or her advisor each term.

The curricula leading to the degree require a minimum of 129-135 semester hours of credit, not including any make-up of high school deficiencies. High school deficiencies must be completed during the first two years of coursework.

A limited offering is available during summer terms, and should be used with the consultation of the advisor.

This degree may be earned in eight semesters if students average 16-17 hours per semester. Students who elect to participate in the co-op program will need to enroll in summer sessions or extend the time to degree by one semester for each co-op experience elected.

Bachelor of Engineering Graduation Policies

All engineering programs have pre-college course requirements (listed below). 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 except industrial and systems engineering. 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 CHEGR 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 CEEGR 4837, 4855, & 4881.

Electrical and Computer Engineering

Students who have not earned a C or better grade in ECEGR 3741 and 3742 and students who are failing to meet the triple C requirement will be denied enrollment in senior-level courses.

Industrial and Systems Engineering

A student who is failing to meet the triple C requirement will be denied enrollment in 4000- and 5000-level ISEGR courses.

Mechanical Engineering

Students who have not earned a C or better grade in MECH 2603 and 2641 and students who are failing to meet the triple C requirement will be denied enrollment in MECH 4808, 4835, and 5892.

Cooperative Education

Several programs leading to the Bachelor of Engineering 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 coop-

The table below shows the minimum pre-college requirements:

PRE-COLLEGE

Subject	High School Units
English	3
Algebra 1 and 2	2
Geometry	1
Trigonometry	½
Chemistry	1
Mechanical Drawing	1
Physics	1
Other	6½

erative education experience. Credit hours awarded for the cooperative education experience are considered "add-on" hours only. A coordinator of professional practice is available to assist in student placement.

A student registering for a co-op course, working as a co-op student, and having a signed co-op agreement, will be considered a full-time student.

Engineering Courses

Course descriptions can be found in a separate section in the back of this *Bulletin*.

DEPARTMENT OF CIVIL/ ENVIRONMENTAL AND CHEMICAL ENGINEERING

Professors Alam, Bakos (Chair), Cernica, Khan, Lim, Martin; Associate Professors Garr, Husain

Civil & Environmental Engineering Program

Professor J. D. Bakos, Jr. (Program Director)

The Civil & Environmental Engineering Program has developed a preliminary set of educational objectives that are consistent with the mission of the institution and are in the process of being refined through consultation with the program's constituent groups (e.g. students, alumni, employees, etc.). These educational objectives are as follows:

- The program will provide an educational environment rich in opportunities for students to obtain the knowledge and skills that will prepare graduates for civil engineering practice or graduate studies, life-long learning, and future professional development—all leading to career success.
- The program will provide opportunities and incentives consistent with the mission of the University to treat teaching, scholarship, and service as mutually supportive pursuits. The program and its policies will accommodate the diverse needs and goals of individual students wherever possible and will be characterized by integrity and by respect for students, society, the profession, and the environment.
- Undergraduate curricula, courses, organization, and activities will emphasize application of mathematics, science, and modern methods to the solution of engineering problems; integration of experimentation, analysis, and design; development of writing and speaking skills for technical communication; development of interpersonal and social skills required for working on a team both in an organization and with the general public; and awareness of professional ethics, societal/global impacts, and other contemporary issues in engineering.

Students entering the program will take a common curriculum for the first two years. This commonality will provide the students with coursework in the fundamentals of engineering, mathematics, and basic science so that they will gain a greater depth of understanding and intellectual maturity. The student then continues in a traditional civil engineering program with the option of choosing an area of concentration in environmental engineering. This option, however, is accompanied by a broad-based civil engineering education. The engineering topics were chosen in order to develop a degree of competence in a variety of areas within the discipline, including environmental engineering, transportation, structures, hydraulics, geotechnology, and surveying/measurements.

Engineers seek to create what "never was" and thus, students must have an early view of civil engineering as a creative career. Integrating design throughout the curriculum, therefore, fosters the depth of understanding and self-confidence they will need to think creatively and eventually become productive engineers. Design is, therefore, fully integrated into the curriculum so that students recognize design as a routine feature of their civil engineering education. It is the program's assertion that students can best develop these creative skills through an educational program that contains significant design experiences including—but extending well beyond—a traditional, senior-level, major design experience.

Students majoring in civil and environmental engineering earn the Bachelor of Engineering (B.E.) degree. The course of study at the undergraduate level is principally a four-year program unless the student selects the co-op option.

Along with an emphasis on preparation for professional, University policy requires that each student satisfy the General Education Requirements (GER). The purposes of GER include the acquisition and development of skills and knowledge deemed essential to living as productive and responsive citizens.

Graduates are prepared for study on the master's and doctoral level in engineering or for employment in the engineering profession directly upon receipt of the baccalaureate degree.

The program retains its tradition acquired as a small school in maintaining close contact between its students and faculty. Senior professors serve as academic advisors and are used in all phases of instruction from freshman to graduate courses.

All the program's facilities are located within the modern Engineering Sciences Building. The program itself maintains laboratories for environmental engineering, incompressible fluid mechanics, soil mechanics, strength of materials, surveying, and concrete testing. A wide variety of equipment and instrumentation is available to support both academic and research activities.

Curriculum for the degree Bachelor of Engineering with a major in Civil & Environmental Engineering

ENVIRONMENTAL OPTION

FIRST YEAR

Courses		Cr. Hrs.
ENGL 1550	Writing 1	3
ENGL 1551	Writing 2	3
CHEM 1515	Chemistry 1	4
CHEM 1515L	Chemistry 1 Lab	0
CHEM 1516	Chemistry 2	4
CHEM 1516L	Chemistry 2 Lab	0
ENGR 1550	Intro to Engineering 1	3
ENGR 1560	Intro to Engineering 2	3
MATH 1571	Calculus 1	4
MATH 1572	Calculus 2	4
GER	General Education Elective	3
GER	General Education Elective	3
		34

SECOND YEAR

Courses		Cr. Hrs.
GER	General Education Elective	3
GER	General Education Elective	3
MATH 2675	Calculus 3	4
MATH 3705	Differential Equations	3
PHYS 2510	Physics 1	4
CEEGR 2610	Surveying	3
CEEGR 2610L	Surveying Lab	1
CEEGR 2601	Statics	3
CEEGR 2602	Strength of Materials	3
CEEGR 2602L	Strength of Materials Lab	1
MECH 2641	Dynamics	3
ISEGR 3724	Engineering Economy	3
		34

THIRD YEAR

Courses		Cr. Hrs.
GEOL 2611	Geology for Engineers	3
CEEGR 3720	Transportation Engineering	3
CEEGR 3716	Fluid Mechanics	3
CEEGR 3716L	Fluid Mechanics Lab	1
CEEGR 3749	Structural Analysis 1	3
CEEGR 4855	Reinforced Concrete Design	3
CEEGR 3736	Environmental Engineering	3
ISEGR 3710	Engineering Statistics	3
GER	Speech	3
GER	General Education Elective	3
GER	General Education Elective	3
		31

FOURTH YEAR

Courses		Cr. Hrs.
CEEGR 4837	Environmental Engr Design	3
CEEGR 4881	Geotechnical Engineering	3
CEEGR 4881L	Geotechnical Lab	1
CEEGR 3751	Water Quality Analysis 1	2
CEEGR 4856	Steel Design	3
CEEGR 4863	Integrated Design	3
CEEGR 3717	Hydraulic Design	4
CEEGR 5884	Hazard & Solid Waste Mgmt.	3
GER	General Education Elective	3
CHEGR 5820	Industrial Pollution Control	3
ECEGR 2632	Basic Cir. Thy. 1 **or**	
MECH 2603	Thermodynamics	3
		31

STRUCTURAL/TRANSPORTATION OPTION

FIRST YEAR

Courses		Cr. Hrs.
ENGL 1550	Writing 1	3
ENGL 1551	Writing 2	3
CHEM 1515	Chemistry 1	4
CHEM 1515L	Chemistry 1 Lab	0
CHEM 1516	Chemistry 2	4
CHEM 1516L	Chemistry 2 Lab	0
ENGR 1550	Intro to Engineering 1	3
ENGR 1560	Intro to Engineering 2	3
MATH 1571	Calculus 1	4
MATH 1572	Calculus 2	4
GER	General Education Elective	3
GER	General Education Elective	3
		34

SECOND YEAR

Courses		Cr. Hrs.
MATH 2675	Calculus 3	4
MATH 3705	Differential Equations	3
PHYS 2510	Physics 1	4
PHYS 2511	Physics 2	4
CEEGR 2610	Surveying	3
CEEGR 2610L	Surveying Lab	1
CEEGR 2601	Statics	3
CEEGR 2602	Strength of Materials	3
CEEGR 2602L	Strength of Materials Lab	1
MECH 2641	Dynamics	3
GER	General Education Elective	3
		32

THIRD YEAR

Courses		Cr. Hrs.
CEEGR 3720	Transportation Engineering	3
CEEGR 3716	Fluid Mechanics	3
CEEGR 3716L	Fluid Mechanics Lab	1
CEEGR 3749	Structural Analysis 1	3
CEEGR 4855	Reinforced Concrete Design	3
CEEGR 4835	Highway Design	3
CEEGR 4849	Structural Analysis 2	3
CEEGR 5877	Systems Engr & Project Mgmt	3
ISEGR 3710	Engineering Statistics	3
GER	General Education Elective	3
GER	General Education Elective	3
COMM	Speech	3
		34

FOURTH YEAR

Courses		Cr. Hrs.
CEEGR 4881	Geotechnical Engineering	3
CEEGR 4881L	Geotechnical Lab	1
CEEGR 4856	Steel Design	3
CEEGR 3736	Environmental Engineering	3
CEEGR 3717	Hydraulic Design	4

CEEGR 4820	Pavement Materials & Design	3
CEEGR 4863	Integrated Design	3
ISEGR 3724	Engineering Economy	3
GER	General Education Elective	3
GER	General Education Elective	3
ECEGR 2632	Basic Cir. Thy. 1 **or**	
MECH 2603	Thermodynamics	3
		32

Cooperative Education Option in Civil & Environmental Engineering

Students who have successfully completed the sophomore year and have fulfilled the additional requirements set forth by the program may select the Cooperative Education Option. Students selecting this option must successfully complete a series of one-semester work periods. Qualifying students will register for these work periods/assignments on an alternating basis with academic semesters beginning at the conclusion of the sophomore year. Students should note that electing the co-op option will add an extra year to their degree program. Curriculum sheets outlining the alternating co-op scheme and the Cooperative Education Program Guidelines are available in the departmental office.

Chemical Engineering Program (Nuclear Minor)

Associate Professor Jeanette M. Garr (Program Director)

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, biological, nuclear, pharmaceutical, and energy-conversion industries, as well as graduate study leading to research positions in industry and government and to academic careers.

The curriculum may easily be modified for students whose career objectives lie in environmental, polymer, biochemical, or biomedical engineering.

Transfer to chemical engineering from other engineering programs or from chemistry, physics, biology, or mathematics may be accomplished without loss of time or credit during the first two years.

The chemical engineering laboratories are 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, crushers, grinders, and other solids-processing equipment, electrostatic particle separator, centrifuges, filter presses, and other miscellaneous equipment. The nuclear laboratory contains radiation detectors, area monitoring and gamma scintillation equipment, and proportional counters. The University's subcritical nuclear reactor is also available to the program. The analytical equipment includes mass sensitive gas chromatograph, high performance liquid chromatograph, absorption and emission spectroscopes, x-ray fluorescence analyzer, photolonization detector and gas analysis tubes, and infrared gas analysis apparatus.

The program has available personal computers, printers, and plotters as well as computer terminals connected directly to the mainframe computer at the University Computer Center. Software for chemical engineering includes ChemCAD, Tutsim, and FLUENT.

The laboratory equipment is being continuously upgraded and modernized.

Curriculum for the degree Bachelor of Engineering with a major in Chemical Engineering

FIRST YEAR

Courses		Cr. Hrs.
ENGR 1550	Intro to Engineering 1	3
ENGR 1560	Intro to Engineering 2	3
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
GER Elective	Speech	3
GER Elective	Social/Art	3
		34

SECOND YEAR

Courses		Cr. Hrs.
PHYS 2510	Physics 1	4
PHYS 2511	Physics 2	4
CHEM 2719	Organic Chemistry 1	4
CHEM 2719L	Organic Chemistry Lab 1	0
CHEM 2720	Organic Chemistry 2	4
CHEM 2720L	Organic Chemistry Lab 2	0
CHEGR 2630	Applied Engineering 1	1
CHEGR 2631	Applied Engineering 2	1
CHEGR 2683	Chemical Engr Principles 1	3
CHEGR 2684	Chemical Engr Principles 2	3
MATH 2675	Calculus 3	4
MATH 3705	Differential Equations	3
GER Elective	Engr Ethics (Pers Resp)	3
		34

THIRD YEAR

Courses		Cr. Hrs.
CHEGR 3771	Molec./Equil. Thermo 1	3
CHEGR 3772	Molec./Equil. Thermo 2	3
CHEGR 3785L	Transport Lab 1	1

CHEGR 3786	Transport Phenomena	3
CHEGR 3786L	Transport Lab 2	1
CHEGR 3787	Trans. 2/Unit Ops 1	3
CHEGR	Chemical Engr Elective	3
CHEM 3739	Physical Chemistry 1	4
CHEM 3739L	Physical Chemistry Lab 1	0
CHEM 3740	Physical Chemistry 2	4
CHEM 3740L	Physical Chemistry Lab 2	0
CHEGR/ MECH/ MATH	Advanced math elective	3
GER Elective	Social/Art	3
GER Elective	Social/Art	3
		34

FOURTH YEAR

Courses		Cr. Hrs.
CHEGR 3787L	Unit Ops Lab 1	1
CHEGR 4815	Unit Operations 2	3
CHEGR 4815L	Unit Ops Lab 2	1
CHEGR 4880	Chem Reactor Design 1	3
CHEGR 4881	Chem Reactor Design 2	3
CHEGR 4882	Process Control	4
CHEGR 4882L	Process Control Lab	0
CHEGR 4887	Process & Plant Design 1	3
CHEGR 4888	Process & Plant Design 2	3
CHEGR	Chem Engr Elective	3
CHEGR	Chem Engr Elective	3
GER Elective	Pers Resp	3
GER Elective	Social	3
		33

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 director 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.

Nuclear Science and Engineering Minor

The minor is open to all engineering and physical science majors and comprises a minimum of 14 semester hours including 7 semester hours of core courses and the rest selected from the list of electives.

Engineering students may substitute a number of their program electives or other technical electives with the nuclear engineering courses to obtain the nuclear engineering minor with few additional credit hours.

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Professors Foulkes, Jalali (Chair), Munro, Pansino, Rost.

The Department of Electrical and Computer Engineering offers coursework leading to the Bachelor of Engineering with a major in electrical engineering. Traditional and computer/digital engineering options are available. The first courses in the department major are Electrical and Computer Engineering (ECE) 1521 and 1521L, which are also available to all students. In addition, Electrical and Computer Engineering (ECE) 1555 and 1555H (Computer Engineering) are available to all University students. Visit the department office or website for details.

Laboratory Facilities

The Department of Electrical and Computer Engineering maintains modern, well-equipped laboratory facilities for circuits, electronics, communications, electromagnetics, energy conversion, control systems, and digital systems. The department also maintains Intel Microprocessor Development Systems with sufficient capability for complete design of both software and hardware for microprocessor-based systems. Both mainframe and PC computing are available.

Curriculum for the degree Bachelor of Engineering with a major in Electrical Engineering

Computer/digital and traditional options, the co-op program, design projects, computer simulation, and hands-on laboratory sessions are the pillars of the Bachelor of Engineering with a major in electrical engineering degree. These features provide students with the opportunity to prepare for a vast array of entry-level positions and advanced studies.

Options, electives, and co-op experiences, as well as semester-by-semester schedules of courses, are chosen by the student with faculty advisement and support. The students' programs are tailored to meet their needs. Each student is assigned a faculty advisor so they can work together as a team to explore options and craft a program.

The Traditional Option has 51 hours of core electrical engineering, 15 hours of engineering, 18 hours math, 16 hours science, 9 hours of writing and speech, and 21 hours general education courses (a total of 130 semester hours).

The Computer/Digital Option has 40 hours of core electrical engineering courses, 15 hours engineering, 17 hours computer science courses, 18 hours math, 13 hours science, 9 hours of writing and speech, and 21 hours general education courses

(a total of 133 semester hours). Students in either option can participate in the co-op program. Scheduling is reasonably flexible, but there are restrictions.

Suggested Course Scheduling

Scheduling of courses will depend upon your particular situation. Are you working part time? Will you be co-oping, either alternate or parallel? Or do you wish a full-time academic pursuit of the degree? Your answers to these questions will affect your scheduling of courses. The Department of Electrical and Computer Engineering has attempted to schedule junior and senior courses to accommodate any of these schedules.

A co-op/curriculum scheduling sheet which shows the required electrical and computer engineering courses and their expected scheduling for the next three years is available in the department office. You are required to meet with your department advisor to plan your semester-by-semester course scheduling.

Electrical and Computer Engineering Traditional Option Curriculum Course List

Elect & Comp Engin (ECEGR)

1521	Basic Comp & Dig Circuits	3
1521L	Basic Comp & Dig Cir Lab	1
2611	Instr & Comp Lab 1	1
2612	Instr & Comp Lab 2	1
2632	Basic Circuit Theory 1	3
2633	Basic Circuit Theory 2	3
3709	Communication Systems	3
3711	Intermediate Lab 1 (WI*)	1
3712	Intermediate Lab 2 (OI*)	1
3741	Electromagnetic Fields 1	3
3742	Electromagnetic Fields 2	3
3771	Digital & Analog Circs 1	3
3772	Digital & Analog Circs 2	3
3731	Digital Systems 1	3
4803	Linear Control Systems	3
4811	Senior Laboratory (WI, OI)	1
4844	Electromag Energy Conversion	3
4899	Senior Design Project	4
	ECEGR Electives	8
		51

Engineering

ENGR 1550	Intro to Engin 1	3
ENGR 1560	Intro to Engin 2	3
CEEGR 2601	Statics	3
MECH 2641	Dynamics	3
ISEGR 3710	Engin Statistics	3
		15

Mathematics (MATH)

1571	Calculus 1 (ES*)	4
1572	Calculus 2 (STE*)	4
2673	Calculus 3	4
3705	Differential Equations	3
3720	Matrix Thry & Linear Alg, or	
3760	Numerical Analysis 1	3
		18

Science

CHEM 1515	Gen Chem 1 (NS*)	4
PHYS 2610	Gen Physics 1 (NS)	4
PHYS 2610L	Gen Physics Lab 1	1
PHYS 2611	Gen Physics 2 (NS)	4
	Elective	3
		16

Writing & Speech (ES*)

COMM 1545	Comm Thry & Prac	3
ENGL 1550	Writing 1	3
ENGL 1551	Writing 2	3
		9

General Education*

ECON 2610	Principles 1 (SI)	3
PHIL 2625	Intro Prof Ethics (PSR)	3
(ALP)		3
(ALP)		3
(SI)		3
(ALP or SI)		3
(PSR)		3
		21

Total Hours **130**

SUMMARY

Math	18
Science	16
Engineering	15
Elec & Comp Engin	51
Writing & Speech	9
General Education	21
	130

Electrical and Computer Engineering Traditional Option Suggested Schedule

FIRST YEAR
FALL

	sh
MATH 1571 Calculus 1	4
ENGR 1550 Intro to Engineering 1	3
CHEM 1515 General Chemistry 1	4
ENGL 1550 Writing 1	3
General Education Req	3
	17

SPRING

MATH 1572 Calculus 2	4
ENGR 1560 Intro to Engineering 2	3
ECEGR 1521 Basic Comp & Dig Circs	3
ECEGR 1521L Basic Comp & Dig Circs Lab	1
ENGL 1551 Writing 2	3
General Education Req	3
	17

SECOND YEAR
FALL

MATH 2673 Calculus 3	4
ECEGR 2632 Basic Circuit Theory 1	3
ECEGR 2611 Instru and Comput Lab 1	1

PHYS 2610 General Physics 1 4
PHYS 2610L General Physics Lab 1 1
CEEGR 2601 Statics 3
16

SPRING
MATH 3705 Differential Equs 3
ECEGR 2633 Basic Circuit Theory 2 3
ECEGR 2612 Instru and Comput Lab 2 1
PHYS 2611 General Physics 2 4
MECH 2641 Dynamics 3
General Education Req 3
17

THIRD YEAR
FALL
ECEGR 3771 Digital & Analog Circuits 1 3
ECEGR 3731 Digital Systems 1 3
ECEGR 3741 Electromagnetic Theory 1 3
ECEGR 3711 Intermediate Laboratory 1 1
MATH 3720 Matrix Thry and Linear Algebra, or
MATH 3760 Numerical Analysis 1 3
PHIL 2625 Intro to Prof Ethics 3
16

SPRING
ECEGR 3772 Digital & Analog Circuits 2 3
ECEGR 3709 Communication Systems 3
ECEGR 3742 Electromagnetic Theory 2 3
ECEGR 3712 Intermediate Laboratory 2 1
ISEGR 3710 Engineering Statistics 3
ECON 2610 Principles 1 3
16

FOURTH YEAR
FALL
ECEGR 4803 Linear Control Systems 3
ECEGR 4844 Electromag Energy Conversion 3
ECEGR Elective 3
ECEGR 4811 Senior Laboratory 1
COMM 1545 Comm Thry & Practice 3
General Education Req 3
16

SPRING
ECEGR 4899 Senior Design Project 4
ECEGR Elective 3
ECEGR Elective 2
Science Elective 3
General Education Req 3
15

Electrical and Computer Engineering Computer/Digital Option Curriculum Course List

Elect & Comp Engin (ECEGR)

1521	Basic Comp & Dig Circuits	3
1521L	Basic Comp & Dig Cir Lab	1
2611	Instr & Comp Lab 1	1
2612	Instr & Comp Lab 2	1
2632	Basic Circuit Theory 1	3
2633	Basic Circuit Theory 2	3
3711	Intermediate Lab 1 (WI*)	1
3712	Intermediate Lab 2 (OI*)	1
3741	Electromagnetic Fields 1	3
3742	Electromagnetic Fields 2	3
3771	Digital & Analog Circs 1	3
3731	Digital Systems 1	3
3732	Digital Systems 2	3
4803	Linear Control Systems	3
4811	Senior Laboratory (WI, OI)	1
4844	Electromag Energy Conversion	3
4899	Senior Design Project	4
		40

Engineering

ENGR 1550	Intro to Engin 1	3
ENGR 1560	Intro to Engin 2	3
CEEGR 2601	Statics	3
MECH 2641	Dynamics	3
ISEGR 3710	Engin Statistics	3
		15

Computer Science

CSIS 2610	Prog & Prob-Solving	4
CSIS 2617	Data Structures	4
CSCI 3750	Advanced UNIX & C	3
CSCI 4805	Systems Programming	3
CSCI 4814	Computer Arch	3
		17

CSCI substitutions may be made but must be approved by your academic advisor.

Mathematics (MATH)

1571	Calculus 1 (ES*)	4
1572	Calculus 2 (STE*)	4
2673	Calculus 3	4
3705	Differential Equations	3
3720	Matrix Thry & Linear Alg, or	
3760	Numerical Analysis 1	3
		18

Science

CHEM 1515	Gen Chem 1 (NS*)	4
PHYS 2610	Gen Physics 1 (NS)	4
PHYS 2610L	Gen Physics Lab 1	1
PHYS 2611	Gen Physics 2 (NS)	4
		13

Writing & Speech (ES*)

COMM 1545	Comm Thry & Prac	3
ENGL 1550	Writing 1	3
ENGL 1551	Writing 2	3
		9

General Education*

ECON 2610	Principles 1 (SI)	3
PHIL 2625	Intro Prof Ethics (PSR)	3
(ALP)		3
(ALP)		3
(SI)		3
(ALP or SI)		3
(PSR)		3
		21

Total Hours 133

SUMMARY

Math	18
Science	13
Engineering	15
Elect & Comp Engin	40
Computer Science	17
Writing & Speech	9
General Education	21
	133

* *General Education domain codes are as follows:*
ALP: Artistic & Literary Perspective
ES: Essential Skills
NS: Natural Science
PSR: Personal & Social Responsibility
SI: Societies and Institutions
STE: Selected Topics & Electives
CTI: Critical Thinking Intensive
OI: Oral Intensive
WI: Writing Intensive

Electrical and Computer Engineering Computer/Digital Option Suggested Schedule

FIRST YEAR
FALL

	sh
MATH 1571 Calculus 1	4
ENGR 1550 Intro to Engineering 1	3
CHEM 1515 General Chemistry 1	4
ENGL 1550 Writing 1	3
General Education Req	3
	17

SPRING

MATH 1572 Calculus 2	4
ENGR 1560 Intro to Engineering 2	3
ECEGR 1521 Basic Comp & Digital Circs	3
ECEGR 1521L Basic Comp & Dig Circs Lab	1
ENGL 1551 Writing 2	3
General Education Req	3
	17

SECOND YEAR
FALL

MATH 2673 Calculus 3	4
ECEGR 2632 Basic Circuit Theory 1	3
ECEGR 2611 Instru and Comput Lab 1	1
PHYS 2610 General Physics 1	4
PHYS 2610L General Physics Lab 1	1
CEEGR 2601 Statics	3
	16

SPRING

MATH 3705 Differential Equations	3
ECEGR 2633 Basic Circuit Theory 2	3
ECEGR 2612 Instru and Comput Lab 2	1
PHYS 2611 General Physics 2	4
MECH 2641 Dynamics	3
General Education Req	3
	17

THIRD YEAR
FALL

ECEGR 3771 Digital & Analog Circuits 1	3
ECEGR 3731 Digital Systems 1	3
ECEGR 3741 Electromagnetic Theory 1	3
ECEGR 3711 Intermediate Laboratory 1	1
CSIS 2610 Prog & Prob-Solving	4
PHIL 2625 Intro to Prof Ethics	3
	17

SPRING

ECEGR 3732 Digital Systems 2	3
ECEGR 3742 Electromagnetic Theory 2	3
ECEGR 3712 Intermediate Laboratory 2	1
ISEGR 3710 Engineering Statistics	3
CSIS 2617 Data Structures	4
ECON 2610 Principles 1	3
	17

FOURTH YEAR
FALL

ECEGR 4803 Linear Control Systems	3
ECEGR 4844 Electromag Energy Conversion	3
ECEGR 4811 Senior Laboratory	1
MATH 3720 Matrix Thry and Linear Algebra, or	
MATH 3760 Numerical Analysis 1	3
CSCI 3750 Advanced UNIX & C	3
General Education Req	3
	16

SPRING

ECEGR 4899 Senior Design Project	4
COMM 1545 Comm Thry & Practice	3
CSCI 4805 Systems Programming	3
CSCI 4814 Computer Arch	3
General Education Req	3
	16

DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING

Professors Driscoll, Kim (Chair), McCoy, Mehri, Suchora; Associate Professors Cala, Kudav; Assistant Professor Shields.

The Department of Mechanical and Industrial Engineering is dedicated to further the missions and objectives of the University and the College of Engineering and Technology by providing an opportunity for quality education in mechanical engineering and industrial and systems engineering and 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

Professor Driscoll, Mehri; Associate Professor Cala (Coordinator).

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 a 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.

The above areas—mathematics, communications, the physical sciences, the humanities and social sciences, and engineering topics— constitute over two-thirds of the ISE program at YSU. The areas provide the student with a requisite base of knowledge and technical expertise for both practicing the profession and contributing to society as conscientious citizens. ISEs employ a wide variety of non-technical skills in practicing the profession, including:

- critical thinking;
- problem-solving;
- written and oral communication;
- computer use;
- project management, including time management, teamwork, and leadership;
- laboratory work, including design of experiments, and data acquisitions; and
- data management and statistical analysis.

All of these skills contribute to the development of the ability to apply pertinent knowledge to the identification and solution of discipline-related problems of society. The ISE program is flexible and broad enough to make a transfer to Industrial and Systems engineering from other engineering programs or from mathematics, computer science, physics, chemistry, business, and management, feasible and without too much loss of time and/or credit hours during the first two years.

Industrial and Systems Engineering Laboratories

The industrial and systems engineering laboratories, which are located in the Engineering Science Building, include a facilities design laboratory, a manufacturing laboratory, methods engineering laboratory, and a starter multimedia laboratory.

The Industrial and Systems Engineering Program also uses the facilities of the College of Engineering and Technology (CE&T) computer laboratory which is equipped with state-of-the-art computation, design, and communication hardware and software.

The facilities design laboratory is equipped with computers, drafting equipment, layout tools and miscellaneous scale models for facilities layout presentation.

The manufacturing laboratory contains plastic injection modeling machines, a CNC lathe, and a CNC milling machine—both with computer simulation and CAM capabilities, an advanced optical comparator, a process monitoring system, a surface measurement machine, and various measurement devices.

The methods laboratory contains time-study equipment, including a video tape recorder with time-lapse capability, a conveyor system, an electronic parts fabrication machine, and tabletop robots which can be controlled by a computer.

Other laboratory facilities used by the department include the computer-aided design (CAD) and computer-aided manufacturing (CAM) laboratories.

The CE&T CAD laboratory includes a large number of workstations, each with AutoCAD and other design/drafting software. The workstations are all linked to the University's microcomputer network, plotters and printers.

The industrial engineering CAM laboratory includes a full-size CNC lathe, a CNC milling machine, a conveyor system, programmable controllers, two industrial robots and other accessories.

Curriculum for the degree Bachelor of Engineering with a major in Industrial and Systems Engineering

FIRST YEAR
FALL

ENGL 1550 Writing 1	3
CHEM 1515 Chemistry 1	4
(Includes Chemistry 1 Lab)	0

ENGR 1550 Intro to Engineering 1 3
MATH 1571Calculus 1 4
General Education Elective 3
17

SPRING
ENGL 1551 Writing 1 3
PHYS 2610 Physics 1 4
PHYS 2610L Physics 1 Lab 1
ENGR 1560 Intro to Engineering 2 3
MATH 1572 Calculus 2 4
General Education Elective 3
18

SECOND YEAR
FALL
MATH 2673 Calculus 3 4
ISEGR 3724 Engineering Economy 3
ISEGR 3710 Engineering Statistics 3
CEEGR 2601 Statics 3
General Education Elective 3
16

SPRING
MATH Elective 3
MECH 2606 Material Properties 3
ISEGR 3716 Systems Analysis & Design 3
ISEGR 3736 Methods Engr. 2
ISEGR 3736L Methods Engr. Lab 1
General Education Elective 3
15

THIRD YEAR
FALL
ISEGR 3727 Simulation IE Systems 3
ISEGR Elective 1 3
ISEGR 3723 Manufacturing Processes 2
ISEGR 3723L Mfg. Processes Lab 1
MECH 2641 Dynamics 3
General Education Elective 3
15

SPRING
PHYS 2611 Physics 2 4
PHYS 2611L Physics 2 Lab 1
ISEGR 3720 Statistical Quality Control 3
ISEGR 4823 Manufacturing Automation 3
ISEGR 5801 Operations Research 1 3
COMM Speech 3
17

FOURTH YEAR
FALL
ISEGR 5850 Operations Research 2 3
*ISEGR 4821 Facility Design I 3
ISEGR 5820 Advanced Quality 3
ELEGR 2632 Circuits 3
General Education Elective 3
15

SPRING
Engineering Elective 1 3
*ISEGR 4822 Facility Design II 3
ISEGR Elective 2 3
Science Elective 3
General Education Elective 3
15

*Capstone series consisting of two 3 sh courses

All electives must be selected with the consent of the student's departmental advisor.

MECHANICAL ENGINEERING PROGRAM

Professors Kim (Coordinator), McCoy, Suchora; Associate Professor Kudav; Assistant Professor Shields.

Mechanical engineering is the branch of the engineering profession that deals with the conversion and use of energy; the design of machines and engines of all types; and the instrumentation and control of physical processes, systems and environments. The challenge of mechanical engineering is to use the principles of mathematics and the physical and thermal sciences to design and construct what people need and want. 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.

Mechanical Engineering Laboratories

The Mechanical Engineering Program maintains six physical experimental laboratories in the Engineering Science Building. A wide array of modern equipment, instrumentation devices, and department-owned computers are housed in spacious rooms and 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 and drafting, machine design, kinematic and dynamic systems, and finite-element analysis. The College and the Mechanical Engineering Program maintain modern computing facilities in the Engineering Science Building and constantly upgrade hardware and software. The students and faculty also use the university computing facilities in Meshel Hall and Kilcawley Center.

Curriculum for the degree Bachelor of Engineering with a major in Mechanical Engineering

FIRST YEAR

Courses	Cr. Hrs.
ENGL 1550, 1551 Writing 1,2	6
MATH 1571, 1572 Calculus 1,2	8
CHEM 1515 Chemistry 1	4
PHYS 2610 Physics 1	4
ENGR 1550, 1560 Intro to Engr 1,2	6
GER Electives	6
	34

SECOND YEAR

Courses	Cr. Hrs.
MATH 2673 Calculus 3	4
MATH 3705 Differential Equations	3
PHYS 2611 Physics 2	4
CEEGR 2601 Statics	3
CEEGR 2602 Str of Material	3
CEEGR 2603 Str of Material Lab	1
MECH 2603 Thermodynamics 1	3
MECH 2604 Thermodynamics 2	3
MECH 2641 Dynamics	3
GER Elective	3
Speech	3
	33

THIRD YEAR

Courses	Cr. Hrs.
MECH 2606 Materials	3
MECH 3708 Engr 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 3751 Stress 1 Lab	1
MECH 3781 Dynamic Sys & Vibrations	3
MECH 3762 Machine Design	3
MECH 3762L Machine Design Lab	1
ELEGR 2632 Circuit 1	3
STAT 3743 or ISEGR 3710 Engr Statistics	3
	33

FOURTH YEAR

Courses	Cr. Hrs.
MECH 4808 Mechanical System Design	2
MECH 4808L Mechanical System Design Lab	1
MECH 4809 Mech Sys Design 2	3
MECH 4835 Thermal Fluid Applications	3
MECH 4835L Thermal Fluid Applications Lab	1
MECH 5892 Control Mech Systems	3
MECH 5892L Vibration & Control Lab	1
MECH Electives	6
Prof Ethics	3
GER Electives	9
	32

MECHANICAL ENGINEERING ELECTIVE

Courses	Cr. Hrs.
MECH 4800 Special Topics	3
MECH 4811 Solar Engineering	3
MECH 4823 HVAC	3
MECH 5825 Heat Transfer 2	3
MECH 5852 Stress 2	3
MECH 5872 Acoustics	3
MECH 5884 Finite Element Analysis	3
MECH 3723 Manufacturing with MECH 3723L	3

SUMMARY

Courses	Cr. Hrs.
Writing and Speech (3 courses)	9
Art & Literature (2 courses)	6
Soc & Institution (3 courses)	9
Pers & Soc Responsibility (2 courses)	6
Nat Science (3 courses)	12
Mathematics (5 courses)	18
ENGR & Other Engr Programs (6 courses)	16
Mechanical Engineering (23 courses)	56
Total	**132**

Cooperative Education

The Department of Mechanical Engineering actively participates in the newly implemented optional cooperative education program. The program includes an alternating and a parallel co-op arrangement.

Co-op students are required to complete the same academic program for graduation as non-co-op students and will be considered full-time by the University in the semester which the students are off campus to do the co-op work. Students must establish an official documented work report by an established date and will receive a grade of PR, CR, or NC.

M.E. students who are interested in the co-op program must refer to the Mechanical Engineering Department co-op handbook for the rules and regulations and for the suggested schedule of coursework.

Mechanical Engineering Minor

The following courses are recommended for students seeking a minor in mechanical engineering:

ENGR 1560 - Introduction to Engineering 2	3 s.h.
MECH 2603 - Thermodynamics 1	3 s.h.
MECH 2641 - Dynamics	3 s.h.
MECH 3725 - Heat Transfer	3 s.h.
MECH 3751 - Stress and Strain Analysis 1	3 s.h.
MECH 3720 - Fluid Dynamics or	
MECH 3742 - Kinematics of Machines	3 s.h.
Total	**18 s.h.**

In cases where required courses in the student's major indicate significant duplication of subject matter with the above courses, appropriate course substitutions will be recommended by the department in consultation with the advisor in the student's major discipline.

SCHOOL OF TECHNOLOGY

Professor Messuri; Associate Professors Bosela (Director), Krygowski, Wood, Zupanic; Assistant Professors Slanina, Kurtanich.

The School of Technology offers "two-plus-two" programs in engineering technology. Students in these programs may work toward a two-year associate degree or a four-year bachelor's degree, as they prefer. 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 a cluster of job opportunities in industry. Demands developed by an expanding technology place graduates of these programs in one of the fastest-growing occupational groups in the country.

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 serve as engineering technicians.

Engineering technicians function as aides or professional associates in support of scientists and engineers. Their work is in the design, drafting (manual or 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 both manual and CAD techniques.

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, electrical, 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 or a bachelor's degree according to his or her needs. After completing the requirements of the two-year 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, earn the Bachelor of Science in Applied Science degree. The student's career potential will then have increased to that of an engineering technologist.

In some instances, technologists perform analysis and design under the direction of engineering professionals, but those assigned to production frequently work independently. They may develop specifications for materials and methods, serve as production supervisors, or serve as liaisons among development, engineering, and production departments. Tasks related to the installation, operation, and maintenance of production machinery are often supervised by technologists.

Based on an evaluation of their work, transfer students who have a related associate degree from a regionally accredited institution will be admitted to the bachelor's degree program at the junior level.

Accreditation and Registration

The civil, electrical, and mechanical engineering technology associate and bachelor programs are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology. 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 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 Technology offers an optional cooperative education program for qualified students enrolled in the civil engineering technology, electrical engineering technology, and mechanical engineering technology bachelor's degree programs. Cooperative work experiences are normally taken during the junior year of study and allow the student to alternate between academic study and full-time work experiences. Students may also participate in a parallel arrangement as well. Details about the co-op program may be obtained from the director of the School of Technology.

Admission Requirements

Admission to all School of Technology programs requires at least one year of high school algebra and one year of high school geometry with grades of C or better. In addition, transfer students must be in good standing.

Students not meeting the above admission requirements are enrolled as pre-majors in the College of Engineering and Technology. 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.

Prospective engineering technology students are urged to enroll in the STECH 1505 course. 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. STECH 1505 is required of all engineering technology majors.

CIVIL AND CONSTRUCTION ENGINEERING TECHNOLOGY

Associate Professor Zupanic; Associate Professor Wood (Program Coordinator); Assistant Professor Kurtanich.

The civil and construction engineering technology (CCET) program is developed on the "two-plus-two" system. Students may choose to terminate their formal education after completing two years of study and earning the Associate in Applied Science degree, or they may continue full or part time to a bachelor's degree.

Associate Degree Program

The associate degree program prepares technicians to support civil engineers in structural design, public works, construction, transportation, and environmental engineering. Most graduates are hired by government agencies, consulting engineers, architects, and contractors.

Bachelor's Degree Program

The bachelor's program in civil and construction engineering technology allows students to increase their potential to that of an engineering technologist and broaden their knowledge in several technical and non-technical areas. The student can also concentrate in urban planning, architecture, construction, or transportation as interests dictate. A co-op program with the Ohio Department of Transportation enables CCET students to gain experience and income during their junior and senior years.

Associate In Applied Science Degree

FIRST YEAR
FALL

MATH 1513	Algebra/Trig	5
STECH 1515	Elements of ET	3
DDT 1505	CADD 1	4
ENGL 1550	Composition 1	3
		15

SPRING

MATH 1570	Calculus 1	5
MET 1515	Statics	3
CCET 2604	Prop & Str Mat'l	3
CCET 2614	Materials Lab 1	1
PHYS 1501	Physics 1	5
ENGL 1551	Composition 2	3
		20

SECOND YEAR
FALL

CEEGR 2610	Surveying 1	4
MET 1516	Dynamics	3
CCET 2610	Structural Analysis	3
CCET 2617	Constr Meth & Mat'l	3
GER	Micro/Macro Econ	3
		16

SPRING

SPCH 15xx	Speech	3
CCET 2624	Hydr & Land Dev	3
CCET 2612	Structural Design 1	4
CCET 2611	Specs & Estimating	3
GER	Elective	3
		16

AAS Semester Hours 67

Bachelor of Science in Applied Science

THIRD YEAR
FALL

MATH 2670	Calculus 2	5
PHYS 1502	Physics 2	4
CCET 4812	Concrete Design	3
CCET 3705	Computing for Tech	3
GER	Elective	3
		18

SPRING

GER		3
NATRL SCI	Elective *	4
CCET 3707	Steel Design	3
CCET 3730	Transp. Tech	3
GER	Elective	3
* Chemistry or Geology		16

FOURTH YEAR
FALL

CCET 3712	Arch Design Tech	3
CCET 3717	Soils & Foundations	3
CCET 3714	Materials Lab 2	1
TECH ELECTIVE 1		3
EET 4810	Electr Systems	3
GER	Writing Intensive	3
		16

SPRING

CCET 4807	Engr Project Mgmt	3
CCET 4817	Construction Mgmt	3
CCET 4800	Building Systems	3
TECH ELECTIVE 2		3
GER	Oral Intensive	3
		15

BSAS Semester Hours 132

PROGRAM OPTION

STRUCTURES

Tech Elective 1

CCET 3710	Structural Analysis 2	3

Tech Elective 2

MET 4870	Appl. Finite Element	3

CONSTRUCTION

Tech Elective 1

CCET 4824	Environmental Tech	3

Tech Elective 2

CCET 4810	Constr. Surveying	3

TRANSPORTATION

Tech Elective 1
CCET 4824 Environmental Tech 3
Tech Elective 2
CEEGR 4820 Pavement Design 3

DRAFTING AND DESIGN TECHNOLOGY

Associate Professor Zupanic (Program Coordinator).

This program prepares students to function as design drafters in either the mechanical or civil field. They study design (the determination of size, form, and clearance) and CAD drafting (the conversion of ideas, sketches, and specifications into plans). They also become acquainted with cost of materials, estimating and specifications writing. Graduates earn the associate degree and are employable in industries relating to 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 or mechanical engineering technology.

Associate Degree Program

FIRST YEAR
FALL

Courses	sh
MATH 1504 Algebraic Functions	5
STECH 1505 Intro to Eng. Tech	3
DDT 1505 CAD Tech 1	4
GER Elective*	3
ENGL 1550 Composition 1	3
	18

SPRING

Courses	sh
MATH 1509 Trigonometry	3
MET 1515 Applied Statics	3
DDT 2606 CAD Tech 2	4
CCET 2604 Prop/Strength Mat	3
CCET 2614 Materials Lab	1
MET 2630 Manuf. Techniques	2
MET 2630L Manuf. Tech. Lab	1
	17

SECOND YEAR
FALL

Courses	Cr. Hrs.
PHYS 1501 Physics 1 & Lab	5
DDT 2609 Industrial Tech	3
GER Speech	3
ENGL 1551 Composition 2	3
EET 3725 Electromech. Sys	4
	18

SPRING

Courses	Cr. Hrs.
GER Elective*	3
DDT 2610 Manuf. Elements	3
DDT 2608 Machine Elements	3
Science Elective	4
Technical Elective	3
	16

Total Semester Hours 69

* GER Elective must not be math or science

ELECTRICAL ENGINEERING TECHNOLOGY

Professor Messuri; Associate Professor Bosela; Assistant Professor Slanina (Program Coordinator).

The electrical engineering technology (EET) program is based on the "two-plus-two" concept. This provides students the opportunity to pursue two years of full-time study leading to the Associate in Applied Science degree, and then, if they desire, to continue for two more years of full-time study, at which time the Bachelor of Science in Applied Science degree is awarded.

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 last two years in the electrical engineering technology bachelor's program provide the student with broader technical and business management background. Graduates generally assume more responsibility in the design and testing of electrical systems, and may function independently in some areas.

Associate Degree Program

FIRST YEAR
SEMESTER I

Courses	Sem. Hrs.
MATH 1513 Alg./Trig	5
STECH 1505 Intro. Eng. Tech	3
EET 1501/L Circuits I & Lab	4
DDT 1505 CAD Tech. I	4
	16

SEMESTER II

Courses	Sem. Hrs.
MATH 1570 Calc. for Eng. Tech I	4
PHYS 1501 Physics	4
EET 1502/L Circuits II & Lab	4
ENGL 1550 Composition I	3
EET 2620/L Digital Electronics & Lab	3
	18

SECOND YEAR
SEMESTER III

Courses	Sem. Hrs.
EET 2605/L Electronics I & Lab	4
EET 2610/L Electrical Machinery & Lab	4
ENGL 1551 Composition II	3
GER Requirement	3
GER Requirement	3
	17

SEMESTER IV

Courses	Sem. Hrs.
EET 2645/L Microprocessor I & Lab	3
EET 2606/L Electronics II & Lab	4
EET 2612/L PLC's & Lab	4
COMM 15XX Speech Com	3
CHEM 1515/L Chemistry I & Lab	4
	18

Total Credit Hours 2 years 69

Bachelor's Degree Program

THIRD YEAR
SEMESTER V

Courses	Sem. Hrs.
MATH 2670 Calc. for Eng. Tech	5
EET 3730/L Logic Systems & Lab	3
EET 3780/L Communication Sys.	3
ENGL 3743 Prof. & Tech. Comm.	3
GER Requirement	3
	17

SEMESTER VI

Courses	Sem. Hrs.
MATH 3785 Numerical Methods	3
MET 3700 Physical Measure	3
MET 2630/L Mfg. Tech. & Lab	3
CCET 3705 Computing for Tech.	3
GER Requirement	3
	15

FOURTH YEAR
SEMESTER VII

Courses	Sem. Hrs.
EET 4810 Electrical System Design	3
EET 3745/L Microprocessor II & Lab	3
EET Elective	3
MGMT 3725 Fundamentals of Mgmt	3
GER Requirement	3
	15

SEMESTER VIII

Courses	Sem. Hrs.
EET 3760/L Variable Speed Drives & Lab	3
EET Elective	3
EET 4870 Process Controls	4
GER Requirement	3
GER Requirement	3
	16

Total Credit Hours 4 years 132

MECHANICAL ENGINEERING TECHNOLOGY

Associate Professors Krygowski (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. If she or he wishes, the associate degree graduate can continue for two more years of full-time study, at which time the bachelor's degree is awarded.

Associate Degree Program

The associate degree program introduces the student to the principles and practices of machine design, manufacturing processes, 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.

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 Applied Science degree, and are prepared for greater levels of responsibility and greater career advancement as engineering technologists.

Associate Degree Program

FALL
FIRST YEAR

Courses	Sem. Hrs.
MATH 1515 Alg/Trig	5
STECH 1505 Elements of Engr Technology	3
DDT 1505 CAD Technology	4
ENGL 1550 Composition 1	3
	15

SPRING
FIRST YEAR

Courses	Sem. Hrs.
MATH 1570 Calc. for E.T.	4
PHYS 1501/L Fund's of Physics 1/Lab	4/1
MET 1515 Mechanics 1	3
CCET 2604 Properties & Strength	3
CCET 2614 Materials Lab 1	1
	18

FALL
SECOND YEAR

Courses	Sem. Hrs.
PHYS 1502 Fund's of Physics 2	3
MET 2615/L Fluid Mechanics/Lab	2/1
MET 2626 Mechanics 2	3
MET 2606 Machine Design 1	3
DDT 2606 Solid Modeling	3
	15

SPRING
SECOND YEAR

Courses	Sem. Hrs.
MET 2605 Thermodynamics	3
MET 2630/L Manufacturing Tech's/Lab	2/1
MET 2607 Machine Design 2	3
COMM xxxx GER speech	3
GER	3
GER	3
	18

Total hours for Associate Degree 66

Bachelor's Degree Program

FALL
THIRD YEAR

Courses	Sem. Hrs.
MATH 2670 Calc. for Engr. Tech. 2	5
MET 3711 Heat & Power Cycles	3
EET 3725 Electrical Systems	4
MET 3710 Tool Design	3
ISEGR/MGT Elective	3
	18

SPRING
THIRD YEAR

Courses	Sem. Hrs.
MET 3720 Mechanisms	3
MET 3715 Fluid Power	3
MET 3700 Physical Msmts.	3
Computer Elective	3
GER	3
	15

FALL
FOURTH YEAR

Courses	Sem. Hrs.
MATH 3785 Matrix/Num Methods	3
MET 4820 Machine Systems	3
MET 4810 Mfg Systems Analysis	3
Chemistry Elective	3
GER	3
GER	3
	18

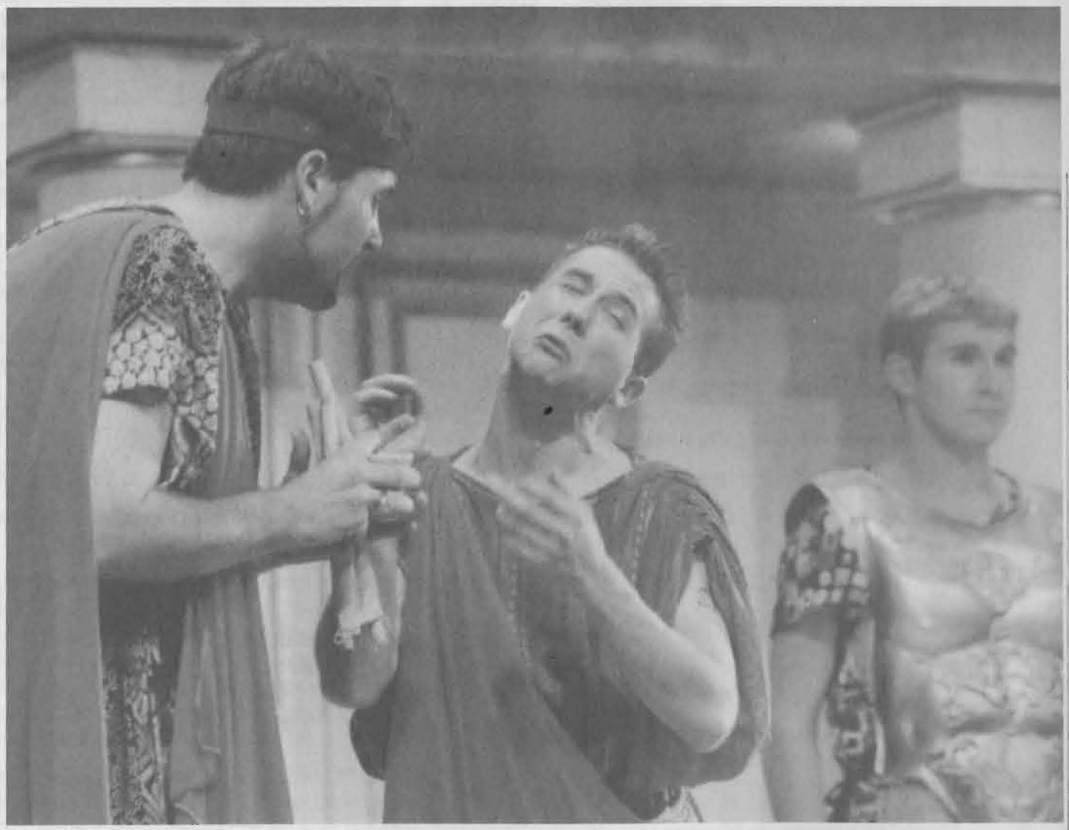
SPRING
FOURTH YEAR

Courses	Sem. Hrs.
MET 4870 Applied Finite Elmnt	3
MET Elective	3
MET 4860/L Robotics Technology/Lab	2/1
GER	3
GER	3
	15

Total hours for Bachelor's Degree 132

The College of Fine and Performing Arts

George McCloud, Dean



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

The Art Department is accredited by the National Association of Schools of Art and Design and the Dana School of Music is a member of the National Association of Schools of Music. The National Association of Schools of Theatre accredits the theater program.

The degrees granted are the Bachelor of Arts (B.A.), Bachelor of Fine Arts (B.F.A.), Bachelor of Music (B.M.), and, in conjunction with the Beeghly College of Education, the Bachelor of Music in Music Education (B.M.). Majors are offered in applied music (performance), art history, music history and literature, communication studies, studio art, telecommunication studies, theater, music theory, or composition; or (in conjunction with the College of Education) in art education, music education, integrated language arts, or drama/theater education.

The activities of the college are conducted primarily in the fine and performing arts center, Bliss Hall. This structure houses the administrative offices of the College as well as classrooms, studios, laboratories and performance areas serving most of the curricular and co-curricular programs in art, communication studies/theater, and music. Additional activities are held in the John J. McDonough Museum of Art, The Butler Institute of American Art, Stambaugh Auditorium, Meshel Hall, 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, and theater; 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. Even if you do not necessarily wish to pursue a major, you should consider taking courses in art, music or communication and theater to develop yourself personally and to complement whatever major you do choose.

Another important objective of the College is to provide the University community maximum opportunity for experiencing the fine arts.

Degree Requirements

High School Preparation

Please refer to the "High School Preparation" section in the front section of this *Bulletin* under Admissions.

Music majors will need to have sufficient musical performance ability to undertake college-level music courses. Voice majors will benefit from taking French, German, and/or Italian in high school.

Requirements for the B.F.A., B.M., and B.A. Degrees

	Semester Hours Of Credit		
Basic Skill Courses *(See "General Education Requirements" under "Academic Policies and Procedures" in the front section of this* Bulletin)	**B.F.A.**	**B.M.**	**B.A.**
English 1550, 1551, Writing 1, 2	6	6	6
Math 2623			
COMM 1545			
Domain Courses *(See "General Education Requirements" under "Academic Policies and Procedures" in the front section of this* Bulletin)			
Artistic & Literary Perspective	6-9	6-9	6-9
Societies & Institutions	6-9	6-9	6-9
Natural Science	6-9	6-9	6-9
	The above three domains must total 8 courses		
Personal & Social Responsibility	6	6	6
Selected Topics	3	3	3
Foreign Language	0	0-12*	0-8**

Professional Courses

These are listed under the appropriate department or school curricula.

Fine and Performing Arts students pursuing the B.S. in Ed. degree should consult the Beeghly College of Education section of this catalog.

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*This requirement is for voice majors only. Each student must take the equivalent of an introductory course (1550) in French, German, and Italian. Consult the Department of Foreign Languages and Literatures for information about the Foreign Language Placement Test.

**Students must complete the equivalent of intermediate study (2600) in one language. Consult the Department of Foreign Languages and Literatures for information about the Foreign Language Placement Test.

Additional Degree Requirements

- Upper-division status (including completion of any specified preparatory units lacking at entrance)
- Major and minor requirements
- Course-level requirements
- Point index requirement
- Residency requirement
- Completion of semester hours required for the degree
- Application for graduation

Courses of Instruction

Course descriptions can be found in a separate section in the back of this *Bulletin*.

DEPARTMENT OF ART

Professors Babisch, Bright, Glasser, Mitchell, Moseley, Russo (Chair), Walusis, Zona; Associate Professors Chan; Assistant Professors Krueger, Moring, Sarro; Instructor Smith.

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.

For the Bachelor of Fine Arts degree, the programs in studio art are designed to familiarize the student with the basic concepts in art and the language of visual form. Concentration is on the development and involvement of the student with the processes and practices of art. A minimum of 127 semester hours is required for the B.F.A. degree. A foundation portfolio review is required at the completion of the foundation sequence to continue in the program. In addition, B.F.A. students are required to exhibit in a senior show at the John J. McDonough Museum of Art. The curricula for studio art are listed below.†

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.

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 at least 2.67, 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.

†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.

Bachelor of Fine Arts Curricula

The areas of studio art emphasis for the B.F.A. degree are: general fine art, art and technology, graphic design, painting, photography, printmaking and spatial arts.

The general requirements for this degree are listed at the beginning of the College of Fine and Performing Arts section.

Please note that lab fees are charged for all studio classes which help pay for some supplies, lab assistants, and small equipment.

Bachelor of Fine Arts Curricula

Studio Art
Art & Technology Emphasis

Studio Courses

Art 1520	Intro. to Visual Arts	1 sh
Art 1521	Foundation Drawing	3 sh
Art 1522	Intermediate Drawing	3 sh
Art 1501	Fundamentals of 2-D Design	3 sh
Art 1502	Fundamentals of 3-D Design	3 sh
	Foundation Portfolio Review	0 sh
Art 2650	Intro. to Painting	3 sh
Art 2625	Woodblock	3 sh **or**
Art 2626	Silkscreen	3 sh **or**
Art 3724	Lithography	3 sh
Art 2631	Intro. to Ceramics	3 sh
Art 2611	Intro. to Sculpture	3 sh
Art 2671	Intro. to B&W Photo	3 sh
Art 3721	Expressive Drawing **or**	
Art 2627	Life Drawing	3 sh
Art 2691	Intro. to Digital Imaging	3 sh
Art 3792	Digital Compositing	3 sh
Art 2661	Intro. to Graphic Design	3 sh
Art 2662	Intro. to Typography	3 sh
Art 2673	Digital Photography	3 sh
Art 3703	Junior Port Review	1 sh
Art 3767	Web Page Design	3 sh
Art 3794	2-D Comp Animation	3 sh
Art 3791	3-D Comp Graph	3 sh
Art 4891	Multimedia Design	3 sh
Art 3795	Digital Video Production	3 sh
Art 4866	Business Skills for the Artist	3 sh
Art 4894	Topics in Digital Imaging	3 sh
Art 37xx	Studio Art Elective	3 sh
Art 4803	Senior Show	2 sh

Art History and Theory

Art 1541	Survey of Art History 1	3 sh
Art 1542	Survey of Art History 2	3 sh
Art 3788	Theory of Art	3 sh
Art 3783	History of Graphic Design	3 sh
Art history elective		3 sh
Art history elective		3 sh

Studio Art
General Fine Art Studio Emphasis

Art 1520	Intro. to Visual Arts	1 sh
Art 1521	Foundation Drawing	3 sh
Art 1522	Intermediate Drawing	3 sh
Art 1501	Fundamentals of 2-D Design	3 sh
Art 1502	Fundamentals of 3-D Design	3 sh
	Foundation Portfolio Review	0 sh
Art 3721	Expressive Drawing	3 sh
Art 2691	Intro. to Digital Imaging	3 sh
Art 2627	Life Drawing	3 sh
Art 2625	Woodblock	3 sh **or**
Art 2626	Silkscreen	3 sh **or**
Art 3724	Lithography	3 sh
Art 2631	Intro. to Ceramics	3 sh
Art 2611	Intro. to Sculpture	3 sh
Art 2671	Intro. to B&W Photography	3 sh
Art 2650	Intro. to Painting	3 sh
Art 2653	Watercolor	3 sh
Art 2615	Intro. to Metals	3 sh
Art 37xx/48xx	Studio Art Elective	21 sh
Art 3703	Junior Portfolio Review	1 sh
Art 4866	Business Skills for the Artist	3 sh
Art 4803	Senior Show	2 sh
Art 48xx	Senior Project	3 sh

Art History and Theory

Art 1541	Survey of Art History 1	3 sh
Art 1542	Survey of Art History 2	3 sh
Art 3788	Theory of Art	3 sh
Art 5882	20th Century from 1960	3 sh
Art 37xx	Art history electives	6 sh

Studio Art
Graphic Design Emphasis

Art 1520	Intro. to Visual Arts	1 sh
Art 1521	Foundation Drawing	3 sh
Art 1522	Intermediate Drawing	3 sh
Art 1501	Fundamentals of 2-D Design	3 sh
Art 1502	Fundamentals of 3-D Design	3 sh
	Foundation Portfolio Review	0 sh
Art 2650	Intro. to Painting	3 sh
Art 2691	Intro. to Digit Imaging	3 sh
Art 2625	Woodblock	3 sh **or**
Art 2626	Silkscreen	3 sh **or**
Art 3724	Lithography	3 sh
Art 2631	Intro. to Ceramics	3 sh
Art 2611	Intro. to Sculpture	3 sh
Art 2661	Intro. to Graphic Design	3 sh
Art 2662	Intro. to Typography	3 sh
Art 3761	Intermediate Graphic Design	3 sh
Art 3703	Junior Portfolio Review	1 sh
Art 3763	Illustration	3 sh
Art 3762	Advanced Typography	3 sh
Art 4863	Identity Systems	3 sh
Art 3767	Web Page Design	3 sh
Art 2671	Intro. to B&W Photo	3 sh
Art 4800	Studio Problems	3 sh **or**
Art 4867	Graphic Design Internship	3 sh
Art 3768	Pre-Press Production	3 sh
Art 4864	3-D Graphics	3 sh
Art 4861	Publication Design	3 sh
Art 4866	Business Skills for the Artist	3 sh
Art 4803	Senior Show	2 sh
Art 4865	Advertising Design	3 sh
	Studio Art Electives	3 sh

Art History and Theory

Art 1541	Survey of Art History 1	3 sh
Art 1542	Survey of Art History 2	3 sh
Art 3788	Theory of Art	3 sh
Art 3783	History of Graphic Design	3 sh
	Art history elective	3 sh
	Art history elective	3 sh

Studio Art
Painting Emphasis

Art 1520	Intro. to Visual Arts	1 sh
Art 1521	Foundation Drawing	3 sh
Art 1522	Intermediate Drawing	3 sh
Art 1501	Fundamentals of 2-D Design	3 sh
Art 1502	Fundamentals of 3-D Design	3 sh
	Foundation Portfolio Review	0 sh
Art 3721	Expressive Drawing	3 sh
Art 2691	Intro. to Digital Imaging	3 sh
Art 2627	Life Drawing	3 sh
Art 2625	Woodblock	3 sh **or**
Art 2626	Silkscreen	3 sh **or**
Art 3724	Lithography	3 sh
Art 2631	Intro. to Ceramics	3 sh
Art 2611	Intro. to Sculpture	3 sh
Art 2671	Intro. to B&W Photography	3 sh
Art 2650	Intro. to Painting	3 sh
Art 2653	Watercolor	3 sh
Art 2651	Intermediate Painting 1	3 sh
Art 3752	Intermediate Painting 2	3 sh
Art 4851	Advanced Painting 1	3 sh
Art 4852	Advanced Painting 2	3 sh
Art 4853	Advanced Painting 3	3 sh
Art 3748	Studio Topics	3 sh
Art 37xx/47xx	Studio Art Electives	6 sh
Art 4866	Business Skills for the Artist	3 sh
Art 3703	Junior Portfolio Review	1 sh
Art 4803	Senior Show	2 sh
Art 4854	Senior Project: Painting	3 sh

Art History and Theory

Art 1541	Survey of Art History 1	3 sh
Art 1542	Survey of Art History 2	3 sh
Art 3788	Theory of Art	3 sh
Art 5881	20th Century to 1960	3 sh
Art 5882	20th Century from 1960	3 sh

Studio Art
Photography Emphasis

Art 1520	Intro. to Visual Arts	1 sh
Art 1521	Foundation Drawing	3 sh
Art 1522	Intermediate Drawing	3 sh
Art 1501	Fundamentals of 2-D Design	3 sh
Art 1502	Fundamentals of 3-D Design	3 sh
	Foundation Portfolio Review	0 sh
Art 2650	Intro. to Painting	3 sh
Art 2625	Intro. to Woodblock	3 sh **or**
Art 2626	Intro. to Silkscreen	3 sh **or**
Art 3724	Intro. to Lithography	3 sh

Art 2691 Intro. to Digital Imaging ..... 3 sh
Art 2661 Intro. to Graphic Design **or**
Art elective ..... 3 sh
Art 2631 Intro. to Ceramics ..... 3 sh
Art 2611 Intro. to Sculpture ..... 3 sh
Art 2671 Intro. to B&W Photo ..... 3 sh
Art 2672 Color Photography ..... 3 sh
Art 2673 Digital Photo 1 ..... 3 sh
Art 3703 Junior Portfolio Review ..... 1 sh
Art 3778 Special Topics ..... 6 sh
Art 3773 Intermediate B&W Photo ..... 3 sh
Art 3774 Digital Photo 2 ..... 3 sh
Art 5871 Adv. Photo: Studio ..... 3 sh
Art 5872 Adv. Photo: Studio Mural ..... 3 sh
Art 4873 Senior Project ..... 3 sh
Art 3775 Photo: Issues & Prac. ..... 3 sh
Art 4866 Business Skills for the Artist ..... 3 sh
Art 4803 Senior Show ..... 2 sh
Art 37xx Studio Art Elective ..... 3 sh

Art History and Theory
Art 1541 Survey of Art History 1 ..... 3 sh
Art 1542 Survey of Art History 2 ..... 3 sh
Art 3788 Theory of Art ..... 3 sh
Art 5881 20th Century to 1960 **or**
Art 5882 20th Century from 1960 ..... 3 sh
Art 3785 History of Still Photography ..... 3 sh
Art 37xx Art Hist Elec ..... 3 sh

Studio Art
Printmaking Emphasis

Art 1520 Intro. to Visual Arts ..... 1 sh
Art 1521 Foundation Drawing ..... 3 sh
Art 1522 Intermediate Drawing ..... 3 sh
Art 1501 Fundamentals of 2-D Design ..... 3 sh
Art 1502 Fundamentals of 3-D Design ..... 3 sh
Foundation Portfolio Review ..... 0 sh
Art 3721 Expressive Drawing ..... 3 sh
Art 2650 Intro. to Painting ..... 3 sh
Art 2691 Intro. to Digital Imaging ..... 3 sh
Art 2627 Life Drawing ..... 3 sh
Art 2631 Intro. to Ceramics ..... 3 sh
Art 2611 Intro. to Sculpture ..... 3 sh
Art 2671 Intro. to B&W Photo. ..... 3 sh
Art 2625 Intro. Woodblock/Monoprinting .... 3 sh
Art 2626 Intro. to Silkscreen ..... 3 sh
Art 3724 Intro. to Lithography ..... 3 sh
Art 3726 Advanced Silkscreen ..... 3 sh
Art 4824 Advanced Lithography ..... 3 sh
Art 3725 Advanced Woodblock/
Monoprinting ..... 3 sh
Art 3703 Portfolio Review ..... 1 sh
Art 4803 Senior Show ..... 2 sh
Art 4829 Senior Project: Printmaking ..... 3 sh
Art 37xx Studio Art Electives ..... 6 sh
Art 4866 Business Skills for the Artist ..... 3 sh
Art 4800 Studio Problems: Printmaking ..... 6 sh

Art History and Theory
Art 1541 Survey of Art History 1 ..... 3 sh
Art 1542 Survey of Art History 2 ..... 3 sh
Art 3788 Theory of Art ..... 3 sh
Art 5881 20th Century to 1960 ..... 3 sh **or**
Art 5882 20th Century from 1960 ..... 3 sh
Art history elective ..... 3 sh
Art 37xx Art history elective ..... 6 sh

Studio Art
Spatial Arts Emphasis

Art 1520 Intro. to Visual Arts ..... 1 sh
Art 1521 Foundation Drawing ..... 3 sh
Art 1522 Intermediate Drawing ..... 3 sh
Art 1501 Fundamentals of 2-D Design ..... 3 sh
Art 1502 Fundamentals of 3-D Design ..... 3 sh
Foundation Portfolio Review ..... 0 sh
Art 3721 Expressive Drawing ..... 3 sh
Art 2691 Intro. to Digital Imaging ..... 3 sh
Art 2627 Life Drawing ..... 3 sh
Art 2625 Woodblock ..... 3 sh **or**
Art 2626 Silkscreen ..... 3 sh **or**
Art 3724 Lithography ..... 3 sh
Art 2650 Intro. to Painting ..... 3 sh
Art 2671 Intro. to B&W Photo ..... 3 sh
Art 2631 Intro. to Ceramics ..... 3 sh
Art 3732 Intermediate Ceramics ..... 3 sh
Art 3733 Advanced Ceramics ..... 3 sh
Art 2611 Intro. to Sculpture ..... 3 sh
Art 3712 Intermediate Sculpture ..... 3 sh
Art 3713 Advanced Sculpture ..... 3 sh
Art 4834 Advanced Studio ..... 9 sh
Art 37xx /48xx Studio Art Electives ..... 6 sh
Art 4866 Business Skills for the Artist ..... 3 sh
Art 3703 Junior Portfolio Review ..... 1 sh
Art 4803 Senior Show ..... 2 sh
Art 4814 Senior Project ..... 3 sh

Art History and Theory
Art 1541 Survey of Art History ..... 3 sh
Art 1542 Survey of Art History ..... 3 sh
Art 3788 Theory of Art ..... 3 sh
Art 5881 20th Century to 1960 ..... 3 sh
Art 5882 20th Century from 1960 ..... 3 sh
Art 37xx Art history electives ..... 3 sh

Bachelor of Arts Curricula

Art History

Major Requirements
Art 1520 Intro. to Visual Arts ..... 1 sh
Art 1541 Survey of Art History 1 ..... 3 sh
Art 1542 Survey of Art History 2 ..... 3 sh

Two of the following:
Art 3740 Topics in Ancient Art ..... 3 sh
Art 3741 Topics in Medieval Art ..... 3 sh
Art 3742 Topics in Renaissance Art ..... 3 sh
Art 3744 17th/18th Century American Art ..... 3 sh
Art 3743 Baroque Art ..... 3 sh

Two of the following:
Art 3745 19th Century European Art ..... 3 sh
Art 3746 19th Century American Art ..... 3 sh
Art 3747 African-American Art ..... 3 sh

Art 3785 History of Still Photography ..... 3 sh
Art 5881 20th Century Art to 1960 ..... 3 sh
Art 5882 20th Century Art from 1960 ..... 3 sh

One of the following:
Art 3780 African Art ..... 3 sh
Art 3782 Precolumbian Art ..... 3 sh
Art 3781 Native North American Art ..... 3 sh

Art History Electives:
Three of any 3700 or higher Art History, 3 sh each

Capstone:
Art 4889 Seminar in Art History ..... 3 sh

Studio Art Electives ..... 6 sh

Bachelor of Science in Education Visual Arts Pre-K–12*

Art 1520 Intro to Visual Arts ..... 1 sh
Art 1521 Foundation Drawing ..... 3 sh
Art 1522 Intermed Drawing ..... 3 sh
Art 1501 Fund. of 2-D Des ..... 3 sh
Art 1502 Fund of 3-D Des ..... 3 sh
Foundation Portfolio Review ..... 0 sh
Art 3721 Expressive Drawing ..... 3 sh
Art 2691 Intro to Digit Imaging ..... 3 sh
Art 2625 Woodblock ..... 3 sh or
Art 2626 Silkscreen ..... 3 sh or
Art 3724 Lithography ..... 3 sh
Art 2661 Intro to Graph Design ..... 3 sh
Art 2631 Intro to Ceramics ..... 3 sh
Art 2611 Intro to Sculpture ..... 3 sh
Art 2671 Intro to B&W Photo ..... 3 sh
Art 2650 Intro to Painting 3 sh
Art 2653 Watercolor ..... 3 sh
Art 2615 Intro to Metals ..... 3 sh

Art Education Requirements
Art 3737 Pre-K — 4, Vis Arts Ed ..... 3 sh
Art 4837 Prof Prac/Middle Sch ..... 3 sh
Art 4838 Prof Prac/Sec Sch ..... 3 sh
Art 4839 Art Education Seminar ..... 1 sh

Education Requirements (Minor)
Found 1501 Intro to Educ ..... 3 sh
Multi 4807 Tchg Across Curric ..... 2 sh
Edtec 3771 Techniques for Tchg ..... 3 sh
Emce 4880 Reading, P-12 ..... 3 sh
Psych 3709 Psych of Educ ..... 3 sh
Found 3708 Educ & Society ..... 3 sh
Sped 4802 Ed/Excep Children ..... 3 sh
Seduc 4842 Student Tchg ..... 7 sh
Seduc 4842A Stu Tchg Sem ..... 1 sh

Art History and Theory
Art 1541 Sur of Art Hist ..... 3 sh
Art 1542 Sur of Art Hist ..... 3 sh
Art 3788 Theory of Art ..... 3 sh
Art 5882 20th C. from 1960 ..... 3 sh
Art 37xx Art history electives ..... 3 sh

*Note: Students can be licensed to teach Pre-K–12 by completing the BFA in Studio Art and the Art Education and Education requirements as well.

DEPARTMENT OF COMMUNICATION AND THEATER

Professors Castronovo, Henneman, Hugenberg, Kougl, O'Neill (Chair), Owens; Associate Professor LaLumia, Murphy; Assistant Professors Mathews, Shanabarger, Instructor Kuskowski.

The Department of Communication and Theater offers coursework which satisfies major requirements for the degrees of Bachelor of Arts, Bachelor of Fine Arts, and, in conjunction with the College of Education, Bachelor of Science in Education.

Bachelor of Arts

The Bachelor of Arts degree for communication studies, telecommunication studies or theater requires 36-40 credit hours within the department. For further information about the department, including a meeting with a faculty member who will discuss the requirements with you, contact the department office, located in Bliss Hall, Room 2000. These degrees may be earned in eight semesters if students average 16 hours per semester.

COMMUNICATION STUDIES

Communication studies provides students with the knowledge and communication skills necessary in today's job market. Students learn to communicate effectively with others in one-to-one situations and in small groups. Effective communication skills in these two situations are identified by corporate recruiters, employers, and alumni as necessary for all college graduates. The student majoring in communication studies is especially prepared to enter today's competitive work force. The overall goal of study in communication studies is to challenge students interested in the many forms of human communication—its processes, outcomes, and effects.

As a program grounded in the liberal arts, communication is a discipline involving the study of symbolic behaviors and critical thinking in many contexts. Through courses and internships, the program combines a strong liberal arts background with a professional focus.

Students graduating with a BA degree in communication studies will:

- understand communication theory and how to translate this theory into successful communication practice
- communicate effectively in a variety of settings
- function knowledgeably and critically as communication consumers and practitioners
- have competence in critical thinking and problem solving
- be aware of the ethical issues involved in human communication

TELECOMMUNICATION STUDIES

A major in the telecommunication studies curriculum provides in-depth knowledge and intellectual challenge in electronic communication. Students receive practical orientation to the skills and techniques of broadcasting. Further, they explore contemporary theories and problems which are central to telecommunications media, as well as examine new communication media.

From a liberal arts perspective, the telecommunication studies curriculum is designed to aid the student in pursuit of careers not only in broadcasting but also in recently expanding avenues of communication such as non-commercial broadcasting, corporate communications, industrial communications, cablecasting, and independent production. Internships are available in media organizations to students of superior academic achievement.

THEATER

The theater program provides a sound academic approach and extensive practical training in the techniques of theater. Students work closely with their instructors in the classroom as well as in practical and/or laboratory settings. This is a sound, basic liberal arts program, designed to provide students with a broad general education with special opportunities to develop skills in theater. As a liberal arts degree with an emphasis on theater training, it is fully accredited by NAST, The National Association of Schools of Theatre.

TEACHING LICENSURE

Students wishing to teach on the secondary level may seek licensure in either the Integrated Language Arts or Drama/Theater P-12. License may be completed as part of either a Bachelor of Arts degree, plus the education requirements, or the Bachelor of Science in Education degree. For the Integrated Language Arts License, consult the curriculum sheet for the appropriate level methods course. For further information about licensure requirements, contact an academic advisor in the College of Education. Curriculum sheets are available in the College of Education and in the department office.

Bachelor of Fine Arts

THEATER (Production/performance or musical theater)

The Bachelor of Fine Arts program is designed to provide intensive theater 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 degree studies is available by audition/interview only. Within the program, the student may follow one of two tracks, the first emphasizing production/performance and the second emphasizing musical theater. Students admitted to the BFA program will combine a basic foundation of general studies with an extensive performance-oriented protocol of course work (acting, directing, design and dance) and participation in the co-curricular activities of University Theater. These degrees may be earned in eight semesters if students average 16 hours per semester.

Admissions to the BFA program is based upon auditions and interviews conducted by the Theater faculty. Retention in the program is contingent upon an annual progress review presented by each student.

Curriculum guides detailing the production/performance and musical theater tracks of the BFA program are available in the department office.

Professional Societies

Alpha Psi Omega

The University Theater 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.

Pi Kappa Delta

Students who are active participants in the Forensics program may apply for membership in Pi Kappa Delta, the National Honor Society for students involved in extracurricular speech activities.

THE DANA SCHOOL OF MUSIC

Professors Edwards (Director), Funk, Gelfand, Gould, Largent, Leonardi, Perkins, Raridon, Rollin, Slocum, Turk; Associate Professors Andrew, Ausmann, Crist, Gage, Mosher, Oltmanns, Rudnytsky, Umble, Wilcox; Assistant Professors Buch, Krummel, Schaft; Instructors Engelhardt, Veneskey, Yun.

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, 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.

The curricula may be divided into five components: music education, music theory, music history, performance, 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 and music education. In addition, it is possible to obtain the degree of Bachelor of Arts with majors in music history, music theory, and applied music.

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.

Credit in music is allowed in varying amounts toward other degrees granted by the University.

Facilities

The Dana School is one of three departmental units in the College of Fine and Performing Arts. The School is housed in Bliss Hall, which provides 80 practice rooms, 30 faculty studios, 8 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 32 Steinway pianos, 68 studio 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 for each instrument.

Multimedia Center

Bliss Hall Multimedia Center offers students the opportunity to work with state-of-the-art music computer software and hardware, including advanced music notation, music sequencing (composition/arranging) and automatic accompaniment applications. The Center features Macintosh and IBM workstations, each fully MIDI-equipped with Roland synthesizer modules, Roland and Yamaha keyboards and a networked laser printer.

Electronic Music Laboratory

The Dana Electronic Music Laboratory is equipped with sophisticated hardware and software offering the advanced student of music technology the opportunity to experience such applications as hard-disk recording, sampling, digital editing, and advanced sequencing. Additionally a complete analog music synthesis area offers students fundamental experiences in analog electronic music techniques and composition.

Libraries

The school's extensive libraries of band, orchestral, and choral music represent musical periods from the Renaissance to the present. Maag Library contains books, printed music, records, CDs, videos, and CD ROMs.

Scholarships and Loans

The Dana School of Music offers a wide range of scholarships, which are awarded, after competitive auditions, on the basis of talent and academic achievement. Applications should be submitted to the Director of the Dana School of Music. For other scholarships, see Loans and Scholarships in the Scholarships and Financial Aid section.

Musical Activities

The Dana School of Music supplements the concerts of the Monday Musical Club and the Youngstown Symphony Orchestra 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 major performing ensembles: the Dana Chorale, the University Chorus, the Wind Ensemble, the Concert Band, the Marching Band, Dana Symphony Orchestra, Opera Workshop; the Madrigal Singers; the Jazz Ensemble; 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, Kappa Kappa Psi (honorary band fraternity), New Music Society, Dana Opera Society, and the Jazz Society. The School and the Youngstown Chapter of the American Guild of Organists jointly sponsor a Guild student group.

Fees

See the Fees and Expenses section of this *Bulletin*.

Application and Admission Examinations

An applicant for admission to the Dana School of Music must satisfy the general requirements for admission to the University (see the Admission section).

Applicants are required to pass entrance auditions in their performance area and to take placement examinations in music theory and piano. These auditions and examinations are on announced dates preceding the commencement of classes in the fall.

Admission to Courses for the Degree of Bachelor of Music

The applicant's high school courses should include the preparatory courses specified under High School Preparation on p. 8 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 50th percentile will be assigned to Music 520, while those scoring above the 50th percentile will be assigned to Music 530.

Prospective composition majors must present evidence of ability to handle the materials of music by placing at or above the 70th 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.

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 hours per semester. For the Bachelor of Music degree, these consist of:

1. **Pre-college or preparatory study, of two kinds:**
   A. Academic. The specific courses are listed on p. 8 of this *Bulletin*. These courses are normally taken in high school. Deficiencies must be overcome prior to completing 60 semester hours at YSU.
   B. Musical. An entrant lacking suitable proficiency must develop it before undertaking the required college-level music courses.
2. **University requirements.** Non-music courses and other requirements to be completed in the University are listed in the Degree Requirements chart at the beginning of the College of Fine and Performing Arts section.
3. **Degree requirements.** Curricula leading to music degrees require from 124 to 142 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.

CURRICULA

Performance Major

Acceptance into a performance area is contingent upon an audition. The student not qualifying for Music 1501 may take the relevant course 1500 until the deficiency is corrected.

Advanced standing in performance may be granted tentatively after an examination given by members of the faculty. The final classification is made at the end of the first semester of resident study.

Enrollments in applied music are contingent upon the approval of the director of the Dana School of Music, with priority given to full-time music majors and music minors participating in major ensembles.

Teacher Assignment. Assignment of students to teachers is made by the area coordinator. Requests for change of teacher should be addressed to the coordinator in writing. A student's choice of teacher will be respected as far as possible, but final assignment rests with the director of the School of Music.

Lessons. Students registered for 4 s.h. courses receive individual instruction and one 50-minute seminar weekly. They are required to practice three hours daily. Students registered for 2 and 3 s.h. courses receive individual instruction and one 50-minute seminar weekly; they are required to practice two hours daily. Students registered for A, B

and C applied courses receive individual instruction and are required to practice one hour daily.

No credit will be given in a performance course if the student misses more than three lessons in any semester. Lessons missed due to legal holidays or school closings will not be made up. In case of prolonged illness the lessons may be made up at the discretion of the teacher.

Recitals. Recognizing that performing before an audience plays a vital role in musical development, the Dana School offers its students many opportunities to appear in public as a way to foster that development. Attendance at 30 recitals is mandatory in the first two years.

Convocation. The assistant director of the School arranges weekly programs of lectures, student and faculty performances. Attendance at 36 convocations is mandatory in the first two years.

Young Artist Competition. An annual concert by the Dana Symphony Orchestra features student soloists chosen by competition.

Degree And Non-degree Recitals. Each candidate for the degree Bachelor of Music must present a senior recital in partial fulfillment of the graduation requirements; performance majors must present a one-hour recital; music education majors must present a half-hour recital. Performance majors must also present a half-hour junior recital. 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.

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 are granted a waiver of examination for the term of the recital. Students may be retained in the same proficiency level with a grade of C or lower or with a grade of PR. Students who fail to meet the standards of the examining faculty may be required to reduce the number of credits for which they register in subsequent terms; or they may be required to withdraw completely from the course sequence.

Each applied area (keyboard, brass, etc.) may vary the above to meet certain needs. Consult with area coordinator for details.

Jazz or Applied/BA Major

The following courses differ only in degree from those listed under Performance Major according to the credit hours earned. A high standard of proficiency is expected. For the jazz major, junior and senior recitals are required.

1501, 1502. See Performance Major 2+2 s.h.

2603, 2604. See Performance Major 3+3 s.h.

3703, 3704. See Major/Performance 3+3 s.h.

4803, 4804. See Major/Performance 3+3 s.h.

Music Education Major

The following courses differ only in degree from those listed under Performance Major according to the credit hours earned. Concentration in the development of basic technics relative to teaching in the elementary and secondary school systems is an integral component of study. A high standard of proficiency is expected. Senior recital required. This degree may be earned in eight semesters if students average 17 hours per semester.

1501, 1502. See Performance Major 2+2 s.h.

2601, 2602. See Performance Major 2+2 s.h.

3701, 3702. See Performance Major 2+2 s.h.

4801. See Performance Major 2+2 s.h.

Music Minor

The following courses are for the student who has a requirement of study on a secondary instrument or voice or who does not meet the standards required in the major courses. No seminar is required. Initial enrollment is contingent upon successful completion of an audition.

1500 A,B	1+1 s.h.
2600 A,B	1+1 s.h.
3700 A,B	1+1 s.h.
5800 A,B	1+1 s.h.

ENSEMBLES

In order to obtain experience in the performance of music written for instrumental and vocal groups, students are required to participate in ensembles as follows:

All vocal and instrumental majors must be in a major ensemble each term they are full-time students. The director of the School of Music may waive ensemble participation in exceptional cases, and during the student-teaching quarter.

There are two types of ensembles in the school of music—major ensembles and chamber ensembles. Major ensembles rehearse a total of three or four hours per week and chamber ensembles for two hours.

The major ensembles are:

Course Number		Cr. Hrs.
1002	*Dana Chorale*	0-1 q.h.
1004	*University Chorus*	0-1 q.h.
1005	*Concert Band*	0-1 q.h.
1006	*Marching Band*	0-1 q.h.
1007	*Wind Ensemble*	0-1 q.h.
1008	*Symphony Orchestra*	0-1 q.h.
The chamber ensembles are:		
1003	*Dana Madrigal*	0-1 q.h.
1009	*Percussion Ensemble*	0-1 q.h.
1010	*String Ensemble*	0-1 q.h.
1012	*Opera Workshop*	0-3 q.h.
1013	*Contemporary Ensemble*	0-1 q.h.
1015	*Dana Early Music Ensemble*	0-1 q.h.
1016	*Woodwind Ensemble*	0-1 q.h.
1017	*Brass Ensemble*	0-1 q.h.
1018	*Horn Choir*	0-1 q.h.
1019	*Trombone Ensemble*	0-1 q.h.
1020	*Tuba Ensemble*	0-1 q.h.
1021	*Brass Chamber Ensemble*	0-1 q.h.
1022	*Trumpet Ensemble*	0-1 q.h.
1023	*Jazz Ensemble*	0-1 q.h.
1024	*Composer's Ensemble*	0-1 q.h.
1026	*Chamber Orchestra*	0-1 q.h.
1028	*Chamber Winds*	0-1 q.h.
1029	*Guitar Ensemble*	0-1 q.h.
1030	*Jazz Combo*	0-1 q.h.
1035	*Saxophone Quartet*	0-1 q.h.
1040	*University Band*	0-1 q.h.
1041	*Basketball Pep Band*	0-1 q.h.

Ensemble courses are open to all students in the University who are qualified for them and any ensemble course may be repeated any number of semesters.

Requirements in addition to the above but unique to each ensemble:

- For students pursuing the jazz emphasis curriculum, the Jazz Ensemble is considered the major ensemble. 023 Jazz Ensemble meets for three hours per week.
- Opera workshop 012 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 quarter hours.
- Madrigal Singers 003 is a highly select ensemble which presents numerous concerts and rehearses two hours per week for 1 s.h. credit.
- Woodwind ensemble may include quartets, quintets, and various other combinations of instruments. 1 s.h. each.
- Composers' Ensemble: Performance of works by student composers or other works which will assist student composers in the development of an original, creative style. Meets two hours per week. 1 s.h.

CURRICULUM FOR PERFORMANCE DEGREES

I. *General University Requirements*

Courses	Cr. Hrs.
Writing 1 and 2	6
Communications	3
Math	3
Domains:	
Personal and Social Responsibility	6
Artistic and Literary Perspectives (MUSHL 3771, 3772, 3773)	9
Natural Science	6
Societies and Institutions	9
Elective (Artistic and Lit. Perspec. outside of music)	3

II. *Core Music Requirements*

Music Theory 1531-3750	15
Music History 3771-3774	12
Junior/Senior Recitals	N/C

III. *Requirements unique to area of emphasis*

1. Instrumental

Applied Major 1501-4806	28
Keyboard Musicianship 1581-2682	4
Major Ensemble (guitar majors/guitar ensemble)	8
Chamber Ensemble	2
Conducting 3715	3
Theory/History Electives (must represent both areas)	9
Music Electives	11

2. Jazz

Applied Major 1501-4804	22
Keyboard Musicianship 1581-1582	2
Jazz Keyboard 3781-3782	2
Jazz Ensemble	8
Jazz Combo	2
Jazz Theory 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
Major 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
Major Ensemble 8
Conducting 3715 3
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 common to both composition concentrations

Writing 1 and 2 6
Communications 3
Math 3
Domains:
Personal and Social Responsibility 6
Artistic and Literary Perspectives 9
(MUSHL 3771, 3772, 3773)
Natural Science 6
Societies and Institutions 9
Elective 3
(Artistic and Lit. Perspec. outside of music)

II. Requirements common to both composition concentrations

Music Theory 1531-3750 15
Music History 3771-3774 12
Composition 1501-4804 20
Major Ensemble 4
Applied Classes 5
Music Theory Electives 9
Music History Elective 3
Music Electives 3
Junior/Senior recitals ..... N/C
Language 9

III. Requirements unique to each composition concentration

1. Keyboard concentration in composition

Piano 1501-3702 12

2. Non-keyboard concentration in composition

Keyboard Musicianship 1581-2682 4
Applied Music 1501-2602 8

CURRICULUM FOR MUSIC EDUCATION DEGREES

I. General University Requirements

Writing 1 and 2 6
Communications 3
Math 3
Domains:
Personal and Social Responsibility 6
Artistic and Literary Perspectives 9
(MUSHL 3771, 3772, 3773)
Natural Science 6
Societies and Institutions 9
(include PSYCH 1560)
Elective 3
(Artistic and Lit. Perspec. outside of music)

II. Core Music Requirements

Applied Major 1501-4801 14
Music Theory 1531-3750 15
Music History 3771-3774 12
Conducting 3715 3
Music Education 2611,
4823, 4824, 4825 and elective 9
Senior Recital ..... N/C

III. Requirements unique to each area of emphasis

1. Instrumental

Major Ensemble 7
Keyboard Musicianship 1581-2682 4
Methods/Applied Classes 5
Music Education 4826 2

2. Keyboard

Major Ensemble 4
Accompanying 2691-2694 4
Voice Class/Applied Voice 2
Pedagogy 5858 3
Methods/Applied Classes 3
Music Education 4826 or 4827 2

3. Voice

Major Ensemble 7
Keyboard Musicianship 1581-2682 4
Pedagogy 5880 1
Diction 1
Methods/Applied Classes 3
Music Education 4827 2

IV. *College of Education Licensure Requirements*

PSYCH 709 3
FOUND 501 3
EDTC 3771 3
FOUND 3708 3
SPED 5802 3
TERG 2601 3
MULTI 4807 2
SEDUC 3704 3
SEDUC 4844 and seminar 12

CURRICULUM FOR BACHELOR OF ARTS DEGREE

I. *General University Requirements*

Writing 1 and 2 6
Communications 3
Math 3
Domains:
Personal and Social Responsibility 6
Artistic and Literary Perspectives 9
(MUSHL 3771, 3772, 3773)
Natural Science 6
Societies and Institutions 9
Elective 3
(Artistic and Lit. Perspec. outside of music)
Foreign Language 12
Minor Field 15

II. *Core Music Requirements*

Music Theory 1531-3750 15
Music History 3771-3774 12
Conducting 3715 3
Keyboard Musicianship (1581-2682 for non-keyboard majors)
(2691-2694 for keyboard majors) 4

III. *Requirements unique to each area of emphasis*

1. Applied Music

Applied Instrument/Voice 1501-4802 16
Major Ensemble 8
Music Theory/History Electives
(must represent each area) 6
Senior Recital ..... N/C

2. Music History

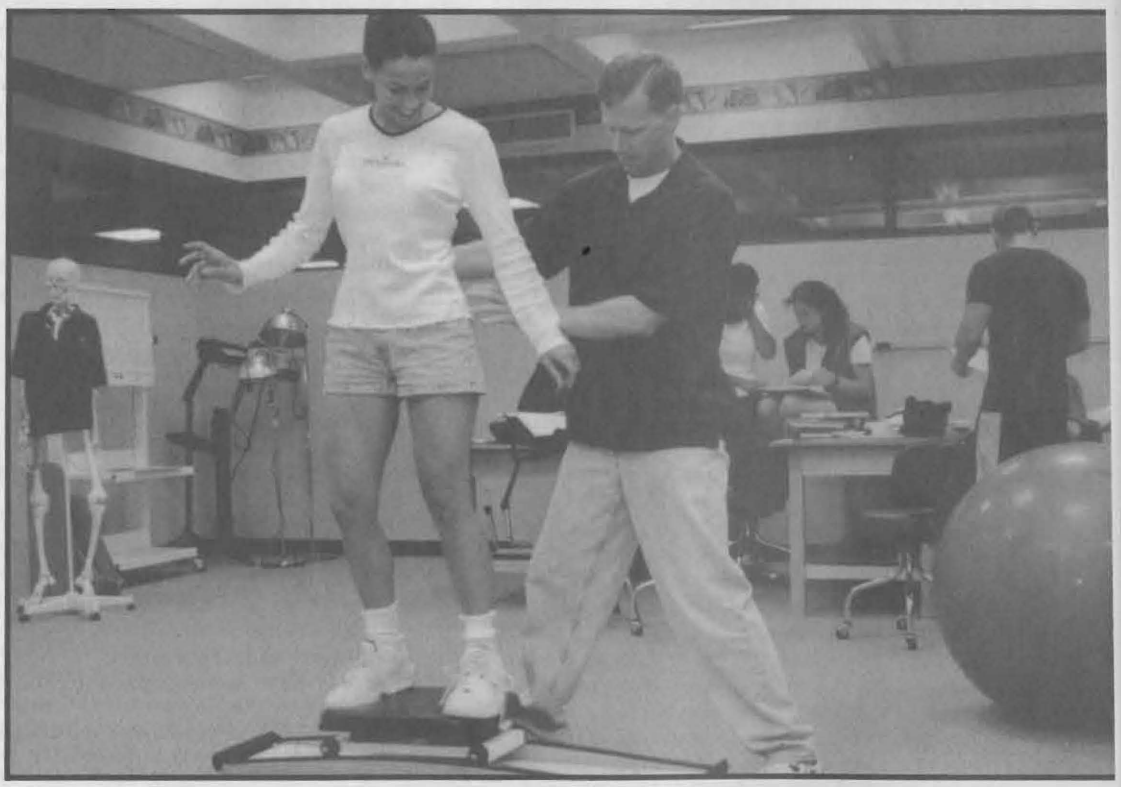
Applied Instrument/Voice 1501-2602 8
Major Ensemble 4
Music History/Literature Electives 12
Music Theory Electives 6

3. Music Theory

Applied Instrument/Voice 1501-2602 8
Major Ensemble 4
Theory/Composition Electives 12
Music History Electives 6

The Dr. Dominic A. and Helen M. Bitonte College of Health and Human Services

John J. Yemma, 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 providing quality education through accredited associate, baccalaureate, and graduate degree programs. 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 degree programs further expand and advance the competencies of graduates in the delivery and administration of health care and human services.

Accreditation

The Commission on Accreditation of Allied Health Education Programs accredits medical laboratory technology, emergency medical technology, respiratory care, and medical assisting. The histologic technician program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences. The Bachelor of Science in Nursing program is accredited by the National League for Nursing and approved by the Ohio Board of Nursing Education and Nurse Registration. The Nursing Home Administration Program is approved by The State of Ohio Board of Examiners of Nursing Home Administrators. The Commission on Dental Accreditation accredits the dental hygiene program. The social work program is accredited by the Council on Social Work Education. The dietetic technology program, the coordinated program in dietetics, and the didactic program in dietetics are approved by the American Dietetic Association. The physical therapy program is accredited by the Commission on Accreditation in Physical Therapy Education.

Organization/Majors

The Bitonte College of Health and Human Services consists of eight departments: Criminal Justice, Health Professions, Human Ecology, Human Performance and Exercise Science, Military Science, Nursing, Physical Therapy, and Social Work. In cooperation with the College of Education, Community and School Health provides a health education major, Human Performance and Exercise Science provides a physical education major, and Human Ecology provides a family and consumer sciences major. Graduate courses are offered by the Departments of Human Ecology and Social Work. The Department of Criminal Justice 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. A new graduate degree will be offered beginning this academic year, 1999-2000. The Northeastern Ohio Universities Master of Public Health program was developed 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 Health Professions
- Allied Health (B)
- Community & School Health (B)
- † Dental Hygiene (A)
- Emergency Medical Technology (A)
- Health and Human Services (M)
- Histotechnology (A)
- Medical Assisting Technology (A)
- † Medical Laboratory Technology (A)
- † Medical Technology (B)
- † Respiratory Care (B)

Department of Criminal Justice
- Criminal Justice (M)
- Criminal Justice (B)
- Police Science Technology (A)

Department of Human Ecology
- Pre-Kindergarten Associates (A) (B)
- Dietetic Technology (A)
- Merchandising: Fashions & Interiors (B)
- Food and Nutrition (B)
- Home Economics Services (B)
- Hospitality Management (A) (B)
- †† Family and Consumer Sciences Education (B)

Department of Human Performance and Exercise Science
- Exercise Science (B)
- †† Physical Education (B)
- Physical Education (B)

Department of Military Science
- ROTC Programs are offered. See pages 163-65.

Department of Nursing
- Nursing (M)
- † Nursing (B)

Department of Physical Therapy
- † Physical Therapy (M)

Department of Social Work
- Social Work (B)
- Social Services Technology (A)
- Nursing Home Administration (B)

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†Restricted admission; see department for further information.

††In cooperation with the College of Education, for the B.S. in Ed. degree.

ROTC students are allowed certain modifications of the requirements, as explained in the Military Science section.

It is the student's responsibility to satisfy all the graduation requirements for the degree sought. These consist of:

1. The pre-college or preparatory courses for each degree as covered in the Academic Policies and Procedures section.

2. The courses and other requirements to be completed in the University as explained in the Academic Policies and Procedures section.

3. The specific curriculum requirements of a given program.

Course descriptions can be found in a separate section in the back of this *Bulletin*.

DEPARTMENT OF CRIMINAL JUSTICE

Professors Pierce and Waldron; Associate Professors King (Chair) and Conser; Assistant Professors Frissora and Greaves.

Youngstown State University offers two undergraduate programs in criminal justice: a two-year program in criminal justice 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. 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 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 course.

A graduate program is also available leading to the Master of Science degree in criminal justice, with emphasis in police management, correctional mangement and treatment, and criminal justice studies and research tracks. Refer to the *Graduate Bulletin* for details.

Admission Policy

Admission to the criminal justice undergraduate programs is restricted because of the department's expectations and course requirements that include various writing assignments and the learning of legal, theoretical, and managerial concepts. New students will be admitted to the "pre-criminal justice" major in the Bitonte College of Health and Human Services. When students have placed in level-3 mathematics or taken Math 1501 and completed 24 hours of selected course credit with a YSU GPA of 2.5 or better, they will be accepted into the department as criminal justice majors. Students entering the University must complete the courses below before being admitted to the Department of Criminal Justice.

ENGL 1550 Writing I	3
SOCIO 1500 Introduction to Sociology	3
PSYCH 1560 General Psychology	3
CRJUS 1500 Introduction to Criminal Justice	3
AHLTH 1500 Applied Pathophysiology	3
PHIL 2625 Introduction to Prof. Ethics	3
COMM 1545 Comm. Theory/Practice	3
CRJUS 2601, 2602 or 2603 Policing/ Criminal Courts/Corrections	3
	24

A former or external transfer student must enter the University as "pre-criminal justice" and apply for admission to the major when the above criteria (or their equivalencies) are satisfied.

Retention Policy

The Department of Criminal Justice 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.

Criminal justice students must maintain a 2.5 GPA overall. If the GPA drops below 2.5 for two consecutive semesters, students will be remanded to PRE-CRJUS status and will remain there until the GPA is brought up to the department's standard.

Associate in Applied Science Degree

The associate degree in criminal justice 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 has three tracks: a police 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 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 1651, COMM 1545, PSYCH 1560, COMM 1545 and an ART/ Lit. course. These are required basic related studies for 15 hours: SOCIO 1500, PHIL 2625, PHIL 3760, AHLTH 1500, and AHLTH 1501.Transfer students must take at least 13 semester hours of criminal justice course work at Youngstown State University.

The associate degree is built upon core/track concept with emphasis (track) areas in police and corrections and loss prevention/assets protection. Core courses for an associate degree include CRJUS 1500, 2601, 2602, 2603, 3735, and 5865. Emphasis area in police requires 12 credit hours. Emphasis area in corrections requires 12 credit hours, and 12 hours is required in loss prevention/assets protection. See department for course options.

Bachelor of Science in Applied Science Degree

All Bachelor of Science in Applied Science students must complete a minimum of 45 semester hours of criminal justice courses of which 36 semester hours or more must be taken from upper-division courses. This degree can be earned in eight semesters if students average 16 hours per semester.

Transfer students must complete a minimum of 18 hours in criminal justice courses at YSU. All majors must complete the core requirements: CRJUS 3735, 2601, 2602, 2603, 3712, 3715, 3719 and select two courses not in their track area, plus one emphasis area. Each major must also complete the courses required in the emphasis area selected.

The purpose of each emphasis area is as follows:

The program in law enforcement is designed for persons preparing for employment in municipal, state, and private agencies; federal law enforcement agencies; administrative positions in municipal or state agencies; or as instructors in police education programs. Courses required: CRJUS 3714, 3714L, 3740, 5825, and 4870.

The program in corrections is offered for students preparing for a career in probation, parole, or institutional services with either adults or juveniles. Courses required: CRJUS 3702, 3702L, 5802 and 4803.

The program in legal processes in criminal justice is designed for students preparing for law school, court administration, paralegal work or legal research positions. Courses required: CRJUS 3720, 3721, 5825 and 4890.

The program in loss prevention/assets protection is offered to students preparing for a career in private security or the protection of assets in corporate, retail, or industrial settings. Courses required: CRJUS 3700, 3740, 3751, and 4848.

A generalist track is available for transfer students and students seeking a non-traditional area of study such as victim's rights and juvenile justice. This emphasis area requires advisement approval and 15 hours of upper division course work.

A grade of C or better must be received in each required criminal justice course in order to satisfy the departmental requirements for the degree.

ASSOCIATE IN APPLIED SCIENCE - CRIMINAL JUSTICE

General Degree Requirements:

Courses	Semester Hrs.
English:	
ENGL 1550	3
ENGL 1550	3
Psychology:	
PSYCH 1560	3
Sociology:	
SOCIO 1500	3
Philosophy:	
PHIL 2625	3
PHIL 3723	3
Allied Health:	
AHLTH 1500	3
AHLTH 1501	3
Speech Communication:	
COMM 1545	3
Art/Literature:	
Select one course	3
Electives	4

Department Requirements (A.A.S.)

1500 Introduction to Criminal Justice	3
2601 Policing	3
2602 Criminal Courts	3
2603 Corrections	3
3735 Crime and Delinquency	3
5865 Gathering & Using Info. in CRJUS	3

Select 12 hours from one of the following tracks:

LAW ENFORCEMENT (select 12 hours)
3700, 3714, 3714L, 3715, 3719, 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, 3719, 3736, 3740, 3765, 4848

TOTAL CRIMINAL JUSTICE HOURS 30

BACHELOR OF SCIENCE IN APPLIED SCIENCE - CRIMINAL JUSTICE

General Degree Requirements:

Courses	Semester Hrs.
Criminal Justice:	
CRJUS 500	3
English:	
ENGL 1550	3
ENGL 1550	3
Psychology:	
PSYCH 1560	3
Sociology:	
SOCIO 1500	3
Philosophy:	
PHIL 26252	3
PHIL 3760	3
Allied Health:	
AHLTH 1500	3
AHLTH 1501	3
Natural Sciences:	
Select two - three courses	6-9
Speech Communication:	
COMM 1545	3
Art/Literature:	
Select two - three courses	6-9
Mathematics:	
Select one course	3
Society and Institutions:	
Select one course	3
Statistics:	
STAT 2601	3

Department Requirements (B.S.A.S.)

2601 Policing	3
2602 Criminal Courts	3
2603 Corrections	3
3712 Criminal Justice Research	3

3715 Criminal Justice Management Concepts 3
3719 Criminal Law 3
3735 Crime and Delinquency 3
Select 2 (Not in Track)
3736, 3740, 3765, 5820, 5826, 5831, 5865, 5875 6
Elective CRJUS hours 6
Complete one of the following tracks (12 hours each):

LAW ENFORCEMENT
3714, 3714L, 3740, 4870, and 5825 12

CORRECTIONS
3702, 3702L, 4803, and 5802 12

LOSS PREVENTION / ASSETS PROTECTION
3700, 3740, 3751, and 4848 12

LEGAL PROCESSES
3720, 3721, 4890, and 5825 12

GENERALIST (for transfer students and students wanting a non-traditional track, must be approved by advisor) select 5 courses (two at the 3000 level and three at the 4000/5000 level) 15

Total Criminal Justice Hours 45

DEPARTMENT OF HEALTH PROFESSIONS

Professors Burger, Harris, Boyd, Mikanowicz, Feld; Associate Professors Akpom, Boehm, Delost, Mistovich (Chair), Vendemia, Juruaz; Instructor Benner.

The department offers associate and baccalaureate degrees and a master's degree program for future members of the health care delivery and health education team. Associate degree programs are offered in dental hygiene, emergency medical technology, medical assisting technology, clinical laboratory technician, and histotechnology. Baccalaureate programs are offered in allied health, community health, school health, clinical laboratory science (medical technology), and respiratory care. A master's degree program in Health and Human Services offers two tracks: health promotion and administration for health and human service professionals. Details on program requirements appear under the specific program heading.

Admission to all programs except medical assisting technology, community health, and school 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.

A graduate program leading to a Master of Health and Human Services with emphasis in either health promotion or administration for health and human services professionals is also available. Refer to the Graduate School catalog for degree program details.

Bachelor of Science in Applied Science in Allied Health

The department offers a baccalaureate program leading to the degree Bachelor of Science in Applied Science 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. It can be completed in five semesters after completing the associate degree requirements, if students average 14 hours per semester.

Graduates with an associate degree in dental hygiene, emergency medical technology, respiratory care, a medical assisting technology, medical 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 as juniors.

Graduates of non-accredited programs will be provisionally admitted and placed at a level determined by an evaluation of their academic transcripts.

Associate Degree in Health Related
Discipline ..... 64-73 s.h.
Required Allied Health Courses ..... 24 s.h.
Selected Allied Health Courses ..... 6 s.h.
Student Selected Minors ..... 14 s.h.
University General Requirements ..... 13-19 s.h.

Total ..... 124-129 s.h.

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

COMMUNITY AND SCHOOL HEALTH PROGRAMS

Professor Mikanowicz; Associate Professor Akpom (Program Director).

The community and school health programs offer two majors: the Bachelor of Science in Applied Science (B.S.A.S.) and the Bachelor of Science in Education (B.S. in Ed.). These programs can be completed in eight semesters if students average 16 hours per semester.The program also offers a minor in public health; a minor in community health; and Health Education methods courses for elementary education majors. The community and school health programs contribute to the University's General Education Requirements by offering HSC 1568 Health Lifestyles, which meets General Education Requirement 9: Personal and Social Responsibility. The community and school health program participates in the Northeast Ohio Universities College of

Medicine (NEOUCOM) by offering the BS/MD Community Health Practicum course and the M4 Community Medicine Clerkship for the NEOUCOM Youngstown Campus.

The B.S.A.S. in community health prepares the student to become a Certified Health Education Specialist (CHES). Graduates are prepared to carry out the areas of responsibility required by CHES certification, which are: to assess individual and community health needs; to plan and implement effective health education and health promotion programs; to coordinate and manage the provision of health education and promotion services; to effectively communicate health and health education needs, concerns and resources; and to conduct program evaluation.

The program integrates classroom and experiential community-based learning in many of its courses. Community health graduates are employed in public health agencies, volunteer and private health and community organizations, hospitals and other health and care settings, local, state and national governmental agencies, and business and industrial settings. A minor, consisting of at least 14- 18 credits in another program of study is required for the community health major. Useful minors include: social work, nutrition, exercise science, criminal justice, environmental studies, business information systems, sociology, psychology, and desktop publishing.

The B.S. in Education enables graduates to receive certification for multi-age school health teaching pre-kindergarten through grade 12. Students seeking this licensure must apply for upper division status in the College of Education upon completion of 62 semester hours.

B.S.A.S. DEGREE PROGRAM; General Education Requirements, including HSC 1568. Core requirements of the major: HSC 2962, 3701L, 3702, 3757, 3791, 4826, 4827, 4828, 4891, 4899. Six semester hours are selected from the following: HSC 3731, 4801, 5893, HSC/ALHTH 4804. Other requirements include: both ALHTH 1550 and 1551, or BIOL 1545; BIOL 1560; PHIL 4825; COUNS 4822C; FNUTR 1551; and one of the following ALHTH 4806, 4807, SOCIO 3701 or STAT 2601. Electives are taken to complete the 124 semester hours for the B.S.A.S. in community health degree.

B.S. in Education: General Education Requirements, including HSC 1568. Core requirements of the major: HSC 2962, 3701L, 3702, 3757, 3791, 4826, 4827, 4828, 4891, 4899. Other requirements include: both ALHTH 1550 and 1551, or BIOL 1550; BIOL 1560; FNUTR 1551; and one of the following ALHTH 4806 4807, SOCIO 3701 or STAT 2601. Electives are taken to complete the 124 semester hours for the B.S.A.S. in community health degree.

DENTAL HYGIENE

Professor Burger, Associate Professors Vendemia and Juruaz.

The two-year program in dental hygiene leads to the Associate in Applied Science degree. This program requires five semesters of study including one summer semester.The program is designed to prepare dental hygienists for work in private practice, in school systems, dental health programs, health agencies, hospitals, research programs, or public health settings.

At the end of the second year in the program, students are eligible to take state 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 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 administering anesthesia and placing 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 National Dental Health Month 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.

Students are admitted to the dental hygiene program only once a year. The admission policy is available in the Department of Health Professions.

Current students applying to the dental hygiene program must submit a completed application form to the College of Health and Human Services dean's office by December 31 to be considered for direct entry to the program for the following fall.

High school, transfer, and former students must apply for admission to YSU by December 31. The University must receive all admission credentials (official transcripts, etc.) directly from the issuing institution by January 31.

In addition to history, U.S. government and social sciences, freshman applicants must have high school credit in the following subjects with grades of "C" or higher and a GPA of 3.2 (on a 4.0 system): algebra I, algebra II or geometry, chemistry and biology.

Freshman applicants who have not graduated from high school but have passed the General Education Development (GED) test must also have completed algebra I, algebra II or geometry, biology, and chemistry with a grade of "C" or higher and a GPA of 3.2 (on a 4.0 system) in these subjects.

Students accepted to the program must have completed Human Anatomy and Physiology for Allied Health majors prior to fall semester of their first year. Current, former, and transfer students must meet all the requirements for freshman admission, and have a minimum program grade point average of 2.5 (on a 4.0 system). Meeting minimum requirements does not assure acceptance into the dental hygiene program.

Dental Hygiene Curriculum

PREREQUISITE

SUMMER SEMESTER

Courses	Semester Hrs.
BIOL 1545 Human Anatomy and Physiology for Allied Health Majors	5
	5

FIRST YEAR

FALL SEMESTER

Courses	Semester Hrs.
DENHY 1511 Dental Hygiene 1	3
DENHYH 1511L Clinical Dental Hygiene 1	2
DENHY 1521 Dental Anatomy	3
DENHY 1521L Dental Anatomy Lab	1
CHEM 1505 Chemistry for Allied Health Sciences 1	3
ENGL 1550 Writing 1	3
BIOL 1560 Microbiology for Health Professions	2
CLTEC 2687 Microbiology for Health Professions Lab	1
	18

SPRING SEMESTER

Courses	Semester Hrs.
DENHY 1529 Management of the Medically Compromised Patient	2
DENHY 1512 Dental Hygiene 2	1
DENHY 1512L Clinical Dental Hygiene 2	3
DENHY 1530 Dental Radiology	2
DENHY 1530L Dental Radiology Lab	1
DENHY 1535 General Oral Pathology	2
CHEM 1506 Chemistry for Allied Health Sciences 2	3
	14

SUMMER SEMESTER

Courses	Semester Hrs.
ENGL 1551 Writing II	3
DENHY 1513 Dental Hygiene 3	1
DENHY 1513L Clinical Dental Hygiene 3	1
PSYCH 1560 General Psychology	3
	8

SECOND YEAR

FALL SEMESTER

Courses	Semester Hrs.
DENHY 2614 Dental Hygiene 4 Seminar	1
DENHY 2614L Clinical Dental Hygiene 4	4
DENHY 2611 Dental Materials	1
DENHY 2611L Dental Materials Lab	1
DENHY 2622 Periodontology	2
DENHY 2623 Pharmacology for the Dental Hygienist	2
Socio 1500 Fundamentals of Sociology	3
	14

SPRING SEMESTER

Courses	Semester Hrs.
DENHY 2615 Dental Hygiene 5 Seminar	1
DENHY 2615L Clinical Dental Hygiene 5	4
DENHY 2627 Dental Public Health	2
DENHY 26271 Dental Public Health Practicum	1
DENHY 2628 Practice Concepts	1
COMM 1545 Communications, Theory and Practice	3
ELECTIVE Artistic and Literary Perspectives	2-3
	14-15

Total Program Hours **73-74**

EMERGENCY MEDICAL TECHNOLOGY

Associate Professor Mistovich; Instructor Benner (Program Director).

Emergency medical technology programs are designed to train persons to provide emergency prehospital care to people experiencing health crises. The goals of these programs are on three different levels: Emergency Medical Technician Basic; Paramedic Certification; and the Associate in Applied Science degree.

The Emergency Medical Technician Basic Certificate is a prerequisite for admission to the emergency medical technology program in addition to University and department admission requirements.

The Emergency Medical Technician Paramedic Certificate can be attained after successfully completing three 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 or an advanced life-support unit. It meets and exceeds all United States Department of Transportation national standard paramedic curriculum objectives

and is accredited by the Commission on Accreditation of Allied Health Educational Programs and the Ohio Department of Public Safety-Division of EMS (3-2-004).

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 the critical care paramedicine, and urgent care technician. Forty percent of all teaching and clinical rotations are physician-instructed and/or precepted. To obtain the Associate in Applied Science degree, including the Emergency Medical Technician Basic Certificate and the Emergency Medical Technician Paramedic Certificate, will require five semesters of study including one summer semester.

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, a current driver's license, and an interview by a selection committee. The student must be EMT-B certified. A physical examination to attest good health is required. Admission into the Associate in Applied Science degree program is restricted. Please refer to the admission policies available from the Department of Health Professions.

Emergency Medical Technology Curriculum

FIRST YEAR

FIRST SEMESTER (FALL)

Courses	Semester Hrs.
EMTEC 1501 Introduction to Prehospital Medicine	1
EMTEC 1502 General Patho. and Techniques for Prehospital Medicine	2
EMTEC 1503 Patient Assessment and Airway Management	1
EMTEC 1504 Principles of Trauma	2
EMTEC 1505 Emergency Medical Techniques I - Lab	1
EMTEC 1506 Emergency Department Clinical I	1
BIOL 1550 Human Anatomy and Physiology for Allied Health Majors	5
	13

SECOND SEMESTER (SPRING)

Courses	Semester Hrs.
EMTEC 1510 Cardiopulmonary Emergencies	3
EMTEC 1511 Cardiopulmonary Techniques Lab	1
EMTEC 1512 Medical Emergencies	2
EMTEC 1513 Emergency Medical Techniques II - Lab	2
EMTEC 1514 Emergency Medical Servies Operations	1
EMTEC 1515 Clinical Experience I	1
EMTEC 1516 Prehospital Internship Experience I	1
MATEC 2605 General Pharmacology	3
	14

THIRD SEMESTER (SUMMER)

Courses	Semester Hrs.
EMTEC 2600 Emergency Medicine Special Topics	3
EMTEC 2601 Emergency Medicine Special Topics - Lab	1
EMTEC 2602 Emergency Medicine Special Certifications	2
EMTEC 2603 Clinical Experience II	2
EMTEC 2604 Prehospital Internship Experience II	2
	10

Award Paramedic Certificate after 36 semester hours

FOURTH SEMESTER (FALL, SECOND YEAR)

Courses	Semester Hrs.
EMTEC 2610 Pathophysiology for Critical Care Paramedicine	2
EMTEC 2611 Assessment and Mngt. for Critical Care Paramedicine	4
ENGL 1550 Basic Composition 1	3
CHEM 1505 Chemistry for Health Sciences with Lab	3
PSYCH 1560 Introduction to Psychology	3
SPCH 1550 Public Speaking	3
	18

FIFTH SEMESTER (SPRING, SECOND YEAR)

Courses	Semester Hrs.
EMTEC 2620 Research Methodology for EMS	2
EMTEC 2630 Multiskilled EMS Practitioner	2
EMTEC 2631 Advanced Clinical and Field Internship Experience	2
ENGL 1551 Composition II	3
CHEM 1506 Chemistry for Health Sciences with Lab	3
SOCIO 1500 Introduction to Sociology	3
Art and Lit	3
	18

Award Associate Degree

Total Program Hours = 73 semester hours

MEDICAL ASSISTING TECHNOLOGY

Associate Professor Feld (Program Director)

The medical assisting technology program is a two-year program leading to the Associate in Applied Science degree. The MATEC Program meets the standards developed by the American Association of Medical Assistants (AAMA) and is accredited by the Commission on Accreditation of Allied

Health Education Programs (CAAHEP). Upon graduation, the student may apply for the certification exam given by the AAMA. Successful completion of the written exam brings the designation as a Certified Medical Assistant (CMA). This program normally requires five semesters of study averaging 15 hours per semester.

The curriculum provides graduates with the skills necessary to perform dual roles as administrative and/or clinical technical 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 clerk, 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 MATEC, AHLTH and OIS courses. A 2.0 overall G.P.A. must be maintained to continue in the program. Prior to scheduling the externship, the student records will be reviewed by the department to determine if all previous courses in the program 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 serology test and hepatitis B vaccination prior to MATEC 620, MATEC 680 and the externship.

The student must have current certification in Red Cross First Aid and CPR to participate in the externship experience.

Medical Assisting Technology Curriculum

General University Requirements

Courses	**Semester Hrs.**
ENGL 1550, 1551 Writing 1 and 2	6
COMM 1545 Communication Theory and Practice	3
PSYCH 1560 General Psychology	3
BIOL 1545 Allied Health Anatomy/ Physiology	3
Artistic & Literary Perspective Elective	3
	20

Major Requirements

Courses	**Semester Hrs.**
MATEC 501 Medical Terminology	3
MATEC 502 Medical Law & Ethics	3
MATEC 2600 Medical Insurance Forms	2
MATEC 2602 Diagnostic & Procedure Coding	2
MATEC 2605 Intro. to Pharmacology	3
MATEC 2610 Intro. to Disease Processes	3
MATEC 2611L Clinical Procedures Lab	1
MATEC 2612 Medical Records Management	2
MATEC 2614 Medical Office Procedures	3
MATEC 2620 Advanced Clin. Procedures	3
MATEC 2620L Advanced Clin. Procedures Lab	1
MATEC 2680 Medical Laboratory Procedures	1
MATEC 2680L Medical Laboratory Procedures Lab	1
MATEC 2692 Medical Assisting Externship	3
	31

Related Course Requirements

HSC 1568 Healthy Lifestyles	3
ACCTG 2602 Financial Accounting	3
AHLTH 4810 Health Care Management	3
CSIS 1514 Business Computer Systems	3
OIS 1575 Document Preparation	4
BIOL 1560 Paramedical Microbiology	2
CLTEC 2687 Microbiology for Health Care	1
	19
Total Credit Hours	**70**

[+]Current Certification in First Aid and CPR required.

[++]Typing skills will depend on background.

CLINICAL LABORATORY PROGRAMS

Associate Professor Delost (Program Director) and Professor Boyd

Laboratory tests play an important role in the detection, diagnosis, and treatment of many diseases. Laboratory professionals perform a myriad of such tests to aid the physician in the management of disease.

Clinical Laboratory Technician (Medical Laboratory Technician)

The clinical laboratory technician (medical laboratory technician) program is a two-year program leading to the Associate in Applied Science degree. Admission to the program is restricted and interested students must apply by March 1 to the academic advisors in the Bitonte College of Health and Human Services (Cushwa, Room 2068). Students may obtain a copy of the admission criteria in The Department of Health and Human Services. The curriculum focuses on knowledge and basic skills and an understanding of principles and mastering procedures of laboratory testing, computer technology, communication and interpersonal skills, and laboratory calculations. Technical instruction includes procedures in hematology, microbiology, immunohematology, clinical chemistry, and body fluids. This program requires five semesters of study including one summer semester.

The clinical laboratory technician (CLT) performs laboratory tests under the supervision or direction of pathologists and other physicians, clinical laboratory scientists (medical technologists) who specialize in clinical chemistry, microbiology, or hematology. The CLT develops data on the blood, tissues and body fluids by using a variety of precise methodologies and technologies. Clinical laboratory technicians perform all of the routine procedures in an up-to-date medical laboratory using instrumentation with the ability to discriminate between closely similar items and correction of errors by preset strategies. The CLT has knowledge of specific techniques and instrumentation and is able to recognize factors that affect laboratory procedures; the CLT also monitors quality assurance procedures.

Clinical laboratory technicians work in a supportive role in a hospital laboratory, private laboratory, clinic, public health facility, or pharmaceutical laboratory performing a variety of laboratory tests under appropriate supervision. These tests are used by physicians to determine the presence and extent of disease, the etiologic implications about the cause of disease, and to monitor the treatment of the disease.

The CLT program is accredited through the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) and meets the standards developed by the American Society of Clinical Pathologists (ASCP) and the American Society of Clinical Laboratory Science (ASCLS). Graduates are eligible to take the certification examinations for MLT/CLT offered through ASCP and ASCLS and become certified as a MLT(ASCP) or as a CLT(NCA).

Students accepted into the program must have a physical examination and provide records of their immunizations. The hepatitis B vaccine series is strongly recommended for each new student.

All course work in the CLT 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 CLT courses. Students receiving a total of 6 semester hours of grades of D or F in CLT, 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. Only those students who have completed the first four semesters of the program with a minimum GPA of 2.5 will be placed into clinical internship. Admission to the CLT program does not guarantee admission into the internship. In the clinical laboratory, clinical 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. Competence in the didactic (knowledge), psychomotor (laboratory skills), and affective (attitude and responsibility) must be achieved by each student prior to clinical placement.

Clinical Laboratory Technician (CLT-AD) Curriculum

Fall - 1

Courses	Semester Hrs.
CLTEC 1501 & 1501L: Introduction to Clinical Laboratory Science and Laboratory	2+1
Engl 1550 Writing 1	3
Comm 1545 Communication Theory & Practice	3
Biol 2601 & 2601L: Principles of Biology 1 with Laboratory	5
Chem 1515 & 1515L: General Chemistry 1 with Laboratory	4
	18

Spring - 1

Courses	Semester Hrs.
CLTEC 1502 & 1502L Urinalysis and Laboratory	2+1
CLTEC 1503 & 1503L Immunohematology and Laboratory	3+1
Biol 2602 & 2602L Principles of Biology 2 with Laboratory	5
MATEC 2611 Clinical Procedures Laboratory	1
Engl 1551 Writing 2	3
	16

Summer - 1

Courses	Semester Hrs.
CLTEC 2601 & 2601L: Clinical Chemistry 1	2+1
Social & Personal Responsibility elective	3
Artistic & Literary Perspective elective	3
	9

Fall-2

Courses	Semester Hrs.
CLTEC 2604: Instrumentation	2
CLTEC 3700 & 3700L: Clinical Chemistry 2 and Laboratory	2+1
CLTEC 3787 & 3787L: Diagnostic Microbiology and Laboratory	2+2
CLTEC 3729 & 3729L: Clinical Hematology and Laboratory	3+2
CLTEC 3703 & 3703L:Clinical Immunology and Laboratory	3+1
	18

Spring - 2

Courses	Semester Hrs.
CLTEC 3706: Seminar	2
CLTEC 3716: Clinical Practicum	8
CLTEC 3708: Interpretation of Laboratory Results	1
	11

Total program hours 72

Histotechnician

Associate Professor Delost (Program Director) and Professor Boyd

The two-year histotechnician program is a two year program leads to an Associate in Applied Science degree. Admission to the program is restricted and application must be made by March 1 to the academic advisors in the Bitonte College of Health and Human Services (Cushwa, Room 2068). Students accepted into the program are required to have a physical examination and provide records of their immunizations. The Hepatitis B vaccine series is strongly recommended. The program requires five semesters of study including one summer semester.

Pathologists and other scientists specializing in biological sciences work in partnership with medical laboratory workers to analyze blood, tissues, and fluids from humans using a variety of precision instruments. The results of these tests are used to detect and diagnose disease and other abnormalities. The main responsibility of the histotechnician in the clinical laboratory is preparing sections of body tissues for examination by the pathologist. This includes the preparation of tissue specimens of human and animal origin for diagnostic, research, and teaching purposes. Tissue sections prepared by the histologic technician for a variety of disease entities enable the pathologist to diagnose body dysfunction and malignancy.

The curriculum includes both didactic instruction and practical demonstration in the areas of biology, chemistry, laboratory mathematics, computer technology, histology, instrumentation, microscopy, anatomy, quality control. The first three semesters of the program consist of laboratory and didactic courses taught on the YSU campus. The final two semesters consist of the clinical practicums that are held at affiliated laboratories.

The program is accredited through the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). To ensure that graduates are competent and able to perform high quality laboratory tests, the Board of Registry of the American Society of Clinical Pathology (ASCP) gives a national certification examination. Upon successful completion of their academic and laboratory education requirements, graduates are eligible to take the certification examination and become certified as HT(ASCP).

Histologic technicians play important roles in the detection of cancer cells. Once a sample tissue is taken from a patient, the histotechnician prepares very thin sections of body tissue for microscopic examination. With the information learned from the section of tissue biopsy, the physician can determine if disease is present, if it has spread and determining the best course of treatment for the patient.

The histologic technician works with fragile, delicate instruments as well as knives, chemicals, and glass slides. He or she must value precision and have good hand-eye coordination and manual dexterity.

Histologic technicians have an unlimited choice of practice settings. Hospitals, for-profit laboratories, clinics, public health facilities, business and industrial settings currently have positions for qualified histologic technicians. Other opportunities may be found in industrial research, veterinary pathology, marine biology, and in forensic pathology.

Histotechnician (HT-AD) Curriculum

All biology, chemistry, and CLTEC courses must be completed with a minimal grade of "C". Students are permitted to repeat a maximum of six hours of coursework. Any student receiving over six hours of grades of "D" or "F" in biology, chemistry, or CLTEC will be dismissed from the program.

Fall 1

Courses	Semester Hrs.
Chem 1515 & 1515L:General Chemistry 1 with Lab	4
Biol 2601 & 2601L: Principles of Biology 1 with Lab	5
CLTEC 1501 & 1501L: Introduction to Clinical Laboratory Science	2+1
Personal & Social Responsibility elective	3
Engl 1550: Writing 1	3
	18

Spring 1

Courses	Semester Hrs.
Chem 1516 & 1516 L: General Chemistry 2 with Lab	4
Biol 2602 & 2602L: Principles of Biology 2 with Lab	5
Biol 3713: Vertebrate Histology	3
Biol 1560: Microbiology for Health Professions Lab	2
CLTEC 2687L: Microbiology for Health Professions	1
CLTEC 2609: Topics in Histotechnology	2
	17

Summer 1

Courses	Semester Hrs.
Artistic & Literary Perspective elective	3
Comm 1545: Communication Theory & Practice	3
Engl 1551: Writing 2	3
	9

Fall - 2

Courses	Semester Hrs.
CLTEC 2612: Histotechnician Practicum 1	11
CLTEC 2621: Histotechnician Seminar 1	1
	11

Spring - 2

CLTEC 2622: Histotechnician Practicum 2	1
CLTEC 2621: Histotechnician Seminar 2	1
	11

Total program hours 68

Clinical Laboratory Science (Medical Technology)

Associate Professor Delost (Program Director) and Professor Boyd

The Clinical Laboratory Science (Medical Technology) program is a four-year program leading to a Bachelor of Science in Applied Science degree with a major in Clinical Laboratory Science. Admission to the program requires a minimum GPA of 2.8. Students accepted into the program must have a physical examination and provide records of their immunizations. The Hepatitis B vaccine series is strongly recommended.

The program follows the "3+1" format with the student completing a preprofessional 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 affiliated, accredited CLS/MT program. The program meets the requirements of NAACLS. Upon successful program completion, graduates are qualified to take the certification examinations offered through ASCP and ASCLS (NCA) and become certified as a MT(ASCP) or as a CLS(NCA).

Clinical laboratory scientists perform laboratory tests in conjunction with pathologists and other physicians who specialize in clinical chemistry, microbiology, or hematology. The CLS develop data on the blood, tissues, and body fluids by many precise methodologies and technologies. In addition, clinical laboratory scientists perform complex analysis, fine-line discrimination, and error correction. They are able to recognize the interdependency of tests and have knowledge of physiological conditions affecting test results so that they may confirm these results. Clinical laboratory scientists also develop data that may be used by the physician to determine the presence, extent, and the cause of disease. The CLS is responsible for accurate results and establishes and monitors quality assurance and quality improvement programs. Tests or procedures performed or supervised by the CLS in the clinical laboratory focus on hematology, microbiology, immunohematology, immunology, clinical chemistry, and body fluid examinations.

As a specialized member of the health care profession, clinical laboratory scientists are employed in hospital laboratories, private laboratories, clinics; by the armed forces; by city, state, and federal health agencies; in industrial medical laboratories; in the pharmaceutical industry; in numerous public and private research programs dedicated to the study of specific diseases; and as faculty of accredited programs preparing medical laboratory personnel.

Because the CLS frequently deals with situations that require precision, dependability, and a strong sense of responsibility, students must have an aptitude and interest in the physical and biological sciences. Students are expected to practically apply scientific principles in the clinical laboratory.

Clinical Laboratory Science (CLS-BSAS) Curriculum

Fall - 1

Courses	Semester Hrs.
CLTEC 1501 & 1501L: Introduction to Clinical Laboratory Science and Laboratory	2+1
Chem 1515 & 1515L:General Chemistry 1 with Laboratory	4
Biol 2601 & 2601L: Principles of Biology 1 with Laboratory	5
Engl 1550: Writing 1	3
	15

Spring - 1

Chem 1516 & 1516L: General Chemistry 2 with Laboratory	4
Biol 2602 & 2602 L: Principles of Biology 2 with Laboratory	5
Engl 1551: Writing 2	3
Artistic & Literary Perspective elective	3
	14

Fall - 2

Courses	Semester Hrs.
Chem 3719 & 3719L: Organic Chemistry 1 with Laboratory	4
Biol 3702: Microbiology with Laboratory	4
Comm 1545:Communication Theory & Practice	3
Match 2623: Survey of Math	3
Social & Personal Responsibility elective	3
	17

Spring - 2

Courses	Semester Hrs.
Chem 3720 & 3720 L: Organic Chemistry 2 with Laboratory	4
Artistic & Literary Perspective elective	3
Social & Personal Responsibility elective	3
CLTEC 1502 & 1502L: Urinalysis and Laboratory	2+1 OR
CLTEC 1503 & 1503L: Immunohematology and Laboratory	3+1
	13-14

Fall - 3

Courses	Semester Hrs.
Society & Institutions elective	3

CLTEC 3700 & 3700L: Clinical Chemistry 2 and Laboratory ..... 2+1
CLTEC 3729 & 3729L: Clinical Hematology and Laboratory ..... 3+2
CLTEC 3787 & 3787L: Diagnostic Microbiology and Laboratory ..... 2+2
15

Spring - 3

Courses	Semester Hrs.
CLTEC 3703 & 3703L: Clinical Immunology & Laboratory	3+1
Chem 3785 & 3785L: Biochemistry 1 with Laboratory	4
Biol 3790 & 3790L: Molecular Biology of the Gene with Lab	2+2 OR
AHLTH elective	3
Society & Institutions elective	3
	14-15

Summer - 3

Courses	Semester Hrs.
CLTEC 4811: Clinical Experience 1	12

Fall - 4

Courses	Semester Hrs.
CLTEC 4821: Clinical Experience 2	12

Spring - 4

Courses	Semester Hrs.
CLTEC 4831: Clinical Experience 3	12

Total Program Hours 124-126

CLS Internship Guidelines

Students should apply for clinical internship upon completion of the second year of the program or after completing approximately 60-65 semester hours. Application packets containing information on clinical affiliations and the application process are available from the program director or in the Department of Health Professions. Students should apply for graduation at the beginning of the junior year so that their transcripts may be evaluated by an academic advisor in the Bitonte College of Health and Human Services. This will help ensure that all of the requirements for internship and graduation have been fulfilled.

The University **does not** guarantee acceptance into the fourth year of hospital clinical internship. Selection and acceptance into a particular hospital program is based on that program's admission and selection process. Thus, students are selected by the hospital programs, which are very competitive. Students are urged to maintain a minimum 3.0 GPA, especially in all science and clinical laboratory courses. To enhance their chances of acceptance into clinical internship, students are encouraged to apply to several accredited programs. A list of these programs is available through the program director. Students should notify the program director upon their acceptance by a professional program.

RESPIRATORY CARE

Professor Harris (Program Director); Associate Professor Boehm.

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, bronchopulmonary hygiene, basic and advanced cardiac life support techniques, non-invasive patient monitoring, pulmonary function evaluation, arterial blood gas analysis, airway management procedures and pulmonary rehabilitation techniques. A licensed RCP must also be knowledgeable regarding various assessment techniques and patient education models. These skills are used with neonatal, pediatric, and adult patients in acute, subacute, and home care settings.

To function effectively as a member of the multidisciplinary health care team, the RCP must have a sound understanding of the physiological and psychological 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.

Proposed Respiratory Care Curriculum

YEAR 1
FALL SEMESTER

Courses	Semester Hrs.
BIOL 1545 A.H. Anatomy and Phy.	5
MAT 1501 Med. Terminology	
MATH 2623 Survey of Math	3
ENGL 1550 Writing 1	3
CHEM 1506 Chemistry for HP 1	3
	17

SPRING SEMESTER

Courses	Semester Hrs.
CHEM 1507 Chem for HP 2	3
MAT 1502 Medical Law & Ethics	3
COMM 1545 Comm Theory & Prac	3
ENGL 1551 Writing 2	3
HSC 1568 Healthy Lifestyles	3
	15

SUMMER SEMESTER

Courses	Semester Hrs.
SOCIO 1550 Intro. to Sociology	3
PSYCH 1560 General Psychology	3
	6

YEAR 2
FALL SEMESTER

Courses	Semester Hrs.
RESPC 1530 Foundation of Resp. Care	5
MATEC 2605 Intro to Pharmacology	3
PHIL 2630 Critical Thinking	3
CLTEC 2687 Microbiology in H.C. Lab	1
BIOL 1560 Micro for Health Professions	2
	14

SPRING SEMESTER

Courses	Semester Hrs.
RESPC 1503 Resp. Procedures 1	3
RESPC 1520 Resp. Assessment 1	3
PHYS 1506 Physics for Health Care	3
AHLTH 3705 Pharmacotherapeutics	3
	12

SUMMER SEMESTER

Courses	Semester Hrs.
RESPC 2620 Resp. Assessment 2	2
RESPC 2621 Cardiopulm. Disease	3
	5

YEAR 3
FALL SEMESTER

Courses	Semester Hrs.
RESPC 3706 Resp. Procedures 2	3
RESPC 3720 Mech. Ventilation 1	3
AHLTH 4806 Research Methods	3
AHLTH 5803 Comp. H.C. Systems	4
Elective (Art/Lit perspective)	3
	16

SPRING SEMESTER

Courses	Semester Hrs.
RESPC 2699 Clinical Practice.1	1
RESPC 3708 Clinical Specialties	3
RESPC 3709 Pediatric Resp. Care	3
RESPC 3725 Mech. Ventilation 2	3
RESPC 3731 Respiratory Care Mgmt	2
	12

SUMMER SEMESTER

Courses	Semester Hrs.
RESPC 3740 Respiratory Clinics 2	5
RESPC 3750 Pulmonary Rehab.	2
	7

YEAR 4
FALL SEMESTER

Courses	Semester Hrs.
RESPC 3765 Adv. R.C. Diagnostics	3
RESPC 3741 Respiratory Clinics 3	3
RESPC 4831 Pulmonary Case Mgmt	3
AHLTH 4812 ACLS	3
AHLTH 4820 Dir.Indiv. Research	2
AHLTH 4801 Special Topics	1
	15

SPRING SEMESTER

Courses	Semester Hrs.
RESPC 4825 Resp. Clinics 4	3
AHLTH 4830 PALS	2
Elective (Art/Lit perspective)	3
Elective (Soc/institutions)	3
	11

Total Semester Hours	**130**
Quarter hour equivalent	**195**

DEPARTMENT OF HUMAN ECOLOGY

Professors Hassell, Associate Professors Campbell, Pavia (Chair); Assistant Professors Nissen, Shayesteh.

The Department of Human Ecology offers nine programs: associate degree programs in pre-kindergarten associate, dietetic technology and hospitality management each leading to the Associate in Applied Science degree; baccalaureate programs in food and nutrition (dietetics), family and consumer studies, merchandising: fashion & interiors, pre-kindergarten education, hospitality management, each leading to the Bachelor of Science in Applied Science degree; and (in conjunction with the College of Education) a bachelor's program in family and consumer sciences education, leading to the Bachelor of Science in Education degree with the major in family and consumer sciences.

For any degree, associate or baccalaureate, the student must satisfy the general University requirements (See Academic Policies and Procedures) as well as the particular requirements for the special field or fields. Curriculum sheets for all programs are available at the department office or from faculty advisors.

FAMILY AND CONSUMER SCIENCES EDUCATION

The family and consumer sciences education major leads to a Bachelor of Science in Education.

Family and consumer sciences education is jointly administered by the College of Education and the Department of Human Ecology. The student should refer to the section of the catalog detailing requirements for the Department of Teacher Education. The student is a major in secondary education with a teaching field of family and consumer sciences. Academic advisors in the College of Education as well as the human ecology teacher educator in the Department of Human Ecology should be consulted regularly. The degree may be earned in eight semesters if students average 16 hours per semester.

FAMILY AND CONSUMER STUDIES

This program is a redesign of the Home Economics Services previously offered by the department.

Along with core courses in Family and Consumer Sciences, students choose an emphasis in either family OR consumer studies. This program prepares the student to attain CFCS (Certified in Family and Consumer Sciences) certification.

FOOD AND NUTRITION (DIETETICS)

Dietetic Technology

The associate degree program is approved by the American Dietetic Association. Graduates of the program who successfully write the Registration Examination for Dietetic Technicians are entitled to use the initials "DTR" to signify professional competence.

Graduates of this program are qualified to work as technicians under the supervision of a registered dietitian (R.D.) in dietary departments of hospitals and nursing homes, and are also employable in commercial food-service systems. Many courses can be applied toward the B.S. in A.S. degree with a major in food and nutrition (dietetics). This program normally requires five semesters of study averaging 15 hours per semester.

Didactic Program in Dietetics (DPD)

This baccalaureate program meets the Didactic Program of Dietetics (DPD) requirements of the American Dietetic Association, and graduates are eligible to apply for internships in clinical or general dietetics.

Upon completion of a fifth-year dietetic internship or an approved pre-professional practice program, students may apply for the registration examination given by the American Dietetic Association. Successful completion of the written examination brings designation as a registered dietitian (R.D.).

Coordinated Program in Dietetics (CPD)

This program, which prepares students for general dietetic practice and includes clinical as well as didactic study, is accredited by the American Dietetic Association. Each student spends 900 hours in approved clinical sites during the two years of the CPD. Graduates are eligible to take the examination to become registered dietitians. This program can be completed in 10 semesters, including two summer semesters.

Admission to the CPD is restricted since only a limited number of 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 and all credentials is the first Monday of March for the following fall semester.

HOSPITALITY MANAGEMENT

The Hospitality Management Program provides students with the knowledge and skills needed to be successful and competent in this fast-growing field not only in the United States, but throughout the world.

Students may earn an associate degree and/or a bachelor's degree with a major in hospitality management. The Associate in Applied Science Degree (AAS) program provides experiences in all phases of hospitality management. The Bachelor of Science in Applied Science Degree (BS in AS) program encompasses all course work in the AAS program and exposes students to advanced management concepts in lodging, food and beverage, travel and tourism, or marketing and sales management. The Associate in Applied Science degree can be completed in four semesters if students average 16 hours per semester. The B.S.A.S. degree may be earned in eight semesters if students average 16 hours per semester.

MERCHANDISING: FASHION & INTERIORS

Merchandising: Fashion & Interiors prepares students for a variety of positions in manufacturing and retailing of apparel, furnishings, accessories and personal care products.

Students complete a block of interdisciplinary courses, and general and professional courses for their specific degrees. The program has a strong academic base in economics, the sciences, communication and computers. All students will have the opportunity for field experiences in various levels and types of merchandising. The program in the Department of Human Ecology leads to a Bachelor of Science in Applied Science degree. The degree may be earned in eight semesters if students average 16 hours per semester.

PRE-KINDERGARTEN

This associate degree leads to Associate Certification 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 certification. All of the coursework is applicable to the bachelor's pre-kindergarten program, and most of it 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 as required by the State Department of Education. This program normally requires five semesters of study averaging 15 hours per semester.

A student seeking the bachelor's degree must complete all courses in the pre-kindergarten associate program, specified general education courses and upper-division professional education courses and one semester of full time student teaching.

In addition all students are required to complete a 21 credit hour area of concentration. Because of the wide range of choices available in this component, students should seek assistance from academic advisors in the Human Ecology Department.

In addition to the course work, the prospective teacher must pass the general knowledge, subject matter and professional knowledge portions of the National Teacher's Examination to become eligible for provisional teacher certification.

NOTE: The bachelor's degree program will be phased out over the next two years because of new state licensure standards and the new program in early childhood education.

Endorsement in Pre-kindergarten

Persons certified for teaching kindergarten/primary, elementary, family and consumer science, and/or special education may obtain an endorsement for pre-kindergarten teaching by completing 21 hours of prescribed courses including pre-kindergarten student teaching.

DEPARTMENT OF HUMAN PERFORMANCE AND EXERCISE SCIENCE

Professor Longmuir; Associate Professors Bosso, Matanin, Mines, Walker (Chair); Assistant Professors Cobb, Hemminger, Neville.

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 or minoring in physical education or exercise science should consult with an advisor in the Department of Human Performance and Exercise Science.

Elective/Required Courses

Students entering the university for the first time Fall Semester, 2000 are not required to take any activity classes; however, these classes are counted as electives by the university.

Students beginning course work under the quarter system but finishing under the semester system are required to have completed 2 activity classes, or 2 quarter or semester hours of activity credit, prior to graduation. Some activity classes are offered for more than 1 semester hour of credit. The form of activity is chosen by the student; however, it is strongly recommended that students select courses which promote lifetime wellness and/or the improvement of motor performance. Activity courses are listed in each semester's Schedule of Classes. For a complete listing of activity courses that satisfy this requirement see the activity course listings in this bulletin.

It is suggested that all students confer with their physician prior to enrolling in activity classes. Students with physical disabilities are urged to see their physician, or the nurse in the Student Health Services office, to review activities which might be appropriate. Most activity classes can be adapted to one's personal abilities and students are encouraged to discuss this with the instructor. Students with disabilities are encouraged to focus on their physical abilities and consider the social and physical benefits that accrue from physical activity. If a student finds only one appropriate activity class, permission may be requested from the department chair (Beeghly 307) to take the same class twice for credit.

Veterans who have served at least one full year can receive physical education credit for service. This is detailed under the heading "Veterans" in the *Undergraduate Bulletin*.

Members of the men's or women's varsity teams may receive physical activity credit through enrollment in HPES 1549, varsity competition. This class may be repeated one time per year for each sport in which an athlete is participating.

Students must provide their own clothing for activity classes, and this attire must be appropriate to the activity. In addition, students who wish to use the locker facilities, must bring their own lock and towel for use during activity classes. Most of the other equipment for physical education classes is supplied by the department (an asterisk beside the catalog number indicates a lab fee will be charged).

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 a teaching license in physical education must formally apply to the Department of Human Performance and Exercise Sci-

ence when they have completed 50 hours of credit. 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.

Physical Education - B.S. in Education Curriculum Guide

For individual semester advisement, including general education requirements, see assigned departmental advisor. It is also recommended that students see an advisor in the College of Education for individual advisement related to education courses. This program can be completed in nine semesters if students average 15 hours per semester.

The following are HPES and College of Education (COE) courses required in the major for this degree:

HPES:1506, 1567, 1568, 1574, 1575, 1577, 1589, 1595, 2605, 2610, 2628, 2661, 2671, 3720, 3767, 3780, 4808, 4851, 4852, 4855, 4876, 4878, 4895, 4899, and 4899L. **COE:** FOUND 1501, TERG 2601, SEDUC 3704, FOUND 3708, PSYCH 3709, EDTC 3771, MULTI-AGE 4807, SEDUC 4842A., SEDUC 4846, and SPED 5802.

Exercise Science - B.S. in Applied Science Curriculum Guide

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 exercise leaders and/or health fitness instructors. Graduates are employed as personal trainers, corporate fitness directors, clinical exercise specialists, and in other positions which provide exercise and fitness programs. Application forms and other information for formal admittance to the Department of Human Performance and Exercise Science may be obtained in the department office, Room 307, Beeghly Center. This program can be completed in eight semesters if students average 16 hours per semester.

For individual semester advisement, including general education, minor, and additional requirements, see assigned departmental advisor.

The following are HPES courses required in the major for this degree:

HPES: 1554 or 1555, 1557, 1577, 1589, 1595, 2605, 2615, 2625, 3700, 3710, 3710 Lab, 3720, 3730, 3740, 3760, 4810, 4820, and 4880.

Physical Education - Bachelor of Arts Curriculum Guide

This program is intended for students seeking careers in recreation or sport related commercial fields. The Bachelor of Arts degree does not offer teacher licensure. For teacher licensure information please see the B.S. in Education section listed above. Application forms and other information for formal admittance to the Department of Human Performance and Exercise Science may be obtained in the department office, Room 307, Beeghly Center. This program can be completed in eight semesters if students average 16 hours per semester.

For individual semester advisement, including general education and minor requirements, see assigned departmental advisor.

The following are HPES courses required in the major for this degree:

HPES: 15_ _ activity (3 classes), 1589, 1595, 2605, 2618 (2 classes), 2671, 3720, 3765, 4808, 4851, 4852, 4855, 4899, and 4899Lab.

DEPARTMENT OF MILITARY SCIENCE

This program is offered under a partnership agreement with the Kent State University.

Army ROTC (Reserve Officer Training Corps) provides college-trained officers for the U.S. Army, the Army National Guard, and the U.S. Army Reserve.

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. They earn commissions as second lieutenants in the U.S. Army (which includes the Active Army, Army National Guard, and Army Reserve) while earning their college degrees. Through ROTC, the Army gains officers with diverse educational backgrounds and contemporary ideas. At the same time, ROTC graduates have the chance to use their training in positions of leadership, and they enable the Army to relate to the thoughts and feelings of our ever-changing society. At present, over 80 percent of all second lieutenants for the U.S. Army come from ROTC programs nationwide.

Students who enroll in the advanced ROTC program are paid a subsistence allowance of $200 a month for 10 months of each school year, and half of a second lieutenant's pay plus lodging, meals, and travel cost for five weeks of ROTC advanced camp training. Application is made through the Department of Military Science.

Lower-division (freshman and sophomore level) courses are *open to all students* and *incur no military obligation.*

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. 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.

Advanced Course Cadets attend a five week camp during the summer between their MS III and MS VI (junior and senior) years. In this camp students put into practice the leadership and tactical skills they have acquired in the classroom. Cadets are paid for camp attendance.

All students in the Advanced Course receive uniforms, pay for Advanced Camp, and a living allowance of up to $2,000 each school year.

Before entering the Advanced Course, an individual signs a contract that certifies an understanding of the service obligation. This obligation may be fulfilled in a variety of ways depending on the individual's personal preference and the needs of the Army at the time of commissioning.

Scholarship graduates incur an eight-year obligation and are required to serve one of the following obligations: two years on active duty and four years in an Army Reserve or National Guard unit then two years in the Individual Ready Reserve (IRR); or three years on active duty and five years in the IRR; or four years on active duty and four years in the IRR; or eight years in Army Reserve or National Guard unit.

Nonscholarship graduates are required to serve one of the following obligations: two years on active duty and six years in the IRR; or three years on active duty and five years in the IRR; or four years on active duty and four years in the IRR; or six years in an Army Reserve or National Guard unit and two years in the IRR; or eight years in the IRR.

All commissionees incur a service obligation of eight years with service being either full time active duty or part time in the reserves. The mix of active and reserve duty is determined by the needs of the Army, the cadets performance and the type of contract the cadet signed (scholarship or nonscholarship, guaranteed Reserve Forces Duty or participation in the Simultaneous Membership Program of the Army Reserve/National Guard).

Two-year Program

The two-year program permits students who attended a junior college, transfer students, or those who did not take Military Science Basic Courses during their first two years of school, and students entering a two-year post graduate course of study to enter the ROTC Advance Course. Students can take advantage of this opportunity by successfully completing a paid six-week ROTC Basic Camp (MILSC 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.

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 annual subsistence allowance of up to $2,000 received for Advanced ROTC, SMP participants are paid for their Reserve or Guard drills and summer training sessions.

Army Nurse Corps

To qualify for appointment in the Army Nurse Corps, the student must complete the ROTC program and obtain a baccalaureate degree in nursing. Students who meet all professional requirements will serve as Army nurses on Active Duty, in the Army National Guard, or in the Army Reserve.

Scholarship Programs

See ROTC Military Science (Gold Bar) Scholarships and Army ROTC Scholarships in Appendix B of this *Bulletin*.

Leadership Laboratory

A practical exercise period for both Basic and Advanced courses. Provides experience in practical military skills and the development of essential characteristics of leadership through progressive evaluation and counseling, MILSC 1530L, MILSC 2630L, MILSC 3730L and MILSC 4830L.

DEPARTMENT OF NURSING

Professor McCarthy (Chair); Associate Professors Fitzgerald, McDougal, Mosca, Phillips, Schuster, and Shipton; Assistant Professors Bosley, Hoyson, Kuite, Serroka, Wood; Instructors Aurilio, Janosik, Inskeep, Lisko, McAllen, O'Dell, Wagner; Learning Resource Coordinator, Julius.

The Department of Nursing at Youngstown State University offers a Bachelor of Science in Nursing (BSN) degree, as well as a program in chronic-care nursing leading to the Master of Science in Nursing. The BSN program is approved by the Ohio Board of Nursing and accredited by the National League for Nursing Accrediting Commission. The Commission (61 Broadway, New York, New York 10006—Phone: (212) 363-5555) is a resource if information regarding tuition, fees, and length of program. Graduates of the generic (non-RN) program are eligible to sit for the state licensure examination.

Admission Requirements for the Bachelor of Science in Nursing Program

Admission into the Bachelor of Science in Nursing (BSN) degree program is on a restricted basis, since only a limited number of students can be accommodated.

There is one generic admission period each year. Students are admitted after completion of all pre-nursing course requirements. The current closing date for applications and credentials is:

September 30 for spring semester admission of generic students only. RN students are admitted directly into the program on an individual basis.

Generic or non-RN applicants for the baccalaureate degree program must meet the following minimum requirements:

1. General University precollege requirements for the Bachelor of Science degree.
2. Completion of pre-nursing courses with a "C" or better and an overall GPA of 2.50 in these courses.
3. Cumulative GPA of 2.00 in all college work.
4. Evidence of current CPR for Health Care Professionals Certification.
5. Completed physical and dental forms, and immunization requirements.

RN applicants for the baccalaureate degree program must meet all of the above requirements in addition to being a registered nurse with a current license to practice nursing in Ohio.

Required pre-nursing courses for generic students include:

BIOL 1551/L, 1552/L, 1560/L, or CLTEC 2687/L

CHEM 1505 and 1506

PSYCH 1560 and 3758

ENGL 1550 and 1551

SOCIO 1500

MATH–GER Course

NURSG 2610, 2646, 2643

Required pre-nursing courses for RN students include:

BIOL 1551, 1552, and 1560 ..... 12 hrs.

CHEM 1505 and 1506 ..... 6 hrs.

PSYCH 1560 and 3758 (or 755, 756 & 757) .... 6 hrs.

ENGL 1550, 1551 ..... 6 hrs.

FNUTR 1551 ..... 3 hrs.

SOCIO 1500 ..... 3 hrs.

Admission to the University, meeting minimal program admission requirements, and completion of core 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. / Mrs. Helen M. Bitonte College of Health and Human Services.

Course Enrollment

All 2000, 3000, and 4000 levelnursing courses, except NURSG 2610, 2646, and 2643 are available only to student formally admitted into the BSN program.

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.

Nursing courses designated as "laboratory" are off-campus clinical courses and may include an on-campus laboratory skill component. 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. Personal transportation is required for travel to off-campus clinical sites which are located in the five-county YSU service area.

Academic Requirements for the Bachelor of Science in Nursing Degree

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 cur-

riculum is available from the Department of Nursing. This program can be completed in eight semester hours if students average 16-17 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; and required elective hours. Only one nursing or one non-nursing support course may be repeated (excluding required elective courses). 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. Grades of less than "C" in a second nursing or required non-nursing course will result in permanent dismissal from the nursing program.

A Bachelor of Science in Nursing degree will be granted to the student who has completed all 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 which actually or potentially places a patient or his/her family in jeopardy. The department reserves the right to dismiss a student who for legal, academic, emotional, or physical reasons cannot be advised to continue in the program.

Current immunizations and CPR for Health Care Professionals certification are required of all nursing students. Students must adhere to a dress code which includes the wearing of specific nurse's uniform for nursing clinical courses.

Curriculum leading to the Bachelor of Science in Nursing Degree for Generic Students (Non-RN)

FIRST YEAR
FIRST SEMESTER (pre-nursing)

Courses	Semester Hrs.
BIOL 1551 Anatomy & Physiology	4 (3+1)
CHEM 1505 Chemistry CHEM/L	3 (2+1)
ENGL 1550 English	3
PSYCH 1560 Gen. Psychology	3
SOCIO/1500	3
	16

SECOND SEMESTER (pre-nursing)

Courses	Semester Hrs.
BIOL 1552 Anatomy & Physiology	4 (3+1)
PSYCH 3758 Life Span Development	3
ENGL 1551 English	3
MATH / GER	3
CHEM 1506	3 (2+1)
	16

SECOND YEAR
FIRST SEMESTER (pre-nursing)
(Apply by September 30)

Courses	Semester Hrs.
BIOL 1560 Microbiology	4 (3+1)
NURSING 2610 Contemporary	3
NURSING 2646 Pathophysiology	4
NURSING 2643 Health Assessment	4 (3+1)
	15

SECOND SEMESTER (Become Majors)

Courses	Semester Hrs.
FNUTR 1551	3
NURSG 2650 Pharmacology	3
NURSG 2645 Professional Nursing	8 (3+5)
COMM / GER 1550	3
	17

THIRD YEAR FIRST SEMESTER

Courses	Semester Hrs.
Elective	3
NURSG 3741 Prof. Nursing 2	6 (3+3)
NURSG 3710 Nursing in the Community	5 (3+2)
Society & Institutions / GER	3
	17

SECOND SEMESTER

Courses	Semester Hrs.
NURSG 3743 Prof. Nursing 3	5 (3+2)
NURSG 3730 Developing Family & Child Nursing 1	5 (3+2)
Art & Lit / GER	3
NURSG 3749 Nursing Research	3
	16

Curriculum leading to the Bachelor of Science in Nursing for RN Students

1. Nursing credit hours awarded after ..... Total 44 hrs.
   completion of NURSG 2643, NURSG 2650, and NURSG 2646 with a cumulative GPA of 2.00.
   Equates to the following courses:
   NURSG 2645/l, NURSG 3730, NURSG 3741/L, NURSG 3742/L, NURSG 3743/L, NURSG 4831/L, NURSG 4840/L, NURSG 4842/L

2. Required Support Courses ..... Total 18 hrs.
   - MATH/GER ..... 3 hrs.
   - ART/LIT GER ..... 6 hrs.
   - COMM 1550 (or COMM 1652) ..... 3 hrs.
   - SOC/INST GER ..... 6 hrs.

3. Required Nursing Courses ..... Total 30 hrs.
   - NURSG 3710 ..... 4 hrs.
   - NURSG 2643 ..... 4 hrs.
   - NURSG 2646 ..... 4 hrs.
   - NURSG 2650 ..... 3 hrs.
   - NURSG 3749 ..... 3 hrs.
   - NURSG 4846/L ..... 5 hrs.
   - NURSG 4850/L ..... 7 hrs.

4. Additional Academic Courses to meet the following minimum requirements:

128 *minimum* program hours for graduation with at least 48 hours in upper division.

School Nurse Licensure Program

This program is designed to build upon an undergraduate education and to prepare a registered nurse for school nurse licensure. Courses are taught by both the Nursing Department and the College of Education. The required curriculum consists of 6 courses plus a practicum. The practicum is a 300-hour (9 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 of 3 s.h. segments to accommodate the working student. Opportunities for practicum hours to be waived (up to 150 hours maximum) are considered on an individual basis for nurses with school nurse experience.

Students seeking admission into the school nurse licensure program must have undergraduate course work 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 necessary prior to practicum placement. Contact Dr. Nancy Mosca, Nursing for further information.

Required Curriculum

NURSG 4870 School Nurse Role Development ... 3
NURSG 4871 Assessment & Management of Health Problems of School Age Children 3
NURSG 3703 Health Education Grades, PreK-3 3
or
NURSG 3704 Health Education Grades, 4-6 3
or
NURSG 3705 Health Education Grades, 7-12 3
FOUND 3708 Education and Society 3
COUNS 5825 Group Processes in the School 2
SPED 5802 Education of Exceptional Children 3
or
SPED 5858 Intervention Concepts & Strategies in Early Childhood Special Education 2
NURSG 4872 School Nurse Practicum 3-9

DEPARTMENT OF PHYSICAL THERAPY

Associate Professor McClelland (Chair), Assistant Professors Frampton, Giuffre (Academic Clinical Coordinator of Education), Landgraff, Parrott (Program Research Director).

The Department of Physical Therapy offers an entry-level postbaccalaureate professional curriculum, granting a Master of Physical Therapy (M.P.T.) degree. An entry-level master's requires undergraduate preparation in a field of study other than physical therapy followed by postbaccalaureate professional study in physical therapy. Only graduates from accredited *postbaccalaureate* programs may sit for the national physical therapy board examination; passage of this exam is required for licensure to practice. Only licensed physical therapists may legally engage in evaluation and treatment activities defined in state practice acts as "physical therapy."

Because the professional graduate program requires undergraduate preparation and prerequisites, the program is summarized here. In general, the program is designed as a 3 + 3 curriculum; three years of pre-physical therapy preparation plus three years of professional study. Further detail is provided in the *Graduate Bulletin* and from the Department of Physical Therapy.

The professional program is a three-calendar year curriculum which begins each June. Students admitted, through selective admissions, complete all courses together as a cohort group. The didactic curriculum is based on a contextualized professional decision-making model, progressing from basic to complex cases of client management in established physical therapy practice patterns. The clinical education component includes 32 weeks of supervised practice with licensed physical therapists in area facilities as well as those located in various states across the country. Students attending out-of-state clinical affiliations will be responsible for travel and housing expenses. All students must fulfill clinical facility requirements (including such items as immunizations and insurance coverage).

Undergraduate preparation may be sought through any major and must include satisfactory completion of general education requirements and university graduation requirements. However, to be eligible to apply to physical therapy, the following prerequisites must be completed. Some majors, such as biological sciences, exercise science, and psychology include many of these courses.

Prerequisites

Anatomy–Human	BIOL 3705
Biology (2 courses)	BIOL 2601; 2602
Biomedical Ethics	PHIL 3725
Chemistry (2 courses)	CHEM 1515; 1516
Physics (2 courses)	PHYS 1501; 1502
Physiology–Human	BIOL 2630
Psychology–General	PSYCH 1560
Psychology–Abnormal	PSYCH 3702
Sociology–General	SOCIO 1500
Statistics	STAT 3717 OR PSYCH 2618

All prerequisite courses must be completed (with a C or better) prior to admission into the program. Undergraduate degree requirements may be completed prior to admissions, but *must* be completed no later than the end of the fall semester of the first professional year. Undergraduate students who

have carefully planned coursework and degree requirements may be eligible to apply in their third (junior) year. Application in fall semester allows juniors who qualify to be notified in spring and begin the professional program in summer.

Admission eligibility and requirements are more fully described in the graduate catalog but are summarized as follows:

Consideration for admission includes:

1. Receipt of complete application by specified deadline.
2. Overall GPA of at least 3.0 on a 4.0 scale.
3. Prerequisite GPA of at least 3.0 (with C or better in each course).
4. Degree completion no later than the end of Fall semester of the first professional year.
5. Submission of GRE scores

The selection/admissions process is competitive; meeting eligibility criteria to apply does not assure admission into the program. The admission criteria currently include GPA and GRE scores, interview, and references. The admissions process is subject to change based on Admissions Committee decisions; applicants should carefully review the application materials.

DEPARTMENT OF SOCIAL WORK

Professors DiGiulio (Chair); Professor Slivinske; Associate Professor Mosca; Assistant Professors Keller, Morawski, Pugh, Silver.

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 licensing in the state of Ohio. This program can be completed in eight semesters if students average 16 hours per semester.

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.

To be admitted to the program as a social work major, pre-social work majors must meet the following requirements.:

1. An overall GPA of 2.5 or better;

2. Successful completion (C or better beginning Fall 1993) of the following courses according to sequencing: ENGL 1550 and 1551, AHLTH 1500 and 1501, SOCIO 1500, PSYCH 1560, ANTHR 2602, POLIT 1560, SCWK 1510, 2622, 2641, 2642, 2644, PHIL 2630, RELIG 2601;

3. Students must also complete and return the Social Work Program Admission Application. This form can be obtained in the Department of Social Work. The completed application must be returned to the Department of Social Work beforethe fourth week of the semester preceding the term for which admission is requested. Students must also sign the intent to enter the program form located in the Department of Social Work before the fourth week of the semester preceding the term for which admission is requested.

A major in social work comprises a minimum of 57 semester hours of professional foundation courses. In lieu of a minor, 27 semester hours of support courses must also be completed. Majors must take SCWK 1510, 2622, 2641, 2642, 2644, 3736, 3737, 3750, 3760, 4825 (12 s.h.), 4826, 4827, 5820, 5822, 5823; and one special populations course from the following: 3728, 3730, 3731 or 4860; plus the following support courses: SOCIO 1500; ANTHR 2602; AHLTH 1500 , 1501; POLIT 1560; PSYCH 1560; PHIL 2630, 2625; and RELIG 2601.

Field Work Practicum Admission Policy

Each student must have completed all the above mentioned coursework for admission to the program, as well as SCWK 3736, 3750, 3760, 5820; PHIL 2625; and one special populations course from the following: SCWK 3728, 3730, 3731 or 4860. SCWK 3737, 5822, and 5823 may be taken concurrently with SCWK 4825, 4826 and 4827. These courses must be completed before the conclusion of the field practicum.

For more detailed information about admission to the social work program and field practicum, please refer to the Social Work Student Handbook and Field Work 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 as 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. This program can be completed in four semesters if students average 16 hours per semester.

The student must meet the general degree requirements and department course requirements as follows:

General University Requirements

Courses	Semester Hrs.
ENGL 1550, 1551	6
COMM 1545	3
ELECTIVE	3
AHLTH 1500, 1501	6
SOCIO 1500	3
PSYCH 1560	3
ANTHR 2602	3
POLIT 1560	3
PHIL 2630	3
RELIG 2601	3
	36

Department Requirements for Social Services Technology

Courses	Semester Hrs.
SCWK 1510	3
SCWK 2622	3
SCWK 2641	3
SCWK 2642	3
SCWK 2644	3
SCWK 3736	3
SCWK 2695	6
SCWK Special Population Elective	3
	27
Total Credit Hours	**63**

NURSING HOME ADMINISTRATION

The Department of Social Work offers a Bachelor of Science in Applied Science degree in nursing home administration. The program prepares students to become specialized, self-critical, accountable, licensed administrators in nursing and convalescent homes, retirement communities and related health care industries.

The program has been approved by the State of Ohio Board of Examiners of Nursing Home Administrators. Graduates are eligible to sit for the national and state licensure examinations.

Students must complete all required coursework for the university and major and have an overall GPA of 2.25, a "C" or better in all courses in the major, 1000 hours in an approved internship, 48 hours of upper-division courses, and 124 hours of coursework overall.

Required Courses:

MATEC 1501/ Medical Terminology

FNUTR 1551/Normal Nutrition I

or FNUTR 4873/Nutrition and Aging

FNUTR 2612/Food Systems I: Operations

NURSG 2610/Contemporary Nursing

SOCIO 3703/Aging and Society

SCWK 3730/Social Services and the Aged

CSIS 1514/Business Computer Systems

ACCTG 2602/Financial Accounting

ACCTG 2603/Managerial Accounting

FIN 3720/Business Finance

MGT 3725/Fundamentals of Management

MGT 3735/Communication for Management and Business
or PSYCH 3712/Survey of Industrial/ Organizational Psychology

SCWK 3736/Social Work Methods I
or COMM 3756/Interviewing

SOCIO 3701/Social Statistics I
or SCWK 3750/Analysis of Social Work Practice Data

SOCIO 4850/Research Methods
or SCWK 3760/Research Methods for Social Work
or AHLTH 4801/Special Topics in Allied Health
or NURSG 3749/Nursing Research
AHLTH 5840/Comparative Health Systems
or AHLTH 4816/Environmental Regulations for Health Care

HSC 5893/Workshop in Health

SOCIO 4821/Internship in Sociology

Required Support Courses:

PSYCH 1560/General Psychology

SOCIO 1500/Introduction to Sociology

COURSES OF INSTRUCTION

Course Numbering System and Abbreviations

Students should be familiar with the University's course numbering system and its significance, and with the abbreviations used to indicate the amount of credit.

Upper- and Lower-Division Courses

Courses numbered from 1500 to 1599 are designed for freshman level; from 2600 to 2699, the sophomore level; from 3700 to 3799, the junior level; and from 4800 to 4899, the senior level. Courses numbered from 5800 to 5899 are swing courses, i.e. senior-level courses that have also been approved for graduate credit. **For ease of finding courses in the transition to semesters, the 4800 and 5800 courses are listed numerically according to their *last three digits*. For example, ART 4880 is followed by 5881, 5882, then 4883.** The freshman and sophomore levels constitute the lower division, and the junior and senior levels the upper division.

Sequences

Ordinarily, a comma between numbers (e.g., 1501, 1502) indicates that the course sequence extends throughout the year, but that credit is given for each course individually.

Abbreviations

The abbreviation "s.h." at the end of a course description stands for "semester hours of credit." Thus, credit for a three-hour, two-semester course is indicated by the notation "3+3 s.h.," meaning "three semester hours of credit each semester."

The abbreviation "NC" means "No Credit."

"Prereq." stands for "Prerequisite." The prerequisite for a course is usually listed in the course description. Since the prerequisites listed in the course description refer to semester prerequisites, a table showing the equivalent quarter prerequisites can be found on page 310.

Honors courses are designated by the suffix "H." Laboratory courses are designated by the suffix "L".

The key for course area abbreviations can be found on page 309.

Courses are listed in alphabetical order by course prefix, as the courses appear in the semester *Schedule of Classes*. Exceptions to this are Foreign Languages, where each language is included alphabetically under the heading FNLG; and Applied Music classes, which are listed under MUSAC–Music, Applied Classes.

The department or college offering the courses is noted in smaller type in the heading. Courses in interdisciplinary programs are indicated as such.

NEOUCOM stands for Northeastern Ohio Universities College of Medicine.

An asterisk (*) before the course title indicates that an additional fee will be charged for that course.

General Education—Approved Courses

The courses that have been approved in the Basic Skills areas are identified with the course listings for Communication (COMM 1545, Communication Theory and Practice), English (ENGL 1550 and 1551, Writing 1 and 2), and Mathematics (MATH 2623, Survey of Mathematics). The courses that have been approved in each domain are also listed with relevant departmental course offerings. For Natural Science, see courses for Arts and Sciences (A&S), Astronomy (ASTRO), Biology (BIOL), Chemistry (CHEM), Geography (GEOG), Geology (GEOL), and Physics (PHYS). For Artistic and Literary Perspectives, see courses for Art (ART), English ENGL), Foreign Languages (FNLG), Music (MUSHED and MUSHL), and Theater (THTR). For Societies and Institutions, see courses for Africana Studies (AFRST), American Studies (AMST), Anthropology (ANTHR), Economics (ECON), Geography (GEOG), History (HIST), Political Science (POLIT), Religion (RELIG), Sociology (SOCIO), and Women's Studies (WMST). For Personal and Social Responsibility, see courses for Counseling (COUNS), Health Sciences (HSC), Philosophy (PHIL), Psychology (PSYCH), and Religion (RELIG). For Select Topics, see courses for Biology (BIOL), Philosophy (PHIL), Religion (RELIG), and Special Education (SPED). Courses with intensive components (writing-intensive, oral-communication-intensive, critical-thinking intensive) are not identified here, as they may change from one semester to the next; see the *Schedule of Classes* for each semester to identify those sections of classes with intensive components.

A&S–ARTS AND SCIENCES
College of Arts and Sciences

The following has been approved as a General Education course in the domain of Natural Sciences: 2600, Explorations in Science.

1599. *Medical Professions Seminar.* Introduction to the doctoral medical professions. Review of careers including allopathic medicine, osteopathic medicine, dentistry, optometry, podiatric medicine, chiropractic medicine, veterinary medicine, and pharmacy; also entrance requirements for medical programs and advising resources at YSU. Grading is CR/NC. 1 s.h.

*2600. *Explorations in the Sciences.* Student investigations in the natural sciences using a variety of laboratory approaches focused on a single theme or concept; a multidisciplinary study from two of the following science areas (biology, chemistry, physical geography, geology, physics, astronomy, environmental science) segmented in three five-week units (6 hrs/wk including 2 to 3 hours of instruction). 4 s.h.

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.: PSYCH 1560 and PHIL 2600 or consent of dean. For current students. 1-7 s.h.

3750. *Study Abroad.* An individually-arranged program of foreign study. Programs can be of 3 general types: (1) study trips conducted by YSU faculty, (2) trips or residential programs sponsored by consortial universities, and (3) independent trips. For independent trips, YSU faculty will design appropriate educational objectives and evaluate students' performance in meeting these objectives. A written plan detailing these objectives must be approved by a faculty member of the Global Awareness Committee and the dean of Arts and Sciences prior to the commencement of the trip. For all three categories, credit toward fulfillment of the degree requirements will be determined by the dean(s) of the relevant college(s), in consultation with the appropriate department chairperson(s). Note: study abroad generally requires about one year's advance planning. Prereq.: Sophomore status. 1-15 s.h.

3760. *Washington Center Internship.* Qualified students will work in selected public and private agencies in the Washington, D.C. area, thus providing access to government and community leaders and activities, and gaining experience by participating in projects, seminars, and courses. A final project is required. Students must take an additional academic credit course at Washington Center. Additional details are available through the Department of Political Science. Credit may be applicable to the major. Grading for this course will be CR/NC. Prereq.: Junior or senior standing, acceptance by the Washington Center, and permission of the chairperson of the major. 6-12 s.h.

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.

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.

ACCTG–ACCOUNTING

Department of Accounting and Finance

Lower-Division Courses

1503. *Elementary Accounting.* Principles, concepts, and terminology related to the accounting cycle. Examination of procedures related to control of cash and payroll activities. Does not fulfill WCBA requirements. 3 s.h.

2602. *Financial Accounting.* Study of the accounting cycle and generally accepted accounting principles including preparation of financial statements. Prereq.: Sophomore standing. 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 ACCTG 2602. 3 s.h.

Upper-Division Courses

*3701, *3702. *Intermediate Accounting 1, 2.* Comprehensive study of the theories and concepts underlying financial accounting. Emphasis on income determination, asset valuation, measurement of liabilities and changes in financial position. Prereq.: C or better in ACCTG 2603 for ACCTG 3701; C or better in ACCTG 3701 for 3702. 4+4 s.h.

*3709. *Accounting Information Systems.* Study of systems analysis, design, and implementation within the context of an accounting information system. Topics include a treatment of the business computing environment, security and control of information, the accounting information system as a component of the management information system, and decision support and expert systems. Prereq.: C or better in ACCTG 3701. 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 nonroutine decision making. Prereq.: C or better in ACCTG 2603. 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 ACCTG 3711. 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 ACCTG 2603. 3 s.h.

4801. *Advanced Accounting.* Partnerships: formation, operation, and liquidation; installment sales; consignments; branch accounting; receivership; joint ventures; consolidations and mergers. Prereq.: C or better in ACCTG 3702. 3 s.h.

*4808. *Auditing.* Auditing theory, practice and procedures in the context of actual problems encountered in professional practice. Topics include EDP auditing and statistical sampling. Students use statistical packages to plan, implement, and obtain the information needed to render an opinion on the financial statements. Team projects. Prereq.: C or better in ACCTG 3702, 3709, and 3711. 4 s.h.

*4813. *Federal Taxation 1.* Introduction to the Federal taxation of individuals and business entities. Emphasis on tax research and tax form preparation. Prereq.: C or better in ACCTG 3701, or FIN 4835. 4 s.h.

*4814. *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 ACCTG 4813. 3 s.h.

4820. *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 ACCTG 2603. 3 s.h.

4840. *Accounting Internship Program.* Participatory accounting and professional business experience under the direction of YSU faculty members and employees of firms participating in the program. Candidates are employed for the entire semester in the offices of the participating firms. A written evaluation of the job experience is required by students and firms. Prereq.: Accounting major, junior standing, 2.75 Accounting GPA, 2.5 overall GPA, and approval of committee. 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. 1 s.h.

ADVER–ADVERTISING
Department of Marketing

Upper-Division Courses

3711. *Marketing Communications.* Examines the integration of promotional activities within a marketing context. Presents the marketing communication role of the four elements in the promotional mix then takes a holistic perspective that focuses on the interrelationships among advertising, public relations, sales promotion, and personal selling. Prereq.: BUS 1500 and sophomore standing. 4 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.: ADVER 3711. 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.: ADVER 3711. 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.: ADVER 3711. 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.: ADVER 3711 and 3717. 3 s.h.

AFRST–AFRICANA STUDIES
Interdisciplinary

The following has been approved as a General Education course in the domain of Societies and Institutions: 2600, Black Studies 1.

2600. *Introduction to Black Studies 1.* The social-historical and intellectual heritage of black people in Africa and the Americas. 3 s.h.

2601. *Introduction to Black 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. *Black 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.: AFRST 2600. 3 s.h.

3701. *Black 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.: AFRST 2601. 3 s.h.

AHLTH–ALLIED HEALTH
Department of Health Professions

1500. *Applied Pathophysiology 1.* Introduction to clinical anatomy, physiology, and pathophysiology with applications to acute and chronic illness. 3 s.h.

1501. *Applied Pathophysiology 2.* Introduction to clinical anatomy, physiology, and pathophysiology with applications to acute and chronic illness. Prereq.: AHLTH 1500. 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, MATEC 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.: DENHY 2628. 3 s.h.

*3708. *Preventive Public Health Care.* Application of current health care philosophies in disease prevention. In-depth case study of a specific public health problem and its prevention. Prereq.: BIOL 1545 or 1551 and 1552, or permission of instructor. 3 s.h.

3709. *Periodontics.* The study of the periodontium and periodontal therapy as it relates to total case planning and the role of the dental hygienist. Prereq.: DENHY 2622. 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.: DENHY 1513. 3 s.h.

3720. *EMS Management.* A review of EMS system design, staffing, chain of command, medical education, policies and procedures, record keeping, inter-agency relationships, community resources and involvement, and legal aspects relevant to private and public emergency medical services. Prereq.: EMTEC 2640. 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.: EMTEC 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.

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.: AHLTH 5840 or permission of instructor. 1-3 s.h.

4804. *Stress and the Health Care Practitioner.* 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.: AHLTH 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.: AHLTH 5840 or HSC 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.: AHLTH 5840, or permission of instructor. 3 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.: AHLTH 3708, 5840, 4806, or permission of instructor. 3 s.h.

4808. *Environmental Health Concerns.* Industrial hygiene, hazardous and infections waste, air and quality, and sanitation policies in health care facilities. Pertinent federal, state, and local legislation. Prereq.: AHLTH 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.: AHLTH 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.: AHLTH 3705 or permission of instructor. 3 s.h.

4816. *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.: AHLTH 3708, 5807 or permission of instructor. 3 s.h.

4820. *Directed Research.* The individual study or research of a special problem or issue related to the health care field. Students must present research at a faculty and student forum. Capstone course for AHLTH majors. Prereq.: Senior standing, AHLTH 4801 and 4806. 2 s.h.

*4830. *Pediatric Advanced Life Support.* Critical care skills as they apply to acute pediatric care and neonatal resuscitation. The course exceeds the objectives of the American Heart Association's PALS program for initial certification or recertification. One hour lecture, two hours lab. Prereq.: AHLTH 4812, pediatric critical care experience, or permission of 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.: AHLTH 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.

4836. *Health Care Diversity.* Strategies of communication that enable the student to understand socioeconomic, political, ethnic, and religious diversity in health care. Prereq.: AHLTH 5840 or permission of instructor. 1 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.: AHLTH 3708 or permission of instructor. 4 s.h.

AMER–AMERICAN STUDIES
Interdisciplinary

The following has been approved as a General Education course in the domain of Societies and Institutions: 2601, American Identity.

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.

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.

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.

ANTHR–ANTHROPOLOGY
Department of Sociology and Anthropology

The following has been approved as a General Education course in the domain of Societies and Institutions: 2602, Introduction to Anthropology.

Lower-Division Course

2602. *Introduction to Anthropology.* An exposition of the past and present horizons of anthropology, with specific attention to the emergence of humans, pre-history, and human social and cultural systems. 3 s.h.

Upper-Division Courses

3701. *Social Statistics 1.* Measurement and interpretation of social data by the use of descriptive techniques. Prereq.: SOCIO 1500 or ANTHR 2602. Listed also as SOCIO 3701. 3 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.: ANTHR 2602. 3 s.h.

3703. *Biological Anthropology.* The physical origins and development of the human species as a member of the primate order and the biological bases of human differences disclosed by human paleontology and archaeology. Prereq.: ANTHR 2602. 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. Prereq.: ANTHR 2602. 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.: ANTHR 3705 or 6 s.h. in AFRST, including AFRST 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.: ANTHR 2602. 3 s.h.

*3778. *Archaeological Techniques.* Practice in archaeological field methods, including surveying, mapping, excavation, and artifact analysis. Ordinarily offered in summer. 220 contact hours per term. Prereq.: ANTHR 3702. 4 s.h.

3790. *Aging in Cross-Cultural Perspective.* Examines the phenomenon of aging from a cross-cultural perspective with particular emphasis on cultural evolution and its impact upon the status, roles and cultural values associated with aging and the aged. Prereq.: ANTHR 2602. 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 multilinear schools. Prereq.: ANTHR 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.: ANTHR 3701 or 6 s.h. in RELIG including RELIG 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.: ANTHR 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.: ANTHR 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.: SOCIO 3701 or ANTHR 3701. Listed also as SOCIO 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.: ANTHR 4850 or SOCIO 4850. Listed also as SOCIO 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.: ANTHR 3702. 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.: ANTHR 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.: ANTHR 3703 and 9 s.h. in ANTHR. 3 s.h.

ART–ART
Department of Art

The following have been approved as General Education courses in the domain of Artistic and Literary Perspectives: 1541, Survey of Art History 1, 1542, Survey of Art History 2.

Lower-Division Courses

*1501. *Fundamentals of 2-D 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 3-D Design.* Investigation of the interactions between line, plane, mass, and space. Emphasis on basic 3-D 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 within each studio concentration. Students must pass to continue in the program. Prereq.: ART 1522 and enrollment in ART 1502. 0 s.h.

1520. *Introduction to the Visual Arts.* An introduction and orientation course for the disciplines of studio art, art education, and art history. The course

concentrates on departmental programs, policies, practices, and facilities. Emphasis is placed on various aspects of artistic education leading to a successful career in the visual arts. 1 s.h.

*1521. *Foundation Drawing*. Introduction to form and composition through drawing. The focus of this course will be on the formal language of pictorial space and picture making rather than on drawing techniques. 3 s.h.

*1522. *Intermediate Drawing*. A continuation of Foundation Drawing with more emphasis on spatial organization. Wider attention to process and techniques as well as pictorial content. Prereq.: ART 1501 and 1521. 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 from1500 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 1502 and 1522 and passing the foundation portfolio review, or permission of instructor. 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, and passing the foundation portfolio review. 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, and passing the foundation portfolio review. 3 s.h.

*2625. *Woodblock and Monoprinting*. Experimentation with woodblock and monoprinting techniques. Prereq.: ART 1502, 1521, and passing the foundation portfolio review. 3 s.h.

*2626. *Silk Screen*. Printmaking experiments using various silk screen techniques. Prereq.: ART 1502,1521, and passing the foundation portfolio review. 3 s.h.

*2631. *Introduction to Ceramics*. Introduction to handbuilding methods, low-fire glaze application, pit firing, and firing procedures. Prereq.: ART 1502, 1522 and passing the foundation portfolio review, or permission of instructor. 3 s.h.

*2650. *Introduction to Painting*. Exploration of new and traditional painting techniques and media. The student is encouraged to see significantly rather than imitatively in the process of developing form and content. Prereq.: ART 1502,1522, and passing the foundation portfolio review. 3 s.h.

*2651. *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.

*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 1502, 1521, 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.

*2671. *Introduction to B & W Photography*. Photographic fundamentals of the camera, B&W film, developing, enlarging, printing. Basic technical and visual skills - photography as expressive art form. Students provide camera and supplies. Prereq.: ART 1502, 1521, and passing the foundation portfolio review, or permission of instructor. 3 s.h.

*2672. *Color Photography*. Photographic fundamentals of camera, color film: developing, enlarging, printing. Basic technical and visual skills - photography as expressive art form. Students provide camera and supplies. Prereq.:ART 2671 or permission of instructor. 3 s.h.

*2673. *Digital Photography 1*. This introductory course examines the potential of digital photography for fabricating, manipulating, and enhancing still photographic imagery. Areas of concern include: appropriation, manipulation, collage, digital mark-making, and color. The course will also address basic computer skills and related technical issues. Prereq.: ART 2671 or permission of instructor. 3 s.h.

*2691. *Introduction to Digital Imaging*. An introduction to the theory of computer-based imaging and explores a variety of "hands-on" techniques pertaining to image creation. manipulation, and construction, Students acquire a fundamental knowledge of vector-based and pixel-based software. Prereq.: ART 1502, 1522, and passing the foundation portfolio review. 3 s.h.

Upper-Division Courses

3703. *Junior Portfolio Review*. A mandatory review of work within each studio concentration. Students must pass to continue in the program. Prereq.: Junior standing. 1 s.h.

*3712. *Intermediate Sculpture*. Examination of sculptural concepts through individual projects. Emphasis is on contemporary sculptural issues, techniques, and media. Directed readings, technical workshops and critiques required. Prereq.: ART 2611. 3 s.h.

*3713. *Advanced Sculpture Studio*. This course continues the examination of contemporary sculptural issues, techniques and media. Students explore alternative sculptural approaches. Individual student projects determined by faculty consultation and critiques. Directed readings, writings, group discussions. Prereq.: ART 3712 or permission of instructor. 3 s.h.

*3715. *Intermediate Metals*. This course examines the casting process used in creating jewelry and small metal objects. Emphasis will be on sound craftsmanship and successfully meeting the design challenges of the metals medium. Slide lecture, demonstrations, assigned readings and studio problems. Prereq.: ART 2615. 3 s.h.

*3721. *Expressive Drawing*. Course work intended to provide a wider and more unusual format in the drawing process within the context of drawing philosophy and concepts. Use of color dynamics and different experimental materials, as well as increased scale and gestural action. Prereq.: ART 1522. 3 s.h.

*3724. *Lithography*. Concentrated printmaking techniques from a flat stone or metal plate. Prereq.: ART 1501 ans 1521. 3 s.h.

*3725. *Advanced Woodblock and Monoprinting*. Continued experimentation with relief and monotype printmaking techniques. Prereq.: ART 2625. 3 s.h.

*3726. *Advanced Silk Screen*. Experiments in various photo silk screen methods of printmaking. Prereq.: ART 2626. 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. 3 s.h.

3740. *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.: ART 1541 or consent of instructor. 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.: AFRST 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.

*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 type faces and their effective use in communications. Emphasis will be directed toward the expressive use of type in interpretive, symbolic and metaphoric solutions. Prereq.: ART 3761. 3 s.h.

*3763. *Illustration.* Visual expression through various media, both electronic and traditional. Emphasis is on problem-solving through the exploration of technique, creative process and the development of personal styles. Prereq.: ART 2662. 3 s.h.

3767. *Web Publication Design.* An investigation of the processes and philosophies behind the field of web publication design. Students will employ various hardware/software tools available to the web page designer. Prereq.: ART 2662 and 2691. 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 3761. 3 s.h.

*3773. *Intermediate B & W Photography.* Continued growth of photographic technical and visual skills: developing, enlarging, printing and presenting photography as an expressive art form. Students provide camera and supplies. Prereq.: ART 2671 or permission of instructor. 3 s.h.

*3774. *Digital Photography 2.* This course builds on the ideas and techniques presented in Digital Photography 1. Special emphasis will be placed upon the relationship between digital technology and darkroom processes, both traditional and non-conventional. Course work will include lectures, readings, and studio projects. Prereq.: ART 2673 or permission of instructor. 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.: Completion of junior portfolio review, or permission of instructor. 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.: AFRST 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 of Graphic Design.* A chronological survey of graphic design from ancient to modern times. An emphasis on specific designers who influenced the field as well as the relationship between visual communication and historical/cultural events. Prereq.: ART 1542. 3 s.h.

3785. *The History of Still Photography.* The history of still photography as a fine art from its beginnings to the present. Prereq.: ART 1542 or consent of instructor. 3 s.h.

3786. *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 1541, 1542 or consent of instructor. 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.

*3791. *3-D Computer Graphics.* An introduction to three-dimensional modeling, lighting, texture mapping, and rendering. Through various platforms, students will explore a range of software including low-end and high-end applications. Prereq.: ART 3762. 3 s.h.

*3792. *Digital Compositing.* Further development of the creative processes of digital imaging with a focus on image compositing, digital color manipulation, and storyboarding. The student begins to develop a personalized and more innovative approach to paint-based media with regard to image manipulation and compositing. Prereq.: ART 2691. 3 s.h.

*3794. *2-D Computer Animation.* Students explore the processes of animation, image and motion interpolation. Students develop an understanding of choreography in the two-dimensional environment with regard to motion and change over time and space. Prereq.: ART 3792. 3 s.h.

*3795. *Digital Video Production.* An introductory course to digital video, students develop an understanding of live image sequencing, manipulation,

and compositing. Students will develop a final, independent project involving research, storyboarding, video capture, and final editing. Prereq.: ART 3794. 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.

4803. *Senior Show.* A mandatory exhibition of work displayed at the McDonough Museum of Art. Students will create and hang their own exhibitions. A written statement must be included. Prereq.: Senior standing. 2 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.

*4829. *Senior Project: Printmaking.* The preparation, selection and development of a body of work in the printmaking discipline. Career options for the professional artist explored. Portfolio and resume preparation, artist's statement, gallery representation, graduate study and other professional issues are considered. Prereq.: ART 4834. 3 s.h.

*4834. *Advanced Spatial Arts Studio.* Advanced students work on individual projects determined through discussions with and critiques by faculty. Emphasis is on personal aesthetic development, mainstream art issues, interdisciplinary approaches, and refinement of technical skills. Directed readings, writings, group discussions. Prereq.: ART 3713, 3733, or permission of instructor. 3 s.h.

4837. *Professional Practices in Middle School.* An exploration of middle school multiarts teaching strategies including observation, presentation, assessment and lesson planning. Direct observation included. Prereq.: ART 3737. 3 s.h.

4838. *Professional Practices in Secondary School.* An exploration of secondary school multiarts teaching strategies including observation, presentation, assessment and lesson planning. Direct observation included. Prereq.: ART 4837. 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.

*4843. *Advanced Lithography.* Continued experimentation with printmaking techniques from a flat stone or metal plate. Prereq.: ART 3743. 3 s.h.

*4851. *Advanced Painting 1.* Concentration on individualized content, direction, style, and technique. Prereq.: ART 2651. 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 1502, 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 3762. 3 s.h.

*4864. *Three-Dimensional* Graphics. The application of graphic design concepts to three-dimensional problems in packaging, environmental graphics, signage and exhibition design. Prereq.: ART 3762, 3763. 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.

4866. *Business Skills for the Artist.* Preparation for business world, galleries and museums as well as obtaining freelance work. Legal issues, taxes and copyrights as well as portfolio preparation, and professional practices. Prereq.: Junior standing. 3 s.h.

4867. *Graphic Design Internship.* An application of graphic design theory and practices within a professional work experience. Students are selected on the basis of preparation, portfolio, GPA, and competitive interview. Enrollment is contingent upon the availability of internship positions. Prereq.: ART 3768. 3 s.h.

*5871. *Advanced Photography 1 - The Studio.* Selected technical and aesthetic photographic problems using medium and large format cameras, studio lighting, and advanced darkroom techniques for fine art applications. Prereq.: ART 3773, portfolio review, and permission of instructor. 3 s.h.

*5872. *Advanced Photography 2 - Mural Printing.* Technical and aesthetic issues concerning large print and mural photography. Areas of concentration include: grain as a pictorial device, scale as abstraction, large format negative production, and related technical issues. Prereq.: ART 5871 or permission of instructor. 3 s.h.

*4873. *Senior Review in Photography*. A capstone photography experience, provides guidance and assistance for students working toward their senior exhibition. Addresses the post-graduate experience, examining statement writing, grant applications, oral presentations, and the production of a professional portfolio. Prereq.: ART 3775, 5871, and 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 5871 or permission of instructor. 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.

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.

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 sh 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. 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 3793. 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: 2-D imaging, 3-D modeling, animation, video, or multimedia design. The student completes an independent project, meeting with the instructor on a weekly basis. Prereq.: ART 3794. 3 s.h.

ASTRO–ASTRONOMY
Department of Physics and Astronomy

The following has been approved as a General Education course in the domain of Natural Sciences: 1504, Descriptive Astronomy.

Lower-Division Courses

*1504. *Descriptive Astronomy*. Scientific method, introduction to modern understanding of the universe, astronomy and society, humanity's place in the universe. Astronomical observing methods, the solar system, stars and star systems, galaxies, cosmology. Recent astronomical discoveries. 3 s.h.

1504L. *Astronomy Laboratory*. Telescope and planetarium laboratory work designed to supplement ASTRO 1504. Two hours per week. Prereq. or concurrent: ASTRO 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.: ASTRO 1504 or GEOL 1505. 3 s.h.

Upper-Division Courses

3711, 3712. *Astrophysics 1, 2*. The application of physical principles to the study of the stars and planets; stellar distances and dimensions; stellar spectra and chemical composition; nuclear reactions and evolution of stars; the Milky Way and other galaxies; cosmology. Prereq.: PHYS 2611 and MATH 2673. 3+3 s.h.

4811, 4812. *Observational Astronomy 1, 2*. Photoelectric photometry, photographic and CCD imaging techniques, spectroscopy, methods of data reduction. Some night observatory work included. Prereq.: PHYS 2611 and MATH 2673. 3+3 s.h.

4815. *Undergraduate Astronomy Research*. Research conducted under the direction of a faculty member. May be repeated to a maximum of 6 s.h. Prereq.: PHYS 3702 and 3705. 3 s.h.

BIOL–BIOLOGICAL SCIENCES

Department of Biological Sciences

The following has been approved as a General Education class in the area of Natural Sciences: 1505, Biology and theModern World; in the domain of Selected Topics. 3718, Women, Science, and Technology. The following courses have been approved as substitutes in the domain of Natural Science. However, they are higher-level courses than the standard General Education courses; students should consult their advisors about taking them. They are: 1545, Allied Health Anatomy and Physiology; 1551, Anatomy and Physiology 1; 1552, Anatomy and Physiology 2; 2601, Principles of Biology1; 2602, Principles of Biology 2.

Lower-Division Courses

1504. *Human Evolution and Genetics.* Mendelian genetics as it applies to humans and evolutionary history, including the genetic problems and evolutionary relationships of humankind. Not applicable to the biology major. 3 s.h.

1505. *Biology and the Modern World.* Biology applied to critical issues of today's society. Focus on the scientific method as relevant to modern biology issues. Not applicable to the Biology major. 3 s.h.

*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.

*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 lecture, two hours lab. Must be taken in sequence with BIOL 1552. Not applicable to the Biology major. Prereq.: High school biology and chemistry. 4 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.

*1560. *Microbiology for the Health Professions.* Basic microbiology including host-microbe relationships and disease processes. Applied microbiology including control of microorganisms and microorganisms in food. Not applicable to the Biological Sciences major. Two hours lecture, three hours lab. 3 s.h.

*2601. *Principles of Biology 1.* The chemical and physical foundations of life, structure and function of cells and organelles, metabolism, basic molecular biology and inheritance, and principles of evolution. Required of all Biological Sciences majors. Four hours lecture, two hours lab. Prereq.: High school chemistry or equivalent recommended. 5 s.h.

*2602. *Principles of Biology 2.* Ecological concepts as they relate to plant and animal diversity, structure an function of plants and animals, basic ecological concepts of populations, communities, and habitats. Required of all Biological Sciences majors. Four hours lecture, two hours lab. Prereq.: BIOL 2601. 5 s.h.

2610. *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 2602. 3 s.h.

2621. *Genetics.* Genetic material, reproductive cycles, sex determination, mitosis, meiosis, mendelism, probability, linkage, genes in populations, mutation, evolution. Prereq.: BIOL 2602. 3 s.h.

*2630. *Human Physiology.* Experimental approach to the study of human physiology that explores regulation of metabolism and homeostasis by the neural, endocrine, cardiovascular, respiratory, renal, and digestive systems. Four hours lecture, three hours lab. Prereq.: BIOL 2602. 5 s.h.

*2640. *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.

*2641. *Animal Diversity.* Examination of the diversity of animal species and their interaction with the environment; the structure and function of vertebrate and invertebrate animals. Three hours lecture, two hours lab. Prereq.: BIOL 2602. 4 s.h.

2699. *Medical Applications Case Studies.* Applications of biological and chemical concepts in the practice of medicine. May be repeated to a total of 3 s.h. Prereq.: Admission to the NEOUCOM-YSU program or consent of the department chairperson. 1 s.h.

Upper-Division Courses

*3702. *Microbiology.* Scope and evolution of microbiology: microscopy, anatomy, cultivation of bacteria, reproduction and growth, bacterial metabolism, microbial genetics, viruses, resistance and immunity. Environmental and applied microbiology. Three hours lecture, two hours lab. Prereq.: BIOL 2602 or 2610. 4 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. Clinical Immunology Laboratory (BIOL 3703L) is optional for Biological Sciences majors. Prereq.: BIOL 2602. 3 s.h.

*3703L. *Clinical Immunology Laboratory.* Laboratory work includes VDRL, ASO, febrile, latex, pregnancy, and viral tests. Techniques include flocculation, precipitation, complement fixation, and titration procedures used in a clinical laboratory. Three hours per week. Concurrent with BIOL 3703. Also listed as CLTEC 3703L. 1 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.

*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.

*3713. *Vertebrate Histology.* The microscopic study of mammalian tissue. Two hours lecture, three hours lab. Prereq.: BIOL 2610 or 2630. 3 s.h.

3718. *Women, Science, and Technology.* An overview of the role women have played in scientific and technological advances. Problems unique to women entering scientific professions will be addressed, information about scientific and technical careers and job opportunities and contacts with professionals in the community will be provided. This course does not count toward the Biology major. Cross-listed with CHEGR 3718. Prereq.: ENGL 1550; one Societies and Institutions General Education course, one Natural Sciences General Education course, or substitutes. 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.

*3766. *Dendrology.* Identification, ecology and silvical significance of geosperm and angiosperm trees and shrubs. Two hours lecture, four hours lab. Prereq.: BIOL 2640. 4 s.h.

*3771. *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 2641. 4 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 2630. 3 s.h.

*3780. *Evolutionary Ecology.* Examination of ecological principles and underlying biodiversity, dynamics of populations and ecosystems, the origin, maintenance, and loss of genetic variation, and the causes of extinction and speciation. Three hours lecture, four hours lab. Prereq.: BIOL 2602. 5 s.h.

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 SOCIO 1500, and junior standing. Listed also as SOCIO 3789 and CEEGR 3711. 3 s.h.

3790. *Molecular Genetics.* Examination of DNA structure, DNA replication, transcription, translation, RNA processing, and gene control in both prokaryotes and eukaryotes. Prereq.: BIOL 2610 or 2621. 3 s.h.

*3790L. *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. Prereq.: BIOL 3790 or concurrent. 1 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.

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.

*4805. *Ichthyology.* Ecology, evolution, and taxonomy of fishes, especially those of Midwestern United States. Two hours lecture, two hours lab. Prereq.: BIOL 2641. 3 s.h.

5806. *Field Ecology.* Field study involving quantitative methods for the collection, analysis, and interpretation of ecological data in populations and communities. Pre-field trip lectures, specified experiments, independent study, a written report, and an oral presentation of the independent study project. Required off-campus travel. Field conditions may be rigorous and/or primitive. Prereq.: BIOL 3780. 4 s.h.

5809. *Concepts of Developmental Biology.* The underlying cellular and molecular mechanisms of embryonic development. Concepts concerning cellular interactions as they relate to developmental processes. Prereq.: BIOL 2610. 3 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 2641. 4 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 extensive field collections, Two hours lecture, four hours lab. Prereq.: BIOL 2640. 4 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 payoffs of the various eukaryotic genome projects (human and others), gene therapy and genetic engineering in animals and plants. Prereq.: BIOL 2621 and 3790. 3 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 3790. 2 s.h.

*4829. *Functional Neuroanatomy.* Detailed examination of the structure of the brain and spinal cord, their function, integration, and role in motor control. Three hours lecture, two hours lab. Prereq.: BIOL 2630. 4 s.h.

5832. *Principles of Neurobiology.* Topics include cell and molecular biology of the neuron, properties of excitable membranes, functional neuroanatomy, motor systems of the brain, integration of sensory and motor systems, localization of higher cortical functions, and diseases of the central nervous system. Prereq.: BIOL 2630. 3 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 2630. 3 s.h.

*5834. *Advanced Systems Physiology 1.* Detailed study of the cardiovascular system, exchange dynamics of blood, interstitial fluid, lymphatics, and renal regulation of extracellular fluid composition, volume, and acid-base balance with emphasis on human physiology. Three hours lecture, three hours lab. Prereq.: BIOL 2630. 4 s.h.

*5835. *Advanced Systems Physiology 2.* Detailed study of respiratory and gastrointestinal systems, metabolism, and temperature regulation. Three hours lecture, three hours lab. Prereq.: BIOL 5834. 4 s.h.

*5836. *Cell Biology: Molecular Mechanisms.* The relationship of molecular structure to cellular function. Concepts integrating the biochemical dynamics of biomembrane systems including receptors, bioenergetics, and the physiochemical environment. The laboratory explores the relationship between DNA and protein using current methodologies in modern cell biology. Three hours lecture, three hours lab. Prereq.: BIOL 2610 or consent of instructor. 4 s.h.

4839. *Selected Topics in Physiology.* Advanced study of topics in physiology not covered in depth in other physiology courses. May be repeated more than once with change in topic. Prereq.: BIOL 2630. 1-2 s.h.

5840. *Advanced Microbiology.* Molecular mechanisms for virulence of pathogenic organisms. Prereq.: BIOL 3702 or equivalent. 3 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.

5844. *Physiology of Reproduction.* Current concepts of reproductive processes and their physiological control in mammalian systems. Prereq.: BIOL 2630. 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. 1-2 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.* Current theories attempting to explain social behavior in invertebrate and vertebrate taxa in terms of social evolution, kinship theory, and costs/benefits to genetic fitness within the overall process of natural selection. Prereq.: BIOL 2641. 2 s.h.

4865. *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 one 4800 level laboratory course. 2 s.h.

*4868. *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. 4 s.h.

*4869. *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 4868. 4 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.

BOTANY

See Biological Sciences

BUS–BUSINESS ADMINISTRATION

College of Business Administration

*1500. *Dynamics of U.S. and Global Business.* The external, competitive, and internal environments of business. Skills required to succeed in business, such as team-building, information gathering, communications, professionalism, and an appreciation of career search. Required for business majors and recommended for non-business majors. 3 s.h.

CCET–CIVIL AND CONSTRUCTION ENGINEERING TECHNOLOGY

School of Technology

Lower-Division Courses

*2604. *Properties and Strength of Materials.* Introduction to the physical and chemical properties of materials and their behavior under various loads and environments. Concepts of stress and strain developed and evaluated for the application of axial, shear, torsional, and bending loads. Prereq. or concurrent: MET 1515. 3 s.h.

*2610. *Structural Analysis 1.* Fundamental determination of member forces in trusses, beams, arches, frames and cables. Calculation of member stresses and deflections. Two hours lecture, two hours computational lab per week. Prereq.: CET 2604. 3 s.h.

*2611. *Specifications and Estimating.* Fundamentals of writing and interpreting specifications for materials and construction methods. Estimating materials and labor costs for construction projects. Use of Timberline computer estimating packages. Prereq.: Sophomore standing or consent of instructor.4 s.h.

*2612. *Structural Design 1.* Structural design using AISC, ACI and similar codes. Selection of members and connections in accordance with manuals and code specifications. Design and drafting projects required with application of CADD. Three hours lecture, three hours lab per week. Prereq.: CET 2610 and DDT 1505. 4 s.h.

*2614. *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: CET 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.: CET 2604. 3 s.h.

2624. *Hydraulics and Land Development.* Study of hydraulics and hydrologic principles and their application to drainage requirements, storm-water management, water distribution systems, and land use planning. Two hours lecture, two hours design lab per week. Prereq.: Sophomore standing. 3 s.h.

Upper-Division Courses

*3705. *Computing for Technologists.* Development of computer techniques used in solutions to problems in all fields of engineering technology. Students write computer programs to solve problems with which they are familiar. Use of database management, spreadsheets. May be taken by non-CET majors. Two hours lecture, three hours lab per week. Prereq.: Junior standing or consent of instructor. 3 s.h.

3707. *Steel Design.* A continuation of CET 2612 with design applications in steel. Practical solutions to more complex members and load applications, Emphasis on understanding and applying AISC and AISI codes. Design projects required. Two hours lecture, two hours design lab per week. Prereq.: CET 2612. 3 s.h.

*3710. *Structural Analysis 2.* Continuation of CET 2610. Analysis techniques for common structures. Introduction to classical approaches to statistically indeterminate structures and calculation of deflections. Use of standard computer programs such as STAAD and SABLE. Two hours lecture, two hours computational lab per week. Prereq.: CET 2610. 3 s.h.

3712. *Architectural Design Technology.* Design using masonry and wood materials. Overall planning, layout and design of building elements. Application of concepts with design projects, and compliance with applicable building codes. Two hours lecture, three hours design lab per week. Prereq.: CET 2612 and 2617. 3 s.h.

*3714. *Materials Laboratory 2.* Practice in soil identification and determination of soil properties. Use and care of basic soil testing equipment. Additional properties testing and quality control tests of construction materials. Three hours per week. Prereq.: CET 2614 and 3717 or concurrent. 1 s.h.

*3717. *Soil Mechanics and Foundation Design.* Study of soil properties, classifications, strength, and behavior. Application of concepts for design of foundations, retaining walls, and underground structures. Two hours lecture, two hours computational lab per week. Prereq.: CET 2604 and junior standing. 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.: CEEGR 2610 and CET 2624. 3 s.h.

4800. *Building Systems.* An interdisciplinary course exploring the relationships between the environmental systems of buildings. Includes architecture, structural, plumbing, and HVAC system design. Design project and presentation required. Two hours lecture, three hours project lab per week. Prereq.: CET 2604 and EET 3725. 3 s.h.

4807. *Engineering Project Management.* Application of engineering skills to a total design project. Teaches and require utilization of technical and management skills necessary to lead a project from proposal through design and preparation of bid plans and specifications. A capstone design project is required. Two hours lecture, three hours design lab per week. Prereq.: Senior standing and less than one years of course work remaining. 3 s.h.

4812. *Concrete Design.* A continuation of CET 2612 with design of concrete elements. Applications of reinforced, prestressed and precast concrete design procedures. Two hours lecture, two hours design lab per week. Prereq.: CET 2612. 3 s.h.

*4817. *Construction Management.* Design and construction office planning and scheduling techniques. 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.: CET 2611 and 2617 and junior standing. 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. Two hours lecture, two hours computational lab per week. Prereq.: CET 2624 and junior standing. 3 s.h.

CEEGR–CIVIL/ ENVIRONMENTAL ENGINEERING

Department of Civil/ Environmental and Chemical Engineering

Lower-Division Courses

*2601. *Statics.* Principles of engineering mechanics as applied to statics with vector applications to forces and moments; centroid and center of gravity; equilibrium; friction; moments of inertia: relationship between loads, stress and strain in tension, compression, torsion and bending. Prereq.: MATH 1572 and PHYS 2610 or concurrent. 3 s.h.

2602. *Strength of Materials.* Relationships between loads, shear and bending moments in beams; combined stresses in beams; indeterminate beam analysis; virtual load; connections; columns. Prereq.: CEEGR 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 CEEGR 2602. 1-3 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 1504 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 CEEGR 2610. 1 s.h.

Upper-Division Courses

3711. *Technology and Society.* A critical exploration of how societal needs affect the creation of technologies and how technology affects society. The course is interdisciplinary in nature and presents various approaches to examining the complex interaction between humans and their tools. Topics include: (1) technology in human history; (2) society, science, and technology development; (3) technology and social change; (4) technology, knowledge, and power; (5) technology, population, and the environment. Prereq.: Junior standing or consent of instructor. Listed also as SOCIO 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.: CEEGR 2602. 3 s.h.

*3716L. *Fluid Mechanics Lab.* Experimental verification of the principles of fluid mechanics as applied to incompressible fluid. Prereq.: CEEGR 3716, ENGR 1560 or equivalent. 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.: CEEGR 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.: CEEGR 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 water and wastewater treatment. Prereq.: CHEM 1516, 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.: CEEGR 2602. 3 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. One hour lecture and three hours laboratory per week. Identical to ENST 3751. Prereq.: CHEM 1516. 2 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. Identical to ENST 3751L. Prereq.: CHEM 1516. 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.: Senior standing or permission of instructor. 3 s.h.

*4820. *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.: CEEGR 3720 and 4881. 3 s.h.

5829. *Civil Engineering Materials - Concrete.* A course designed to broaden the student's understanding of Portland Cement Concrete as a construction material. Topics include the study of cement, hydration of cement, aggregates, admixtures for concrete, mix design handling and placing, curing and properties of Portland Cement Concrete. Testing of Concrete, quality control and special concretes are also included. A library research paper on a concrete-related topic of the student's choice is required. Prereq.: CEEGR 3749 or permission of instructor. 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.: CEEGR 3720. 3 s.h.

4837. *Environmental Engineering Design.* Theory and design of unit operations and processes for treatment of drinking water and municipal wastewater. Prereq.: CEEGR 3736 and an unrecalculated GPA of 2.0 or better for all CEEGR courses. 3 s.h.

*4849. *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.: CEEGR 3749. 3 s.h.

4855. *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.: CEEGR 3749 and an unrecalculated GPA of 2.0 or better for all CEEGR (major) courses. 3 s.h.

4856. *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.: CEEGR 3749. 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.: Senior standing. 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.

*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.: CEEGR 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, CEEGR 3749, and an unrecalculated GPA of 2.0 or better for all CEEGR (major) courses. 3 s.h.

*4881L. *Geotechnical Lab.* Typical soil testing procedures and physical testing of soil samples. Prereq.: Concurrent with CEEGR 4881. 1 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.: CEEGR 3736. 3 s.h.

CHEGR–CHEMICAL ENGINEERING

Department of Civil/ Environmental and Chemical Engineering

Lower-Division Courses

2630. *Applied Engineering 1.* Physics, chemistry, and calculus applications to problems in general engineering with focus on EIT/FE exam questions, strength and properties of materials. Topics include: mechanics, dynamics, kinematics, conservation equations. Three-hour computational lab. Prereq.: PHYS 2610 or permission of instructor. 1 s.h.

2631. *Applied Engineering 2.* Physics, chemistry, and calculus applications to problems in general engineering with focus on EIT/FE exam questions, strength and properties of materials. Topics include: wave phenomena (light, sound), electricity (circuits), magnetism, materials, strength of materials. Three-hour computational lab. Prereq.: CHEGR 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. 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 CHEGR 2683. Prereq.: CHEGR 2683. 3 s.h.

2688. *Energy Assessment.* Concept of energy assessment. Technology of energy production that includes coal gasification, liquefaction, magnetohydrodynamics, utilization of shale oil, solar, geothermal, and chemical energy. Nuclear energy utilization. Fuel from wastes. Energy resource distribution and future supply and demand. Simple calculations relating to fuel saving, production, and consumption. Primarily for non-engineering students. 3 s.h.

Upper-Division Courses

*3700. *Measurement Laboratory.* Computer application in real-time data acquisition and laboratory data processing. Measurements of physical and chemical properties. Oral presentations and preparation of technical reports. Prereq.: Acceptance in any engineering program. 1 s.h.

3718. *Women, Science, and Technology.* An overview of the role women have played in scientific and technological advances. Problems unique to women entering scientific professions will be addressed, information about scientific and technical careers and job opportunities and contacts with professionals in the community will be provided. Cross-listed with BIOL 3718. Prereq.: ENGL 1550. 3 s.h.

3721. *Engineering Plastics.* Preparation, characterization, manufacture, properties and applications of commercial polymers. Prereq.: CHEGR 2681 or 2683, CHEM 3721, 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.: CHEGR 2683. 3 s.h.

*3771, 3772. *Chemical Engineering Thermodynamics 1, 2.* Development of the concepts and formalisms of thermodynamics and their applications to chemical engineering systems. Real and ideal behavior of single and multicomponent systems. Introduction to the thermodynamics of phase equilibria. Analysis and design of thermal systems. Additional topics include applications in transport phenomena and plant design. Prereq.: MATH 2673, CHEGR 2683. 3+3 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. Prereq.: MATH 2673. 3 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 the design equations from mass and energy balances. Applications of the equations to equipment design. Solution of simultaneous differential equations of mass, momentum, and energy. Continuation of topics in Transport Phenomena 1. Prereq.: CHEGR 3786. 3 s.h.

*3785L,*3786L. *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. 1+1 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.: CHEGR 3787. 1 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.

4801, 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 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 sell membranes. Analysis and design of artificial organs. Prereq.: Junior standing. 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.: CHEGR 3786. 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.: CHEGR 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.: CHEGR 4815. 1 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.: Junior standing. 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.: Junior standing. 3 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.: Junior standing. 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.: CHEGR 3726 or consent of instructor. 3 s.h.

5835. *Introduction to Nuclear Fusion.* Fusion reactors; the kinetics of fusion reactions. Plasma confinement technology. Prereq.: CHEGR 3726. 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. 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.: Junior standing. 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.: Junior standing. 3 s.h.

*4880, *4881. *Chemical Reactor Design 1 and 2.* Chemical reaction equilibria. Theoretical developments and methods of interpreting experimental data pertaining to chemical kinetics. General design principles and construction features of reactors with application of these principles to the design of specific reactors. Prereq.: CHEGR 3772. 3+3 s.h.

*4882. *Process Dynamics.* Introduction to automatic control and control loop concepts. Laplace transform techniques. Linear open-loop and closed-loop systems. Root-locus and frequency response methods. Design of control systems. Prereq.: CHEGR 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.: CHEGR 4882. 1 s.h.

*5883. *Mathematical Methods in Chemical Engineering.* The applications of advanced mathematics to the solution of chemical engineering problems. Topics 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 analytic techniques. Prereq.: CHEGR 3786. 3 s.h.

5886. *Nuclear Reactor Design.* The steady state reactor core; four-factor equation, resonance escape probability, neutron flux distribution in various geometrics, two-group and multigroup theories. Transient reactor behavior and control; effect of delayed neutrons, fission product poisoning, nuclear fuels, nuclear heat transfer and burnout problems, reactor economy; fuel burnup and power cost. Thermal breeder and fast reactors. Neutron flux distribution measurements. Radiation detection and monitoring. Prereq.: CHEGR 3726 or consent of instructor. 3 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.: Senior standing in Engineering. 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.: CHEGR 4887. 3 s.h.

CHEM–CHEMISTRY
Department of Chemistry

The following has been approved as a General Education course in the domain of Natural Sciences: 1500, Chemistry in Modern Living. The following courses have been approved as substitutes in the domain of Natural Science. However, they are higher-level courses than the standard General Education courses; students should consult their advisors about taking them. They are: 1505, Allied Health Chemistry 1, 1506, Allied Health Chemistry 2; 1516, General Chemistry 1; 1516, General Chemistry 2.

Lower-Division Courses

1500. *Chemistry in Modern Living.* Introduction to basic chemical concepts, the scientific method, and the impact of chemistry on human life and society. Examples may include water treatment, air quality, plastics, drugs, cosmetics, energy resources, food, and the chemical basis of life. No laboratory. 3 s.h.

*1505, *1506. *Allied Health Chemistry 1, 2.* Fundamentals of inorganic, organic, and biological chemistry including application to the human organism. Two hours lecture, three hours lab-discussion. Concurrent for 1505: CHEM 1505R unless exempted by departmental placement exam. Concurrent for 1506: CHEM 1506R unless a grade of C or better was earned in CHEM 1505. The corresponding recitation course is required concurrently for students repeating CHEM 1505 or 1506. 3+3 s.h.

1505R, 1506R. *Recitation for Allied Health Chemistry 1, 2.* Discussion and problem solving exercises to complement and enhance study in CHEM 1505 and 1506. Concurrent with CHEM 1505 and 1506. 1+1 s.h.

*1515, *1516. *General Chemistry 1, 2.* The fundamental principles and the more important elements and compounds; qualitative analysis. Intended for majors in the natural sciences and engineering. Three hours lecture, three hours lab-discussion. Prereq.: Three units of high school algebra and geometry (or MATH 1503 and 1511 or their equivalents), and one unit high school chemistry. Concurrent for 1515: CHEM 1515R unless exempted by placement exam. Concurrent for 1516: CHEM 1516R

unless a grade of C or better was earned for CHEM 1515. The corresponding recitation course is required concurrently for students repeating CHEM 1515 or 1516. 4+4 s.h.

1515R, 1516R. *Recitation for General Chemistry 1, 2.* Discussion and problem solving based on current material in CHEM 1515 and 1516. Concurrent with CHEM 1515 and 1516. 1+1 s.h.

2602. *African and African-American Contributions to Science.* Introduction to basic science concepts, the scientific method, and the impact of chemistry as a central science on society. Examples include works of African-American scientists. 3 s.h.

*2604. *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.

2650. *Introduction to Undergraduate Research.* Introduction to the methods of chemical research under the direction of a faculty member. May include literature search and analysis, instructional laboratory development, and/or original basic or applied research. May be repeated to a maximum of 4 s.h. Prereq. or concurrent: CHEM 1516 and approval of department chairperson. 1-2 s.h.

Upper-Division Courses

*3705. *Nutritional Biochemistry.* Phases of biochemistry of special interest in home economics and dietetics. Credit cannot be received for this course if credit is received for any other biochemistry course. Two hours lecture, three hours lab-discussion. Prereq.: CHEM 1506. 3 s.h.

*3719, *3720. *Organic Chemistry 1, 2.* Organic compounds, reactions and theories. Typical preparations and procedures of analysis. Three hours lecture, three hours lab. Prereq.: CHEM 1516.4+4 s.h.

3719R, 3720R. *Organic Chemistry Recitation 1, 2.* An introduction to the preparation and analysis of organic compounds. Discussion of CHEM 3719 and 3720 material and approaches to problem solving. Required for chemistry majors. Concurrent with CHEM 3719 and 3720. 1+1 s.h.

3729. *Inorganic Chemistry.* Fundamental principles underlying the structure, bonding, and properties of the elements and molecular, solid state, and coordination compounds. Prereq. or concurrent: CHEM 3739. 3 s.h.

*3737. *Biophysical Chemistry.* Principles of chemical thermodynamics, spectroscopy, and kinetics as specifically applied to biological systems. Three hours lecture, three hours lab. Prereq.: CHEM 2604, PHYS 2611 and 2611L, MATH 1572. Credit may not be received for both CHEM 3737 and 3739. 4 s.h.

*3739, *3740. *Physical Chemistry 1, 2.* Principles and applications of physical chemistry. Three hours lecture, three hours lab. Prereq.: CHEM 2604, PHYS 2611 and 2611L, MATH 2673. Prereq. for 3740: CHEM 3737 or 3739, MATH 2673. Credit may not be received for both CHEM 3737 and 3739.4+4 s.h.

3764. *Chemical Toxicology.* Introduction to the clinical, forensic, industrial, and environmental aspects of chemical toxicology. Therapeutic and toxic limits of drugs. Actions, control and treatment of poisons and environmental agents. Prereq.: CHEM 3720 and either CHEM 2604 or permission of chairperson. 2 s.h.

3785. *Biochemistry 1.* Structure and properties of biomolecules, including proteins, lipids, carbohydrates and nucleic acids. Introduction to glycolisis metabolic pathway. Prereq.: CHEM 3720. 3 s.h.

*3785L. *Biochemistry Laboratory.* Analysis and separation techniques of biochemistry. Three hours lab-discussion. Prereq.: CHEM 2604. 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.

*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.

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.

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 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.

5836. *Quantum Chemistry*. Basic principles of quantum chemistry, with applications to problems in molecular structure, spectroscopy and thermodynamics. Prereq.: CHEM 3740. 3 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. Required of BA and BS chemistry majors. Prereq. or concurrent: CHEM 4850 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.: CHEM 2604 or 3719 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.

*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. 3 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.

*5876. *Enzyme Analysis*. Advanced biochemistry laboratory focusing on the methods of enzyme purification and characterization. Six hours lab-discussion. Prereq.: CHEM 3785 or equivalent and 3785L or equivalent. 2 s.h.

CHFAM–CHILD AND FAMILY
Department of Human Ecology

Lower-Division Courses

1514. *Introduction to Early Childhood Education*. Historical and theoretical foundations of early childhood education; overview of early childhood environments, relationships with children and families, and curricular issues. Thirty hours of field experience is required. 3 s.h.

1531. *Infant and Toddler: Integrating Development and Education*. The design of developmentally appropriate curriculum and caregiving environments as related to the development and learning of children from conception to age three. Emphasis on the caregiver-child relationship and the creation of supportive partnerships with families. Includes five hours field/clinical experience. Prereq. or concurrent: CHFAM 1514 or FOUND 1501. 3 s.h.

1531L. *Infant/Toddler Lab*. Observation and participation in infant and toddler programs. Six hours lab per week. Concurrent with 1531. 1 s.h.

1532. *Early Childhood: Integrating Development and Education*. Planning curriculum and organizing learning environments which are developmentally appropriate and responsive to the needs of diverse children, ages three to eight years of age. Includes 10 hours of field/clinical experience. Prereq. or concurrent: CHFAM 1514 or FOUND 1501. 3 s.h.

1532L. *Early Childhood Lab*. Participation in early childhood settings. Six hours lab per week. Concurrent with 1532. 1 s.h.

2632. *Child Health and Safety*. Health care practices applied to child care in group facilities; home nursing skills for non-health personnel. Students receive certificates in first aid, communicable disease management, and child abuse detection and prevention. Prereq.: CHFAM 1514 and HSC 1568. 2 s.h.

2650. *Introduction to Assessment of Young Children*. Principles of conducting developmentally appropriate assessments of behavior and development of young children; includes assessment purposes and strategies, and appropriate use of assessment information. Prereq.: CHFAM 1531 and 1532. 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: CHFAM 1532 and 1532L. 3 s.h.

2672. *Nutrition and the Young Child.* Nutritional needs of the developing child; implementation of quality food service in a child care setting; nutrition education of young children for development of desirable food habits. Includes five hours field/clinical experience. Prereq.: FNUTR 1543 or 1551. 3 s.h.

Upper-Division Courses

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.: PSYCH 1560. 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.: CHFAM 2664; CHFAM 1514 or FOUND 1501. 3 s.h.

3760. *Language and Literacy Experiences in Early Childhood Settings.* Concepts and teaching strategies related to understanding language and literacy development of young children and planning language and literacy experiences for all children three to eight years of age. Prereq.: CHFAM 1532. 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.: CHFAM 1532. 3 s.h.

3790. *Supervised Practice in Early Childhood Education.* A culminating practicum designed to provide beginning teachers clinical experience with children in the early childhood years (3 to 8). Students apply developmental theories and appropriate practices in settings for young children. 140 hours field/clinical experience. Prereq.: CHFAM 1532L, ECE 2630, and CHFAM 2664. 3 s.h.

4833. *School-Age Child Care.* Developing and administering extended day and vacation programs for children K-6, in schools and other facilities. Prereq.: CHFAM 3731. 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, CHFAM 3790. 3 s.h.

4860. *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.: CHFAM 2664 or ECE 4841 or SEDUC 4842. 3 s.h.

CIS–COMPUTER INFORMATION SYSTEMS

Department of Computer Science and Information Systems

Lower-Division Courses

*2605. *MVS JCL and Utilities.* General purpose programs found in computer installations, including sort/merge routines, report generators, magnetic tape routines, supervisory routines, and random-access utility programs. Prereq.: CSIS 1590. 3 s.h.

*2613. *RPG and Midrange Computing.* Program design and development with emphasis on midrange computing systems such as the AS/400 and report-based languages such as RPG. Three hours lecture, two hours lab. Prereq.: CSIS 2610. 4 s.h.

*2635. *UNIX Environment.* Use of the UNIX operating systems or similar systems, including editors, file management, shell scripts, and language compilers. Prereq.: CSIS 2610. 3 s.h.

*2640. *Business Programming.* The use of high-level languages such as COBOL to design and develop programs with special emphasis on applications for business. Topics include program design and testing, control structures, sorting, report design, and table processing. Use of sequential and indexed files. Three hours lecture, two hours lab. Prereq.: CSIS 2610. 4 s.h.

Upper-Division Courses

*3714. *Assembly Language and Architecture.* Fundamentals of computer architecture and organization. Forms of data representation. Assembly language and machine language programming. The assembly process. Methods and protocols for subroutine linkage. Prereq.: CIS 2640. 3 s.h.

*3718. *Operating Systems Concepts.* Concepts of computer operating systems, including memory allocation, job scheduling, process communication, and input/output processing. Examination of operating systems on several platforms. Prereq.: CIS 3714. 3 s.h.

*4808. *CICS Programming.* A detailed study of CICS (Customer Information Control System), including CICS commands, file definitions, screen definitions, and application programming. Prereq.: CIS 3714 or permission of chairperson. 3 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 up to 6 s.h. Prereq.: At least 3 s.h. of upper-division departmental courses, and permission of chairperson. 1-3 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 2640 or OIS 2663, 3 s.h. of upper-division departmental courses. 3 s.h.

CLTEC–CLINICAL LABORATORY TECHNOLOGY

Department of Health Professions

Lower-Division Courses

1500. *Phlebotomy 1.*Principles and practice of blood collection by venipuncture and capillary puncture techniques; proper collection and preservation of laboratory specimens; infection control and safety measures. Three hours lecture, three hours lab per week. Prereq.: BIOL 2601 or 1551, or permission of instructor. 3 s.h.

*1501. *Introduction to Clinical Laboratory Science.* Overview of the clinical laboratory profession, ethics, responsibilities and clinical relevance of laboratory procedures. Prereq.: Algebra 2, high school chemistry and biology. Concurrent with CLTEC 1501L. 2 s.h.

*1501L. *Introduction to Clinical Laboratory Science Laboratory.* Phlebotomy, specimen collection and processing; basic clinical laboratory exercises. Three hours lab per week. Concurrent with CLTEC 1501. Prereq.: Algebra 2, high school chemistry and biology. 1 s.h.

1502. *Urinalysis and Body Fluids.* Theory and techniques in the analysis of urine and body fluids. Concurrent with CLTEC 1502L. Prereq.: CLTEC 1501/L, BIOL 2601. 2 s.h.

*1502L. *Urinalysis and Body Fluids Laboratory.* Chemical and microscopic analysis of urine. Concurrent with CLTEC 1502. Three hours lab per week. Prereq.: CLTEC 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 CLTEC 1503L and BIOL 2602. Prereq.: BIOL 2601 and CLTEC 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 CLTEC 1503. Prereq.: CLTEC 1501/L, BIOL 2601. 1 s.h.

2601. *Clinical Chemistry 1.* Medical laboratory applications of clinical chemistry. Concurrent with CLTEC 2601L. Prereq.: CLTEC 1502/L, CHEM 1515. 2 s.h.

*2601L. *Clinical Chemistry 1 Laboratory.* Spectrophotometric, semi-automated, and automated analysis of glucose, electrolytes, enzymes, and other chemical constituents of serum. Three hours lab per week. Concurrent with CLTEC 2601. Prereq.: CLTEC 1502/L, CHEM 1515. 1 s.h.

*2604. *Instrumentation.* Laboratory instrumentation, quality control, quality assurance, instrument maintenance and troubleshooting; performance verification, proficiency surveys, choice and implementation of new instruments. Two hours lecture, four hours lab per week. Prereq.: CLTEC 2601, 2601L; CHEM 1515. 2 s.h.

2607. *Phlebotomy 2.* Clinical phlebotomy training for students in health professions who intend to become certified professional phlebotomists. Students are required to complete 16 s.h. of clinical experience in a laboratory. Successful completion of this practicum qualifies students to take the certification exam. Prereq.: Health care provider status or permission of the instructor. 2 s.h.

*2609. *Topics in Histotechnology.* Instrumentation, processing, fixation, microtomy, staining, and special staining as relative to the histotechnician. Prereq.: Admission to Histotechnology program, CLTEC 1501/L, or permission of instructor. 2 s.h.

2611. *Histotechnician Seminar 1.* Didactics in specimen processing, fixation, microtomy, sectioning, and general staining methods. Evaluation of clinical progress. Prereq.: CLTEC 2609. Concurrent with CLTEC 2612. 1 s.h.

2612. *Histotechnician Practicum 1.* Assignment to a clinical affiliate. Histologic procedures of instrumentation, cell structure, fixatives, processing and sectioning of tissues, and general staining methods. Forty hours of clinical experience per week. Concurrent with CLTEC 2611. Prereq.: Successful completion of first three semesters of histotechnician curriculum with a minimum GPA of 2.5. 11 s.h.

2621. *Histotechnician Seminar 2.* Didactics in special staining methods, microorganisms, immunochemistry, DNA and RNA probes, electron microscopy and flow cytometry. Preparation for practical examination. Prereq.: CLTEC 2611 and 2612. Concurrent with CLTEC 2622. 1 s.h.

2622. *Histotechnician Practicum 2.* Assignment to a clinical affiliate. Histologic procedures of nuclear, cytoplasmic, nervous tissue, connective tissue, microorganisms, and muscle fiber stains; immunocytochemistry, DNA and RNA probes, flow cytometry, special techniques, and preparation for the ASCP practical examination. Concurrent with CLTEC 2621. Prereq.: Successful completion of CLTEC 2612 with a grade of C or better. 11 s.h.

*2687L. *Microbiology for Health Care Laboratory.* Medical microbiology laboratory for health care professionals. Laboratory methods in the transmission, identification, prevention, and treatment of

common bacterial, viral, fungal, and parasitic pathogens with a focus on nosocomial infections. Three hours lab per week. Concurrent with BIOL 1560. Prereq.: BIOL 1545, 1551, 2601, or permission of instructor. 1 s.h.

Upper-Division Courses

3700. *Clinical Chemistry 2.* Immunomicroscopic, receptor binding, and enzyme-linked techniques as applicable to detection of antigen, antibody, drug and other chemical analyses. Concurrent with CLTEC 3700L. Prereq.: CLTEC 2601/L or CHEM 1515. 2 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 CLTEC 3700. Prereq.: CLTEC 2601/L or CHEM 1515. 1 s.h.

3703. *Clinical Immunology.* Fundamentals of antigen-antibody reactions applied to serological procedures performed in the clinical laboratory. Three hours lecture per week. Concurrent with CLTEC 3703L. Identical with BIOL 3703. Prereq.: CLTEC 1501/L, BIOL 2602. 3 s.h.

*3703L. *Clinical Immunology Laboratory.* VDRL, ASO, febrile, latex, pregnancy, and viral tests; flocculation, precipitation, complement fixation, and titration procedures for various diseases. Three hours lab per week. Concurrent with CLTEC 3703. Identical with BIOL 3703L. Prereq.: CLTEC 1501/L, BIOL 2602. 1 s.h.

3706. *Clinical Laboratory Seminar.* Internship evaluation, special topics in the clinical laboratory. Case studies in the clinical laboratory. Concurrent with CLTEC 3716. 2 s.h.

3710. *Interpretation of Clinical Laboratory Results.* The significance of laboratory results and how they relate to gender and age. Prereq.: CLTEC 2601/L or permission of instructor.

*3716. *Clinical Internship.* Thirty-six hours per week of practical application of skills in affiliate hospitals and private laboratories. Prereq.: Completion of previous five semesters of CLTEC curriculum with a grade of C or better and a minimum 2.5 GPA. Concurrent with CLTEC 3706. 8 s.h.

3729. *Clinical Hematology.* Origin and formation of blood cells; anemias, leukemias and other hematologic disorders. Coagulation system and disorders. Concurrent with CLTEC 3729L. Prereq.: BIOL 2602. 3 s.h.

*3729L. *Clinical Hematology Laboratory.* Manual, semi-automated and automated blood cell counts; hemoglobin and hematocrit procedures; staining techniques and differential morphology; coagulation procedures. Students complete 100 different counts and ten case studies. Concurrent with CLTEC 3729. Prereq.: BIOL 2602. 2 s.h.

*3787. *Diagnostic Microbiology.* A clinical approach to the study of human pathogenic microorganisms, including types of infections, frequency, isolation, identification, and treatment. Focus on bacterial, fungal, viral, and parasitic pathogens. Two hours lecture per week. Concurrent with 3787L. Prereq.: BIOL 2602. Identical with BIOL 3787. 2 s.h.

3787L. *Diagnostic Microbiology Laboratory.* A clinical approach to the study of bacteria, fungi, viruses, and parasites. Methods to isolate and identify clinically significant pathogens from clinical specimens; case studies in clinical microbiology. Six hours lab per week. Prereq.: BIOL 2602. Identical with BIOL 3787L. 2 s.h.

4811. *Clinical Experience 1.* Acceptance into a clinical affiliate. Clinical microbiology and laboratory, clinical immunology and laboratory, clinical mycology, clinical parasitology, and virology. Forty hours of clinical experience per week. Prereq.: Permission of program director. 12 s.h.

4821. *Clinical Experience 2.* Acceptance into a clinical affiliate. Immunohematology and laboratory, clinical hematology and laboratory, coagulations and laboratory. Forty hours of clinical experience per week. Prereq.: Permission of program director. 12 s.h.

4831. *Clinical Experience 3.* Acceptance into a clinical affiliate. Clinical chemistry and laboratory, urinalysis and laboratory, laboratory management, laboratory education methods, special topics in clinical laboratory science. Capstone course: senior laboratory research project and resumes completed. Forty hours of clinical experience per week. Prereq.: Permission of program director. 12 s.h.

COMM–SPEECH COMMUNICATION

Department of Communication and Theater

The following have been approved as General Education courses in the area of basic Skills, Oral Communication: 1545 and 1545H, Communication Theory and Practice.

Lower-Division Courses

1500. *Orientation.* Introduction to department programs, policies, practices, and facilities, with particular emphasis on the needs of speech communication majors. Various educational and career opportunities in speech communication are included. Relevant aspects of the assessment program in speech communication are explained. 1 s.h.

1530. *Communication Theory.* The study of significant communication models, systems, and theories. The verbal and nonverbal communication processes are discussed and applied as they occur in interpersonal, group, organizational, mass, and public situations. Prereq.: COMM 1500. 3 s.h.

*1545. *Communication Theory and Practice.* The study of the theories, strategies, and skills for competent participation in interpersonal, group, and public communication situations. Application exercises in interpersonal, group, and public communication are included. 3 s.h.

*1545H. *Honors Communication Theory and Practice.* The study of the theories, strategies, and skills for competent participation in interpersonal, group, and public communication situations. Application exercises in interpersonal, group, and public communication are included. Stylistic experimentation is encouraged so students develop their own distinctive oral communication style. Prereq.: Eligibility for the Honors Program. 3 s.h.

2610. *Intercultural Communication.* The study of key historical and contemporary theories that affect communication across cultural boundaries. Exercises for improving communication skills in intercultural communication situations are included. 3 s.h.

*2645. *Presentational Speaking.* In-depth examination of the theory and practice of preparing and delivering presentations in today's work environment. Emphasis on using technology aids during presentations. Prereq.: COMM 1545 or equivalent. 3 s.h.

2653. *Group Communication.* Small-group interaction and participation from a communication systems perspective. Includes an examination of group processes and leadership in group interaction. 3 s.h.

2656. *Interpersonal Communication.* An examination of the skills necessary to develop, maintain, and evaluate one-to-one relationships. Through practical experiences from everyday life, the class examines what occurs when one person communicates with another. 3 s.h.

2657. *Organizational Communication.* A general survey of traditional and interpretive approaches to organizational communication as well as career applications. Explores the relationship between communication and organizational effectiveness. 3 s.h.

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 literary work and communication of the work to an audience. 3 s.h.

Upper-Division Courses

3705. *Speech Problems of Children.* A consideration of speech improvement for all pupils and of speech correction for pupils with speech and/or hearing problems in kindergarten, primary, and intermediate grades. Types of difficulties, techniques, and materials for development and continued use of good voice and acceptable speech. Prereq.: COMM 1545. 2 s.h.

3740. *Special Topics.* An in-depth analysis of topics of relevance and interest in classical through contemporary communication. May be repeated if the topic changes. Prereq.: COMM 1530 and junior standing. 3 s.h.

3745. *Individual Studies.* The student selects a special problem or issue in communication to research in detail. Repeatable to a maximum of 6 s.h. Prereq.: COMM 1530, junior standing, approval of Individual Studies form. 1-3 s.h.

3754. *Argumentation.* Developing critical thinking through systematic evaluation of theories, principles, and practices of argumentation. Prereq.: COMM 1530. 3 s.h.

3756. *Interviewing.* Theories of communication applied to interview situations with a special concern for developing student understanding of and skills needed to participate in one-to-one and panel interviews. Prereq.: COMM 1530. 3 s.h.

4852. *Group Communication and Practice.* Analysis of communication variables influencing communication practice in groups. Includes the study of relevant literature, observation and participation in group situations, and application of theory to practice. Prereq.: COMM 1530 and 2653. 3 s.h.

4855. *Interpersonal Communication Theory and Practice.* An examination of the development of interpersonal communication theory and its application in personal and professional relationships. Prereq.: COMM 1530 and 2656. 3 s.h.

4858. *Practicum.* Faculty supervised experiences in communication studies. Might include field work applying theory to practice in business or applying research techniques to support communication research. Repeatable to a maximum of 6 s.h. Prereq.: COMM 1530, 2657, and approval of Practicum Proposal form. 1-3 s.h.

4859. *Organization Communication Theory and Practice.* An in-depth analysis of communication topics in modern organizations. Students will examine communication processes as they influence organizational development outcomes. May be repeated for credit as long as a specific topic is not repeated. Prereq.: COMM 2657. 3 s.h.

4896. *Internship.* An application of communication theories and practice within organizational settings. Weekly meetings with faculty supervisor are required. Weekly field workload is 20 hours. May be repeated upon approval to a maximum of 6 s.h. Prereq.: COMM 2657, senior standing, and approval of Internship Proposal form. 3 s.h.

4898. *Seminar.* A cooperative exploration of topics in communication not covered in course offerings. May be repeated for credit if seminar topic changes. Prereq.: COMM 1530, 2653, 2656 and senior standing or permission of instructor. 3 s.h.

4899. *Senior Project.* Students demonstrate a synthesis of research, writing, and presentation skills through the completion of a project identified by the student during coursework in the major. The student, in consultation with a faculty project advisor, will produce and develop an appropriate presentation to department faculty and other interested parties. Prereq.: Senior standing, 30 s.h. of Speech Communication complete, approval of Senior Project form, and either COMM 4852, 4855, or 4859. 2 s.h.

COUNS–COUNSELING
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.

5821, 5822. *Seminar in Guidance and Counseling.* Study of selected topics chosen by staff, e.g. career guidance, counseling process, and other contemporary issues in school personnel work. Prereq.: Upper-division standing. 1-3 s.h.

4823. *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.

5862. *Principles of Interaction with Special Needs Children.* Principles and methods of interaction with students, parents, and other professionals in behalf of students with special needs. A team approach and the use of community resources. 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 Ethics.* Introduces the field of counseling and the profession's ethical standards. Included are major areas of counselor preparation and professional issues relating to the practice counselor. ACA's code of ethics is integrated throughout the curriculum. This course also informs students of work opportunities. Requirements differ for undergraduate and graduate students. Prereq.: Upper-division standing. 3 s.h.

CRJUS–CRIMINAL JUSTICE
Department of Criminal Justice

Lower-Division Courses

1500. *Introduction to Criminal Justice.* Overview of the American criminal justice process with emphasis on its constituent foundations, its constitutional limits, and the rights of the individual from arrest through sentencing and release. 3 s.h.

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.: CRJUS 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.: CRJUS 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.: CRJUS 1500. 3 s.h.

Upper-Division Courses

3700. *Fire and Safety.* Municipal, industrial and other fire protection services; fire detection and suppression systems; special emphasis on fire safety at industrial and commercial locations. Must be a Criminal Justice or Forensic Science major or have permission of chairperson. Prereq.: CRJUS 2601 and 3751. 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.: CRJUS 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 CRJUS 3702. Must be a Criminal Justice major or have permission of chairperson. Prereq.: CRJUS 2603. 2 s.h.

*3710. *Social Statistics.* Measurement and interpretation of social data by use of descriptive techniques. Cross-listed with SOCIO 3701. Prereq.: CRJUS 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.: CRJUS 3710 or STAT 2601 or equivalent. 3 s.h.

3714. *Forensic Science Investigation.* Scientific study of the significance of physical materials associated with crime scenes; qualitative and quantitative analytical concepts in the examination of physical evidence. Concurrent with CRJUS 3714L. Prereq.: CRJUS 2601. 2 s.h.

*3714L. *Forensic Science in Investigation Laboratory.* Techniques and procedures in crime scene processing with special emphasis on legal and scientific aspects of physical evidence. Experiments and demonstrations concerning the examination of the physical and chemical properties of physical evidence. Three hours lab. Concurrent with CRJUS 3714. Must be a Criminal Justice major or Forensic Science major. Prereq.: CRJUS 2601. 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.: CRJUS 2601 or 2602 or 2603. 3 s.h.

3719. *Criminal Law.* Development, theories, and purposes of criminal law; elements of a crime, parties to a crime. Prereq.: CRJUS 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.: CRJUS 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.: CRJUS 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.: PSYCH 1560 and SOCIO 1500 and MATH 2601. 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 toward victims. Review of current laws advocation for compensation of crime victims. Prereq.: CRJUS 3735. 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.: Junior standing in CRJUS and CRJUS 3715 and CSIS 1514 or equivalent courses. 3 s.h.

3751. *Prevention Strategies.* Concepts and strategies of crime prevention, the protection of assets in the public and private sectors. Must be CRJUS major, or have permission of chairperson. Prereq.: CRJUS 2601. 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.: SOCIO 1500 and PSYCH 1560 plus 9 s.h. in CRJUS. 3.s.h.

3777. *OPOT-Law Enforcement.* Students complete a training academy at YSU. Meets daily for 15 weeks, up to 8 hours each day. Once the training is complete, the student will have an Ohio Peace Officer Training Certificate. Prereq.: Senior standing, completion of the appropriate track courses, and permission of chairperson. 12 s.h.

3799. *Directed Individual Study.* Individual study or research of a special problem or issue related to the criminal justice field. Application must be made to the department prior to registration. May be repeated once for a maximum of 4 s.h. of credit. Prereq.: Senior standing and 15 s.h. of CRJUS and approval of instructor. 1-2 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.

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.: CRJUS 3702 or approval of instructor. 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.: CRJUS 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 9 s.h. Prereq.: Senior standing in CRJUS and specific emphasis area courses per department guidelines. 3-9 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.: CRJUS 3720 or approval of instructor. 3 s.h.

5825. *Criminal Procedures and Constitutional Issues.* Examination of the constitutional foundations of the American criminal justice process with special emphasis on recent Supreme Court decisions; state and federal legislation affecting criminal law. Legal and practical applications of the laws of arrest, criminal procedure, search and seizure, court structures, and federal civil rights. Must be a Criminal Justice major or have permission of chairperson. Prereq.: Senior standing. 3 s.h.

5826. *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.: Senior standing. 3 s.h.

5831. *Violence in America.* Analysis of violence in America including official and unofficial statistics; types and levels of violence; research findings; profiles of offenders. Case analysis of domestic violence, juvenile violence, gangs, and other forms of violence. Prereq.: CRJUS 3735 and 3712. 3 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 function. Administrative decisions regarding implementation of a security program. Plant protection, merchandising safety and security; credit and insurance investigative procedures. Serves as the loss prevention/assets protection track senior capstone course. Portfolios and resumes prepared, assessment exam. Must be a Criminal Justice major or have permission of chairperson. Prereq.: CRJUS 3740 and Senior standing. 3 s.h.

*4850. *Special Topics in Criminal Justice.* Contemporary issues in the criminal justice area. Topics are announced prior to enrollment. Prereq.: Senior standing or permission of instructor. 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.: CRJUS 3712 or 3765. 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.: CRJUS 3715 and senior standing. 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.

4890. *Judicial Administration.* Court management examined in light of structure, judicial responsibility, and inherent power of courts. Consideration to case flow, case management, automation, and judicial staffing. Serves as the legal processes track senior capstone course. Portfolios and resumes prepared, assessment exam. Must be a Criminal Justice major or have permission of chairperson. Prereq.: CRJUS 3720 and senior standing. 3 s.h.

CSCI–COMPUTER SCIENCE

Department of Computer Science and Information Services

Lower-Division Courses

*2650. *Language Topics.* Intensive language course with emphasis on writing efficient programs in a particular programming language. Each language topic is open only to students without previous credit in that particular language. The language topic and special prerequisites are announced in advance. Prereq.: Permission of chairperson. 1-3 s.h.

*2690. *Individual Study in Computer Programming.* Individual study of a computer language. The instructor is available for consultation and evaluates the student's progress. Grading is CR/NC. May be repeated twice with consent of the chairperson. 1 s.h.

Upper-Division Courses

3710. *Introduction to Discrete Structures.* Basic set theory, including functions and relations. Boolean algebra, propositional logic, regular expressions, and finite automata. Prereq.: CSIS 2610 and MATH 1571. 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 2617. 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 2617. 3 s.h.

4801. *Software Engineering.* Developing and maintaining complex software systems. Process and lifecycle 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.

*4805. *System Programming.* Topics selected from aspects of systems programming, including assemblers, loaders, linkage editors, macro processors, and file management. Prereq.: CSIS 2617 and 3740. 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 2617 and 3740. 3 s.h.

*5807. *Compiler Design.* Study of compiler design and construction, including context-0free languages, lexical analysis, parsing, code generation and optimization. Prereq.: CSIS 2617 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 2617 and 3740. 3 s.h.

*5820. *Simulation.* Methods for modeling discrete event systems by algorithmic approaches using simulation languages. Prereq.: CSIS 2617 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 2617 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 2617 and either CSIS 3723 or 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.

*5835. *Artificial Intelligence.* Study of the theory and applications of intelligent systems. Topics may include general problem-solving techniques, knowledge representation and expert systems, vision and perception, and natural language processing. AI systems and languages. Prereq.: CSIS 2617 and 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.

*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 2617 and CSCI 3710. 3 s.h.

*5881. *Microcomputer System Architecture.* State-of-the-art course on microcomputer architecture. Topics include introduction to microcomputer systems, 16 and 32 bit microprocessors, direct memory access and other I/O transfer schemes, architecture of I/O processors, introduction to computer communications. Prereq.: CSIS 3740 and 3780. 3 s.h.

*4885. *Evaluation of Educational Software and Hardware 1.* A critical analysis of educational software for various academic disciplines and grade levels. The use of evaluative forms and the study of existing review criteria. Analysis and evaluation of hardware alternatives, peripheral devices, networking and hardware expansions in an educational setting. Not applicable to the CSCI major. Prereq.: 3 s.h. upper-division department courses. 3 s.h.

*4886. *Evaluation of Educational Software and Hardware 2.* Continuation of the analysis and evaluation of educational software and hardware begun in CSCI 4885. Emphasis on grades K-6. Not applicable to the CSCI major. Prereq.: CSCI 4885. 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.

4893. *Computer Science Internship.* An academic/industrial experience in which the student works as part of a Data Center's programming group for a semester. Minimum of 20 hours per week. Each student has a faculty advisor and an industrial advisor who periodically review the student's work as an intern. Written report on the internship required. For a computer science major, internship hours may be applied only to the technical electives requirement. May be repeated once with permission of department chairperson. Prereq.: 16 s.h. of departmental courses (at least 3 s.h. upper division) and permission of the department internship supervisor. 2-4 s.h.

*5895. *Special Topics.* Study of special topics in computer science. May be repeated up to 8 s.h. Subject matter and credit hours announced in advance. Prereq.: Al least 3 s.h. of upper-division CSIS courses, and permission of chairperson. 2-4 s.h.

CSIS–COMPUTER SCIENCE AND INFORMATION SYSTEMS

Department of Computer Science and Information Services

Lower-Division Courses

*1500. *Computer Literacy.* A survey of computer concepts and applications. Network access and electronic mail. Emphasis on software applications packages available for microcomputers, including word processing. Not applicable to the CSCI major. 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. 3 s.h.

*1525. *Survey of Modern Operating Systems.* An introduction to the common operating systems currently used with computers, such as DOS, Microsoft Windows, UNIX, and X-windows. Topics include setting up the user's work environment, file manipulation, and other commands. Not applicable to the CIS or CSCI major. Prereq.: CSIS 1500. 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 chairperson. 3 s.h.

*1560. *BASIC Programming.* Introduction to computer programming on microcomputer using a structured version of BASIC. Topics include program design, control structures, array processing, and input/output. Prereq.: MATH 1504. 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. Intended for CSIS majors and minors. Prereq.: CSIS 1500. 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 CSIS major. Prereq.: CSIS 1500 and MATH 1513. 3 s.h.

*2610. *Programming and Problem-Solving.* Problem-solving methods and algorithms using a high-level programming language. Designing, coding, debugging, and documenting programs using techniques of good programming style. Three hours lecture, two hours lab. Prereq.: CSIS 1590. 4 s.h.

*2617. *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. Three hours lecture, two hours lab. Prereq.: CSIS 2610. 4 s.h.

Upper-Division Courses

*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 2617. 3 s.h.

*3720. *System Configuration and Maintenance.* Theory and practice of installing and maintaining hardware and software for complex systems. Installation of application software, with emphasis on Windows and Mac applications. Essential DOS utilities: formatting, data recovery, protecting data. Printing problems, Windows environment problems, and problems with booting the machine. Small laboratory management. Prereq.: CSIS 1590. 3 s.h.

*3722. *Development of Databases.* The basic structure, design, development, implementation, and modification of databases for use in management of information systems. Prereq.: CSIS 1590. 3 s.h.

*3723. *Networking Concepts and Administration.* Overview of electronic communications concepts and technologies, with emphasis on Local Area Networks. Network topologies, design, administration, installed applications, and performance monitoring. Privacy, ethical and legal concerns. Prereq.: CSIS 1590. 3 s.h.

*3726. *Visual/Object-oriented Programming.* Use of one or more visual programming languages in conjunction with the concepts of object-oriented programming. Development of interactive programs using a graphical user interface. Two hours lecture, three hours lab. Prereq.: CSIS 2610.

*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 2617 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 2610. 3 s.h.

*3740. *Computer Organization.* Basic hardware components, structure, and implementation of computer systems. Assembly language and instruction set architecture. Combinational and sequential digital logic. CPU and control unit design. Prereq.: CSIS 2610. 4 s.h.

*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 2617 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.

*4824. *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 2617 and 3 s.h. of upper-division departmental courses. 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.

4840. *Business Systems 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 department level system. Prereq.: CIS 2640 and 3 s.h. of upper-division department courses. 4 s.h.

DDT–DRAFTING AND DESIGN TECHNOLOGY

School of Technology

*1505. *CAD Technology 1.* Basic instruction in the use of AUTOCAD computer-aided drafting system. Includes primary 2-D 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 Technology 2.* Parametric Solid Modeling and other 3-D techniques. A continuation of customization techniques and the use of an applications programming language within AUTOCAD. Three hours lecture, three hours lab per week. Prereq.: DDT 2605. 4 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.: CET 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.

DENHY–DENTAL HYGIENE

Department of Health Professions

*1511. *Dental Hygiene 1.* An introduction to dental hygiene and its role as an integral part of the dental health profession. Theories and principles of client assessment, prevention of disease transmission, instrumentation, instrument sharpening, and coronal polishing. Prereq.: Admission to the Dental Hygiene program. 3 s.h.

*1511L. *Clinical Dental Hygiene 1.* Preclinical instruction which includes planning comprehensive patient care and implementation techniques. Six hours lab per week. Prereq.: Admission to the Dental Hygiene program. 2 s.h.

*1512. *Dental Hygiene 2.* Discussion of individualized patient education instruction, the appropriate preventive dental agents and devices, and the techniques for utilization. Prereq.: DENHY 1511. 1 s.h.

*1512L. *Clinical Dental Hygiene 2.* Clinical application of dental hygiene techniques with emphasis on applied preventive measures. Nine hours clinic per week. Prereq.: DENHY 1511L. 3 s.h.

1513. *Dental Hygiene 3.* Concepts of nutrition science as they relate to evaluation and education of dental hygiene patients. Prereq.: DENHY 1512. 1 s.h.

*1513L. *Clinical Dental Hygiene 3.* Clinical application of dental hygiene techniques with emphasis on nutrition as it relates to dental caries and periodontal disease. Prereq.: DENHY 1512L. 1 s.h.

*1521. *Dental Anatomy.* A study of the anatomy of the head and neck, oral structures, tissues of the human body, and embryologic development. Prereq.: Admission to the Dental Hygiene program. 3 s.h.

*1521L. *Dental Anatomy Lab.* Applied study of tooth morphology and the anatomy of the head and neck. Prereq.: Admission to the Dental Hygiene program. 1 s.h.

1529. *Management of the Medically Compromised Patient.* Discussion of modified dental hygiene procedures as they relate to special needs dental clients and management of medical/dental emergencies. Prereq.: DENHY 1511. 2 s.h.

1530. *Dental Radiology.* Radiographic theory, techniques, and use of diagnosis in prevention of dental and related diseases. History and development of radiographs, hazardous effects of radiation, and methods of protection. 2 s.h.

*1530L. *Dental Radiology Lab.* The techniques necessary to expose, develop, and mount dental films. Three hours lab per week. 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.: DENHY 1521. 2 s.h.

2611. *Dental Materials.* The sources, physical properties, methods of manufacturing, and uses of various dental materials. One hour lecture per week. Prereq.: Second-year standing in the Dental Hygiene program. 1 s.h.

*2611L. *Dental Materials Lab.* Selected dental materials are manipulated in laboratory procedures so the student can assist the dentist at the chair as well as perform certain laboratory procedures and specified clinical duties. Three hours of lab per week. Prereq.: Second-year standing in the Dental Hygiene program. 1 s.h.

*2614. *Dental Hygiene 4 Seminar.* In-depth seminar on advanced clinical procedures and comprehensive client care. Emphasis on specialties, implementation and evaluation phases, and applications in dental hygiene treatment planning. Concurrent with DENHY 2614L. Prereq.: DENHY 1513. 1 s.h.

*2614L. *Clinical Dental Hygiene 4.* Clinical application of dental hygiene techniques with emphasis on comprehensive care of periodontal patients. Twelve hours of clinic per week. Concurrent with DENHY 2614. Prereq.: DENHY 1513L. 4 s.h.

2615. *Dental Hygiene 5 Seminar.* In-depth seminar dealing with comprehensive dental hygiene care. Assessment, diagnosis, planning, and implementation phases of treatment discussed for complex medically and dentally compromised clients. Each student presents a capstone case study. Concurrent with DENHY 2615L. Prereq.: DENHY 2614. 1 s.h.

*2615L. *Clinical Dental Hygiene 5.* Advanced clinical application of dental hygiene techniques with emphasis on professionalism and patient and time management. Twelve hours clinic per week. Concurrent with DENHY 2615. Prereq.: DENHY 2614L. 4 s.h.

2622. *Periodontology.* A study of the healthy periodontium and histopathology of disease. Emphasis on the role of the dental hygienist in thorough diagnosis, bacteriology, treatment, and supportive periodontal therapy. Prereq.: DENHY 1535. 2 s.h.

2623. *Pharmacology for the Dental Hygienist.* Importance of pharmacological aspects of those drugs and drug groups with which the dentist and dental hygienist are directly and indirectly concerned, including an in-depth study of patient management and pain control in dentistry. Prereq.: Second-year standing in the Dental Hygiene program. 2 s.h.

2627. *Dental Public Health.* An introduction to public health dentistry, including study of the epidemiology of dental disease. Particular attention is given to preventing and controlling dental disease and promoting optimal oral health through organized community efforts. Prereq.: Second-year standing in the Dental Hygiene program. 2 s.h.

*2627L. *Dental Public Health Practicum.* Primary preventive dental services provided by students in off-campus locations. A case-study design is used by student teams in solving a community oral health problem. Three hours lab and/or clinical experience per week. Prereq.: DENHY 2614L. 1 s.h.

2628. *Practice Concepts.* The historical, professional, legal, and ethical aspects of dental hygiene and dentistry. Discussion of responsibilities and changing roles of the dental hygienist, including an overview of dental office management. Prereq.: Second-year standing in the Dental Hygiene program. 1 s.h.

ECE–EARLY CHILDHOOD EDUCATION

Department of Teacher Education

2630. *Facilitating Conceptual Learning in Early Childhood Education.* Provides preservice teachers with the knowledge and skills to facilitate children's classroom experiences in ways that lead to rich conceptual development. Ten field/clinical hours. Prereq.: PSYCH 3755, ENGL 1551. 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.: MATH 2651 and 2652. 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.: 12 s.h. of science. 3 s.h.

3760. *Cross-Curricular Applications.* Field application of developmental theories and appropriate practices in settings for young children. Part of 16 week TEC (Teacher Education Center) designed to provide preservice teachers clinical experiences with children in the early childhood years (3 to 8). Prereq.: Admission to upper-division status in COE. 4 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.: HIST 2605 or 2606. 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:. CHFAM 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.: ENGL 2651, Upper-division status in COE. 3 s.h.

4841. *Supervised Student Teaching: Early Childhood.* A 16-week assignment in a kindergarten-grade 3 setting. Grading is CR/NC. Prereq.: Completion of TEC requirements, senior status and approval of the chairperson. 1-10 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.

ECEGR–ELECTRICAL AND COMPUTER ENGINEERING

Department of Electrical and Computer Engineering

Lower-Division Courses

1521. *Basic Digital and Computer Circuits.* Introduction to digital and computer design concepts: number systems, switching algebra, logic gates, and truth tables. Combinatorial and sequential design techniques. Comparators, multiplexers, coders and decoders, flip-flops, registers, counters, and their practical applications. 3 s.h.

*1521L. *Basic Digital and Computer Circuits Laboratory.* Laboratory exercises to accompany ELEGR 1521. Design and testing of combinatorial and sequential logic circuits. Experiments with computer hardware. Prereq. or concurrent: ECEGR 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.

*2611. *Instrumentation and Computation Lab 1.* Laboratory experiments and computer exercises to accompany ECEGR 2632. Laboratory experimentation and basic instrumentation. Computer-aided analysis and simulation. Prereq. or concurrent: ENGL 1551 and ECEGR 2632. 1 s.h.

*2612. *Instrumentation and Computation Lab 2.* Laboratory experiments and computer exercises to accompany ECEGR 2633. Laboratory experimentation and basic instrumentation. Computer-aided analysis and simulation. Prereq.: ECEGR 2611. Prereq. or concurrent: ECEGR 2633. 1 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. First-order transients. Analysis of AC circuits using phasors; impedance and admittance. Power of calculations in DC and AC circuits. Prereq. or concurrent: MATH 1572. 3 s.h.

*2633. *Basic Circuit Theory 2.* Continuation of ECEGR 2632. Transients is RLC circuits. Mutual inductance and transformers. Three-phase circuits. Transform methods in circuit analysis, transfer functions, resonance. Prereq. or concurrent: MATH 2673. Prereq.: ECEGR 2632. 3 s.h.

Upper-Division Courses

*3709. *Communications Systems.* Overview of the elements and operation of general communications systems. Types of signals and their characteristics. Generation, transmission, and reception of signals. Relationship of classical differential equation methods to time- and frequency-domain transforms (integral equations, Fourier techniques). Development of ideas and practices for communications design projects. Prereq. or concurrent: ECEGR 2633. Prereq.: MATH 3705 and PHYS 2611. 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.: ECEGR 2612. Prereq. or concurrent: ECEGR 3731 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.: ECEGR 3711. Prereq. or concurrent: ECEGR 3742; ECEGR 3772 or 3732. 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 ECEGR 2632. 3 s.h.

*3731, 3732. *Digital Systems 1, 2.* Analysis, design, and application of logic arrays, basic cells, flip-flops, registers, counters, memories, and controllers. Synchronous and asynchronous finite-state machines. Analysis and design of systems using programmable logic arrays, programmable logic controllers, and microprocessors. Prereq.: ECEGR 1521, 1521L, 2632 for 3731; 3731 for 3732. 3+3 s.h.

*3741. *Electromagnetic Fields 1.* Maxwell's equations. Static electric and magnetic fields. Magnetic materials and forces, dielectrics, conductance, capacitance, and inductance. Poisson's and Laplace's equations. Prereq.: PHYS 2611, MATH 3705. 3 s.h.

*3742. *Electromagnetic Fields 2.* Maxwell's equations. Time varying electric and magnetic fields. Electro-mechanical devices, transmission lines, microwaves. Antennas and radiation. Prereq.: ECEGR 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.: ECEGR 2633. 3 s.h.

*3772. *Digital and Analog Circuits 2.* Continuation of ECEGR 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: ECEGR 3771. 3 s.h.

*4800. *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.

*4803. *Linear Control Systems.* Laplace transform techniques and system modeling. System responses and performance measures. Root locus analysis and design. Frequency response methods: Bode plots, Nyquist criterion, stability margins. Digital control systems: z-transform methods, design using discrete equivalents. Computer-aided control system design. Prereq.: ECEGR 2633. 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.: ECEGR 3772. 3 s.h.

*5808. *Signals and Systems.* Operation and analysis of communications, control, and computer systems at the signal level. Tools and methods used to analyze signals and design systems. Probabilities, statistics, and noise. Signal detection, line codes, and multiplexing. Applications. Prereq.: ECEGR 3709, or ECEGR 2633 and MATH 3705 and PHYS 2611. 3 s.h.

*4811L. *Senior Laboratory.* Laboratory experiments and computer exercises in the areas of applied electromagnetics, energy conversion, and control systems. Designed to accompany the co-requisite courses. Prereq.: ECEGR 3712. Prereq. or concurrent: ECEGR 4803 and 4844. 1 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.: ECEGR 2633, PHYS 2610, ECEGR 3741. 3 s.h.

*5817. *Sensor Design and Application.* Designs and applications for measurement and control; includes electro-chemical, -mechanical, -optical, and -thermal transducers. Signal conditioning and smart sensors. Prereq.: ECEGR 3771 or ECEGR 3717. 3 s.h.

*4824. *Advanced Digital and Microprocessor Design with Applications.* Digital designs and applications based upon different microprocessors and microcomputers. Microprocessor development systems. Two hours lecture, three hours laboratory per week. Prereq.: ECEGR3732, 3712. 3 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: ECEGR 4844. 4 s.h.

*4844. *Electromagnetic Energy Conversion.* An examination of lumped electromagnetic parameters with development of theoretical, experimental, and design parameters for electrical energy conversion devices such as transformers, motors, and generators. Typical and special applications. Prereq.: MECH 2641, ECEGR 3741 and 21 s.h. of ECEGR courses. 3 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. Individual and team projects. Prereq.: ECEGR 3709 or 4808. 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.: ECEGR 3741 and 21 s.h. of ECEGR 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.: ECEGR 2611 and 21 s.h. of ECEGR courses. 3 s.h.

*4881. *Modern Control System Design.* State variable techniques for continuous-time and discrete-time systems. Introduction to system identification. Pole placement using state-variable feedback. Design of state observers. Digital computer implementation of controllers. Three hours lecture, three hours laboratory per week. Prereq.: ECEGR 4803. 4 s.h.

*5890. *Power Electronics.* SCRs, rectifier circuits, commutation techniques, AC controllers, converters, and invertors. 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.: ECEGR 3771 and 21 s.h. of ECEGR courses. 3 s.h.

*4899. *Senior Design Project.* An electrical/computer engineering design problem is chosen or assigned; students work in teams. Proposals are presented which describe the design problem and approaches to it. The final design is presented in written and oral forms. This capstone course is intended to mimic a typical industrial or research project and includes ethical and economical considerations with the engineering work. Three hour lecture/discussion, three hours of laboratory per week. Prereq.: ECEGR 4811 and 27 s.h. of ECEGR courses. 4 s.h.

ECON–ECONOMICS

Department of Economics

The following have been approved as General Education courses in the domain of Societies and Institutions: 1501, Economics in Action; 1502, Panic and Prosperity, US Economic Policy Since the Great Depression; 1503, Rich and Poor, Diversity and Disparity in the U.S. Workplace; 2610, Principles 1; and 2630, Principles 2. General Education credit can only be given for one of the following: 1501, 1502, 1503, or 2610.

Lower-Division Courses

1501. *Economics in Action.* An introduction to the United States' economic system and institutions through the examination of current economic problems. Not applicable for a major or minor in economics. 3 s.h.

1502. *Panic and Prosperity, U.S. Economic Policy Since the Great Depression.* Examines the crises and successes of the American economy since 1929, and how the economic policies of different presidential administrations affected the lives of U.S. citizens. Not applicable towards a major or minor in economics. 3 s.h.

1503. *Rich and Poor: Diversity and Disparity in the U.S. Workplace.* Examines how labor markets determine the distribution of income and the dramatic changes in the composition of the American labor force. Explores such issues as the widening gap between low and upper income groups, the characteristics of the poor, affirmative action, the glass ceiling, the mommy track, and family-friendly working environments. Not applicable towards a major or minor in economics. 3 s.h.

2610. *Principles 1.* An introduction to the theory of markets, including the behavior of consumers and the conduct of private and public business enterprise. The 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 3 or higher score on the math placement exam. 3 s.h.

2630. *Principles 2.* 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.

2632. *Principles 3: International Economics.* Determinants of a nation's exports and imports of goods and services. Effects of free and restricted international trade on a nation's welfare, income and employment structure. Balance of payments problems, exchange rate regimes and currency unification. International investment and regional development. Open only to students who have taken ECON 610 and 630 on the quarter system. Prereq.: ECON 630 (quarter). 3 s.h.

2650. *Environmental Economics and Policy.* Economics of resource depletion and environmental damage. Evaluation of conservation strategies, pollution control policies; benefit-cost analysis in the policy-making process. The use of science and economic analysis in the creation of environmental law. Prereq.: ECON 1501 or ECON 2610 or ENST 2600. 3 s.h.

3701. *Money and Banking.* Organization and operation of commercial banking in the United States; central banking under the Federal Reserve System; basic theory. Monetary policy as a determinant of national income. Prereq.: ECON 2630. 3 s.h.

3702. *Public Finance.* The development and present status of public finance; federal, state and local expenditures and taxation; theories of tax incidence, axioms of taxation, theories in justification and government spending; tax reform. Study of the techniques of fiscal policy with emphasis on its role as a determinant of the level of national income. Prereq.: ECON 2610. 3 s.h.

*3705. *Economics and Social Statistics 2.* Continuation of estimating and testing using small sample techniques. Correlation, simple and multiple regression, time series, index numbers, nonparametric statistics, and introduction to decision theory. Limited to students who took ECON 624 under the quarter system but did not take ECON 705. Prereq.: ECON 624. 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, 1570, or 1571. 3 s.h.

3712. *Intermediate Macroeconomic Theory.* The construction of national income and production accounts and the basic determinant of income, out-

put, 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, 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.

3780. *Business and Economic Statistics.* Introduction to statistical methods in data analysis and forecasting. Topics include descriptive statistics, probability, hypothesis testing, regression analysis, ANOVA, time series, and nonparametric tests. Prereq.: MATH 1548 or a level 5 on the math placement exam, or MATH 1570 or 1571. 4 s.h.

3781. *Business and Economic Statistics Workshop.* Computer applications of statistical techniques introduced in ECON 3780 using a standard statistical software package. Emphasis is placed on interpretation and presentation of results. Must be taken concurrently with ECON 3780. 1 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.

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.

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.

4813. *Resource and Environmental Economics.* The economic analysis of depletable, renewable, and inexhaustible resources worldwide. An examination of the limits to growth debate. The regulation of domestic and international markets for fuels. Problems of a throughput economy and transition to a steady-state economy. Prereq.: ECON 2610, or 2650 and junior standing. 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 3780. 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.

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.

*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 3780 or equivalent, ECON 2630, or permission of instructor. 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.

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 3780 or equivalent, or permission of instructor. 3 s.h.

4870. *Economic Internship.* The practical application of economic knowledge and statistical skills in the workplace. Students assist professionals in various kinds of industrial, financial, and public service organizations. Prereq.: By permit only, minimum GPA 2.5. 1-3 s.h.

4880. *Analysis of Economic Problems.* The application and extension of the student's skills in economic analysis and statistical techniques to economic issues. The course covers sources of data, exploratory data techniques, matching of data and statistical tests, interpretation and presentation of the results. Students demonstrate their command of research techniques by the completion of a research paper and its oral presentation. Topics to be determined. Prereq.: ECON 3710, 3712, and 3780. 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.

EDTC–EDUCATIONAL TECHNOLOGY

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.

EET–ELECTRICAL ENGINEERING TECHNOLOGY

School of Technology

Lower-Division Courses

1501. *Circuit Theory 1.* Theoretical analysis of DC electrical circuits including units conversions, current voltage, power, Ohm's Law, Kirchhoff's Laws, network theorems, capacitance, magnetic circuits, inductance and transient analysis of RL and RC circuits. Prereq. or concurrent: MATH 1504, STECH 1505. Concurrent with EET 1501L. 3 s.h.

*1501L. *Circuit Theory 1 Lab.* Use of electrical components to construct circuits and use of electrical instrumentation including meters and oscilloscopes to analyze DC resistive series/parallel networks and basic RC & RL transient circuits. Computer circuit analysis with PSPICE. Three hours per week. Concurrent with EET 1501. 1 s.h.

1502. *Circuit Theory 2.* Study of AC sinusoidal waveforms, phasor representations, phasor algebra and phasor diagrams. Solution of steady state single phase series/parallel networks including network theorems, power and power factor, resonant circuits, filters, mutual inductance, transformers and balanced three-phase systems. Prereq.: C or better in EET 1501, EET 1501L. Prereq. or concurrent: MATH 1513. Concurrent with EET 1502L. 3 s.h.

*1502L. *Circuit Theory 2 Lab.* Measure effective values of AC currents and voltages, observe waveforms with oscilloscopes, verify impedance concepts and phasor diagrams for AC series/parallel networks and resonant circuits. Computer circuit analysis with PSPICE. Three hours per week. Concurrent with EET 1502. 1 s.h.

2605. *Electronics 1.* Physical basis of semiconductor materials, diodes, rectifier circuits, Zener diode regulators, clippers, clampers, special purpose diodes. Bipolar junction transistors (BJT) characteristics, bias circuits, equivalent circuit models, amplifiers and field effect transistor (FET) characteristics. Prereq.: EET 1502, 1502L. Prereq. or concurrent: MATH 1570. 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.

2606. *Electronics 2.* Field effect transistor (FET) bias circuits and amplifiers, thyristor circuits, frequency effects (Bode plots), differential amplifiers, linear and non-linear OP-AMP circuits, active filters, oscillators and regulated power supplies. Prereq.: C or better in EET 2605, EET 2605L. Concurrent with EET 2606L. 3 s.h.

*2606L. *Electronics 2 Laboratory.* Experiments involving field effect transistors (FETs), integrated circuits (ICs) operational amplifiers, frequency effect on gain, oscillator circuits and regulated power supplies. Computer circuit analysis with PSPICE. Three hours per week. Concurrent with EET 2606. 1 s.h.

2610. *Electrical Machines.* Construction, operating principles and characteristics, efficiency and control of DC motors, generators, and specialized machines. AC single and 3-phase transformers, alternators, induction and synchronous motor principles, characteristics, efficiency and control. Prereq.: EET 1502, 1502L. Prereq. or concurrent: MATH 1570. Concurrent with 2610L. 3 s.h.

*2610L. *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 2610. 1 s.h.

2612. *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.: EET 2605, 2605L, 2610, 2610L, 2620, 2620L. Concurrent with EET 2612L. 3 s.h.

*2612L. *PLC Laboratory.* Exercises in ladder logic programming for programmable logic controllers (PLCs) using concepts developed in EET 2612. Input/output (I/O) concepts related to PLCs. Three hours per week. Concurrent with EET 2612. 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.: EET 1501. Prereq. or concurrent: MATH 1513. 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.

2645. *Microprocessor Systems 1.* An introduction to microprocessor architecture and organization. Emphasis on machine/assembly language programming. Prereq.: C or better in EET 2620, or CSIS 1590. Concurrent with EET 2645L. 3 s.h.

*2645L. *Microprocessor Systems 1 Lab.* Laboratory exercises utilizing a microcomputer to provide practical applications of concepts developed in EET 2645. Three hours per week. Concurrent with EET 2645. 0 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: STECH 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.: EET 1502/L, 2620/L. Prereq. or concurrent: EET 2605/L. 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.: EET 1502/L. 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.

Upper-Division Courses

*3725. *Electromechanical Systems.* AC/DC circuit analysis techniques including network theorems, PSPICE computer circuit analysis and laboratory experiences with applications to AC/DC machinery, electronics, digital circuits and control systems. Three hours lecture, three hours lab per week. Prereq.: 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.: EET 2605, C or better in 2620. 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.

3745. *Microprocessor Systems 2.* Continuation of EET 2645 with emphasis on advanced programming techniques, memory mapping, I/O ports, and basic I/O interfacing. Prereq.: EET 2606, 2645. Concurrent with EET 3745L. 3 s.h.

*3745L. *Microprocessor Systems 2 Lab.* Laboratory exercises utilizing a microcomputer to provide practical applications of concepts developed in EET 3745. Three hours per week. Concurrent with 3745. 0 s.h.

3760. *Variable Speed Drives.* Introduction to electronic speed control of direct and alternating current motors. Power conversion and waveform modulation techniques, drive sizing, harmonics, and motor performance. Prereq.: EET 2606, 2612. Concurrent with EET 3760L. 3 s.h.

*3760L. *Variable Speed Drives Lab.* Exercises in variable speed drive applications, demonstrating the concepts developed in EET 3760. Concurrent with 3760. 0 s.h.

3780. *Communication Systems.* Audio signals, noise, untuned and RF amplifiers, amplitude, frequency, pulse modulation, transmission lines, antennas, and multiplexing of communication channels. Prereq.: EET 2606. 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 2610 or junior standing. 3 s.h.

4820. *Power Transmission and Distribution.* An introduction to power system analysis, transmission line parameters and calculations, and steady-state power system representation. Prereq.: EET 2610. 3 s.h.

4845. *Microprocessor Systems 3.* Continuation of EET 3745 with emphasis on real data acquisition, A/D and D/A conversions, and industrial applications. Prereq.: EET 3730, 3745. Concurrent with EET 4845L. 3 s.h.

*4845L. *Microprocessor Systems 3 Lab.* Laboratory exercises utilizing a microcomputer to provide practical applications of concepts developed in EET 4845. Three hours per week. Concurrent with 4845. 0 s.h.

4850. *Integrated Circuit Applications.* Introduction to integrated circuits technology and typical application. Prereq.: EET 2606. 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.: EET 2612, 2612L, and MATH 2670. 4 s.h.

EMCE–EARLY AND MIDDLE CHILDHOOD EDUCATION

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.

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.

5888. *Topical Seminar.* Examination of issues related to the teaching of reading not covered in depth in other courses. Prereq.: Admission to upper-division status in COE or admission to the School of Graduate studies. 1-3 s.h.

EMTEC–EMERGENCY MEDICAL TECHNOLOGY

Department of Health Professions

1500. *Emergency Medical Technician - Basic.* Provides the basic knowledge and skills required to be an Emergency Medical Technician. Meets all U.S. Department of Transportation training standards for the Basic EMT. Must be taken concurrently with EMTEC 1500L. 3 s.h.

*1500L. *Emergency Medical Technician - Basic Laboratory.* Laboratory experience necessary to acquire skills required to be an Emergency Medical Technician - Basic. Meets all U.S. Department of Transportation training standards for the Basic EMT. Six hour lab. Must be taken concurrently with EMTEC 1500L. 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 EMT program. 1 s.h.

1502. *General Pathophysiology for the EMT 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 EMT program or permission of instructor. 2 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 EMT program or permission of instructor. 1 s.h.

*1504. *Principles of Trauma.* Study of traumatic emergencies normally encountered prehospitally with emphasis on pathophysiology, etiology, symptomatology, and management. Prereq.: Admission to EMT program or permission of Program Director. 2 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. Must be taken concurrently with EMTEC 1501, 1502, 1503 and1504. 1 s.h.

*1506. *Emergency Department Clinical 1.* Clinical experience in the emergency department where the student performs patient interviews, assessment, and intravenous cannulation under the direct supervision of a clinical preceptor. Five hours of clinical time per week during the last ten weeks of the semester. Must be taken concurrently with EMTEC 1503 and 1505. Prereq.: Admission to EMT program or permission of instructor. 1 s.h.

*1510. *Cardiopulmonary Emergencies.* Intense study of the etiology, pathophysiology, symptomatology, and management principles for cardiovascular and pulmonary emergencies. Includes electrophysiological principles of EKG interpretation. Must be taken concurrently with EMTEC 1511. Prereq.: Admission to EMT program or permission of instructor. 3 s.h.

*1511. *Cardiopulmonary Techniques Lab.* Performance of fundamental techniques employed in the management of the cardiovascular and/or respiratory emergency. Three hours lab per week. Must be taken concurrently with EMTEC 1510. 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 EMTEC 1513. Prereq.: EMTEC 1502, 1503, and 1504. 2 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 EMTEC 1512. 2 s.h.

1514. *Emergency Medical Service Operations.* Introduction to common rescue tools and techniques utilized in basic victim disentanglement and extrication. Prereq.: Admission to EMT program or permission of instructor. 1 s.h.

1515. *Clinical Experience 1.* Hospital clinical experience to include rotations through the following: adult emergency department, critical and intensive care units, and surgery. At least ten hours of clinicals per week. Must be taken concurrently with EMTEC 1511 and 1513. 1 s.h.

*1516. *Prehospital Internship Experience 1.* Internship experience with an approved advanced life support unit under the direct supervision of a selected paramedic field preceptor. At least ten hours per week. Prereq.: EMTEC 1504, 1510, 1512. 1 s.h.

*2600. *Emergency Medicine Special Topics.* 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 EMTEC 2601. Prereq.: EMTEC 1510 and 1512 or permission of instructor. 3 s.h.

*2601. *Emergency Medical Techniques 3 Lab.* Techniques necessary to effectively manage conditions in EMTEC 2600. Three hour lab. Must be taken concurrently with EMTEC 2600. 1 s.h.

2602. *EMS Special Certifications.* Provides the EMT-Paramedic with certifications beneficial to prehospital care. These certifications are nationally recognized and commonly sought after by paramedics, and desired by employers. Include PALS, BTLS, AMLS, Defensive Driving, and Instructor courses in BCLS and ACLS. Prereq.: Admission to EMT program or permission of instructor. 2 s.h.

2603. *Clinical Experience 2.* Hospital clinical experience to include rotations through the following departments: triage, pediatric emergency department, adult emergency department, obstetric/gynecological, neonatal, well-baby clinic, psychiatric, morgue. At least 20 hours per week. Must be taken concurrently with EMTEC 2600. 2 s.h.

*2604. *Prehospital Internship Experience 2.* Performance of advanced life support procedures under the direct supervision of a selected paramedic field preceptor. At least 20 hours per week. Prereq.: EMTEC 1516. 2 s.h.

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 EMTEC 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 EMTEC 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.: EMTEC 2610 and 2611. 2 s.h.

*2630. *Multiskilled EMS Practitioner.* Principles, concepts, clinical knowledge, and skills necessary to prepare the multiskilled EMS practitioner. Prereq.: EMTEC 2610 and 2611. 2 s.h.

2631. *Advanced Clinical and Field Internship Experience.* Clinical experience in hospitals and urgent-care settings. 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. Average of ten clinical or field internship hours per week. Must be taken concurrently with EMTEC 2630. Prereq.: EMTEC 2610 and 2611. 2 s.h.

ENGL–ENGLISH
Department of English

The following have been approved as General Education courses in the area of Basic Skills, Writing I and II: 1550 and 1550H, Writing I; 1551 and 1551H, Writing II. In the domain of Artistic and Literary perspectives: 1590, Introduction to Literature; 2610, World Literature; 2617, Women in Literature; 2618, American Literature and Diversity; 2631, Mythology in Literature; 2665, Introduction to Film Study.

English-as-a-Second-Language

1509. *Academic English for Non-native Speakers.* Development of writing and reading comprehension skills in English through outlining, summary, and response. Emphasis on vocabulary, main idea, detail, and conclusion in assigned reading and writing. Entrance on basis of English-as-a-Second-Language placement test. Must be taken until a grade of C or better is achieved. **Does not count toward a degree.** Grading is CR/NC. 3 s.h.

1511. *Advanced Academic English for Non-native Speakers.* Development of advanced writing and reading skills. Focus on oral-aural fluency, extensive and intensive reading, and formal writing for academic purposes. Entrance on basis of English-as-a-Second-Language placement test or permission of ESL coordinator. Must be taken until a grade of C or better is achieved. **Does not count toward a degree.** Grading is ABC/NC. 3 s.h.

1512. *English Conversation for Non-native Speakers.* Development of conversation skills. Focus on oral-aural fluency, idiomaticity, extracting and organizing information, and situation-oriented communication strategies. Emphasis on meaningful topics relevant to the students' pursuit of their academic goals. Entrance on basis of English-as-a-Second-Language placement test. **Does not count toward a degree.** Grading is ABC/NC. 1 s.h.

Lower-Division Courses

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. 3 s.h.

1540T. *Introductory College Writing Workshop.* Intensive individualized writing instruction in the Writing Center. Does not count toward the graduation requirement in composition. Open to students on the basis of the Composition and Reading Test results. Two hours per week. Concurrent with ENGL 1540. Grading is CR/NC. 1 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. Grading is ABC/NC. 3 s.h.

*1550H. *Honors Writing 1.* Strategies for writing as a means of critical inquiry, with focus on writing processes and on the roles of writer, audience, and purpose as they affect writing. Writing assignments treat a broad range of ideas, especially in response to challenging readings. Stylistic experimentation is encouraged so that each student can develop a distinctive writing style. Students divide their time between regular classrooms and computer classrooms, where they have the opportunity to acquire and develop basic word-processing and electronic communication skills. Prereq.: Eligibility for the Honors program and permit on the basis of Composition and Reading Test results or upon recommendation of 1550 instructor and approval of the Director of Composition. Grading is ABC/NC. 3 s.h.

*1551. *Writing 2.* Practice in writing with emphasis on the process of investigation: exploration of topics, formulation of tentative theses, collection of data from suitable primary and secondary sources, and clear and appropriate presentation of the results of these inquiries. Students divide their time between regular classrooms and computer classrooms, where they have the opportunity to perform research on the World Wide Web. Prereq.: ENGL 1550 or Composition and Reading Test results. Grading is ABC/NC. 3 s.h.

*1551H. *Honors Writing 2.* Research on a topic of some depth, conducted independently and focused on a single project that results in a substantial investigative paper. Students divide their time between regular classrooms and computer classrooms, where they have the opportunity to perform research on the World Wide Web. Prereq.: Eligibility for the Honors Program and either ENGL 1550H or recommendation of ENGL 1550 instructor and approval of Director of Composition. Grading is ABC/NC. 3 s.h.

1560. *Language, Ethnicity, and Gender.* Basic understanding of relations between ethnicity, gender, and speech style, distinguishing linguistics, sociolinguistics, and women's issues. Examination of topics such as language, socialization, oral vs written language, language and class membership and intra-ethnicity variation in Urban Vernacular English. Listed also and FNLG 1560. 3 s.h.

1590. *Introduction to Literature.* Primarily British or American works in a variety of genres, chosen to illuminate a central topic, are read and discussed critically to promote understanding and enjoyment of reading. Focused on one of four topics: Nature and the Environment, The Good Life, Science and Technology, or Social Justice. 3 s.h.

*2601. *Intermediate Writing for Teachers.* A course to increase proficiency in critical reading and writing. Designed specifically for students entering the College of Education; reading, discussions and writing assignments emphasize current issues in Education. Assignments allow students to practice, collaboratively and individually, the kinds of writing used in teaching. Does not count toward the English major. Prereq.: ENGL 1551. 3 s.h.

2602. *Media Writing.* Introduction to writing for the mass media. Development of writing techniques and examination of styles and approaches used in writing for various mass audiences. Fulfills requirement for Integrated Language Arts Middle Childhood teaching license and may be applied to the Journalism minor and Professional Writing and Editing professional area. Listed also as JOURN 2602. Prereq.: ENGL 1551. 2 s.h.

2610. *World Literature.* Literature in translation from Western and non-Western cultures. Prereq.: ENGL 1551. 3 s.h.

2617. *Women in Literature.* Examination of works by and about women, drawn primarily from American and English writers. Prereq.: ENGL 1551. 3 s.h.

2618. *American Literature and Diversity.* Writers and works in relation to the diversity of American culture, politics, lifestyles, and social movements. Prereq.: ENGL 1551. 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.: ENGL 1551. 3 s.h.

2622. *Basic Journalism.* Study of news reporting and writing, with emphasis on journalistic style, development of news judgment, interviewing, and coverage of special story types. Listed also as JOURN 2622. Prereq.: ENGL 1551. 3 s.h.

2626. *American Journalism.* The development of newspaper and magazine journalism in America, the role of the press and its effects on American society, including those led by women, people of color, and journalists of diverse cultural backgrounds, and journalism as a literary tradition. May be applied to the Journalism minor and Professional Writing and Editing professional area. Listed also as JOURN 2626. Prereq.: ENGL 1551. 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. Prereq.: ENGL 1551. 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.: ENGL 1551. 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.: ENGL 1551. 3 s.h.

2648. *Introduction to Script Writing.* Examination and application of dramatic techniques and conventions designed to introduce the basic elements of writing plays and screenplays. May be repeated once. Prereq.: ENGL 1551. 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.: ENGL 1551. 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. Prereq.: ENGL 1551. 3 s.h.

Upper-Division Courses

3701. *British and American Literature 1*: From the Beginnings to the Enlightenment. Emphasis on learning how to read literature and how to write literary analysis. Students read from a selection of British and American literature from the beginnings to the Enlightenment in the context of literary history. Prereq.: ENGL 1551. 3 s.h.

3702. *British and American Literature 2*: From the Enlightenment to the Present. Emphasis on learning how to read literature and how to write literary analysis. Students read from a selection of British and American literature from the Enlightenment to the present in the context of literary history. Prereq.: ENGL 1551. 3 s.h.

3703. *Literature for Young Children*. Study of the development of children's literature, giving the prospective elementary teacher criteria for evaluating books for children. Required of all elementary education candidates. Prereq.: ENGL 1551. 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.: ENGL 1551. 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.: Any course in English literature at or above the 2600 level. 3 s.h.

3716. *Feature Writing*. Development of techniques of writing feature stories, including generating feature ideas, gathering information, and polishing feature style. Practice in writing various types of features. Listed also as JOURN 3716. Prereq.: ENGL 2622. 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 JOURN 3717. Prereq.: ENGL 2622. 3 s.h.

*3721L. *Journalism Workshop*. Application through student publications of the principles of JOURN 2622 and an introduction to creating publications on computers. May be repeated once. Listed also as JOURN 3721L. Prereq. or concurrent: ENGL 2622. 3 s.h.

*3723. *Editing and Design for Newspapers*. The practice of copy editing, headline writing, layout and design, photo editing, caption writing, and designing publications on computers. Listed also as JOURN 3723. Prereq.: ENGL 2622. 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.: ENGL 1551. 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.: ENGL 1551. 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.: ENGL 1551. 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.: ENGL 1551. 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. *Online Text Workshop*. Application of professional communication principles to student online publications. May be repeated once. Prereq: ENGL 2622 or 3743. 2 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.

3750. *Language and Culture*. Language structure as an instrument in human behavior and social institutions with emphasis on cross-cultural and intercultural communication. Prereq.: ENGL 1551. 3 s.h.

3755. *Principles of Linguistic Study*. Survey of elements of linguistic structure, methods of analysis and description, theoretical models, and the role of language in human affairs. Prereq.: ENGL 1551. 3 s.h.

3757. *Development of the English Language.* Sounds, vocabulary, grammar, and usage, from old to contemporary English. 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 3701, 3702, 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. Prereq.: ENGL 3701 or 3702. 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 3701 or 3702. 3 s.h.

3790. *Selected Topics in Multicultural Studies.* Concentrated study of discourse in English 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.: ENGL 1551. 3 s.h.

4820. *Advising Student Publications.* Study of the role and responsibilities of the publication advisor in high school and college. Topics include the unique legal and ethical concerns of student publications, the training of writers and editors, the relationship of the student press to the academic administration, and a range of publication-management concerns. Listed also as JOURN 4820. Prereq.: ENGL 2622. 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 JOURN 4824. Prereq.: ENGL 2622. 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 JOURN 4825. Prereq.: ENGL 2622. 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 3701 or 3702. 3 s.h.

4831. *Genres, Circles, and Movements in British Literature.* 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 3701 or 3702. 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.: ENGL 1551 and junior or senior standing. 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.: ENGL 3755. 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.: 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 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.: ENGL 3755. 3 s.h.

4857. *TESOL Practicum.* Supervised teaching in English as a Second Language (ESL) program. Additionally, weekly seminar attendance required. Prereq.: ENGL 4856. 3 s.h.

4858. *English Grammar.* Descriptions and analysis of English language structure. Prereq.: ENGL 3755. 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 3701 or 3702. 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 3701 or 3702. 3 s.h.

4864. *Selected Topics in American Literature.* An important aspect of or approach to America's literary heritage not covered in other courses. May be repeated once with different topic. Prereq.: ENGL 3701 or 3702. 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 3701, 3702, or 2665. 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 3701 or 3702. 3 s.h.

4881. *Shakespeare and His World.* Study of Shakespeare's works along with an exploration of the artistic and social forces that shaped his writing. Prereq.: ENGL 3701 or 3702. 3 s.h.

4882. *The English Renaissance.* Study of British literature from 1500 to 1600 and the social, cultural, and artistic forces that influenced it. Prereq.: ENGL 3701 or 3702. 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 3701 or 3702. 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 3701 or 3702. 3 s.h.

4890. *Senior Seminar.* Study of literature, linguistics, or criticism and theory requiring a long, critical, research-based paper. Prereq.: ENGL 3701 or 3702, and six additional courses in the major.3 s.h.

4892. *Nineteenth Century British Literature Studies.* Nineteenth-century writers, works, and themes read in the context of the period's culture and history. Prereq.: ENGL 3701 or 3702. 3 s.h.

4895. *Early Twentieth Century British Studies.* Literature read in the context of the period's literary movements, culture, and history. Prereq.: ENGL 3701 or 3702. 3 s.h.

4896. *British Literature from World War II to the Present.* Literature read in the context of the period's literary movements, culture, and history. Prereq.: ENGL 3701 or 3702. 3 s.h.

4898. *Professional Writing Internship.* Supervised work-and-learning experiences in professional communication under the direction of a faculty member and an employee of a participating firm. Ten to 20 hours of student time each week. Enrollment is contingent upon the availability of internships. Students are selected on the basis of relevant qualifications, including GPA, courses taken, recommendations, and an interview. May be repeated with the approval of the department chairperson. Prereq.: 12 s.h. in Journalism and/or Professional Writing and Editing. 1-3 s.h.

4899. *Professional Writing Senior Project.* Capstone experience for the Professional Writing and Editing major. Individualized research, analysis, development, and oral presentation of a project that incorporates audience-appropriate writing, design, and/or editing in a usable high-quality product. Taken during the student's final undergraduate year. Prereq.: Senior standing and permission of a Professional Writing and Editing advisor. 3 s.h.

ENGR-ENGINEERING
College of Engineering and Technology

1550. *Engineering Concepts.* Engineering in the global arena. Careers and the different engineering disciplines. Basic engineering computer, laboratory, and design skills. Two hours lecture, three hours lab. Prereq.: Eligibility to take math 1513 or higher level math course. 3 s.h.

1560. *Engineering Computing.* Computing skills required in engineering. Structured programming. Commercial CADD software to create engineering drawings and solid models. Engineering problems solved in teams with results professionally presented. Two hours lecture, three hours lab. Prereq.: ENGR 1550, MATH 1571 or concurrent, demonstration of high school drawing proficiency or ENGR 1560L. ENGR 1560L may be taken concurrently. 3 s.h.

1560L. *Engineering Drawing Laboratory.* Development of visualization and sketching skills and drafting conventions including standard views and dimensioning. Three hours lab. To be taken prior to or concurrently with ENGR 1560 for those lacking high school drawing proficiency. Prereq.: Eligibility to take MATH 1504 or higher level math course. 1 s.h.

3798. *Co-op Assignment 1.* Cooperative educational experiences while enrolled in the College. Students may be assigned to public, corporate or governmental organizations during alternate or parallel work periods for practical learning and training in the major field of study. Consult department for rules and regulations. Prereq.: Junior standing, Engineering major, selection of employer, and approval of student's program. 1 s.h.

4898. *Co-op Assignment 2.* Cooperative educational experiences while enrolled in the College. Students may be assigned to public, corporate or governmental organizations during alternate or parallel work periods for practical learning and training in the major field of study. Consult department for rules and regulations. Prereq.: Senior standing, Engineering major, selection of employer, and approval of student's program. May be repeated. 1 s.h.

ENST–ENVIRONMENTAL STUDIES
Interdisciplinary

Lower-Division Courses

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. Students who receive credit for ENST 601 or ENST 602 cannot also receive credit for ENST 2600. Prereq.: BIOL 2601 or CHEM 1515 or GEOL 1505. 3 s.h.

*2600L. *Foundations of Environmental Studies Laboratory.* A laboratory investigating problems 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. Students who receive credit for ENST 601L or ENST 602L cannot also receive credit for ENST 2600L. 1 s.h.

2650. *Independent Study.* The introductory study of problems or issues in Environmental Studies or a review of the literature relating to a specific environmental topic. May be repeated for different topics for a total of 6 s.h. Prereq.: Permission of the director. 1-3 s.h.

Upper-Division Courses

3700. *Environmental Chemistry.* Study of the fundamental chemical principles underlying common environmental problems, including hazardous wastes, acid precipitation, eutrophication, global warming, smog formation and ozone depletion. Chemistry of common pesticides and other hazardous chemicals. Prereq.: ENST 2600 and CHEM 1515. 3 s.h.

*3710. *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. Prereq.: ENST 2600. 1 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. One hour lecture per week. Identical to the lecture portion of CEEGR 3751. Prereq.: CHEM 1516. 2 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. Identical to the laboratory portion of CEEGR 3751. Concurrent with ENST 3751. Prereq.: CHEM 1516. 0 s.h.

3760. *Environmental Regulations.* A survey of Federal and Ohio state regulations, to execute legal mandates. Prereq.: ENST 2600. 3 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.

4800. *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 3760 and senior 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 3760, and senior or graduate standing. 3 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.

F&PA—FINE AND PERFORMING ARTS

College of Fine and Performing Arts

1500. *The Creative Arts.* Survey highlighting the diversity of artistic achievement. Includes art, dance, music, and theater taught by professionals from those areas. Features a wide variety of instructional methods, including audio-visual materials and live performances. Does not fulfill music literature requirement for the music major or art history requirement for the art major. 3 s.h.

FIN–FINANCE

Department of Finance

Lower-Division Course

2615. *Planning Your Financial Future.* A practical orientation to the world of personal finance planning. Emphasis on establishing financial goals and monitoring progress toward reaching those goals to improve the individual's quality of life. Topics include budgeting, credit, insurance, selection of investment alternatives, retirement planning. Open to business and non-business majors. Does not count toward the Finance major. 3 s.h.

Upper-Division Courses

*3720. *Business Finance.* Study of the financial problems associated with the life cycle of business. Analysis of problems relating to estimating the financial needs of an enterprise and to evaluating the alternative means of providing temporary and permanent capital. Relationship of current financial decision with financial policy is analyzed from the viewpoint of management and the investor. Prereq.: C or better in ACCTG 2603. 3 s.h.

3721. *Personal Financial Management.* An integration of the comprehensive financial planning process into the individual's financial life cycle. Includes accumulation, preservation, and distribution of financial assets. Topics include financial planning basics and risk management, investment selection, retirement planning and employee benefits, tax considerations, estate and trust basics. Prereq.: C or better in FIN 3720. 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. 3 s.h.

3726. *Risk Management.* The fundamental nature of risk and insurance. Property and liability insurance and other loss-bearing techniques. Proper use of life insurance in personal and business planning. Prereq.: C or better in FIN 3720. 3 s.h.

3730. *Investment Analysis.* Detailed examination of the investment merits of corporate bonds, preferred stocks, common stocks, and investment companies from the point of view of the individual investor. Includes security analysis, option basics, and portfolio management. Prereq.: C or better in FIN 3720. 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. 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, 3730, and 4835. 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. 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. 3 s.h.

4850. *Finance Internship.* Provides students with the opportunity to combine theoretical concepts with business experience. Available in banking, securities brokerage, insurance, real estate, and corporate finance. Prereq.: GPA 2.75 and 8 s.h. in Finance. 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. 4 s.h.

FNLG–FOREIGN LANGUAGES

Department of Foreign Languages and Literatures

The following has been approved as a General Education course in the domain of Artistic and Literary Perspectives: 2605, Topics in Foreign Drama.

FNLG- Foreign Languages

Lower-Division Courses

1500. *Introduction to Foreign Language Study.* An introductory exploration of human language and foreign language learning. Topics include language and society, language and culture (linguistic and cultural knowledge), strategies for learning a foreign language, practical applications of knowing foreign languages, issues of proficiency and bilingualism, intercultural communication, basic terms and concepts, language use and gender. For students without previous foreign language study. Prereq.: Placement test or permission of department chairperson. 3 s.h.

*1550. *Elementary.* Intensive training in understanding, speaking, reading, and writing a foreign language not regularly offered; knowledge of geography and daily life as well as appreciation of the culture of its speakers. By the end of the course students should achieve Intermediate Low Level proficiency. Assignments in the LLRC. Grading is ABC/NC. Prereq.: FNLG 1500 or equivalent.4 s.h.

1560. *Language, Ethnicity, and Gender.* Basic understanding of relations between ethnicity, gender, and speech style, distinguishing linguistics, sociolinguistics, and women's issues. Examination of topics such as language, socialization, oral vs written language, language and class membership, and intra-ethnicity variation in Urban Vernacular English. Listed also as ENGL 1560. 3 s.h.

1560H. *Language, Ethnicity, and Gender.* Basic understanding of relations between ethnicity, gender, and speech style, distinguishing linguistics, sociolinguistics, and women's issues. Examination of topics such as language, socialization, oral vs written language, language and class membership, and intra-ethnicity variation in Urban Vernacular English. Listed also as ENGL 1560. 3 s.h.

*2600. *Intermediate.* Intensive training in understanding, speaking, reading and writing a foreign language not regularly offered; knowledge of geography and daily life as well as appreciation of the culture. By the end of the course the students should achieve Intermediate Mid Level proficiency. Assignments in the LLRC. Grading is ABC/NC. Prereq.: FNLG 1550. 4 s.h.

2605. *Topics in Foreign Drama.* Study of representative plays written in a language other than English (but read in English translation); examination of relevant critical theories and of historic and institutional factors affecting the development of the genre; special attention to ethical issues raised in the plays. This course may not be repeated for credit. 3 s.h.

2610. *Foreign Film.* Study of representative films originally produced in a language other than English; examination of relevant critical theories and of historic and institutional factors affecting the development of the genre; special attention to cultural issues raised in the films. 3 s.h.

2615. *Introduction to French Literature.* A survey of the principal milestones of French literature, illustrated by reading representative works of various periods and parts of the Francophone world in their English translations. French majors must supplement this course by registering for FRNCH 2608 during the same semester. This course is for non-French majors. Prereq.: ENGL 1551. 3 s.h.

2625. *Contemporary Germany.* Modern Germany and its role in the European tradition as seen in political and cultural developments during the last 100 years. Topics on the geography of central Europe and ethnic Germans; the socio-political-economic history of modern Germany; the influence of German creativity in architecture, religion, fine and performing arts; German unification. Taught in English. 3 s.h.

2630. *German-Americans.* Contributions of German immigrants to American life from the earliest adventurers to the present. An examination of immigration history; German language, press, and schools; Mennonite and Amish communities including Germans in Ohio, especially the Mahoning Valley. Taught in English. German majors must supplement this course by registering for GERMN 2603 in the same semester. 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.

2670. *The Ancient Military.* Problems in the military and society in three cultures: Greek city-states (ca 700-338 BCE), Macedonia under Philip and his son Alexander the Great (ca 370-323 BCE), and Rome (ca BCE-ca 400 CE). Emphasis on the military as a social and political entity, with some attention to armor, strategy, tactics, and logistics. 3 s.h.

2685. *Topics in Russian Literature and Culture.* Studies of selected authors, genres, or themes in Russian literature read in English translation. Topic is announced each time course is offered. May be repeated once for credit is topic is different. 3 s.h.

Upper-Division Courses

3766. *Amish Culture.* The European origins of the Amish and their emigration; settlement and expansion in North America; language and life style; religious practice; music, literature, arts and crafts. The struggle with modernity. Prereq.: ANTHR 2602. 3 s.h.

4801. *Methods of Foreign Language Teaching.* Elementary and secondary methods of teaching foreign languages 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 and middle school field experiences. Prereq.: FOUND 3708 and SEDUC 3704. 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 ENGL 4850. Prereq.: ENGL 3755. 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 ENGL 4851. Prereq.: ENGL 3755. 3 s.h.

FRNCH-French

Lower-Division Courses

*1550. *Elementary.* Intensive training in understanding, speaking, reading, and writing French; knowledge of physical aspects of French-speaking countries and Francophone cultures. Successful students will have reached Intermediate Low Level proficiency at the end of the course. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or FNLG 1500. 4 s.h.

*2600. *Intermediate.* Intensive training in understanding, speaking, reading, and writing French; knowledge of physical aspects of French-speaking countries and Francophone cultures. Successful students will have reached Intermediate Mid Level proficiency at the end of the course. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or FRNCH 1550. 4 s.h.

2605. *Advanced Intermediate.* Intensive training in understanding, speaking, reading, and writing French; knowledge of physical aspects of French-speaking countries and Francophone cultures. Successful students will have reached Intermediate High Level proficiency at the end of the course. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or FRNCH 2600. 3 s.h.

2608. *Directed Reading.* Reading authentic French texts of intermediate difficulty relevant to the content of another course not taught in French. Reading comprehension strategies and vocabulary building. Primarily for students not majoring in French. May be repeated once. Prereq.: FRNCH 2605 or Placement test. 1 s.h.

2610. *Translation.* Techniques of translating complex sentence structures into English from general, business, technical, and scientific materials. Prereq.: Placement exam or FRNCH 2600. 3 s.h.

Upper-Division Courses

*3710. *Applied Phonetics.* A systematic study of French phonetics to correct defects in pronunciation and intonation and give students a better understanding of the differences between the French and English sound systems. Prereq.: FRNCH 2605. 3 s.h.

3715. *Conversation and Composition.* Skills in written and oral expression developed through directed composition and conversation, discussion of assigned topics, extemporaneous situational dialogues, and written papers on topics of special interest to the participants. Prereq.: FRNCH 2605. 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.: FNLG 2615 and FRNCH 3715. 3 s.h.

3725. *Literature and Culture: Africa.* A study of major works representative of Francophone African literature in their cultural context. Prereq.: FNLG 2615 and FRNCH 3715. 3 s.h.

3730. *Literature and Culture: America.* A study of major works in Francophone literature in North America in its cultural context. Prereq.: FNLG 2615 and FRNCH 3715. 3 s.h.

3740. *Introduction to Business French.* A survey of business practices specific to French-speaking countries, with emphasis on France and Canada; development of oral communication in business situations; principles of effective letter and report writing. Prereq.: FRNCH 3715. 3 s.h.

3750. *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.: FRNCH 3715. 3 s.h.

4874. *Advanced Writing.* A course designed to develop skills in free composition on assigned topics. Prereq.: FRNCH 3750 and one of the following: 3720, 3725, 3730. 3 s.h.

4885. *Special Topics.* Studies in French language, literature, or civilization ranging from medieval to modern times. Topic announced each time course

is offered. May be taken three times for credit if content is not repeated. Prereq.: FRNCH 3750 and one of the following: 3720, 3725, 3730. 3 s.h.

GERMN–German

Lower-Division Courses

*1550. *Elementary.* 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 Intermediate Low Level proficiency. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or FNLG 1500. 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. By the end of the course the students should achieve Intermediate Mid Level proficiency. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or GERMN 1550. 4 s.h.

2603. *Directed Reading 1.* Reading authentic German texts of intermediate difficulty relevant to the content of another course not taught in German. Reading comprehension strategies and vocabulary building. Primarily for students not majoring in German. May be repeated once. Prereq.: GERMN 2600 or Placement test. 1 s.h.

2605. *Advanced Intermediate.* Intensive training in understanding, speaking, reading, and writing German; knowledge of geography and daily life as well as appreciation of the cultures of German speakers. By the end of the course the students should achieve Intermediate High Level proficiency. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or GERMN 2600. 3 s.h.

2610. *Translation 1.* Techniques of translating complex sentence structures into English from general, business, technical, and scientific materials. Prereq.: GERMN 2600. 3 s.h.

Upper-Division Courses

*3725. *Phonetics and History of the Language.* Theory and practice in German phonetics with special emphasis on improving the pronunciation and intonation of second language learners. A history of the German language with attention to changes in sounds, forms, word order, vocabulary, and writing systems. Prereq.: GERMN 2605 or Placement test. 3 s.h.

3740. *Conversation and Composition.* Development of oral fluency, writing style, and understanding spoken German. Special emphasis on expanding active and passive vocabulary; advanced grammar structures. Prereq.: Placement test or GERMN 2605. 3 s.h.

3750. *Cultural Heritage 1.* A survey of German civilization from the beginnings to 1949, including such topics as literature, history, music, and art. Prereq.: GERMN 3740. 3 s.h.

3751. *Cultural Heritage 2.* A survey of German civilization since 1949, including such topics as literature, history, music, and art. Prereq.: GERMN 3740. 3 s.h.

3753. *Directed Reading 2.* Reading advanced authentic German texts relevant to the content of another course not taught in German. Reading comprehension strategies and vocabulary building. Primarily for students not majoring in German. May be repeated once. Prereq.: GERMN 3740 or 2 s.h. credit for GERMN 2603. 1 s.h.

3765. *Translation 2.* German to English translation for the professional translator. Introduction to polysemy, collocation, word level equivalence, cultural equivalence, cohesion, coherence, and concept systems. Use and evaluation of translation software. Development of terminology and text summarization. Treatment of scientific, medical, technological, business, and literary texts. Prereq.: GERMN 2610. 3 s.h.

4861. *Modern Literature.* A study of an author, a genre, or a literary trend since 1950. Prereq.: GERMN 3750 or 3751. 3 s.h.

4865. *Translation 3.* Advanced German to English translation strategies for the professional translator with emphasis on transposition, amplification, implication, compensation, and modulation. Advanced terminology, vocabulary techniques and translation software applications. Techniques of parallel/background texts and post editing. Treatment of semi-professional texts in business, science, technology, journalism, literature, history and culture. Prereq.: GERMN 3765. 3 s.h.

4875. *Translation Project.* A major German to English translation project in business, science, medicine, technology, social studies, or humanities. Prereq. or concurrent: GERMN 4865. 2 s.h.

4880. *Research and Writing.* An in-depth investigation of a problem in German or German-American language, literature, or culture, or German language education. Extensive reporting of research results, both orally and in writing. Capstone course. Prereq.: GERMN 3750 or 3751. 3 s.h.

GREEK-Greek (Ancient)

Lower-Division Courses

*1550. *Elementary.* Introduction to Ancient Greek with emphasis on those aspects of grammar most essential for developing the ability to read Greek. Translation of simple Ancient Greek texts into English. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or FNLG 1500. 4 s.h.

*2600. *Intermediate.* Continuation of GREEK 1550 with emphasis on more complex aspects of Ancient Greek grammar. Translation of more advanced Ancient Greek texts, including some authentic passages. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or GREEK 1550. 4 s.h.

2603. *Directed Reading 1.* Reading of selections from an Ancient Greek author or genre with emphasis on translation. Review of Ancient Greek grammar and introduction of some advanced grammatical constructions not covered in Ancient Greek 1550 or 2600. May be repeated once if topic is different. Prereq.: Placement test or GREEK 2600 or permission of department chairperson. 3 s.h.

Upper-Division Courses

3753. *Directed Reading 2.* Reading of selections from an Ancient Greek author or genre with emphasis on translation and interpretation of text. Review of Ancient Greek grammar. Introduction to relevant modern scholarship. Writing of evaluative essays. May be repeated once if topic is different. Prereq.: GREEK 2603 and permission of department chairperson. 3 s.h.

4883. *Directed Reading 3.* Reading of selections from an Ancient Greek author or genre with emphasis on translation and interpretation of text. Review of Ancient Greek grammar. Writing of a research paper. May be repeated once if topic is different. Prereq.: GREEK 3753 and permission of department chairperson. 3 s.h.

ITALN–Italian

Lower-Division Courses

*1550. *Elementary.* 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. By the end of the course students should achieve Intermediate Low Level proficiency. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or FNLG 1500. 4 s.h.

*2600. *Intermediate.* 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. By the end of the course students should achieve Intermediate Mid Level proficiency. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or ITALN 1550. 4 s.h.

2605. *Advanced Intermediate.* 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. By the end of the course students should achieve Intermediate High Level proficiency. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or ITALN 2600. 3 s.h.

Upper-Division Courses

3708. *Civilization.* A condensed study of the geography, history, literature, and social heritage of Italy, from the fall of the Roman Empire to the present. Includes class discussion for improvement of oral facility. Prereq.: ITALN 2605. 3 s.h.

3720. *Advanced Grammar and Composition.* In-depth study of Italian grammar through exercises and original composition. Prereq.: ITALN 2605. 3 s.h.

*3725. *Phonetics.* Theory and practice in Italian phonetics with special emphasis on improving the pronunciation and intonation of second language learners. Prereq.: ITALN 2605. 3 s.h.

3730. *Conversation.* Designed to develop oral facility through exercises and discussion of assigned topics, and through prepared and extemporaneous situational dialogues. Prereq.: ITALN 2605. 3 s.h.

4801. *Literature of the 14th Century.* A study of the Italian literature of the 14th century with concentration on Dante's *Divine Comedy.* Prereq.: ITALN 3720 and 3730. 3 s.h.

4802. *Literature of the 16th Century.* A course dealing with the literature of the Renaissance and concentrating on Ariosto, Bandello, Machiavelli, and Tasso. Prereq.: ITALN 3720 and 3730. 3 s.h.

4830. *Literature of the 19th Century.* A study of the literature of the 19th century with concentration on Leopardi, Manzoni, Pascoli, and Carducci. Prereq.: ITALN 3720 and 3730. 3 s.h.

4840. *Literature of the 20th Century.* A study of the literature of the 20th century and its movements and innovations, with concentration on D'Annunzio, Ungaretti, Quasimodo, Montale, Moravia, and Pirandello. Prereq.: ITALN 3720 and 3730. 3 s.h.

LATIN–Latin

Lower-Division Courses

*1550. *Elementary.* 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 LLRC. Grading is ABC/NC. Prereq.: Placement test or FNLG 1500. 4 s.h.

*2600. *Intermediate.* Continuation of Latin 1550 with emphasis on more complex aspects of Latin grammar. Translation of more advanced Latin texts, including some authentic passages. Introduction to the culture of the Augustan Age, including reading selected primary sources in English. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or LATIN 1550. 4 s.h.

2603. *Directed Reading 1.* Reading of selections from an Latin author or genre with emphasis on translation. Review of Latin grammar and introduc-

tion of some advanced grammatical constructions not covered in Latin 1550 or 2600. May be repeated once if topic is different. Prereq.: Placement test or Latin 2600. 3 s.h.

Upper-Division Courses

3753. *Directed Reading 2.* Reading of selections from an Latin author or genre with emphasis on translation and interpretation of text. Review of Latin grammar. Introduction to relevant modern scholarship. Writing of evaluative essays. May be repeated once if topic is different. Prereq.: LATIN 2603 and permission of department chairperson. 3 s.h.

4883. *Directed Reading 3.* Reading of selections from an Latin author or genre with emphasis on translation and interpretation of text. Review of Latin grammar. Writing of a research paper. May be repeated once if topic is different. Prereq.: LATIN 3753 and permission of department chairperson. 3 s.h.

RUSSN-Russian

Lower-Division Courses

*1550. *Elementary.* Intensive training in understanding, speaking, reading, and writing Russian; knowledge of geography and daily life as well as appreciation of the cultures of Russian speakers. By the end of the course students should achieve Intermediate Low Level proficiency. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or FNLG 1500. 4 s.h.

*2600. *Intermediate.* Intensive training in understanding, speaking, reading, and writing Russian; knowledge of geography and daily life as well as appreciation of the cultures of Russian speakers. By the end of the course students should achieve Intermediate Mid Level proficiency. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or RUSSN 1550. 4 s.h.

*2605. *Advanced Intermediate 1.* Russian phonetics and conversation. Focus on sounds, intonation, and forms of speech etiquette. Prereq.: Placement test or RUSSN 2600. 3 s.h.

2606. *Advanced Intermediate 2.* Reading and listening. Focus on morphology and syntax. Topics will vary according to the student's major area of interest. May be repeated if topic is different. Prereq.: Placement test or RUSSN 2605. 3 s.h.

Upper-Division Courses

3700. *Directed Study.* Readings in major or independent language work in LLRC. May be repeated up to 3 s.h. as needed for skills maintenance. Prereq.: RUSSN 2606. 1 s.h.

SPAN-Spanish

Lower-Division Courses

*1550. *Elementary.* Intensive training in understanding, speaking, reading, and writing Spanish; knowledge of geography and daily life as well as appreciation of the cultures of Spanish speakers. By the end of the course students should achieve Intermediate Low Level proficiency. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or FNLG 1500. 4 s.h.

*2600. *Intermediate.* Intensive training in understanding, speaking, reading, and writing Spanish knowledge of geography and daily life as well as appreciation of the cultures of Spanish speakers. By the end of the course students should achieve Intermediate Mid Level proficiency. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or SPAN 1550. 4 s.h.

2605. *Advanced Intermediate.* Intensive training in understanding, speaking, reading, and writing Spanish; knowledge of geography and daily life as well as appreciation of the cultures of Spanish speakers. By the end of the course students should achieve Intermediate High Level proficiency. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or SPAN 2600. 3 s.h.

2655. *Conversation for Proficiency 1.* Techniques of oral expression to develop fluency and accuracy. Practical strategies to help students communicate effectively in a variety of social contexts. Listening comprehension, pronunciation drills, functional vocabulary. Laboratory practice. Prereq.: SPAN 2605. 3 s.h.

Upper-Division Courses

*3724. *Spanish Pronunciation.* Theory and practice of Spanish pronunciation. Description of production of Spanish speech sounds and general characteristics of Spanish pronunciation. Topics on intonation. Audio-lingual practice in class and in language laboratory. Prereq.: SPAN 2605. 3 s.h.

3735. *Advanced Spanish Grammar and Composition.* A systematic study of Spanish morphology, sentence structure, and usage applied to a variety of written discourse styles such as description, narration, and exposition. Discussion of contrasts with English discourse styles, and effective grammatical use. Prereq.: SPAN 2605. 3 s.h.

3736. *Introduction to Spanish Linguistics.* Examines some of the basic concepts and issues of modern Spanish linguistic theory in the areas of phonology, morphology, syntax and pragmatics, including readings and discussion on these topics. Prereq.: SPAN 2605. 3 s.h.

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.

3752. *Spanish Culture and Literature 1.* Introduction to Peninsular culture and literatures from the Middle Ages to the Romantic period in the 19th century through representative selections of key historic and literary figures. Theoretical and critical approaches to help the student interpret key texts. Prereq.: SPAN 2605. 3 s.h.

3753. *Spanish Culture and Literature 2.* Introduction to Peninsular culture and literatures from the Romantic period to the present through representative selections of key historic and literary figures. Theoretical and critical approaches to help the student interpret key texts. Prereq.: SPAN 2605.3 s.h.

3755. *Conversation for Proficiency 2.* 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 2655 and one 3700-level SPAN course. 3 s.h.

3756. *Spanish-American Culture and Literature 1.* This course traces the history and cultures of Spanish America from pre-Columbian and colonial times through independence (1820). Describes important literary currents and provides a historical context for the period. Prereq.: SPAN 2605. 3 s.h.

3757. *Spanish-American Culture and Literature 2.* This course traces the history and cultures of Spanish America from independence (1820) through the 20th century. Describes important literary currents and provides a historical context for the period. Prereq.: SPAN 2605. 3 s.h.

3758. *Culture and Literature of Spanish-Speaking Groups in the U.S.* Provides an overview of the significant culture and literature of the diverse Hispanic groups in the U.S. The relationship between literature and society broached through an in-depth discussion of several representative texts and their historical and political background. Prereq.: One 3700-level SPAN course. 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 3752 or 3753. 3 s.h.

4885. *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. Prereq.: one of SPAN 3752, 3753 or one of SPAN 3756, 3757. 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 3756 or 3757. 3 s.h.

SWAH–Swahili

*1550. *Elementary.* Intensive training in understanding, speaking, reading, and writing Swahili; knowledge of geography and daily life as well as appreciation of the culture of its speakers. By the end of the course students should achieve Intermediate Low Level proficiency. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or FNLG 1500. 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. By the end of the course students should achieve Intermediate Mid Level proficiency. Assignments in the LLRC. Grading is ABC/NC. Prereq.: Placement test or SWAH 1550. 4 s.h.

FNUTR–FOOD AND NUTRITION
Department of Human Ecology

Lower-Division Courses

1543. *Personal Nutrition.* Basic normal nutrition adaptable to individual lifestyles throughout the lifespan. Emphasis on valid nutrition information, wellness, and healthful food choices. 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 chemistry. 3 s.h.

*1551L. *Nutrition Laboratory.* Principles, procedures, techniques used in assessing the normal diet and nutritional status in healthy individuals. Four hours lab per week. Prereq.: FNUTR 1551 or concurrent. 1 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 FNUTR 1553. Must be taken concurrently with FNUTR 1553. Three hours lab per week. 1 s.h.

2603. *Diet Therapy.* 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.: FNUTR 1551L and BIOL1552L. 3 s.h.

*2603L. *Diet Therapy Lab.* Application of basic principles of diet therapy; nutritional assessment; diet calculations. Two 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.: ACCTG 2602 with a grade of C or better, prereq. or concurrent with FNUTR 2612 and 2610. Permit required. 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.: FNUTR 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.: FNUTR 1553 and 1553L. Concurrent with FNUTR 2612. Permit required. 2 s.h.

2613L. *Nutritional Care Clinical Experience.* Application of nutritional care process in a hospital or other clinical setting. Includes conferences, two-hour on-campus seminar, and six hours supervised clinical experiences per week. Prereq.: FNUTR 2603 and 2603L. Permit required. 3 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. Overall GPA of 2.5 required. Twenty-one hours of clinical experience per week. Prereq.: FNUTR 2609L, 2612, 2612L, 2613L, and CHEM 1505. 2 s.h.

2650. *Seminar in Dietetic Technology.* The role of the dietetic technician in the health care delivery system; overview of current opportunities in the food service field; standards of professional responsibility, practice, and self development. Concurrent with FNUTR 2628. Permit required. 1 s.h.

Upper-Division Courses

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.: FNUTR 1551; BIOL 1552/L; CHEM 3705/L or concurrent. 3 s.h.

3760. *Clinical Nutrition 1.* 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.: FNUTR 2603 and 3759. 3 s.h.

3761. *Nutrition and the Athlete.* Facets of nutrition of special relevance to athletes, such as carbohydrate loading, protein intake, electrolyte imbalances, and crash diets. Prereq.: HSC 1568. 2 s.h.

*3761L. *Clinical Nutrition 1 Laboratory.* Orientation to the dietetic profession. Selected clinical experiences providing opportunities for developing an understanding and working knowledge of the nutritional care process and its application to individuals exhibiting special nutritional needs. Six hours lab, two hours lecture per week. Concurrent with FNUTR 3760. 4 s.h.

4802. *Research Methods in Dietetics.* Overview of research methodology, statistics and applications in the field of nutrition and dietetics. Prereq.: MATH 2623. 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 FNUTR 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.: FNUTR 1553, CHEM 1506. Permit required. 2 s.h.

*4810L. *Experimental Foods Laboratory.* Application of scientific principles and experimental procedures to cooking processes. Three hours lab per week. Concurrent with FNUTR 4810. Permit required. 1 s.h.

4825. *Current Nutrition Concepts.* Readings and critical appraisal of research literature in nutrition. Prereq.: FNUTR 3759, CHEM 3705. 3 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.: FNUTR 2612 and a minimum of 20 s.h. of Human Ecology credit. 3 s.h.

4858L. *Food Service System Management Laboratory.* Application of the management process to institutional food service systems. Twelve hours supervised practice, one hour lecture per week. Prereq.: FNUTR 4858. 4 s.h.

4860. *Clinical Nutrition* 2. Study of the nature and etiology of select disease conditions with focus on solving dietetic problems accompanying them. Prereq.: FNUTR 3760. 3 s.h.

*4860L. *Clinical Nutrition 2 Laboratory.* Selected clinical experience providing opportunities for application of nutritional care process to individuals exhibiting special nutritional needs. Eight hours lab, one hour lecture per week. Concurrent with FNUTR 4860. 3 s.h.

4862. *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.: CHFAM 3731. 2 s.h.

*4862L. *Food and Cultures Laboratory.* Concurrent with FNUTR 4862. Three hours lab per week.1 s.h.

4872. *Maternal and Child Nutrition.* Principles of the nutritional care process as it relates to the maternal and pediatric population. Prereq.: FNUTR 3760. 3 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 FNUTR 4872. 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.: FNUTR 3760. 3 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, four hours clinical experience per week. Prereq.: FNUTR 4858L; concurrent with FNUTR 4873. 2 s.h.

4874. *Community Nutrition.* Public Health nutrition programs and their services to the community. Emphasis on program funding, cultural aspects and needs of the underserved and elderly. Prereq.: FNUTR 2603. 2 s.h.

4874L. *Community Nutrition Laboratory.* Selected clinical experiences providing opportunities for application of the nutritional acre process to individuals in the community setting. Four hours clinical experiences, one hour lecture per week. Concurrent with FNUTR 4874. 2 s.h.

4885. *Practicum in Dietetics.* Clinical experiences providing opportunities to integrate application of food systems management and clinical dietetics into professional practice. This is a capstone course. Twenty-four hours clinical experience and one hour lecture per week. Prereq.: FNUTR 4858L and 4860L. 5 s.h.

FOUND–FOUNDATIONS OF EDUCATION

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. 3 s.h.

3710. *Educational Measurement and Guidance.* Critical review of assessment strategies and techniques including implementation of authentic assessment, and multiple intelligences for the pre-professional teacher. Standardized testing and implications for current practice. Prereq.: FOUND 1501. 3 s.h.

5875, 5876, 5877. *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. 2 s.h.

GEOG–GEOGRAPHY
Department of Geography

The following have been approved as General Education courses in the domain of Natural Sciences: 1503, Physical Geography; 2630, Weather. In Societies and Institutions, 2626, World Geography; 2640, Human Geography.

Physical Geography

The following courses satisfy the math/science requirement for students enrolled prior to fall 2000.

Lower-Division Courses

1503. *Physical Geography.* An introductory analysis of selected elements of the natural habitat and their geographic distribution. 3 s.h.

2603. *Human Impacts on the Environment.* The interactions between natural systems and human activities that result in environmental change or degradation of the earth's atmosphere, waters, soil, vegetation and animal life. Conservation, mitigation, and sustainable resource strategies are discussed. 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.

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.

Upper-Division Courses

3730. *Global Climates.* An examination of the earth's climates and the processes and controls responsible for their occurrence, distribution and change. Prereq.: GEOG 2630. 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 1505; high school chemistry is recommended. 3 s.h.

Human and Regional Geography

Lower-Division Courses

The following courses satisfy the social studies requirement for students enrolled prior to fall 2000.

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.

2640. *Human Geography.* An examination of the place to place variation in people's utilization of the earth. Topics include the distribution of people, spatial variations in culture, urbanization and politization of space. 3 s.h.

2640H. *Honors Human Geography.* An examination of the place to place variation in people's utilization of the earth. Topics include the distribution of people, spatial variations in culture, urbanization and politization of space. 3 s.h.

2650. *Global Economic Landscapes.* Geographic patterns of economic activities such as agriculture, manufacturing, retailing and services, and regional patterns and issues in the emerging global economy. 3 s.h.

Upper-Division Courses

*3710. *Remote Sensing.* The use of aerial imaging systems and satellite sensors to study the earth's physical and cultural phenomena through manual and digital analyses. Students who have completed GEOG 661 will not receive credit for this course. Prereq.: GEOG 2610. 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. 3 s.h.

3717. *Geography of Europe.* Spatial patterns found in the physical and cultural landscapes of Europe. Prereq.: GEOG 2626 or 2640. Not available to students with credit for 750E. 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. Not available to students with credit for 750Y. 3.s.h.

3721. *Geography of Ohio.* Spatial patterns found in the physical and cultural landscapes of Ohio. Prereq.: GEOG 2626 or 2640. Not available to students with credit for 750O. 3 s.h.

3722. *Historical Geography of the United States.* Spatial patterns in the United States over time. Topics include discovery and exploration, regional variation in settlement, ethnicity and material culture, and the role of transportation in the American landscape. Prereq.: GEOG 2626 or 2640. 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 2640. 3 s.h.

*3732. *GIS 1.* An introduction to Geographic Information Systems that focuses on the nature of digital maps and geographic data, the development of geographic data bases and the production of thematic maps. Prereq.: GEOG 2610. 3 s.h.

*3740. *Business Geographics.* The application of geographic concepts and techniques to business problems, with emphasis on the use of geographic data, locational decision-making and the analysis of markets. Prereq.: GEOG 2640 or 2650. 3 s.h.

3741. *Transportation Geography.* Spatial properties of interregional and intraurban transportation. Topics include network development, movement patterns of people and commodities and the impact of transportation on other activities. Prereq.: GEOG 2626 or 2640 or 2650. 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. 3 s.h.

3750. *Topics in Regional Geography.* Application of the regional method to selected areas of the world. Topic is announced each time the course is offered. May be repeated three times for credit if content is not repeated. Maximum credit 9 s.h. Prereq.: GEOG 2626 or 2640. 3 s.h.

3755. *Tourism Geography.* Geographic analysis of leisure travel and the travel industry including patterns of travel, impacts of tourism and marketing of tourism sites. Prereq.: GEOG 2626 or 2640. 3 s.h.

*3765. *GIS 2.* A continuation of GIS 1 that focuses on applications of Geographic Information Systems, geographic data base management, spatial analysis, data presentation and the future of GIS. Prereq.: GEOG 3732. 3 s.h.

*4813. *Field Methods.* Practical experiences in geographic data collection. Emphasis on applying the techniques of observation, sampling, interviewing and mapping to both physical and human phenomena having *geographical* dimensions. Students apply these techniques at several scales: the local campus, the Youngstown-Warren SMSA, a larger metropolitan region, and other nearby regions. Participation in field trips is mandatory. Prereq.: Junior standing, 6 s.h. of geography and permission of chairperson. 3 s.h.

4820. *Special Problems in Geography.* An in-depth study of a specific problem in geography. The problem is dependent upon the student's interest and competence, availability of faculty supervision and department equipment. Maximum credit 3 s.h. Prereq.: 20 s.h. of Geography. 1-3 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.

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.: permission of the chairperson. 3 s.h.

4890. *Senior Research.* Investigation of research topics, methods and issues in modern geography. Students select a geographic research topic, collect and analyze data using appropriate geographic methods and present the results of their research in oral and written form. Prereq.: Senior standing in Geography or permission of the chairperson. 3 s.h.

GEOL–GEOLOGY

Department of Geology

The following have been approved as General Education courses in the domain of Natural Science: 1504, The Dynamic Earth; 1510, Geology of National Parks; 2602, Introduction to Oceanography. The following courses have been approved as substitutes in the domain of Natural Science. However, they are higher-level courses than the standard General Education courses; students should consult their advisors about taking them. They are: 1505, Physical Geology; 1513, Physical Evolution of North America; 1514, Life of the Geologic Past; 2611, Geology for Engineers.

Lower-Division Courses

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.

*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.

*1513. *Physical Evolution of North America.* Origin and evolution of the continent of North America with a focus on the geologic evidences and physical changes through geologic time within the context of plate tectonics theory. The laboratory component emphasizes geologic interpretation from a variety of geologic map types and rock materials. Three hours lecture, two hours of lab per week. Field trips are an integral part of the course. Prereq.: GEOL 1504 or 1505. 4 s.h.

*1514. *Life of the Geologic Past.* Origin, classification, and evolution of plants, invertebrates and vertebrates through geologic time as evidenced by the fossil record; contemporary understanding of the extinction of various life forms, such as the dinosaurs. Two hours lecture, two hours lab. 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.

*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 1513. 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.

2699. *Individual Study.* The introductory study of problems or issues in geology, or a review of literature relating to a specific geologic topic. A maximum of 3 s.h. may be taken. Prereq.: 8 s.h. in Geology, consent of department chairperson and instructor. 1-3 s.h.

Upper-Division Courses

*3700. *Mineralogy.* The occurrence, composition, and crystallography of common and economically important minerals. Identification of minerals using physical, chemical, optical and x-ray properties. The theory and use of the polarizing microscope and its application to the study of crystalline material, including asbestos materials. Two hours lecture, four hours of lab per week. Prereq.: CHEM 1515 (may be concurrent) and GEOL 1513. 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 nonglacial 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 1513. 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 1513. 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 1513; 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 1513 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.

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.

*5802. *Sedimentology and Stratigraphy.* The study and interpretation of sedimentary rocks, including physical characteristics, petrography and petrology, depositional environments, principles of correlation, and principles of basin analysis. Three hours lecture, two hours lab per week. Prereq.: GEOL 1513 and 3700. 4 s.h.

*4804. *Ground Water.* A study of the geologic and hydrologic factors controlling the occurrence and behavior of water beneath the earth's surface. Two hours lecture, two hours lab per week. Prereq.: GEOL 1505 and 1513; MATH 1571 recommended. 3 s.h.

5805. *Special Problems in Geology.* An in-depth study of a specific problem in one of the branches of geology. The problem depends on the student's interest and qualifications and the equipment availability. A maximum of 8 s.h. may be taken. Prereq.: 8 s.h. in Geology, consent of the department chairperson and instructor. 1-4 s.h.

5815. *Geology and the Environment 2.* In-depth examination of earth processes, earth resources and properties of earth materials as they relate to human activities, and their geologic consequences. Prereq.: GEOL 2615 or ENST 2600. 2 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.

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.

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.

HIST-HISTORY

Department of History

The following have been approved as General Education courses in the domain of Societies and Institutions: 1511 and 1511H, World Civilization to 1500; 1512 and 1512H, World Civilization from 1500; 2605, Turning Points in U.S. History 1; 2606, Turning Points in U.S. History 2.

Lower-Division Courses

1511. *World Civilization to 1500.* Origins and growth of the major civilizations of the world from earliest times to about 1500. 3 s.h.

1512. *World Civilization from 1500.* Development of the major civilizations of the world from 1500 to the present. 3 s.h.

1511H. *World Civilization to 1500.* An honors course in the origins and growth of the major civilizations of the world from earliest times to about 1500 with emphasis on the analysis and critical evaluation of historical developments. Prereq.: Eligibility for admissions to University Honors Program, or recommendation of a history instructor. 3 s.h.

1512H. *World Civilization from 1500.* An honors course in the development of the major civilizations of the world from about 1500 to the present with emphasis on the analysis and critical evaluation of historical developments. Prereq.: Eligibility for admissions to University Honors Program, or recommendation of a history instructor. 3 s.h.

2601. *American Military History.* A survey of American military history from the origin of the United States Army to the present, with emphasis on how military policies and strategies have been influenced by the domestic and foreign affairs of the United States. Identical with MILSC 2601. 3 s.h.

2605. *Turning Points in U.S. History 1.* Key episodes in the social, economic, political and cultural developments of the United States to 1877, exploring how diverse peoples shaped the growing nation. 3 s.h.

2605H. *History of the United States 1.* An honors course concerning the political, social, and economic development of the United States to 1877 with emphasis on the analysis and critical evaluation of historical developments. Prereq.: Eligibility for admission to University Honore Program, or recommendation of a history instructor. 3 s.h.

2606. *Turning Points in U.S. History 2.* Key episodes in the social, economic, political and cultural developments of the United States since 1877, exploring how diverse peoples shaped the growing nation. 3 s.h.

2606H. *History of the United States 2.* An honors course concerning the political, social, and economic development of the United States from 1877 to the present with emphasis on the analysis and critical evaluation of historical developments. Prereq.: Eligibility for admission to University Honore Program, or recommendation of a history instructor. 3 s.h.

2611. *Latin America.* A survey of Latin America from its beginnings to the present. Emphasis is on late 19th and 20th century developments. 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.

2661. *Middle Eastern Civilization.* A survey of North Africa, the Middle East, and the Indian Subcontinent from ancient times to the present, with special emphasis on nationalistic movements in these regions in the past two centuries. 3 s.h.

2662. *History of Asian Civilization.* Institutions and cultures of East Asia from ancient times to date. Emphasis on modern times. 3 s.h.

2663. *African Civilization.* A survey of the cultural, political, social and economic development of Africa from antiquity to the present, viewed in the context of world history. 3 s.h.

Upper-Division Courses

3700. *The Atlantic World.* Development of the Atlantic rim from 1450 to 1700 with emphasis on the processes of exploration, cultural contact, and colonization. Cross-cultural focus on West Africa, the Caribbean and eastern North America. Prereq.: HIST 1511 or 2605. 3 s.h.

3702. *Early America.* From the first English interactions with the Native Americans and Africans, to the rebellion for Independence, to the struggles over the creation of the Constitution. Prereq.: HIST 2605. 3 s.h.

3704. *Age of Jefferson and Jackson.* Early 19th century America, with emphasis on politics and culture before 1845. Prereq.: HIST 2605. 3 s.h.

3706. *The Age of Sectionalism.* The period from 1845 to 1877, including the development of the North-South conflict, the war years, and the Reconstruction aftermath. 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 nation's political, social, economic and cultural development, along with foreign policy. Prereq.: HIST 2606. 3 s.h.

3712. *United States in Crisis: 1920-1945.* The Roaring Twenties, Great Depression, New Deal, and World War II. An examination of the social, economic, and political forces that enables America to cope with dramatic foreign and domestic crises. Prereq.: HIST 2606. 3 s.h.

3713. *Cold War America: 1945-1990.* An exploration of U.S. efforts to grapple with the Soviet Union, civil rights and equality, the role of government, changing sexual and social mores, the welfare state, and deindustrialization. Prereq.: HIST 2606. 3 s.h.

3715. *Introduction to Historic Preservation.* Introduction to the field of historic preservation. Provides historical context for the discipline as well as a basic grounding in the concepts and opportunities of the field. Prereq.: HIST 2605 and 2606. 3 s.h.

3717. *Constitutional History of the United States.* The development of the American constitutional system from colonial times to the present. Prereq.: HIST 2605 or 2606. 3 s.h.

3723. *History of American Sports.* An examination of sports within America from earliest times to the present. Special emphasis on the manner in which sports and society have influenced each other, such as racial and class relationships, social mobility, politics, religion, and foreign policy. Prereq.: HIST 2605 or 2606. 3 s.h.

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.

3728. *History of South America.* The Spanish-American Republics and Brazil. Prereq.: HIST 2611 or consent of instructor. 3 s.h.

3730. *The Black Experience in American History.* A historical study of Black people's roles in and contribution to the political, social, and economic development of American society. Prereq.: HIST 2605 or 2606, or AFRST 2600. 3 s.h.

3732. *The West in American History* 1. The American frontier from the colonial period to 1800, with emphasis on the role of the Indians; the social, political, and economic currents in frontier life. Prereq.: HIST 2605. 3 s.h.

3733. *The West in American History* 2. The movement of people in 19th century America west of the Mississippi, with emphasis on the role of the Indians. Prereq.: HIST 2605. 3 s.h.

3734. *History of Organized Crime in the United States.* The history or organized crime emphasizes the organization of the criminal underworld, the ethnic, racial, and religious composition of criminal groups, and the impact of organized crime on prostitution, gambling, Prohibition, and drugs. Prereq.: HIST 2605 or 2606. 3 s.h.

3736. *History of American Cities.* City politics, social change, ethnic and racial issues, industrialization, and city planning during the 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, 3742. *Diplomatic History of the United States* 1, 2. A study of American foreign relations as determined by interaction between domestic and international pressures (1) to 1900 and (2) since 1900. Prereq.: HIST 2605 for 3741, HIST 2606 for 3742. 3+3 s.h.

3743. *Labor in United States History.* Traces the transformation of American workers and the impact of the labor movement upon the United States. Emphasizes the diversity of the working class and the historical context of the of the political and social implications of the labor movement. Prereq.: HIST 2606. 3 s.h.

3744. *The History of American Business.* An examination of the growth and structural development of American business and its relationship to government from colonial times to the present with emphasis on the 20th century. 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, decolonialization and the challenges of modern Africa. Prereq.: HIST 2663 or consent of instructor. 3 s.h.

3751. *History of Modern 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. *Medieval Civilization.* A political, economic, intellectual and cultural history, which traces events and developments from the collapse of the Ancient World to the end of the High Middle Ages. 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.

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. *The Far East.* Arts and philosophy, economic development, social and political institutions, and international relations from ancient times to the beginning of modernization, including China, Japan, and Korea. Prereq.: HIST 2662 or consent of instructor. 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.

3776. *History of Modern Japan.* Japan's history from the Meiji Restoration to date, including the industrialization, the party movement, intellectual development, the rise and fall of militarism, postwar reconstruction, and current problems. Prereq.: HIST 2662 or consent of instructor. 3 s.h.

3778. *History of the Russian Empire.* History of Russia from Kyevan Rus to the dissolution of the empire with special attention to the Russian Revolution. Prereq.: HIST 1511 or 1512. 3 s.h.

3779. *Soviet Union and Successor States.* History, diplomacy, and tactics from the Bolshevik Revolution to the present; achievements and shortcomings of Communism in Russia, constituent republics, autonomous regions, and satellites. 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.

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. *English History 1.* England from the earliest times to 1714. Emphasis on the early political and cultural evolution of the English people, the expansion of interests in the Elizabethan Age, and the establishment of parliamentary government in the Stuart era. Prereq.: HIST 1511. 3 s.h.

3791. *English History 2.* Great Britain from the accession of the Hanovers to the present. Emphasis on the domestic affairs of Great Britain and Ireland, the intellectual impact of Newton and Darwin, commercial and industrial developments, and the attendant social and political problems. Prereq.: HIST 1512. 3 s.h.

3792. *British Empire and Commonwealth.* British Empire from the collapse of the old empire in 1783 to the present. Colonial institutions, colonial policy, supervision of slave trade, expansion of empire, growth of colonial nationalism, and emergence of the Commonwealth. 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.

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.

5808. *American Architectural History.* Development of structural style and trends within the United States. Includes formal and vernacular developments. The community serves as a basic laboratory. Prereq.: HIST 2605 and 2606. 3 s.h.

5809. *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.

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.

4811. *Practicum in Historic Preservation.* Experience in historic preservation through student participation in a wide variety of historic preservation projects. Prepares students for internships outside the university. Prereq.: HIST 3715 and permission of Historic Preservation Committee. 3 s.h.

4812. *Historic Preservation Internship.* Practical application of principles and methods in the field of historic preservation with the goal of producing a completed project. Internship to be selected by student in conjunction with program director. May be repeated once. Prereq.: HIST 3715 and approval of internship committee. 3 s.h.

4815. *American Material Culture.* A discussion and analysis of the use and importance of material artifacts as texts for the recovery of the American past. Emphasis on sources not traditionally utilized by historians. Examples include the contextual analysis of children's books, foodways, and sacred spaces. Prereq.: HIST 2605 and 2606, or AMER 2601 and 3701. 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 Third World History.* Specific issues in African, Asian, Latin American, or Middle Eastern 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.

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.

HMEC–HUMAN ECOLOGY
Department of Human Ecology

1550. *Introduction to Human Ecology.* History, philosophy, current trends and careers; interrelationships of the specialized areas of family and consumer sciences; development of personal and professional altitudes and values relevant to practice in each specialization. Prereq.: EPT placement in ENGL 1550 or completion of ENGL 1540. 1 s.h.

3771. *Presentation Techniques.* Application of demonstration, audio-visual, and public relations tools and techniques in communicating family and consumer sciences information to target groups from preschoolers to adults. One hour lecture, two hours lab per week. Prereq.: Eight s.h. of human ecology credit and ENGL 1550 and COMM 1545 or equivalent speech course. 2 s.h.

3780. *Consumer Economics.* Managing the family's economic resources through the use of the decision-making process. Current consumer issues and sources of information for consumers. Prereq.: ECON 2610 or 2630. 3 s.h.

3799. *Family and Consumer Sciences Education, History, and Philosophy.* History, philosophy, scope and requirements of family and consumer sciences educational programs. Prereq.: FOUND 1501 and HMEC 1550. 1 s.h.

4800. *Teaching in Family and Consumer Sciences.* Methods of organization, instruction, and evaluation for teaching in vocational family and consumer sciences. Prereq.: HMEC 3799 or concurrent with HMEC 3799. 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.

4850. *Contemporary Issues.* Interrelationships of the specializations in human ecology in addressing public policy issues as they affect the family and the profession. Prereq.: HMEC 1550, CHFAM 3731, junior standing and 20 s.h. of H.E. credit. 1 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.: CHFAM 3731 and PSYCH 3707 or SOCIO 3705. 3 s.h.

4870. *Human Ecology Workshop.* Special workshops in a professional area of human ecology as needed. Prereq.: Junior standing. 1-3 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. H.E. credit and senior standing. 1-2 s.h.

4892. *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.: CHFAM 3731. 3 s.h.

4893. *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.: CHFAM 3731, SOCIO 3705, or PSYCH 3707. 2 s.h.

4895. *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.: CHFAM 3731, junior standing, permission of instructor and H.E. department chairperson. 1-4 s.h.

HMGT–HOSPITALITY MANAGEMENT
Department of Human Ecology

1501. *Survey of Lodging and Tourism.* Survey of statistics and organization, history, growth and future, and demographics related to national and international travel. Study of all areas of leisure and business travel, restaurant and event markets. Includes site visits. 3 s.h.

*2600. *Front Office Management.* Operation and supervision of a hotel-motel front office. Computerized property management systems, reservations, registration, checkout, guest accounting, handling guest needs. Three hours lecture, two hours lab. Prereq.: CSIS 1500. 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.: ACCTG 2602. 4 s.h.

2620. *Hospitality Security.* Security techniques used to enhance safety of persons and property, including loss prevention, administration, organization, emergency planning, and liability. Prereq.: HMGT 1501. 2 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. 10 s.h. HMGT credit. Permit required. 3 s.h.

3719. *Facilities Management.* Maintenance and engineering principles for lodging and food service properties. Technical information, preventive main-

tenance, engineering and housekeeping department roles; electrical, plumbing, sewer, swimming pool, HVAC, elevator, acoustic and sound control, environmental management. Prereq.: HMGT 2620. 3 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.: FNUTR 2612. 3 s.h.

3745. *Hospitality Marketing and Sales.* Application of marketing principles to sales of hospitality services; methods, techniques, and services for successful meetings and conventions; computer application/simulation transferrable to industry. Classroom-based industry marketing project. Prereq.: MKTG 3703 and HMGT 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.: HMGT 2620, MGT 2604. 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.: HMGT 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.: HMGT 2691 and HMEC 4835. 3 s.h.

HONOR-HONORS PROGRAM

Interdisciplinary

University Honors Study

1599. *Special Topics.* An introductory-level examination of some topic appropriate for honors study. Typically team-designed. In certain cases, students may arrange to have the course counted toward the major by negotiation with the major department. With approval of the director of Honors, may be repeated for credit with different topics. Prereq: Admission to the Honors Program or permission of instructor and director of Honors. 3 s.h.

2601, 2602. *Honor Seminar.* An interdisciplinary seminar series dealing with topics appropriate to students in the Honors Program. The subjects include, but are not limited to, creativity, the organization and function of the university, the total human being, critical thinking, current events, etc. Prereq.: Eligibility for the Honors Program. 1-2 s.h.

2699. *Special Topics.* A close examination of some topic appropriate for lower-division honors study. Typically team-designed. In certain cases, students may arrange to have the course counted toward the major by negotiation with the major department. With approval of the director of Honors, may be repeated for credit with different topics. Prereq: Admission to the Honors Program or permission of instructor and director of Honors. 3 s.h.

3701, 3702. *University Honors Seminar.* A critical investigation of selected areas underlying civilization, embracing and integrating the particular studies of science, society, and the humanities. Prereq.: Eligibility for the Honors Program. 1-2 s.h.

3799. *Special Topics.* A close examination of some topic appropriate for upper-division honors study. Typically team-designed. In certain cases, students may arrange to have the course counted toward the major by negotiation with the major department. With approval of the director of Honors, may be repeated for credit with different topics. Prereq: Admission to the Honors Program or permission of instructor and director of Honors. 3 s.h.

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 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.

HPES–HUMAN PERFORMANCE AND EXERCISE SCIENCE

Department of Human Performance and Exercise Science

Activity Classes

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.

*1537. *Aquatic Exercise.* Fitness through aquatic conditioning exercises tailored to the individual needs of the student. Open to swimmers and nonswimmers. 1 s.h.

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. Prereq.: HPES 1540. 2 s.h.

1542. *Dance Composition.* Basic principles of form and structure to choreography. Prereq.: HPES 1541. 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.

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.

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.

1570. *Tap and Jazz 1.* Principles and practices of the basic techniques of tap dance, soft shoe, jazz, and combinations of the fundamental forms of movements. Designed to introduce the student to various forms of dance and movement combinations performed in musical theater. Identical with THTR 2663. 1 s.h.

1571. *Tap and Jazz 2.* Emphasizes basic tap combinations and routines. Prereq.: HPES 1570. 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. Identical with THTR 1558. 1 s.h.

1573. *Ballet 2.* Expands on vocabulary and establishing patterns of balletic movement. Prereq.: HPES 1572. 2 s.h.

1588. *Selected Activities in Human Performance and Exercise Science.* Knowledge of and practice in a particular area of dance, fitness, or sport. Activity is announced each time the course is offered. May be repeated up to 4 s.h. with change in topic. 1-2 s.h.

2622. *Motor Skill Analysis for the Elementary Teacher.* Performance and analysis of locomotor, non-locomotor, and manipulative skills. Basic movement, movement education, and materials for elementary children. Characteristics of children and their relationship to physical education and concept development. Prereq.: Elementary Education major. 1 s.h.

*2630. *Lifeguard Training.* Water rescue, preventive lifeguarding techniques, emergency procedures. Red Cross certificate granted upon satisfactory completion of all requirements. 2 s.h.

*2631. *Water Safety Methods for Instructors.* Techniques for teaching and supervising swimming, emergency water safety, and basic water safety. Introduction to infant and preschool aquatic programs. A water safety instructor's certificate granted upon satisfactory completion of all requirements. Prereq.: Current lifeguard training certificate or emergency water safety certificate. 2 s.h.

*2632. *Skin and Scuba Diving.* Basic skin-diving with the use of mask, fins, and snorkel. Scuba diving skills with the use of tank and regulator. Emphasis on diving physics, physiology, lifesaving, first aid, and safety skills related to skin and scuba diving. Two hours lecture, two hours lab. Student must furnish mask, fins, and snorkel. 2 s.h.

*2635. *Openwater Scuba Diving.* Practical experiences in physiological and psychological stress, underwater navigation, effects of hypothermia, decompression, repetitive diving, and rescue techniques. Students completing this course receive basic scuba certification. Five hours lecture, ten hours lab per semester. Prereq.: HPES 2632. 1 s.h.

*2697. *Camping.* The specific skills and problems encountered in camping: shelter, clothing, food, transportation, and site selection. Two hours lab. 1 s.h.

Lecture-Laboratory Classes for Majors or Minors only

1506. *Performance and Analysis of Track and Field.* Skills, techniques, and rules of track and field events. Includes progressions, organizational strategies, and field day administration for teachers. Two hours lab. 1 s.h.

1567. *Performance and Analysis of Team Sports 1.* Analysis and practice in performing and strategies for teaching team sports including soccer, team handball, and variations of hockey and football. Information such as rules, terminology, etiquette, strategies, progressions, lead up games, officiating and assessment. One hour lecture, two hours lab. 2 s.h.

1568. *Performance and Analysis of Team Sports 1.* Analysis and practice in performing and strategies for teaching team sports including softball, volleyball, and basketball. Two hours lab. 1 s.h.

*1574. *Performance and Analysis of Lifetime Sports.* Analysis and practice in performing and teaching golf, bowling and other lifetime sports. Two hours lab. 1 s.h.

*1575. *Performance and Analysis of Racquet Sports.* Analysis and practice in performing and teaching tennis, racquetball, badminton and other racquet sports. Two hours lab. 1 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. 1 s.h.

*1589. *Scientific Basis of Fitness.* Introduction to components of physical fitness and their physiological basis. Role of exercise in prevention of cardiovascular and other hypokinetic diseases. Participation and application of training principles in a variety of fitness activities. Selection and proper use of exercise equipment. One hour lecture, two hours lab. Prereq.: Major in HPES or permission of instructor. 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.: Major in HPES or permission of instructor. 3 s.h.

*2610. *Introduction to Outdoor Pursuits.* Philosophy and content of outdoor education including participation in activities such as canoeing, backpacking, orienteering, and initiative activities. Emphasis on risk management as it pertains to land- and water-based outdoor pursuits. Two hours lab. 1 s.h.

2615. *Methods of Teaching Rhythmic Aerobic Activity.* Rhythm and movement fundamentals related to aerobic dance and step aerobics. Methods and materials of teaching rhythmic aerobic activity culminating in practical teaching experience in the classroom. One hour lecture, two hours lab. Prereq.: HPES 1589. 2 s.h.

2618. *Physical Education Practicum.* A supervised experience in an approved fitness or sports related program (e.g., health spa or racquetball club) under the direction of a qualified individual. Designed to give the student a controlled field experience with periodic observation by a full-time faculty member. May be repeated for a maximum of 3 s.h. Prereq.: HPES 1595 and 4 s.h. of HPES activity classes. 1 s.h.

2620. *Exercise Equipment Management.* Factors to consider when purchasing new or used exercise equipment, equipment repair and preventive maintenance procedures, and equipment-related risk management. Prereq.: Permission of instructor. 1 s.h.

2624. *Physical Education for Children in Early Childhood Settings.* Principles, methods, materials, and organization of activities for preschool-grade 3 children. Active participation, approximately 15-20 hours field work in area preschools/schools. Prereq.: 30 s.h. 3 s.h.

2625. *Pedagogical Aspects of Exercise Science.* Effective instructional practices and development of organizational skills and characteristics required for teaching in exercise programs. Two hours lecture, two hours lab. Prereq.: HPES 1589 and 24 s.h. 3 s.h.

2628. *Movement for Early Childhood.* Laban's movement approach to teaching educational dance, gymnastics, games, and creative activities for grades preK-grade 3. One hour lecture, two hours lab. 2 s.h.

*2661. *Games Analysis.* Selection, analysis, adaptation, and creation of games for varying developmental levels and environmental situations in grades 3-12 physical education. Large and small group, coeducational, self-challenging, and multicultural activities. One hour lecture, two hours lab. Prereq.: Completion of 4 s.h. from HPES 1506, 1567, 1568, 1574, 1575, 2610. 2 s.h.

2671. *Principles and Analysis of Motor Development.* Designed to help the prospective physical educator critically analyze movement patterns and understand their relationship to a lifespan motor behavior approach. Motor patterns, applications to teaching. Two hours lecture, two hours lab. Prereq.: HPES 1595 and 4 s.h. from among 1506, 1567, 1568, 1574, 1575 and 2610. 3 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.

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 Leader Practicum.* Introductory exercise leadership skills including exercise testing and prescription, and design of safe and effective programs. Supervised field experience in exercise leadership for 5-8 hours per week. Content based on American College of Sports Medicine objectives. Prereq.: HPES 1589, 2615, and 2625. 4 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.: BIOL 1552 and 48 s.h. or consent of instructor. 3 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.: BIOL 1552 or 1545. 3 s.h.

*3722. *Physical Education in Elementary Grades for Classroom Teachers.* Principles, methods, materials, and organization of activities for elementary school children. Active participation required, including approximately 15 hours of field work in area schools. Prereq.: HPES 2622. 2 s.h.

3730. *Health/Fitness Instructor Practicum.* Intermediate exercise testing, exercise prescription based on metabolic calculations, and analysis of exercise equipment and facilities. 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.

3740. *Exercise Program Administration.* Provides an overview of a wide range of topics in health/fitness management. Basic skills necessary to develop and implement health/fitness programs. Emphasis on administration. Prereq.: Junior standing in exercise science or permission of instructor. 3 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. One hour lecture, two hours lab. Prereq.: HPES 3710 and 3720. 2 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.

3767. *Teacher Behavior 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.: Admission to upper division in HPES and HPES 1595, 2671, 2661, and 2628. 4 s.h.

3780. *Methods of Teaching Dance.* Rhythm and movement fundamentals and forms: folk, square, social and aerobic. Methods and materials of teaching dance culminating in clinical or field experiences. One hour lecture, two hours lab. Prereq.: HPES upper-division status and 1595, 2628, 2661, and 2671. 2 s.h.

4803. *Issues and Trends in Exercise Science.* Current issues and trends and their impact on exercise science and the general public as they relate to the American College of Sports Medicine's behavioral objectives for various professional certificates. Prereq.: 64 s.h. or permission of instructor. 1 s.h.

*4808. *Assessment Instruments and Strategies in Physical Education.* Various assessment instruments and strategies used in teaching physical education P-12, including cognitive, motor, and affective domains. Practical experience in designing and completing a research project. Two hours lecture, two hours lab. Prereq.: 72 s.h. 3 s.h.

*4810. *Clinical Exercise Practicum.* Clinical exercise tests (electrocardiography, pulmonary function, submaximal/maximal cardiorespiratory tests) and exercise prescription (cardiovascular, pulmonary, diabetes, obesity, osteoporosis, arthritis, elderly, pregnancy, children). Supervised experience in clinical exercise facilities 5-8 hours per week. Content based on American College of Sports Medicine objectives. Prereq.: HPES 3710 and 3730. 5 s.h.

*4820. *Research Design and Statistics in Exercise Science.* Scientific methods in exercise science including basic research design and elementary statistical techniques. Practical experience in using computer statistical software, understanding published research, and designing and completing a research project. Two hours lecture, two hours lab. Prereq.: CSIS 1500 and HPES 3710. 3 s.h.

4850. *Exercise Testing and Prescription for the Health Professions.* Introduction to exercise testing and prescription for healthy adults as well as clinical (cardiovascular, pulmonary, diabetes, obesity, osteoporosis, arthritis) and other special (pregnancy, children, elderly) populations. For Health Professions majors. Not applicable to the major in Exercise Science. Two hours lecture, two hours lab. Prereq.: Senior standing or permission of instructor. 3 s.h.

4851. *History and Philosophy of Physical Education and Sport.* Survey of major historical developments and philosophical issues in physical education and sport from ancient times to the present. Prereq.: 20 s.h. in major. 2 s.h.

4852. *Psychosocial Aspects of Physical Education and Sport.* Survey of major psychosocial principles, developments and concerns as they relate to the participant in physical activity and sport. Prereq.: 20 s.h. in major. 2 s.h.

4855. *Organization and Administration of Human Performance and Exercise Programs.* Organizational patterns and administrative methods in activities, including instructional programs, intramurals and recreation. Prereq.: 20 s.h. in major. 3 s.h.

*4865. *Athletic Training 2.* Advanced techniques of athletic training with emphasis on evaluation, treatment and rehabilitation of athletic injuries. Topics include application of therapeutic modalities, reconditioning programs, and the role of the athletic trainer in sports medicine. One hour lecture, two hours lab. Prereq.: HPES 3765. 2 s.h.

4870. *Exercise and Aging for Health Professions.* For majors in Gerontology/Health Professions who work with older adults in exercise/physical activity programs. Emphasis on physical aspects/limitations of aging, exercise testing, prescription, and programs for the elderly. Not applicable to the major in Exercise Science. Prereq.: Senior standing or permission of instructor. 3 s.h.

*4876. *Teaching of Elementary Physical Education.* Curriculum principles, methods and materials for teaching elementary physical education. Includes development of a portfolio and field work in area schools. Two hours lecture, two hours lab. Prereq.: HPES 3767. 3 s.h.

*4878. *Teaching of Middle/Secondary Physical Education.* Curriculum, principles, methods and materials for teaching secondary physical education. Includes the development of a reflective teaching journal and portfolio, and field work in area schools. Two hours lecture, two hours lab. Prereq.: HPES 4876. 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.

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.

5894. *Workshop in Human Performance and Exercise Science.* Concentrated study of a selected topic in HPES education and/or athletics. Department selects and announces the topic and determines the credit hours based on frequency and duration of workshop meetings. 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.

4895. *Adapted Physical Education.* The organization of physical education activities selected to meet the individual needs of exceptional students. Approximately 15 hours of field work. Prereq.: HPES 3720. 2 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 3720. 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.

HSC–HEALTH SCIENCES

Department of Health Professions

The following has been approved as a General Education course in the domain of Personal and Social Responsibility: 1568, Healthy Lifestyles.

1568. *Healthy Lifestyles.* Personal and consumer health issues and prevention of premature death analyzed from physical, emotional, social and spiritual perspectives. Plans for disease prevention and healthful living. Importance of health promotion to the individual, region, nation and world. 3 s.h.

2692. *Human Sexuality.* An interdisciplinary approach to the study of human sexuality. Cross listed with PSYCH 2692. Prereq.: HSC 1568. 3 s.h.

3701L. *Pre-Professional Field Experience.* Students participate in an approved community health education program under faculty supervision. Students observe and assist in the organization and/or delivery of programs. Prereq.: HSC 1568. 1 s.h.

3702. *Health Education Theory and Methods.* Overview of health education theory, history, ethics, and methods for the community, school, workplace and health care setting. Provides a foundation in teaching methods. Prereq.: HSC 1568. 3 s.h.

3703. *Health Education for Grades preK-3.* Comprehensive School Health Education curricula, methods and materials for teaching pre-kindergarten through third grade students. Prereq.: HSC 1568, 3702 and BIOL 1545 or AHLTH 1500 and 1501. 3 s.h.

3704. *Health Education for Grades 4-6.* Comprehensive School Health Education curricula, methods and materials for teaching fourth through sixth grade students. Prereq.: HSC 1568, 3702 and BIOL 1545 or AHLTH 1500 and 1501. 3 s.h.

3705. *Health Education for Grades 7 - 12.* Comprehensive School Health Education curricula, methods and materials for teaching seventh through twelfth grade students. Prereq.: HSC 1568, 3702 and BIOL 1545 or AHLTH 1500 and 1501. 3 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.: HSC 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.: HSC 1568, BIOL 1545 or AHLTH 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.: HSC 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.: HSC 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.: HSC 3791 and AHLTH 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.: HSC 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.: HSC 4826 and HSC 4827. 3 s.h.

4891. *Community Health Internship.* Supervised experience designed to provide an opportunity to plan, implement and evaluate a program in an approved community health setting. Approximately 35 hours per week. Prereq.: HSC 4828. 8 s.h.

4893. *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.: HSC 3701, 3791 or permission of instructor. 1-3 s.h.

4899. *Senior Seminar.* Capstone course for synthesis of professional course work. Development of resume and professional portfolio; preparation for internship; administration of outcome assessment instruments for the community health majors and school health majors; preparation for the CHES and PRAXIS certification exams. Prereq.: Senior standing and consent of instructor. 3 s.h.

ISEGR–INDUSTRIAL AND SYSTEMS ENGINEERING

Department of Mechanical and Industrial Engineering

2625. *Industrial Organization and Management.* The general principles of industrial organization and management. Prereq.: MATH 1571. 3 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, ENGR 1560. 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.: ISEGR 3710. 3 s.h.

3723. *Manufacturing Processes.* Modern continuous, batch, and hybrid manufacturing processes; 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. or concurrent with MECH 2606. Must take with ISEGR 3723L. Listed also as MECH 3723. 2 s.h.

*3723L. *Manufacturing Processes Laboratory.* Experimental work in measurement and gaging, practice in the operation and analysis of several machining, joining and molding processes. Operation of numerically controlled machines and simple NC programming. Three hours laboratory. Must take with ISEGR 3723. Listed also as MECH 3723L. 1 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, ENGR 1560. 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.: ISEGR 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.: ISEGR 3710. 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 ISEGR 3736. Three hours laboratory per week. 1 s.h.

3745. *Accounting for Engineers*. Fundamentals of financial and cost accounting as applied to engineering. Prereq.: ISEGR 3724. 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.

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.

4815. *Production Planning and Control*. The application of the fundamentals and techniques of forecasting, aggregate planning, material requirement planning, scheduling, machine assignment and inventory to the design of production control systems. Prereq.: ISEGR 3710 and 5801. 3 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.: ISEGR 3720. 3 s.h.

4821, *4822. *Facilities Design*. The application of engineering techniques to the analysis, design, and justification of production facilities which may be product and/or service oriented. Equipment selection, process flow, material flow and material handling in the design of facilities. 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. Prereq.: ISEGR 3723 and 3736. Prereq. or concurrent: ISEGR 5850 and 96 s.h. of engineering degree credit. 3+3 s.h.

4823. *Automation and Computer-Aided Manufacturing*. Fundamental concepts in manufacturing, automation and automation strategies. Analysis of high volume discrete parts production lines. Automated flow lines and line balancing. Introduction to numerical control, Computer-Aided Manufacturing/Design and Robotics. Fundamentals of manufacturing support systems, group technology and flexible manufacturing systems. Prereq.: ISEGR 3723. 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.: ISEGR 3724. 3 s.h.

4830. *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.: ISEGR 3710. 3 s.h.

*4840. *Reliability Engineering*. Introduction to reliability as a probabilistic concept, including: measurement, control, maintenance, repair and replacement, and life testing. 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 transhipment problems. Prereq.: ISEGR 5801. 3 s.h.

4860. *Operations Engineering*. Application of analytical tools of operations research and linear programming to operational problems of industry. Emphasis on the practical aspects of applying the tools, including data collection, modeling, model verification, and the interpretation, documentation, and presentation of the results. Prereq. or concurrent: ISEGR 3727. Prereq.: ISEGR 5801 and 5850. 3 s.h.

5870. *Robotics*. Manipulator kinematics, robot dynamics and programming, sensors and machine vision, machine intelligence, and robot planning. Prereq.: MATH 2673. 3 s.h.

*5880. *Management of Technology*. Addresses two important aspects of technology management. The general aspects of forecasting, planning for adoption, and the effective use of technology in a production/service environment. The technical aspects of the projects as related to the design, production, and support of the products and systems. Prereq.: Senior standing or consent of instructor. 3 s.h.

JOURN–JOURNALISM
Department of English

Lower-Division Courses

2602. *Media Writing*. Introduction to writing for the mass media. Development of writing techniques and examination of styles and approaches used in writing for various mass audiences. Fulfills requirement for Integrated Language Arts Middle Childhood teaching license and may be applied to the Journalism minor and Professional Writing and Editing professional area. Listed also as ENGL 2602. Prereq.: ENGL 1551. 2 s.h.

2622. *Basic Journalism.* Study of news reporting and writing, with emphasis on journalistic style, development of news judgment, interviewing, and coverage of special story types. Listed also as ENGL 2622. Prereq.: ENGL 1551. 3 s.h.

2626. *American Journalism.* The development of newspaper and magazine journalism in America, the role of the press and its effects on American society, including those led by women, people of color, and journalists of diverse cultural backgrounds, and journalism as a literary tradition. May be applied to the Journalism minor and Professional Writing and Editing professional area. Listed also as ENGL 2626. Prereq.: ENGL 1551. 3 s.h.

Upper-Division Courses

3716. *Feature Writing.* Development of techniques of writing feature stories, including generating feature ideas, gathering information, and polishing feature style. Practice in writing various types of features. Listed also as ENGL 3716. Prereq.: JOURN 2622. 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.: JOURN 2622. 3 s.h.

*3721L. *Journalism Workshop.* Application through student publications of the principles of JOURN 2622 and an introduction to creating publications on computers. May be repeated once. Listed also as ENGL 3721L. Prereq. or concurrent: JOURN 2622. 3 s.h.

*3723. *Editing and Design for Newspapers.* The practice of copy editing, headline writing, layout and design, photo editing, caption writing, and designing publications on computers. Listed also as ENGL 3723. Prereq.: JOURN 2622. 3 s.h.

4820. *Advising Student Publications.* Study of the role and responsibilities of the publication advisor in high school and college. Topics include the unique legal and ethical concerns of student publications, the training of writers and editors, the relationship of the student press to the academic administration, and a range of publication-management concerns. Listed also as ENGL 4820. Prereq.: JOURN 2622. 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.: JOURN 2622. 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.: JOURN 2622 or any 2600 English literature course. 3 s.h.

LING–LINGUISTICS
Department of English

3755. *Principles of Linguistic Study.* Survey of elements of linguistic structure, methods of analysis and description, theoretical models, and the role of language in human affairs. Prereq.: ENGL 1551. 3 s.h.

Group 1

ENGL 2651. *Introduction to Language.* Introduction to language principally for prospective teachers, with emphasis on the nature and function of language and its history, variations, and acquisition. Prereq.: ENGL 1551. 3 s.h.

ENGL 3750. *Language and Culture.* Language structure as an instrument in human behavior and social institutions with emphasis on cross-cultural and intercultural communication. Prereq.: ENGL 1551. 3 s.h.

ENGL 3757. *Development of the English Language.* Sounds, vocabulary, grammar, and usage, from old to contemporary English. 3 s.h.

ENGL 4850. *Sociolinguistics.* An investigation of the relationship between language and society. Includes discussion of dialects and standard language, language planning, linguistic identity, multi- and bilingualism, class, gender, ethnicity, and social interaction. Listed also as FNLG 4850. Prereq.: ENGL 3755. 3 s.h.

4855. *Advanced Linguistics.* In-depth study of selected issues in contemporary linguistic theory. Especially recommended for students pursuing advanced studies or a minor in linguistics or planning graduate studies. Prereq.: ENGL 3755. 3 s.h.

ENGL 4858. *English Grammar.* Descriptions and analysis of English language structure. Prereq.: ENGL 3755. 3 s.h.

FRNCH 3710. *Applied Phonetics.* A systematic study of French phonetics to correct defects in pronunciation and intonation and give students a better understanding of the differences between the French and English sound systems. Prereq.: FRNCH 2605. 3 s.h.

FRNCH 3715. *Conversation and Composition.* Skills in written and oral expression developed through directed composition and conversation, discussion of assigned topics, extemporaneous situational dialogues, and written papers on topics of special interest to the participants. Prereq.: FRNCH 2605. 3 s.h.

FRNCH 4885. *Special Topics.* Studies in French language, literature, or civilization ranging from medieval to modern times. Topic announced each time course is offered. May be taken three times for credit if content is not repeated. Prereq.: FRNCH 3750 and one of the following: 3720, 3725, 3730. 3 s.h.

GERMN *3725. *Phonetics and History of the Language.* Theory and practice in German phonetics with special emphasis on improving the pronunciation and intonation of second language learners. A history of the German language with attention to changes in sounds, forms, word order, vocabulary, and writing systems. Prereq.: GERMN 2605 or Placement exam. 3 s.h.

ITALN 3720. *Advanced Grammar and Composition.* Study in depth of Italian grammar through exercises and original composition. Prereq.: ITALN 2605. 3 s.h.

ITALN *3725. *Phonetics.* Theory and practice in Italian phonetics with special emphasis on improving the pronunciation and intonation of second language learners. Prereq.: ITALN 2605. 3 s.h.

SPAN *3724. *Spanish Pronunciation.* Theory and practice of Spanish pronunciation. Description of production of Spanish speech sounds and general characteristics of Spanish pronunciation. Topics on intonation. Audio-lingual practice in class and in language laboratory. Prereq.: SPAN 2605. 3 s.h.

SPAN 3735. *Advanced Spanish Grammar and Composition.* A systematic study of Spanish morphology, sentence structure, and usage applied to a variety of written discourse styles such as description, narration, and exposition. Discussion of contrasts with English discourse styles, and effective grammatical use. Prereq.: SPAN 2605. 3 s.h.

SPAN 3736. *Introduction to Spanish Linguistics.* Examines some of the basic concepts and issues of modern Spanish linguistic theory in the areas of phonology, morphology, syntax and pragmatics, including readings and discussion on these topics. Prereq.: SPAN 2605. 3 s.h.

SPAN 5855. *Topics in Spanish Language and Linguistics.* An introduction to the terminology, concepts, bibliography and current issues in Spanish language and linguistics. Major topics include phonology, morphology, semantics, syntax, applied linguistics, transformational grammar, and other topics related to language variation and society. May be repeated once when topic varies. Prereq.: Any 3700-level SPAN course. 3 s.h.

Group 2

ENGL 4851. *Language Acquisition.* A study of research on the learning of first and second languages. Topics include developmental sequences, learner variables, critical periods and conditions for learning, and the roles of input and interaction. The course is designed for those planning to teach languages. Listed also as FNLG 4851. Prereq.: ENGL 3755. 3 s.h.

ENGL 4856. *TESOL Methods.* Introduction to teaching English as a Second Language (ESL), including reading, writing, listening, and speaking. Focus on using communicative methods with nonnative speakers. Prereq.: ENGL 3755. 3 s.h.

ENGL 4857. *TESOL Practicum.* Supervised teaching in English as a second language (ESL) program. Additionally, weekly seminar attendance required. Prereq.: ENGL 4856. 3 s.h.

ENGL 4858. *English Grammar.* Descriptions and analysis of English language structure. Prereq.: ENGL 3755. 3 s.h.

ENGL 4859. *Selected Topics in Discourse.* Study in depth of a specific topic such as stylistics, semantics, or rhetoric. May be repeated once with different topic. Prereq.: ENGL 3740, 3741, or 3755 as appropriate to topic. 3 s.h.

PHIL 2619. *Introduction to Logic.* Introduction to syllogistic or classical logic, symbolic and inductive logic. Emphasis on the rules of syllogism, propositional functions, classes, truth tables, Venn diagrams; the use of analogy, generalization, the verification of hypotheses, and the scientific method. 3 s.h.

PHIL 3714. *Language and Mind.* Introduction to the study of traditional philosophical problems in the analysis of linguistic structures and functions and of their implications for the nature of mind, including meaning, mental representation and causation, information processing, and psychological explanation. Prereq.: One 2600-level PHIL course. 3 s.h.

PHIL 3719. *Symbolic Logic.* The structure and properties of axiomatic systems; the theory of propositional and relational logic; the algebra of classes; related topics. Prereq.: PHIL 2600. 3 s.h.

CSCI *5835. *Artificial Intelligence.* Study of the theory and applications of intelligent systems. Topics may include general problem-solving techniques, knowledge representation and expert systems, vision and perception, and natural language processing. AI systems and languages. Prereq.: CSIS 2617 and 3710. 3 s.h.

PSYCH 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: PSYCH 3761L. Prereq.: PSYCH 2618. 3 s.h.

PSYCH *3761L. *Cognition Laboratory.* Laboratory demonstrations and experiments using research techniques in cognition. Two hours per week. Concurrent: PSYCH 3761. 1 s.h.

PSYCH 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.: PSYCH 2618 or ENGL 3755.3 s.h.

PSYCH *3764L. *Psycholinguistics Laboratory.* Research techniques in basic and applied psycholinguistics. Two hours per week. Concurrent: PSYCH 3764. 1 s.h.

PSYCH 4850. *Seminar.* Major topics in psychology not covered in listed courses. Two s.h. may be applied to the psychology major. Prereq.: Senior standing in psychology. 2 s.h.

MATEC–MEDICAL ASSISTING TECHNOLOGY

Department of Health Professions

1501. *Medical Terminology.* Structure of medical words, pronunciation, and meaning of medical terms. 3 s.h.

1502. *Medical Law and Ethics.* Types of medical practices. Legal relationship of physician to patient, i.e., professional liability, implied and informed consent, malpractice, invasion of privacy. Emphasis on professional attitude and behavior. 3 s.h.

2600. *Medical Insurance Forms.* A study of private group and government insurance programs; Medicare, Medicaid, Worker's Compensation and Disability Insurance and the completion of required forms. Prereq.: MATEC 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.: MATEC 1501. 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.: MATEC 1501, BIOL 1551. 3 s.h.

2610. *Introduction to Disease Processes.* Introduction to the disease process including diagnostic symptoms and treatment aspects. Emphasis on the physical, psychological, and environmental conditions which influence the individual's well being. Prereq.: MATEC 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.: MATEC 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.: MATEC 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.: MATEC 1501 and 1502. 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.: MATEC 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 MATEC 2620. Three hours of lab per week. 1 s.h.

2680. *Medical Laboratory Procedures.* An introduction to diagnostic laboratory procedures performed in the physician's office. Principles and techniques of laboratory procedures. Prereq.: MATEC 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 MATEC 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. Twenty hours per week at the site. Twenty-one hour weekly seminar. Prereq.: MATEC 2620, 2614, 2680. 3 s.h.

MATH–MATHEMATICS

Department of Mathematics and Statistics

The following has been approved as a General Education course in the Basic Skills area of Mathematics: 2623, Survey of Mathematics.

Lower-Division Courses

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. Grading is CR/NC. Students taking MATH 1501 must take an additional 5 s.h. to complete the requirements for graduation. 5 s.h.

1504. *Intermediate Algebra with Trigonometry.* Relations and functions with graphing by algebraic techniques; solving nonlinear equations and inequalities. Right triangle trigonometry. Applications of algebraic and geometric concepts. Prereq.: MATH 1501 or Level 2 on the Mathematics Placement Test, and high school geometry. 5 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 4 on the Mathematics Placement Test and high school geometry, or MATH 1504. 5 s.h.

1548, 1549. *College Business Mathematics 1, 2.* Solving and graphing equations and inequalities, algebraic operations and functions, matrices and linear systems, linear programming and simplex method, mathematics of finance. Limits, derivatives and integrals with applications. No credit for students who have completed MATH 1570 or 1571. Prereq.: MATH 1501 or at least Level 3 on the Mathematics Placement Test. MATH 1548 for MATH 1549. 3+4 s.h.

1564, 2665. *Foundations of Middle School Mathematics 1, 2.* Conceptual foundations of topics from number theory, operations, functions, algebra, geometry, measurement, probability, and data analysis. Emphasis on multiple approaches and representations, problem solving, and communication of mathematical reasoning. Includes inquiry-based laboratory experiences with manipulatives and computing technology. Prereq.: At least Level 5 on the Mathematics Placement Test, or MATH 1513. MATH 1564 for MATH 2665. 4+4 s.h.

1570, 2670. *Applied Calculus 1, 2.* The elements of differential and integral calculus,, with emphasis on applications. Analytical geometry, differentiation and integration techniques and series representations. Introduction to differential equations, transform calculus, and Fourier analysis. This is a basic methods course particularly adapted for those who require applied topics in mathematics. It is not applicable toward the Mathematics major. Credit will not be given for both MATH 1550 and 1570. Prereq.: MATH 1513 or at least Level 5 on the Mathematics Placement Test. MATH 1570 for MATH 2670. 4+5 s.h.

1571, 1572, *2673. *Calculus 1, 2, 3.* A sequence of integrated courses in analytic geometry and calculus. A detailed study of limits, derivatives, and integrals of functions of one and several variables with applications. Prereq.: MATH 1571 requires either four high school units of mathematics (including trigonometry) and at least Level 7 on the Mathematics Placement Test, or MATH 1513. MATH 1571 for MATH 1572, MATH 1572 for MATH 2673. 4+4+4 s.h.

*1580H, *1581H. *Biomathematics 1, 2.* Counting techniques, probability, matrices and linear systems. 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 1572. Prereq.: Admission to NEOUCOM-YSU program for MATH 1580H. MATH 1580H for 1581H. 2+4 s.h.

1585H, *2686H. *Calculus 1, 2 Honors.* A sequence of honors courses in analytical geometry and calculus which cover essentially the same material as MATH 1571, 1572, 2673, in two semesters instead of three. A detailed study of limits, derivatives, and integrals of functions of one and several variables and their applications. Prereq.: four high school units of mathematics (including trigonometry) and at least Level 9 on the Mathematics Placement Test for MATH 1585H. MATH 1585H for MATH 2686H. This sequence will be offered at most once during each academic year. 5+5 s.h.

2623. *Survey of Mathematics.* Mathematics models emphasizing basic ideas in mathematics and descriptive statistics, stressing concept formation rather than manipulative skills. Prereq.: MATH 1501 or at least Level 3 on the Mathematics Placement Test. 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 1504 or at least Level 3 on the Mathematics Placement Test. 3 s.h.

2651, 2652. *Mathematics for Early Childhood Teachers 1, 2.* A conceptual development of mathematics topics underlying today's Pre-K-grade 3 curriculum. Emphasis on multiple approaches, problem solving, and communication of mathematics. Incorporates classroom activities, manipulatives, technology, and activities developmentally appropriate for young children. Prereq.: MATH 1501 or at least Level 3 on the Mathematics Placement Test for 2651, MATH 2651 for MATH 2652. 4+5 s.h.

2683. *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 2683. Prereq.: MATH 1572. 3 s.h.

Upper-Division Courses

*3705. *Differential Equations.* Methods and theory of solving differential equations with applications. Existence, uniqueness. First order equations. Higher order linear equations. Introduction to partial differential equations and boundary value problems, including LaPlace's equation. Prereq.: MATH 2673. 3 s.h.

*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 2683 and 3720. 3 s.h.

3750. *History of Mathematics.* A survey of the historical development of mathematics. Prereq.: MATH 2673 or 2683. 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 2683. 3 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 CIS 2610. 3 s.h.

3767, 3768. *Algebra/Geometry/Calculus for Middle School Teachers.* An integrated, conceptual, and function-centered approach to the foundations of algebra, geometry, trigonometry and calculus for preservice middle childhood mathematics specialists. Emphasis on multiple approaches and representations, problem solving, and communication of mathematical reasoning. Includes inquiry-based laboratory experiences. This course is not applicable to the Mathematics major. Prereq.: MATH 2665 for MATH 3767, MATH 3767 for MATH 3768. 4+4 s.h.

*3785. *Numerical Methods.* Matrices, matrix operations, and the application of numerical methods. Not applicable to the Mathematics major. Prereq.: MATH 2670 and STECH 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.

4821. *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 2683 and 3720. 3 s.h.

5822. *Abstract Algebra 2.* A continuation of MATH 3721 with special emphasis of fields. Additional topics in pure or applied algebra. Prereq.: MATH 3721 or equivalent. 3 s.h.

*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.

4830. *Foundations of Geometry.* The development of Euclidian and non-Euclidian geometries from postulate systems. Prereq.: Completion of or concurrent enrollment in MATH 3721. 3 s.h.

5832. *Euclidian Transformations.* General properties of functions and transformations; isometries and other transformations of the Euclidian plane; the complex plane, its geometry and subfields; transformational, analytical and vector approaches to Euclidian geometry; connections to other branches of mathematics and applications. Prereq.: MATH 3721 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 2683 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.

5844. *Theory of Statistics.* The mathematical theory of statistical inferences including likelihood principle, sufficient statistics, theory of statistical estimation, hypothesis testing and related topics. Credit will not be given for MATH 5844 and STAT 5844. Prereq.: MATH 5843. 3 s.h.

*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, transhipment problems, and network problems. Prereq.: MATH 2683 and 3720. 3 s.h.

4851. *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 4851. Prereq.: MATH 2673, 2683, and 3720. 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 chose from: proofs of fundamental theorems, phase plane analysis, limit cycles and the Poincare-Bendixon theorem, biological models, stability via Liapunov functions, asymptotic methods, and boundary value problems. Prereq.: MATH 3705 and 3721. 3 s.h.

*4860. *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 4860. Prereq.: MATH 3720 and CSCI 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.

4869. *Integrated Probability and Statistics for Middle School Teachers*. An integrated and conceptual approach to the foundations of probability and statistics for pre-service middle childhood mathematics specialists. Comparison of discrete and continuous models. Emphasis on multiple approaches and representations, problem solving, and communication of mathematical reasoning. Not applicable to the major in mathematics. Prereq.: MATH 3768. 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 3721or PHIL 3719. 3 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.

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.

4896. *Senior Undergraduate Research* Project. Individualized study of a topic in mathematic 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 mathematic 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.

MECH-MECHANICAL ENGINEERING

Department of Mechanical and Industrial Engineering

Lower-Division Courses

1500. *Drawing Fundamentals*. Visualization of objects for engineering communication. Freehand sketching, orthographic projection, multiview drawing, auxiliary views, sectional views, and dimensioning. Prereq.: High school geometry or equivalent. 3 s.h.

*1501. *Engineering Communication with CAD*. Computer-aided drawing for engineering communication. 2-D multiview drawings, 3-D 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.

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. or concurrent: MATH 1572. 3 s.h.

*2604. *Thermodynamics 2*. Irreversibility and exergy, mixtures and solutions; psychometry. Introduction to phase and chemical equilibrium. Prereq.: MECH 2603, CHEM 1515. 3 s.h.

2606. *Engineering Materials*. Properties and uses of engineering materials, manufacturing processes, including refining process, heat treatment, and forming operations. Introduction to testing methods. 3 s.h.

2641. *Dynamics*. Kinematics of particles and rigid bodies. Newton's laws of motion, work-energy, and impulse momentum techniques applied to particle and rigid body motion using a vector approach. Prereq.: CEEGR 2601. 3 s.h.

Upper-Division Courses

*3708. *Engineering Analysis*. Analysis of engineering systems utilizing advanced mathematical techniques and methods. Implementation of computer tools in the solution of engineering problems. Two hours lecture, three hours laboratory per week. Prereq.: ENGR 1560. 3 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 2603 and MATH 3705. 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. 1 s.h.

3723. *Manufacturing Processes.* Modern continuous, batch, and hybrid manufacturing processes; 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. or concurrent with MECH 2606. Must take with MECH 3723L. Listed also as ISEGR 3723. 2 s.h.

*3723L. *Manufacturing Processes Laboratory.* Experimental work in measurement and gaging, practice in the operation and analysis of several machining, joining and molding processes. Operation of numerically controlled machines and simple NC programming. Three hours laboratory. Must take with MECH 3723. Listed also as ISEGR 3723L. 1 s.h.

*3725. *Heat Transfer 1.* Fundamentals of heat transfer by conduction, convection, and radiation. Heat transfer by combined modes. Prereq.: MECH 2603, MATH 3705. 3 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. 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.: CEEGR 2602. 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.

*3781. *Dynamic Systems Analysis and Vibrations.* Mathematical modeling of linear mechanical, electrical, thermal, fluid, and mixed systems. State-space variables. Frequency response. Computer simulation using modern computer tools. Introduction to mechanical vibrations: single and multi-degree of freedom systems, free and forced vibrations, impedance and modal analysis. Prereq.: MECH 2641; MATH 3705; ELEGR 2632; ENGR 1560. 3 s.h.

*4800. *Special Topics.* Special topics and new developments in mechanical engineering. Subject matter, credit hours, and special prerequisites are announced in advance of each offering. May be repeated to a maximum of 8 s.h. with different content. Prereq.: Junior standing in Mechanical Engineering, or consent of instructor. 3 s.h.

4808, 4809. *Mechanical Systems Design 1, 2.* Detailed design of a mechanical engineering system utilizing expertise expected of a new graduate in an industry setting. Case studies, computer software applications, verification, oral presentations, and written reports prepare the student to function as part of a design team on a capstone project. Two hours lecture per week for 4808, three hours lecture for 4809. Prereq. for 4808: MECH 3725, 3742, 3781, or consent of instructor. Prereq. for 4809: MECH 3762, 4808. 2+3 s.h.

*4808L. *Mechanical Systems Design Laboratory.* Supplemental activities related to MECH 4808, such as discussion and seminars on industry practices and standards, computer software applications, experimental verification, etc. Three hours laboratory per week. Must be taken concurrently with MECH 4808. 1 s.h.

*4811. *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. 3 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 3720 and 3725. 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.: MATH 3705, MECH 3708 and 3725. 3 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 3720 and 3725. 3 s.h.

*4835L. *Thermal Fluid Applications 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 and 3725. 1 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, 3751L, 3708, and 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 3781. 3 s.h.

*5872L. *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.

*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, 3751, 3725, 3781, and MATH 3705. 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. Prereq.: MATH 3705, MECH 3708 and 3781. 3 s.h.

*5892L. *Vibrations and Control Laboratory.* Introduction to vibrations measurements. Experiments with mechanical systems, computer simulation of vibration systems. Experimental determination of component models and parameters. Study of control system components. Taken concurrently with MECH 5892. 1 s.h.

MERCH–MERCHANDISING: FASHIONS & INTERIORS

Department of Human Ecology

Lower-Division Courses

*1506. *Clothing and Image Development.* Purpose and meaning of dress and adornment as a means of communication and social identity. 3 s.h.

*1508. *Clothing Construction.* Use of commercial patterns, basic alterations, fundamental techniques, and skills required for proficiency in construction of simple garments. 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.* An introduction to the interrelated levels of the fashion industry; international designers and schools of thought in fashion. 3 s.h.

*2642. *Applied Fabric Design.* The use of dyes and needlework in clothing and home furnishings. One hour lecture, four hours lab per week. 3 s.h.

*2660. *Visual Merchandising.* Creating visual displays used to sell fashion, furnishings, and other merchandise; includes field trips, two hours lecture, two hours lab. 3 s.h.

*3705. *Fashion Textiles.* Study of textiles, including their characteristics, functions, purposes and care. Fibers, yarns, construction methods, finishes, and textile legislation. Prereq.: high school chemistry. 3 s.h.

3730. *Social and Psychological Aspects of Clothing.* Interdisciplinary study of clothing within the comprehensive context of its cultural, social, psychological, physical, economic, and aesthetic relationships. Prereq.: SOCIO 1500, PSYCH 1560. 3 s.h.

3764. *Family Housing and Technology.* Planning the home environment to meet consumer's needs and resources; focus on consumer decisions related to residences, floor plans, technology, color schemes, and furnishings. Student project and field trips included. Prereq.: HMEC 1550 and CHFAM 3731. 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.: MERCH 2625 and 2660. 1 s.h.

4877. *Survey of Fashion History.* The chronological study of costumes, silhouettes, accessories, and fabrics from ancient to modern times, and their influences on current fashion with consideration of cultural forces affecting their development. Prereq.: MERCH 3730 and junior standing. 3 s.h.

4879. *History of Interiors and Furnishings.* Study of furniture, interiors, and decorative arts and designs from ancient times through the 20th century with emphasis on social/cultural factors that affected their development. Prereq.: MERCH 3730 and junior standing. 3 s.h.

MET–MECHANICAL ENGINEERING TECHNOLOGY
School of Technology

Lower-Division Courses

1515. *Mechanics 1.* Study of forces as vector quantities; resultants of force systems; principles of mechanical equilibrium; application of principles to problems, devices and structures commonly encountered in industry. Prereq.: STECH 1505, prereq. or concurrent MATH 1513. 3 s.h.

*2605. *Thermodynamics.* Properties of ideal and real gases, first and second laws of thermodynamics, application to thermodynamic cycles involving power plants and cyclic machinery. Two hours lecture and two hours lab per week. Prereq.: MATH 1570, and MET 2616 or PHYS 1501. 3 s.h.

*2606. *Machine Design 1.* Principles of stresses and deflections, combined stresses, fatigue, and theories of failure. Application of these principles to design of machine components. Two hours lecture, two hours lab per week. Prereq.: DDT 1505 or equivalent, CET 2604. 2 s.h.

*2607. *Machine Design 2.* Continuation of MET 2606, progressing to the design of machine elements such as gears, belts, clutches, chains, bearings, welded and bolted joints. Two hours lecture, two hours lab per week. Prereq.: MET 2606. 3 s.h.

2615. *Fluid Mechanics.* Principles of fluid statics and fluid dynamics and their application to incompressible flow in pipes and channels; energy and momentum in fluid flow. Prereq. or concurrent: MET 2616. 2 s.h.

*2615L. *Fluid Mechanics Laboratory.* Tests and applications of concepts covered in MET 2615. Two hours lab per week. Concurrent with MET 2615. 1 s.h.

2616. *Mechanics 2.* Continuation of MET 1515 with further application of statics, introduction to dynamics of solids, study of various types of motion, Newton's second law, work and energy, impulse and momentum. Prereq.: MET 1515. 3 s.h.

2630. *Manufacturing Techniques.* The study of materials and processes used in manufacturing, including casting, heat treatment, hot and cold working, plastics processing and machining.2 s.h.

*2630L. *Manufacturing Techniques Laboratory.* Practice and procedures of machine tool operation including lathes, drill presses, shapers, and milling machines. Two hours lab per week. Concurrent with MET 2630. 1 s.h.

Upper-Division Courses

*3700. *Physical Measurements.* Use and selection of instruments for measuring pressure, temperature, strain, force and flow, including the interpretation of data and the principles of Statistical Quality Control. Two hours lecture, two hours lab per week. Prereq.: EET 3725. 3 s.h.

3710. *Tool Design.* Design and selection of cutting tools, fixtures, bending and forming dies, inspection and gauging instruments, and material feed mechanisms. Two hours lecture, two hours lab per week. Prereq.: MET 2630, DDT 1505. 3 s.h.

*3711. *Heat and Power Cycles.* A continuation of MET 2605, including the study of heat transfer, the Rankine cycle, the Otto cycle, the Diesel cycle, and the performance of pumps and heat exchangers. Two hours lecture, two hours lab per week. Prereq.: MET 2605 and 2615. 3 s.h.

*3715. *Fluid Power Systems.* Principles of hydraulic and pneumatic systems, including device selection and application. Typical industrial systems are constructed and tested. Two hours lecture, two hours lab per week. Prereq.: MET 2615. 3 s.h.

3720. *Mechanisms.* Graphical and analytical solution of problems involving displacement, velocity, and acceleration in machine mechanisms. Design of linkages to provide required motions of machine members. Two hours lecture, two hours lab per week. Prereq.: MET 2616, MATH 1570. 3 s.h.

*4810. *Manufacturing Systems Analysis.* Study of manufacturing systems including manufacturing process design, analysis, selection and sequencing; value analysis, machine tool cost and functions. Computer simulation of production systems. Prereq.: MET 2630 and 3700. 3 s.h.

*4812. *Numerical Control.* A study of the programming of numerically-controlled machine tools. Students program NC machines using manual and computer-assisted techniques. Two hours lecture, two hours lab per week. Prereq.: DDT 1505, MET 2630 or consent of instructor. 3 s.h.

4820. *Machine Systems.* Analysis and design of complex machine systems incorporating hydraulic and pneumatic subsystems and electrical controls, including PLCs. Comprehensive design projects. Two hours lecture, two hours lab per week. Prereq.: MET 2607, 3715, and EET 3725. 3 s.h.

*4850. *Air Conditioning Principles and Practice.* The practical techniques used in the design of heating, ventilating, and air conditioning systems, including load calculations, unit selection, and duct system layout. The laboratory work includes the use of design charts and manufacturer's catalogs in a project. Two hours lecture, two hours lab per week. Prereq.: MET 3711. 3 s.h.

4860. *Robotics Technology.* An application-oriented course on the technology and use of industrial robots, including classification, tooling, sensors, workcell design, safety, and programming. Prereq.: MET 3720 and 4820. Concurrent with MET 4860L. 2 s.h.

*4860L. *Robotics Technology Laboratory.* Practice in the programming and application of industrial robots and associated equipment. Construction of simulated robotic workcells using actual industrial robots, programmable controllers, sensors, and grippers. Two hours lab per week. Concurrent with MET 4860. 1 s.h.

*4870. *Applied Finite Element Method.* Principles of the finite element method and its application to the analysis of stress, strain, and heat transfer. Computer-aided solutions to two- and three-dimensional problems in structural analysis, mechanical design and heat transfer. Two hours lecture, two hours lab per week. Prereq.: DDT 1505, MET 2607 or CET 2610 or permission of instructor. 3 s.h.

MGT–MANAGEMENT
Department of Management

Introductory Course

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.

Business Core

3725. *Fundamentals of Management.* Emphasizes the basic principles of management rather than those involved in business organization. The nature of managerial action within and organization, formal and informal structure, process of making decisions, and interrelated activities in management. Prereq.: Junior standing and declared major. 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.

Management Core

3750. *Human Behavior in Organization.* Study of human factors in the administration function. Emphasis on the contributions of the behavioral sciences to the student of business. Topics include a history of human relations, leadership and its development, labor-management relations, group dynamics, and communication and group processes. Prereq.: Junior standing. 3.s.h.

*3789. *Operations Management.* Study of current operations management theories and practices with emphasis on direction, planning, and control of production systems. Includes detailed analysis in such areas as materials management, work measurement, quality control, scheduling, maintenance, and forecasting. Prereq.: MGT 3725, ECON 3780. 3 s.h.

4890. *International Business.* Management problems of firms engaged in international business, including the strategy of foreign involvement and control of foreign activities. Emphasis on management issues unique to firms in international operations. Prereq.: MGT 3725. 3 s.h.

Human Resource Management

3734. *Human Resources Management.* Management and the human resource field; organization and jobs; employment and development of people. Review of applications of job design and analysis, human resource planning, recruitment and selection, equal employment opportunity legislation, training and development, career management. Human resource management theories and concepts integrated into experiential exercises which simulate practical applications. Prereq.: MGT 3725. 3 s.h.

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 an a declared major. 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 3734. 4 s.h.

4819. *Selection, Training, and Development.* Intensive analysis of programs for personnel acquisition, the training and development of employees. Includes the human resources planning process. Examination of federal and other employment legislation where applicable. Prereq.: MGT 3734. 3 s.h.

Management Information Systems

*3761. *Information Systems for Management.* Study of information systems and their interaction with individuals and organizations, providing a basic understanding of hardware, software, and computer technology used in information systems. Prereq.: Junior standing. 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. 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. 3 s.h.

*5875. *Decision Support/Expert Systems.* Fundamental techniques, construction, and use of decision support systems, expert systems, and management support systems. Prereq.: MGT 3761. 3 s.h.

Operations Management, Management Science

*3737. *Management Science.* An understanding of methods of management science from an executive or managerial viewpoint, emphasizing formulation of business problems in quantitative terms. Topics such as linear programming, dynamic programming, game theory, Monte Carlo method, probability theory, queuing theory, inventory theory, transportation method, and simulation discussed and evaluated. Prereq.: MATH 1548, ECON 3780. 3 s.h.

*4815. *Total Quality Management.* Study of the influence of quality on all phases of business operations from strategic planning to process control, quality measurement to systems and process design. Statistical process control in detail, but all aspects of quality management are reviewed. Prereq.: MGT 3789. 3 s.h.

*4820. *Materials Management.* Study of areas pertaining to the production control function such as inventory control, forecasting, aggregate planning, and scheduling. Prereq.: MGT 3789. 3 s.h.

Other Management Courses

2699. *Industry Studies Seminar.* Specialized course for students from a specific industry involving selected issues and problems on the basis of interests and needs. Prereq.: Permission of instructor. 1-2 s.h.

3714. *Legal Environment of Business 2.* In-depth analysis of commercial law areas covered on the CPA exam, with emphasis on sales, secured transactions, real and personal property, insurance, bankruptcy, and commercial paper. Prereq.: MGT 2604, junior standing. 3 s.h.

3735. *Communications for Management and Business.* Analyzes communication and information processes as means for coordinating and controlling organizational activities. Analytical writing activities required including a long, formal report. Prereq.: ENGL 1551, MGT 3725, permission of instructor. 3 s.h.

4840. *Managing Organizational Environments.* Dynamics of structure, design, strategy and culture in the context of an organization's relationships to external environments; included are institutional forces, the global environment, and the new technological environment. Organizational ethics as cultural components that define appropriate ways for stakeholders to deal with one another and with the organization's environments. Prereq.: MGT 3725, permission of instructor. 3 s.h.

4845. *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. 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.

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.

*4870. *Small Business/Entrepreneurship.* Study of the small business environment and the problems in starting a business. How small businesses apply the managerial functions in using their resources. Cross-listed with MKTG 4870. Prereq.: Senior standing or permission of instructor. 3 s.h.

*4871. *Small Business Enterprise.* Students work with actual problems faced by small businesses under faculty supervision. Problems are defined, analyzed, researched. Recommendations are developed and presented to clients for evaluation. Cross-listed with MKTG 4871. Prereq.: MGT 4870 or permission of instructor. 3 s.h.

4880. *Special Topics in Management.* Subject matter, credit hours, and specific prerequisites to be announced in advance of each offering. Prereq.: Senior standing in MGT or permission of instructor. 1-4 s.h.

4895. *Management Internship.* Offers the student the opportunity to relate theory to practice through on-the-job work experience with participating organization. Mandatory bi-weekly meetings with faculty advisor to insure maximum learning from

the experience. Offered all three semesters each year based on the availability of internships. A written evaluation of the job experience is required. Prereq.: 20 s.h. of MGT courses including 3725 and 3750, and department screening and approval. 3 s.h.

4899. *Independent Study.* Development of a special topic of interest to the student under the direct supervision of a management faculty member. Credit hours vary according to the nature of the project. Prereq.: MGT core and permission of department chairperson. 1-3 s.h.

Labor Studies

1510. *Union Leadership Skills.* Introduction to basic leadership skills with emphasis on human relations, motivation, communication skills, decision making, problem solving, parliamentary procedure. 3 s.h.

3705. *Fundamentals of Occupational Safety.* Overview of the broad concepts of occupational safety and health that provide a proper foundation for understanding the basic principles of workplace safety and health programs. Analysis of the regulatory environment including OSHA and Workers' Compensation; the development of safety management programs; the evaluation of workplace hazards; and discussion of the economic, political, and societal implications involving workplace safety and health. Prereq.: ENST 2600, CRJUS 1500, MGT 3725, or consent of instructor. 3 s.h.

3715. *Labor Law and Negotiations.* Introduction to private and/or public sector labor law. Includes the study of the legal principles surrounding employee organizing, unfair labor practices, bargaining, striking, and picketing; involves participation in a negotiations simulation. Prereq.: MGT 2604 or 3725 or permission 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 3725 or permission of instructor. 4 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.

MILSC–MILITARY SCIENCE

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 (MILSC 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 (MILSC 1530L) per week. 1 s.h.

1530L or 2630L. *Basic Course Leadership Laboratories.* Practical exercises with different roles for students at different levels in the program. Build self confidence, and team-building leadership skills that can be applied throughout life. Open only to (and required of) students in the respective MILSC courses. For MILSC 1510 and 1520 it is MILSC 1530L. For MILSC 2610 and 2620 it is 2630L. 0 s.h.

2610. *Self Team Development.* Apply ethics-based leadership skills that develop individual abilities and contribute to the building of effective teams. Develop skills in oral presentations, writing concisely, planning of events, coordination of group efforts, advanced first aid, land navigation, and basic military tactics. Fundamentals of ROTC's Leadership Development Program. Two hours lecture and leadership lab (MILSC 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 (MILSC 2630L) per week. 2 s.h.

2640. *Basic ROTC Summer Camp Challenge.* A five-week summer camp conducted at an army post. The student receives pay. Travel, lodging, and most meal costs are defrayed by the Army. The environment is rigorous, and similar to Army Basic Training. **No military obligation is incurred.** 3 s.h.

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 (MILSC 3730L) per week. Prereq.: Permission of department chairperson. 3 s.h.

3720. *Leading Small Organizations 2.* Continues methodology of MILSC 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 (MILSC 3730L) per week. Prereq.: Permission of department chairperson. 3 s.h.

3730L or 4830L. *Advanced Course Leadership Laboratories.* Practical exercises with different roles for students at different levels in the program. Involves leadership responsibilities for the planning, coordination, execution, and evaluation of training and activities. Open only to students in the respective MILSC courses. For MILSC 3710 and 3720 it is 3730L; for MILSC 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 (MILSC 4830L) per week. Prereq.: Permission of department chairperson. 3 s.h.

4820. *Transition to Lieutenant.* Continues the methodology from MILSC 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 (MILSC 4830L) per week. Prereq.: Permission of department chairperson. 3 s.h.

MKTG–MARKETING
Department of Marketing

Lower-Division Course

*1520. *Selected Marketing Topics.* Topics vary each semester. Subject matter and number of credit hours announced in advance of each offering. May be taken twice with change of topic. 1-3 s.h.

Upper-Division Courses

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. 4 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. 3 s.h.

3713. *Retail Merchandise Buying.* The product dimension of retailing. The strategies and philosophies that determine excellence in merchandise selection. Topics include the organization of the buying function, determining what to buy based on customer needs, visiting the market, vendor analysis and selection, Quick Response (QR) and Efficient Consumer Response (ECR), and the retail buyer's responsibilities in other areas of the retail firm. Extensive attention to global sourcing. Prereq.: MKTG 3703. 3 s.h.

3720. *Industrial Marketing.* Characteristics of Manufacturers' goods, channels of distribution, functions of intermediates, distribution costs, marketing research, government control, and legal limitations. Product policies, service policies, packaging policies, price policies. Industrial advertising organization, planning and budgeting, uses of advertising agencies and national advertising media, sales manuals, dealer helps. Prereq.: MKTG 3703. 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. 3 s.h.

3732. *Non-Textiles/Furnishings.* The principles and functions of non-textiles and furnishings. The sources of raw materials, manufacturing processes, care, use, and selling points of these types of merchandise: paper, leather, furs, jewelry, metals, stones, and cosmetics. The furnishings industry is examined with emphasis on forecasting, planning, selecting, negotiating, pricing, and recording of merchandise. Prereq.: MKTG 3703. 4 s.h.

3740. *Professional Selling.* Personal selling and sales management examined within the marketing environment. Emphasis on marketing relationships, buyer motivation and behavior, selling strategy and sales management techniques. Prereq.: BUS 1500 and sophomore standing. 3 s.h.

3755. *Shopping Center Fundamentals.* General survey of the elements in the development of planned shopping centers. The history and social significance of planned shopping centers, their present position and future directions. Prereq.: MKTG 3703. 3 s.h.

3757. *Shopping Center Development.* Examination of shopping centers from a marketing and development standpoint. Topics include marketing strategies, site selection, promotions, tenant mix, and public relations. Prereq.: MKTG 3703. 3 s.h.

*4815. *Marketing Research.* Introduction to the major areas of research marketing. Problem definition, research design, gathering information and analysis to assist marketing management with the decision making process. Both empirical and theoretical concepts. Review of research problems, approaches and trends in industrial retailing, wholesaling, trade associations, advertising, publishing and consulting firms. Prereq.: MKTG 3703. 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. 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. 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. 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 ECON 3780. 3 s.h.

4848. *Marketing and Social Responsibility.* Present marketing practices and their impact on the values of society and the impact of social and ethical trends upon marketing. Search for the consumers' interest, the social audits, marketing responsibilities, product safety, ecological considerations, legal restraints, and pricing and sales practices. Prereq.: MKTG 3703. 3 s.h.

4850. *Marketing Internship.* Through employment with participating business organizations the student receives professional marketing experience. Candidates work for the entire semester at a local business organization under the direct guidance of a faculty advisor. Required paper at the end of the course on the relationship of marketing theory and practice. Prereq.: MKTG 3703. 3 s.h.

4851. *Services Marketing.* Cross-functional approach to the marketing of customer services in profit and non-profit organizations, including domestic and international opportunity analysis, customer analysis, financial analysis, strategy formulation, process and systems management, and quality improvement. Prereq.: MKTG 3703. 3 s.h.

4865. *Shopping Center Operations.* Comprehensive review of the practices and procedures involved in the operation of shopping mall properties, including merchandising, maintenance, security, mall-tenant relations, and community relations. Prereq.: MKTG 3703. 3 s.h.

*4870. *Small Business/Entrepreneurship.* Study of the small business environment and the problems in starting a business. How small businesses apply the managerial functions in using their resources. Cross-listed with MGT 4870. Prereq.: MKTG 3703. 3 s.h.

*4871. *Small Business Enterprise.* Students work with actual problems faced by small businesses under faculty supervision. Problems are defined, analyzed, researched. Recommendations are developed and presented to clients for evaluation. Cross-listed with MGT 4871. Prereq.: MKTG 3703. 3 s.h.

MULTI–MULTIAGE EDUCATION

Department of Teacher Education

4824. *Techniques of Teaching K-12.* Enables the prospective special subject K-12 teacher to learn instructional planning, strategy implementation, performance and achievement evaluation, and appropriate classroom management skills for use in elementary and middle school settings. Field Experience required. Prereq.: SEDUC 3704 and 3706.

MUSAC–MUSIC, APPLIED CLASSES

Dana School of Music

A series of instrumental and vocal classes at the beginning level to explore technics and approaches appropriate to school music instruction. Music education majors select varying numbers of these courses in addition to pedagogy as described in the curriculum outline section. A minimum level of performance is required. Each class meets two hours a week.

1556. *Singer's Diction: English/Italian.*

1557. *Singer's Diction: German.*

1558. *Singer's Diction: French.*

Application of the principles of Lyric diction; utilization of the International Phonetic Alphabet in developing and reading phonetics transcriptions of English, Italian, German, and French song texts. 1 s.h. each.

3732. *Brass Methods.* A study of the brass instruments (trumpet, French horn, trombone, euphonium, tuba) with emphasis on various teaching approaches for each instrument. Basic tone production as well as common features and differences. Brass study materials introduced and analyzed. Teaching demonstrations included. Prereq.: FOUND 1501. 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.: FOUND 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.: FOUND 1501. 1 s.h.

3755. *Guitar Class.* Study of the guitar at the beginning level to explore techniques and approaches appropriate to school music instruction. A minimum level of performance is required. Prereq.: FOUND 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.: FOUND 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.: FOUND 1501. 1 s.h.

Applied Studio Instruction

PIANO–Piano

Major/Performance

1501, 1502. Development of hand position and finger-stroke with emphasis on finger independence. All major and minor scales and tonic, dominant-seventh, and leading-tone seventh arpeggios, hands together, four-octave compass. Repertoire of the variety and difficulty of the following: Bach, *Sinfonias;* Beethoven, *Sonata,* Op. 49 no.1, Bartok, *Three Rondos.* Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Continuation of previous technical study; emphasis on development of hand stroke. Scales in octaves, thirds, sixths, and tenths; arpeggios as above, faster tempo. (609 Technical Examination) Repertoire of the variety and difficulty of the following: Bach, *English Suites;* Scarlatti, *Sonatas;* Beethoven, *Sonata,* Op. 26; Chopin, less difficult *Etudes* and *Polonaises;* Debussy, *Preludes;* Hindemith, *Sonata II.* Prereq.: PIANO 1502. 4+4 s.h.

*3705, 3706. Technical studies to develop forearm-stroke and refine hand stroke. Scales in double-thirds and double-octaves. Repertoire of the variety and difficulty of the following: Bach, *Well-Tempered Clavier;* Beethoven, *Sonata,* Op. 28; Chopin, *Scherzos;* Ravel, *Valses Nobles et Sentimentales;* Prokofiev, *Visions Fugitives;* Mozart, Haydn, or early Beethoven concertos. *Junior recital. Prereq.: PIANO 2606. 4+4 s.h.

4805, *4806. Continuation of technical studies as needed. Repertoire of the variety and difficulty of the following: Bach, *Toccatas;* Beethoven, *Sonata* Op. 31, no. 3; Chopin, *Ballades;* Copland, *Piano Variations;* Concertos by Mendelssohn, Chopin, Schumann. *Senior recital including paper and oral presentation. Prereq.: PIANO 3706. 4+4 s.h.

HARPS–Harpsichord

Major/Performance

1501, 1502. Instruction in basic technique, with discussion of construction and maintenance. Survey of literature, ornamentation, and performance practices. Repertoire of the variety and difficulty of the following: Purcell, *Suites;* Bach, *Inventions;* Daquin, *Pieces de Clavecin.* Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Continuation of technical studies emphasizing fingering and ornamentation. Introduction to improvisation and accompaniment from figured bass. Repertoire of the variety and difficulty of the following: Byrd, *Sellinger's Round;* Frescobaldi, *Partite Sopra L'Aria Di Follia;* Bach, *French Suites* and *Sinfonias;* Scarletti, less difficult sonatas. Prereq.: HARPS 1502. 4+4 s.h.

3705, *3706. Technical studies as needed. Continuation of improvisation and figured-bass studies. Repertoire of the variety and difficulty of the following: Gibbons, *Pavan and Galliard Lord of Salisbury;* Couperin, *Les Follies Francaises;* Bach, *Well-Tempered Clavier, English Suites,* and concertos; Scarlatti, *Sonatas;* Pinkham, *Partita.* *Junior recital. Prereq.: HARPS 2606. 4+4 s.h.

4805, *4806. Figured-bass accompaniment of such works as Handel, Violin Sonatas. Repertoire of the variety and difficulty of the following: Bull, *Walsingham;* D'Anglebert, *Variations Sur Les Folies D'Espagne;* Rameau, *Les Niais De Sologne;* Bach, *Toccatas;* Soler, *Sonatas;* Rochberg, *Nach Bach;* Poulenc, *Concert Champetre.* *Senior recital including paper and oral presentation. Prereq.: HARPS 3706. 4+4 s.h.

ORGAN–Organ

Major/Performance

1501, 1502. Manual exercises; pedal exercises; easy trios. Repertoire of the variety and difficulty of the following: Pachelbel, *Fugues on the Magnificat;* Bach, *Prelude and Fugue in E Minor* (S. 533). *Es Ist Das Heil* (S. 638); Schumann, *Canon in B Major,* Op. 56, no. 6; Walcha, *Herzliebster Jesu.* Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Pedal exercises, pedal scales. Repertoire of the variety and difficulty of the following: Couperin, *Messe a L'Usage Ordinaire Des Paroisses;* Bach, *Sonata in E-Flat Major* (S 525). *In Dir Ist Freude* (S 615); Brahms, *Mein Jesu Der Du Mich;* Hindemith, *Sonata II.* Prereq.: ORGAN 1502. 4+4 s.h.

3705, *3706. Pedal scales and arpeggios; advanced studies. Repertoire of the variety and difficulty of the following: Buxtehude, *Prelude Fugue,* and *Chaconne;* Bach, *Prelude and Fugue in B Minor* (S 544), *Schmucke Dich, O Liebe Seele* (S 654); Mendelssohn, *Sonata* no. 6; Alain, *Litanies;* Handel, concertos. *Junior recital. Prereq.: ORGAN 2606. 4+4 s.h.

4805, *4806. Technical studies as needed. Repertoire of the variety and difficulty of the following: Bach, *Fantasy and Fugue in G Minor* (S. 542); Christ, *Unser Herr* (S. 684); Mozart, *Fantasy* (K. 594); Franck, *Chorale in A Minor;* Messiaen, *Transports De Joie;* Poulenc, *Concerto.* *Senior recital including paper and oral presentation. Prereq.: ORGAN 3706. 4+4 s.h.

VOICE–Voice

Major/Performance

1501, 1502. Concentration on the development of basic technique for the singer: breath control, freedom and relaxation of the vocal mechanisms, maximum resonance, and accurate articulation. At the teacher's discretion, the student applies the techniques acquired in selected works of the vocal repertoire. Foreign language songs may be introduced. Amount of repertoire decided is on an individual basis. Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Primary emphasis continues to be placed upon the development of the voice and mastery of technique. The student is expected by the end of the year to be able to sing properly a number of songs in English and foreign languages and one or two arias from opera and oratorio. Minimum requirements are established by the voice faculty; requirements beyond these are established by the teacher on an individual basis. Prereq.: VOICE 1502. 4+4 s.h.

3705, *3706. Technical study continued to maintain steady growth in technical mastery. Repertoire enlarged to include a wide range of styles and periods. Songs appropriate to the individual voice are chosen in English, French, Italian and German. Operatic arias required. *Junior recital. Prereq.: VOICE 2606. 4+4 s.h.

4805, *4806. Advanced literature and technique. Additional songs of the standard repertoire by French, German, Russian, English, and American composers. The student demonstrates ability to sing in three foreign languages, and has a repertoire of operatic and oratorio arias, classic and modern songs for immediate use, and a knowledge of the general song literature. *Senior recital including paper and oral presentation. Prereq.: VOICE 3706. 4+4 s.h.

String Instruments

VIOLIN–Violin

Major/Performance

1501, 1502. Kreutzer, Studies to No. 32. Concertos by Vivaldi, Nardini, Rode, deBeriot. Sonatas by Corelli, Veracini, Leclair. Technical material including Sevcik, Op 8 and 9, Flesch Scale System. No fewer than six short compositions suitable for recital repertoire. Major and minor scales and arpeggios within one position, two octaves using a low position (I, II), a middle position (III, IV), and a high position (VI, VIII). Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Kreutzer concluded; Fiorillo, Rovelli. Concertos by Bach, Viotti, Kreutzer, deBeriot. Sonatas by Tartini, Mozart, Handel. No fewer than six compositions added to the repertoire. Scales and arpeggios in three octaves continued with secondary strokes. Technical materials of 1501 and 1502 continued. Prereq.: VIOLIN 1502. 4+4 s.h.

3705, *3706. Rode, Studies. Concertos by Mozart, Bruch, Vieuxtemps. Sonatas by Beethoven, Bach. No fewer than six compositions added to the repertoire. Scales on one string, one octave, two octaves. Scales in sixths, octaves, thirds, and tenths. *Junior recital. Prereq.: VIOLIN 2606. 4+4 s.h.

4805, *4806. Advanced studies from Wieniawski; Dont, Op. 35; Gavinies and Paganini concertos. Additional works by Wieniawski, Saint-Saens, Mendelssohn, Beethoven, etc. *Senior recital including paper and oral presentation. Prereq.: VIOLIN 3706. 4+4 s.h.

VIOLA–Viola

Major/Performance

1501, 1502. Studies by Mazas, Kreutzer, Sitt, Schradick Technic. Sonatas by Handel; repertoire material: no fewer than six pieces. Scales and arpeggios in three octaves. Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Studies by Kreutzer and Fiorillo. Sonatas by Vivaldi and Marcello. Scales and arpeggios continued. Six recital pieces. Prereq.: VIOLA 1502. 4+4 s.h.

3705, *3706. Studies by Rode, Campagnoli, and Bruni. Concertos by Stamitz and Mozart. Scale in double stops. Six recital pieces. *Junior recital. Prereq.: VIOLA 2606. 4+4 s.h.

4805, *4806. Studies by Gavinies and Dolesji; sonatas by Bowen, Bach, and others. Scales and arpeggios continued. *Senior recital including paper and oral presentation. Prereq.: VIOLA 3706. 4+4 s.h.

CELLO-Cello

Major/Performance

1501, 1502. Scales and arpeggios in three octaves. Studies from Dotzaur, Op. 35, Duport, Popper. Repertoire to include Bach, *Suite No. 1*, Sonatas by Bach, Beethoven, Sammartini, Concerti by Goltermann (No. 4) and Vivaldi (D). Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Scales and arpeggios in four octaves. Studies from Popper, Franchomme. Repertoire to include Bach Suite No. 2 or No. 3; sonatas by Beethoven, Mendelssohn; concerti by Saint-Saens, and Haydn (C). Prereq.: CELLO 1502. 4+4 s.h.

3705, *3706. Scales in octaves, thirds, sixths. Studies from Popper, Piatti. Repertoire to include sonatas by Breval (G), Boccherini, Brahms, Schumann. Concerti by Boccherini, Haydn (D), Lalo. *Junior recital. Prereq.: CELLO 2606. 4+4 s.h.

4805, *4806. Scales in octaves, thirds, sixths. Studies from Popper, Piatti, Sewais. Repertoire to include Barb Suites No. 4, 5, 6, Reger Solo Suite No. 2, sonatas by Brahms, Prokofiev, Schubert, Shostakovich, Hindemith, Kodaly, Valentini, concerti by Dvorak, Haydn (D), Prokofiev, Schumann, Shostakovich, Tchaikovsky. *Senior recital including paper and oral presentation. Prereq.: CELLO 3706. 4+4 s.h.

SBASS–String Bass

Major/Performance

1501, 1502. Studies to include Simandl, *Book I, 30 Etudes*, Bille, *Method*, Books 1 and 3. Major and minor scales and arpeggios. Solos such as the Marcello and Vivaldi sonatas, Beethoven, *Sonatina;* Russell, *Chaconne*. Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Studies to include Simandl, *Book II*, Bille, *Method*, Books 3 and 4, Hrabe. Scales and arpeggios in two octaves. Solos such as Capuzzi, *Concerto;* Eccles, *Sonata;* Corelli, *Sonata in D Minor;* Rachmaninoff, *Vocalise*. Prereq.: SBASS 1502. 4+4 s.h.

3705, 3706. Studies to include continuation of Simandl, *Book II;* Bille, *Method*, Books 4 and 5. Scales and arpeggios in three octaves. Solos to include Bottesini, *Reverie;* Koussevitsky, *Chanson Triste;* Lars-Erik Larsson, *Concertino;* Fuare, *Apres Un Reve*. *Junior recital. Prereq.: SBASS 2606. 4+4 s.h.

4805, *4806. Zimmerman, *Orchestral Books*. Solos such as Concertos by Koussevitsky, Dragonetti, Dittersdorf, Bottesini, Vanhal; Hindemith, *Sonata;* Bottesini, *Elegy;* Koussevitsky, *Valse Miniature*. *Senior recital including paper and oral presentation. Prereq.: SBASS 3706. 4+4 s.h.

GUITR–Guitar

Major/Performance

1501, 1502. Scale patterns through all strings up to and including the ninth position. One study from numbers 1-5 by Segovia; 20 Studies (1-10) for the guitar by F. Sor; a similar study by Giuliani, Corelli, or Carcassi. Preludes 1, 3, and 4, H. Villa-Lobos; etudes by Carcassi and Giuliani; music from twelve compositions, F. Tarrega; studies by Aquado, Villa-Lobos, Coste, Sor, and Almeida; simple ensembles from the works of Handel, Corelli, Scarlatti, and others of the same time period. Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Bach, *Preludes;* F. Sor, *Studies 11-15;* music of English composers such as Dowland; *Prelude Number 5*, H. Villa-Lobos; solo works by Granados (*Spanish Dances*); chamber music of Paganini, Boccherini, and Giuliani. Prereq.: GUITR 1502. 4+4 s.h.

3705, *3706. *Lute Suites*, J. S. Bach; solo works of Ponce, Scarlatti, Granados, Albeniz, B. Henze, Sor, Tarrega, Ravel; Sor Studies 16-20; *Concerto in A Major*, M. Giuliani; *Grosse Sonata* and other works by Paganini; ensembles from the works of Paganini, L. DeCall, Matiegka, and J. Kreutzer. *Junior recital. Prereq.: GUITR 2606. 4+4 s.h.

4805, *4806. J. S. Bach, *Suites* and *Fugues for Lute;* Castelnuovo Tedesco *Concerto;* solo works by B. Britton, deFalla, L. Almeida, Albeniz; *Prelude Number 2* and *Etudes* by Villa-Lobos; ensembles from the works of Ibert, Paganini, Boccherini, Haydn, and Schubert. *Senior recital including paper and oral presentation. Prereq.: GUITR 3706. 4+4 s.h.

Woodwind Instruments

FLUTE-Flute

Major/Performance

1501, 1502. Studies compatible with the student's training and the development of techniques, articulation, phrasing, and tone quality. Repertoire to include all Handel Sonatas, at least 6 additional sonatas from the baroque, and the 24 Andersen *Studies*. Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Continued development of technique, articulation, phrasing, and tone quality. Repertoire to include Bach, *Sonatas in E Minor* and *B Minor;* Mozart, *Concerto in G Major;* Louis Ganne, *Andante* and *Scherzo;* Faure, *Fantasy,* and Telemann, *Suite in A Minor,* also the 24 Andersen Etudes, Op. 15. Prereq.: FLUTE 1502. 4+4 s.h.

3705, *3706. The study of solo works such as Bach, *Suite in B Minor;* Schubert; *Variations,* Po. 160; and *Sonatas* by Poulenc and Piston. Also at least 12 studies from Anderson, Op. 63, and 12 additional studies of comparable difficulty. Orchestral excerpts and classical concertos. *Junior recital. Prereq.: FLUTE 2606. 4+4 s.h.

4805, *4806. Survey of music etudes from the teaching standpoint, including Hughes, Op. 101, 32, and 75; 3 *Caprices* by Karg-Elert; Etudes by Boehm, Casterede, Briccialdi, Soussmann, Furstenau, and others. Solo repertoire to include the Prokofiev *Sonata* Op. 94, and the Dutilleux *Sonatine.* Orchestral excerpts and 20th century concertos. *Senior recital including paper and oral presentation. Prereq.: FLUTE 3706. 4+4 s.h.

CLAR-Clarinet

Major Performance

1501, 1502. Studies compatible with student's training and the development of technique, articulation, phrasing, and tone quality. Repertoire to include Jeanjean, *Arabesque;* Mozart, *Concerto* (2nd Movement); Weber, *Concertino;* Stocks, *Wessex Pastoral;* Guilhaud, *First Concertino;* Pierne, *Canzonetta.* Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Continues development of technique, articulation, phrasing, and tone quality. Repertoire expanded to include Hindemith, *Sonata;* Von Weber, *Variations* and *Concerto No. 1;* Cavallini, *Adagio* and *Tarantella;* Marty, *First Fantasy;* Messager, *Solo de Concours;* Rabaud, *Solo de Concert.* Prereq.: CLAR 1502. 4+4 s.h.

3705, *3706. Emphasis on the instrument in a chamber role, and the study of solo works such as Brahms, *Sonatas.* Op. 120, Nos. 1 and 2; Bernstein, *Sonata;* Debussy, *Premier Rhapsody;* Weber, *Concerto No. 2;* Mozart, *Concerto;* Lefebvre, *Fantasy Caprice.* *Junior recital. Prereq.: CLAR 2606. 4+4 s.h.

4805, *4806. Emphasis on the instrument in an orchestral role. Additional solo works to include Stravinsky, *Three Pieces;* Osborne, *Rhapsody;* Hindemith, *Concerto;* Widor, *Introduction* and *Allegro;* Jeanjean, *Scherzo Brillante;* Martinu, *Sonatina;* Nielsen, *Concerto.* *Senior recital including paper and oral presentation. Prereq.: CLAR 3706. 4+4 s.h.

OBOE–Oboe

Major Performance

1501, 1502. Studies compatible with the student's training and the development of technique, articulation, phrasing, tone quality and reed making. Repertoire to include Boni, *Sonata in G;* Cimarosa, *Concerto in C;* Nielsen, *Fantasiestucke;* Grovelez, *Sarabande* and *Allegro.* Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Continued development of technique, articulation, phrasing, tone quality and reed making. Repertoire to include Baroque sonatas and concerti; Haydn, *Concerto;* Headington, *Sonatina;* Hindemith, *Sonata;* Poulenc, *Sonata.* Prereq.: OBOE 1502. 4+4 s.h.

3705, *3706. Work on technical studies by Ferling, Brod and others. Concentrated study on reedmaking. Repertoire to include Ibert, *"Tunis"* from *Escales;* Reizenstein, *Three Concert Pieces;* Schumann, *Three Romances;* and chamber music such as Boccherini, *Quintets;* Mozart, *Oboe Quartet;* and Beethoven, *Variations.* *Junior recital. Prereq.: OBOE 2606. 4 s.h.

4805, *4806. Emphasis on orchestral excerpts and more advanced work from the solo repertoire. Students are expected to use their own reeds. Students learn to gouge cane and adjust the gouging machine. Solo works include Foss, *Concerto;* Kibbe, *Serpent Music;* Saint-Saens, *Sonate;* Britten, *Metamorphoses.* *Senior recital including paper and oral presentation. Prereq.: OBOE 3706. 4+4 s.h.

BASSN–Bassoon

Major/Performance

1501, 1502. Studies compatible with the student's training and the development of technique, articulation, phrasing, and tone quality. Repertoire to include representative selections such as Hindemith, *Sonata;* Bordeau, *Premiere Solo;* David, *Concertino;* Galliard, *Six Sonatas.* Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Continued development of technique, articulation, phrasing, and tone quality. Repertoire expanded to include Mozart, *Concerto K. 191;* Bach, *Concerto in E-Flat;* Cascarino, *Sonata;* Graun, *Concerto in G-Flat;* selected Vivaldi concerti. Prereq.: BASSN 1502. 4+4 s.h.

3705, *3706. Emphasis on the instrument in a chamber role. Mozart, *Divermenti*; Beethoven, *Duos*; Piston, *Trio*; standard quintet literature. *Junior recital. Prereq.: BASSN 2606. 4+4 s.h.

4805, *4806. Emphasis on the instrument in an orchestral role. Memorization of major orchestral passages. Additional solo literature to include Elter, *Sonata*; Jacob, *Concerto*; Saint-Saens, *Sonata*; Bozza, *Concertino*. *Senior recital including paper and oral presentation. Prereq.: BASSN 3706. 4+4 s.h.

SAX–Saxophone

Major/Performance

1501, 1502. Basics of embouchure, articulation, phrasing, technique, and tone reviewed with Londeix, *Les Gammes*; Viola, *The Technique of the Saxophone*; and literature which includes Telemann/Londeix, *Sonate*; Glazounov, *Concerto*; Creston, *Sonata*; and Bonneau, *Suite*. Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Refinement of technique, interpretation, and tone quality. Studies include Koechlin, *15 Etudes*; Vol. 1 of Mule, *54 Etudes*; and literature and performance of Hartley, *Duo*; Bozza, *Piece Breve*; Noda, *Improvisation I*; Heiden, *Sonata*; and chamber works. Prereq.: SAX 1502. 4+4 s.h.

3705, *3706. Emphasis on literature and performance, including Absil, *Sonata*; Bozza, *Improvisation et Caprice*; Villa-Lobos, *Fantasia*; Milhaud, *Scaramouche*; Maurice, *Tableaux de Provence*; Noda, *Mai*. *Junior recital. Prereq.: SAX 2606. 4+4 s.h.

4805, *4806. Emphasis on literature and performance to include Ibert, *Concertino Da Camera*; Husa, *Elegie et Rondeau*; Persichetti, *Parable*; Berio, *Sequenza IXb*; and Bassett, *Music for Saxophone and Piano*. *Senior recital including paper and oral presentation. Prereq.: SAX 3706. 4+4 s.h.

Brass Instruments

TRUMP–Trumpet

Major/Performance

1501, 1502. Development of basic fundamentals of breath and tonal control, and of full physical potential. Sight-reading. Introduction to transposition techniques. Study material: H. Clarke, *Technical Studies*; W. Smith, *Lip Flexibilities*; Arban, *Complete Method*; Hering, *Etudes*. Solo literature: Balay, *Prelude and Ballade*; Handel-Fitzgerald, *Aria Con Variazione*; Barat, *Fantasy in E-Flat*; Andante and Scherzo. Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Continued study of fundamentals and literature from the previous levels. Orchestral excerpts and chamber music. Extensive work on transposition and sight-reading. Introduction of the C trumpet. Study materials: Schlossberg, *Technical Studies*; Clarke, *Characteristic Studies*; Pietsch, *Virtuosity Studies*; W. Smith, *Top Tones for the Trumpet*; Charlier, *36 Etudes*. Solo literature such as Hummel, *Concerto in E-Flat*; Kennan, *Sonata*; Bohrnsdedt, *Concerto*; J. Stanley, *Trumpet Tune*; Flor Peeters, *Sonata*. Prereq.: TRUMP 1502. 4+4 s.h.

3705, *3706. Continued refinement of the technical and tonal aspects of trumpet playing. Improvement of transposition ability. Introduction of the D trumpet. Continued experience on the C trumpet; further study of orchestral excerpts. Study materials such as Nelson, *Top Tone Duets*; Petit, *Petite Studies*, Broiles, *Technical Studies*, Vol. 1; Toldman, *Triple and Double Tonguing*; Tomasi, *Etudes*. Solo literature to include: Vidal, *Sonata*; Hindemith, *Sonata*; Gianinni, *Concerto*; Artumian, *Concerto*; Stevens, *Sonata*. *Junior recital. Prereq.: TRUMP 2606. 4+4 s.h.

4805, *4806. Continued study of materials from previous courses. Extensive work on orchestral excerpt collections of Bartholody and Voisin. Preparation of senior recital. Solo literature such as Jolivet, *Sonatina*; Tomasi, *Concerto*; D. White, *Sonata*; Telemann, *Concerto in D Major*; Haydn, *Concerto in E-Flat*. *Senior recital including paper and oral presentation. Prereq.: TRUMP 3706. 4+4 s.h.

FHORN–French Horn

Major/Performance

1501, 1502. Establishment of a practice routine to promote fundamental skills; tone production, air control, embouchure, flexibility, legato/staccato articulation. Transposition, sight-reading. Orchestral excerpts taken from the music of Brahms, Tchaikovsky, Beethoven, Mendelssohn, A. Thomas. Study materials such as Kopprasch, *Six Selected Studies*, Book 1; Maxime-Alphonse, *70 Etudes*, Book 1; Pottag and Andraud, *335 Studies*, Book 1; Pares, *Daily Exercises and Scales*. Solo literature to include Mozart, *Concerto No. 1*; Adler, *Sonata*; Baroff, *Sonata*; Jones, *Solos for the Horn Player*. Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Continued emphasis on fundamentals. Transposition, sight-reading. Orchestral excerpts: continuation of literature listed for 1501 and 1502, plus Rossini, Wagner, Dvorak, Franck, Weber. Study materials such as Kopprasch, *60 Selected Studies*, Books I and II; Maxime-Alphonse, *40 Etudes*, Book II; Pottag and Andraud, *335 Studies*, Book I; Bach-Hoss, *Suites for Cello*. Solo literature to include Beethoven, *Sonata for Horn and Piano*, Op. 17; Chabrier, *Larghetto*; Rosetti, *Concerto in E-Flat*; Saint-Saens, *Concert Piece* Op. 44; Mozart, *Concerto No. 3*. Prereq.: CELLO 1502. 4+4 s.h.

3705, *3706. Further study of technical problems. Transposition, sight-reading. Orchestral excerpts; continuation of repertoire listed for previous courses, plus music of Bizet, Massenet, Borodin, Rimsky-Korsakov, Strauss, Stravinsky. Study materials such as Kopprasch, *6 Selected Studies*, Book II; Maxime-Alphonse, *40 Etudes*, Book III; Gallay, *Studies and Preludes*; Bach-Hoss, *Suites for Cello*; Kling, *40 Characteristic Studies*. Solo literature to in-

clude Haydn, *Concerto No.1;* Mozart, *Concerto No. 2;* R. Strauss, *Concerto No. 1;* Dukas, *Villanelle;* Wilder, *Sonata No. 3;* Beethoven, *Sonata,* Op. 17. *Junior recital. Prereq.: FHORN 2606. 4+4 s.h.

4805, *4806. Continuing emphasis on fundamental technical problems. Transposition, sight-reading. Orchestral excerpts: continuation of literature listed for previous courses plus Bach, Mozart, Haydn, Mahler, Schoenberg, and other 20th century composers. Study materials such as Pottag and Andraud, *Selected Studies 305,* Book II; Bach-Hoss, *Suites for Cello;* Gallay, *Etudes and Preludes;* Maxime-Alphonse, *20 Etudes,* Book IV; Mueller, *22 Etudes.* Solo literature to include Haydn, *Concerto No. 2;* Mozart, *Concerto No. 4;* Tomasi, *Concerto;* Donato, *Concerto;* Hindemith, *Sonata.* *Senior recital including paper and oral presentation. Prereq.: FHORN 3706. 4+4 s.h.

TROMB–Trombone

Major/Performance

1501, 1502. Emphasis on all playing fundamentals. Establishment of a warm-up procedure. Establishment of good practice habits. Introduction to the F attachment. Introduction to tenor clef. Study materials such as: tenor trombone - Bordogni-Rochut, *Melodious Etudes,* Book I; Fink, *Introduction to Tenor Clef;* Blume-Fink, *36 Studies for Trombone with F Attachment.* Bass trombone - Ostrander, *Method for Bass Trombone,* and *Melodious Etudes for Bass Trombone;* Solo materials to include: tenor trombone - Marcello, *Sonatas Nos.1, 4, 6;* Jacob, *Concerto* (1st Movement); Barat, *Andante et Allegro.* Bass trombone - McCarty, *Sonata;* Mozart-Sansone, *Concert Rondo;* Galliard, *Sonata No. 5.* Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Continued emphasis on all playing fundamentals, warm-up and practice habits, and sight-reading. Concentration on developing range, endurance, and dynamics. Continued work in tenor clef. Introduction to alto clef. Continued work with F attachment. Study materials such as; tenor trombone - Bordogni-Rochut, *Melodious Etudes,* Book I and II; Fink, *Introduction to Alto Clef;* Kopprasch, *60 Studies,* Book II. Bass trombone - Bordogni-Rochut, *Melodious Etudes;* Tyrrell, *40 Progressive Studies for Tuba;* Menken, *Orchestral Excerpts,* Books I and II. Solo materials to include: tenor trombone - David, *Concertino;* Grafe, *Grand Concerto;* White, *Sonata.* Prereq.: TROMB 1502. 4+4 s.h.

3705, *3706. Continued emphasis on all playing fundamentals, warm-up and practice habits, and sight-reading. Continued study of orchestral excerpts. Study on baritone horn is recommended. Emphasis on ensemble playing and playing "lead". Study materials such as: tenor trombone - Blazevich, *Clef Studies;* Bordogni-Rochut, *Melodious Etudes,* Book II; Pederson, *Intermediate Etudes for Tenor Trombone.* Bass trombone - Bordogni-Rochut, *Melodious Etudes;* Blazevich, *Advanced Studies,* Book I (for Tuba); Weissenborn, *Studies,* Book II for Bass Trombone. Solo materials to include: tenor trombone - Hindemith, *Sonata;* Bozza, *Homage a Bach;* Casterede, *Sonatine.* Bass trombone - Ross, *Prelude, Fugue, and Big Apple;* Stevens, *Sonatina.* *Junior recital. Prereq.: TROMB 2606. 4+4 s.h.

4805, *4806. Culmination of all playing fundamentals in a solo recital. Introduction to study on the alto trombone. Perfection of orchestral audition repertoire. Study materials such as: tenor trombone - Bordogni-Rochut, *Melodious Etudes,* Book II; Pederson, *Advanced Etudes for Tenor Trombone;* Mazted, *20 Advanced Studies.* Bass trombone - White, *Tetra Ergon;* Persichetti, *Serenade for Unaccompanied Tuba;* Beversdorf, *Sonata for Tuba.* *Senior recital including paper and oral presentation. Prereq.: TROMB 3706. 4+4 s.h.

BHORN–Baritone Horn/ Euphonium

Major/Performance

1501, 1502. Study of fundamentals. Development of daily practice and warm-up routines. Knowledge of bass and treble clefs. Introduction to tenor clef. Study materials such as Arban, *Complete Method;* Bordogni-Rochut, *Melodious Etudes,* Book I; Kopprasch, *6 Etudes;* Blume, *26 Etudes.* Solo literature to include Galliard, *Sonata in G;* Barat, *Introduction and Dance;* Telemann, *Sonata in F;* Morel, *Piece in F;* Marcello, *6 Sonatas.* Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Continued emphasis on fundamentals. Introduction of alto clef. Orchestral and band parts. Emphasis on sight-reading. Study materials such as Arban, *Complete Method;* Bordogni-Rochut, *Melodious Etudes,* Book I and II; Voxman, *Selected Etudes;* Bitsch, *20 Etudes.* Solo literature to include Hindemith, *Bassoon Sonata;* Bach, *Cello Studies;* David, *Concertino;* Mozart, *Bassoon Concerto;* Whear, *Sonata;* Pryor, *Blue Bells of Scotland.* Prereq.: BHORN 1502. 4+4 s.h.

3705, *3706. Continued study of orchestral and band parts. Study of trombone recommended. Study of materials such as Smith, *Top Tones for Trumpet;* Bordogni-Rochut, *Melodious Etudes,* Book II; Bitsch, *20 Etudes.* Solo literature to include Ross, *Partita;* Stevens, *Sonatina;* Cords, *Concert Fantasie;* Hindemith, *Bassoon Sonata;* Ross, *Capriccio Furioso;* Bach, *Sonata in G;* White, *Lyric Suite.* *Junior recital. Prereq.: BHORN 2606. 4+4 s.h.

4805, *4806. Continued study of orchestra and band parts. Study materials such as Bozza, 13 Etudes Caprices; Bordogni-Rochut, *Melodious Etudes,* Book III; Rieunier, *22 Dechiffranges Rythmiques.* Solo literature to include Jacob, *Fantasia;* Horovit, *Concerto;* Boda, *Sonatina;* Curnow, *Symphonic Varients;* Hartley, *Sonata Euphonica;* Bach, *Sonata in D.* *Senior recital including paper and oral presentation. Prereq.: BHORN 3706. 4+4 s.h.

TUBA–Tuba

Major/Performance

1501, 1502. Study of fundamentals. Development of daily practice and warm-up routine. Playing of study and solo literature one octave lower. Study materials such as Blazevich, *70 Studies*, Vol. 1; Arban, *Complete Method*; Kopprasch, *60 Etudes*, Vol. 1; Bordogni-Rochut, *Melodious Etudes*, Book I. Solo literature to include David, *Concertino*; Telemann, *Sonata in F*; Lebejew, *Konzert*; Marcello, *6 Sonatas*; Barat, *Introduction and Dance*. Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Introduction to tenor clef. Orchestral parts; chamber literature. Study materials such as Blazevich, *70 Studies*, Vol II; Kopprasch, *60 Studies*, Vol. II; Barbatou, *Melodious Etudes*, Vols. I and II. Solo literature to include Hindemith, *Sonata;* Mozart, *Concerto No. 3*; Blavet, *Sonata in G*; Vinci, *Sonata in D;* Wilder, *Sonata*. Prereq.: TUBA 1502. 4+4 s.h.

3705, *3706. Continued study of orchestral parts and chamber literature. Study materials such as Bordogni-Rochut, *Melodious Etudes*, Book I and II; Bitsch, *20 Studies;* Gregson, *Concerto*; Heiden, *Concerto*; Pisciotta, *Sonata*. Solo literature to include Schumann, *Adagio and Allegro*; Stevens, *Sonatina;* Bach, *Sonata in G;* Mozart, *Concerto No. 2;* Strauss, *Concerto No. 1*. *Junior recital. Prereq.: TUBA 2606. 4+4 s.h.

4805, *4806. Introduction of F tuba (if not already used). Continued study of orchestra parts and chamber music. Study materials such as Bordogni-Rochut, *Melodious Etudes*, Book III; Reynolds, *48 Etudes;* Sauter, *Eight Random Thoughts;* Kraft, *Encounters II;* Beversdorf, *Concerto*: Jacob, *Tuba Suite;* Largent, *Four Shorts;* Vaughan Williams, *Concerto*. Solo literature to include Takacs, *Sonata Capricciosa;* Penn, *Three Essays;* Reynolds, *Sonata;* Woolf, *Per Tuba Ad Astram*. *Senior recital including paper and oral presentation. Prereq.: TUBA 3706. 4+4 s.h.

PERC–Percussion

Major/Performance

1501, 1502. Keyboard percussion, snare drum and tympani. Concentration of the development of basic techniques and daily practice studies. Sight-reading, sticking, phrasing, and tempo flexibility are emphasized. Various solos for appropriate level of study are stressed on each instrument. An original multi-percussion composition to be written. All major and minor scales, and arpeggios in all keys. Prereq.: entrance audition. 2+2 s.h.

2605, 2606. Continued development on the above instruments. Emphasis on marching percussion and writing percussion scores. Projecting good rhythm and learning independent coordination on the drum set. Development of four mallets on marimba. Various solos for appropriate level of study on each instrument. Expanding octaves and speed on all major and minor scales, arpeggios in all keys. Prereq.: PERC 1502. 4+4 s.h.

3705, *3706. Continued development of technique, articulation, sticking, and sight-reading in bass clef. Emphasis on percussion accessories and applying them to orchestral excerpts. Latin percussion studies include timbales, bongos, conga drums, and Latin percussion accessories. Various solos for appropriate level of study on each instrument. Expanding octaves and speed on all major and minor scales, arpeggios in all keys. Prereq.: PERC 2606. 4+4 s.h.

4805, *4806. Continued development with emphasis on literature and performance. Writing an original percussion ensemble piece. Continuation of orchestral excerpts and learning orchestral audition repertoire. *Senior recital including paper and oral presentation. Prereq.: PERC 3706. 4+4 s.h.

Keyboard Musicianship Classes

1581, 1582. *Keyboard Musicianship 1*. Elements of keyboard techniques, with emphasis on sight-reading, interpretation of simple music, transposition, and analysis. All major and minor scales and related chords, hands together. Required of all non-keyboard majors. Must be taken in sequence. 1+1 s.h.

2681, 2682. *Keyboard Musicianship 2*. A continuation and intensification of studies begun in Music 1581 and 1582, with emphasis on accompanying, modulation, repertoire, and stylistic analysis. Must be taken in sequence. Prereq.: MUSAC 1582 or equivalent. 1+1 s.h.

2691, 2692. *Accompanying 1*. A study of techniques useful in playing the piano for vocalists, with supervised studio and recital experience. May be repeated for credit. 1+1 s.h.

2693, 2694. *Accompanying 2*. A study of techniques useful in playing the piano for instrumentalists, with supervised studio and recital experience. May be repeated for credit. 1+1 s.h.

Jazz

1525. *Jazz Fundamentals*. A study of harmony and ear training in the jazz idiom: intervals, chord construction, terminology and symbols, modal scales, pentatonic and blues scales, symmetrically altered scales, thirteenth chords and harmonic substitutions and functions, and ear training and diction. Meets two hours per week. Prereq.: MUSTC 1520 with a grade of B or better or placement in MUSTC 1531. 2 s.h.

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.

2667, 2668. *Jazz Improvisation 1, 2.* Jazz techniques with emphasis on analysis of harmonic progressions, form, style, and performance requirements of the jazz idiom. Prereq.: MUSAC 1525 or a grade of B or better on the Jazz Placement Test. Classes must be taken in sequence. 3+3 s.h.

3712, 3713. *Jazz Arranging 1, 2.* Scoring in the jazz idiom with emphasis on harmonic concepts, voicing procedures, form, and stylistic trends developed by major jazz composer-arrangers. Detailed study of instrumental techniques with projects scored for various size ensembles. Student arrangements are performed in reading sessions and concerts. Prereq.: MUSTC 1532 and MUSAC 2668 or permission of instructor. Classes must be taken in sequence. 3+3 s.h.

3781, 3782. *Jazz Keyboard 1, 2.* (For keyboard and non-keyboard majors). Class instruction and keyboard experience in jazz chordal voicing techniques and jazz accompanying techniques. Prereq.: MUSAC 1525, a grade of B or better on the Jazz Placement Test, or permission of instructor. Classes must be taken in sequence. Meets two days per week. 1+1 s.h.

4867, 4868. *Jazz Improvisation 3, 4.* Advanced jazz techniques with emphasis on analysis of harmonic progressions, form, style, and performance requirements of the jazz idiom. Prereq: MUSAC 2668. Courses must be taken in sequence. 3+3 s.h.

MUSCO–MUSIC, CONDUCTING

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.: MUSTC 2632. 3 s.h.

MUSED–MUSIC EDUCATION

Dana School of Music

The following has been approved as a General Education course in the domain of Artistic and Literary Perspectives: 2621, Music Literature and Appreciation.

*2611. *Computer Applications in Music Education.* An overview of basic computer music applications as they relate to the music educator, including principles of the Musical Instrument Digital Interface (MIDI), and emphasizing music software packages for computer-based notation, automatic accompaniment and composition (sequencing). Additional discussions and projects aimed at applying the above in a classroom-style experience, using computer-based hardware and software in a real-time situation. 2 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.

3721. *Music Education for Elementary Teachers.* The development of an understanding of the theoretical aspects of music through discussion and demonstration of repertoire and techniques for teaching music in the elementary school. Prereq.: Upper-division status in the College of Education. 3 s.h.

3722. *Music in Early Childhood.* Fundamental skills, repertoire, materials, and techniques for teaching music to pre-school and kindergarten children. For non-music majors. 3 s.h.

5814. *Selected Topics in Music Education.* Course title will be listed each semester in the Schedule of Classes. May be repeated for credit with different topics. Prereq.: MUSED 4823 or 4825. 2 s.h.

Topics may include:

Vocal Ensembles in the High School. A study of methods and materials for small vocal groups at the high school level including madrigals, swing choirs, and other small chamber ensembles.

Orff and Kodaly for the Classroom. A study of the philosophies, materials, and methods of Carl Orff and Zoltan Kodaly with applications to the elementary school classroom.

Music and the Related Arts. Techniques and materials for teaching humanities or related-arts classes at the elementary or secondary level. Relationships among music, art, architecture, literature, drama, and film.

Marching Band Arranging. A study of the instrumentation, suitable instrumental ranges, and scoring procedures for attaining the sound power for outdoor performance.

Instrument Repair. Practical experience in the basic skills needed by the prospective instrumental teacher in repairing string, brass, woodwind, and percussion instruments.

Jazz Ensemble in the Secondary School. Organizing, scheduling, and rehearsing the jazz ensemble, and a study of suitable jazz materials for the secondary school with emphasis on interpretation, style characteristics, and improvisation procedures.

4823. *Music Teaching in Early Childhood (Pre-K-4).* A study of the role of music in the life of the child. An examination of principles, repertoire, and techniques of teaching music to children (ages pre-k through third grade). Prereq.: Upper-division status in the College of Education. 3 s.h.

4824. *Music Teaching in the Middle School.* Music materials and methods of instruction in middle schools with emphasis on understanding the physiological and psychological development of early adolescents in the context of the general music class.

Course content includes managing the learning environment, motivating students, developing music curricula, planning musical experiences and assessing musical behaviors. Prereq.: Upper-division status in the College of Education. 2 s.h.

4825. *Music Teaching in the High School.* Methods of organizing, administering, and conducting music in the high schools. Study to include instructional methods, library organization, scheduling, curriculums, philosophy, technology, classroom management, festivals and competitive events. Includes two hours field experience per week. Prereq.: Upper-division status in the College of Education and concurrent enrollment in MUSED 4826 or 4827. 2 s.h.

4826. *Instrumental Music Education.* Materials, methods, and literature for use in teaching and administering elementary, middle school, and high school instrumental music programs. Emphasis on curriculum design, pedagogy, and learning theories related to concert band, marching band, and orchestra. Prereq.: Upper-division status in the College of Education and concurrent enrollment in MUSED 4825. 2 s.h.

4827. *Choral Music Education.* Development of students' knowledge of choral music appropriate for effective music learning in the schools including pedagogical issues relevant to adolescent voices. Students also explore the historical development of show choir along with pedagogical methods for movement and voice instruction. Prereq.: Upper-division status in the College of Education and concurrent enrollment in MUSED 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.

MUSEN–MUSIC ENSEMBLES
Dana School of Music

Major Ensembles

0002. *Dana Chorale.* Prereq.: Audition. 0-1 s.h.

0003. *Dana Madrigal.* Prereq.: Audition. 0-1 s.h.

0004. *University Chorus.* 0-1 s.h.

0005. *Concert Band.* Prereq.: Audition. 0-1 s.h.

0006. *Marching Band.* 0-1 s.h.

0007. *Wind Ensemble.* Prereq.: Audition. 0-1 s.h.

0040. University Band. Prereq.: Audition. 0-1 s.h.

Chamber Ensembles

0008. *Symphony Orchestra.* Prereq.: Audition. 0-1 s.h.

0009. *Percussion Ensemble.* Prereq.: Audition. 0-1 s.h.

0010. *String Ensemble.* Prereq.: Audition. 0-1 s.h.

0012. *Opera Workshop.* Prereq.: Audition. 0-1 s.h.

0013. *Contemporary Ensemble.* Prereq.: Audition. 1 s.h.

0014. *Women's Chorus.* 1 s.h.

0015. *Early Music Ensemble.* Prereq.: Audition. 0-1 s.h.

0016. *Woodwind Ensemble.* Prereq.: Audition. 0-1 s.h.

0017. *Brass Ensemble.* Prereq.: Audition. 0-1 s.h.

0018. *Horn Choir.* Prereq.: Audition. 1 s.h.

0019. *Trombone Ensemble.* Prereq.: Audition. 0-1 s.h.

0020. *Tuba Ensemble.* Prereq.: Audition. 0-1 s.h.

0021. *Brass Chamber Ensemble.* Prereq.: Audition. 1 s.h.

0022. *Trumpet Ensemble.* Prereq.: Audition. 1 s.h.

0023. *Jazz Ensemble.* Prereq.: Audition. 0-1 s.h.

0024. *Composer's Ensemble.* Prereq.: Audition. 0-1 s.h.

0026. *Chamber Orchestra.* Prereq.: Audition. 0-1 s.h.

0028. *Chamber Winds.* Prereq.: Audition. 1 s.h.

0029. *Guitar Ensemble.* Prereq.: Audition. 0-1 s.h.

0030. *Jazz Combo.* Prereq.: Audition. 1 s.h.

0035. *Saxophone Quartet.* Prereq.: Audition. 1 s.h.

0041. *Basketball Pep Band.* Prereq.: Audition. 0-1 s.h.

0051. *Piano Chamber Ensemble.* Prereq.: Audition. 0-1 s.h.

MUSHL–HISTORY AND LITERATURE OF MUSIC
Dana School of Music

The following have been approved as General Education courses in the domain of Artistic and Literary perspectives: 2616, Survey of Jazz; 2618, Rock 'n Roll to Rock.

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.

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 the development 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. 3 s.h.

3772. *Music History and Literature 2.* An exploration of the development of European Baroque and Rococo musical styles. 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. 3 s.h.

3773. *Music History and Literature 3.* An exploration of the development 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. 3 s.h.

3774. *Music History and Literature 4.* An exploration of late 19th and early 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. 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.: MUSTC 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.: MUSTC 2632 and MUSHL 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.: MUSTC 2632 and MUSHL 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.: MUSTC 2632 and MUSHL 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.: MUSTC 2632 and MUSHL 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.: MUSTC 2632 and MUSHL 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.: MUSTC 2632 and MUSHL 3774. 3 s.h.

MUSTC–MUSIC THEORY AND COMPOSITION

Dana School of Music

1501. *Applied Theory.* Applications of theory of diatonic harmony; development of independent study and research projects in such areas as analysis, aural perception, scoring, and arranging. May be repeated once. Prereq.: Permission of instructor. 2 s.h.

*1520. *Materials of Music.* Musical styles, listening concepts, and harmonic technics as they relate to the literature of music. For students who do not qualify for MUSTC 1531. 3 s.h.

*1531, *1532. *Theory 1.* A study of the harmonic, melodic, rhythmic and contrapuntal materials in diatonic tonal music. Instruction entails harmonic progression and voice leading, harmonic and formal analysis; laboratory practice in ear training, keyboard harmony, and sight singing, and computer assisted instruction. Meets five hours a week. Prereq.: MUSTC 1520 with a grade of B or better or a minimum score of 50% on the theory placement test. 3+3 s.h.

2601. *Applied Theory.* Applied instruction in music theory of chromatic harmony; development of independent study and research projects in such areas as analysis, aural perception, scoring, and arranging. May be repeated once. Prereq.: Permission of instructor. 2 s.h.

1502, 2601, 2602. *Composition.* Composition for composition majors. Creative use of materials of music; beginning study of instrumentation; composition of short works for solo and chamber media. Analysis of representative compositions in various styles. Learning computer music applications appropriate for score and parts preparation. Prereq.: Grade of B or better in lower-division theory courses or concurrent with MUSTC 1531, 1532. 2+2+2 s.h.

3704, 3705, 4804, 4805. *Composition.* Composition for composition majors. Private instruction employing contemporary techniques; composition for solo instruments, vocal and instrumental chamber groups, and large ensembles. Computer editing and proofing of scores and parts to prepare compositions for performance or publication. A recital of at least one hour duration of selected works of the students is required for graduation. Prereq.: MUSTC 2602 or 3705 as appropriate. 3+3+3+3 s.h.

2631, 2632. *Theory 2.* Study of chromatic materials in tonal music and the introduction of atonal and set theory elements in music. The instruction entails harmonization; harmonic and formal analysis; reading of choral, chamber, and orchestral scores; laboratory practice in ear training, keyboard harmony, and sight singing. Meets five days per week. Prereq.: MUSTC 1532 with grade of C or better. 3+3 s.h.

3701. *Applied Theory.* Applied instruction in music theory of tonal and/or non-tonal music; development of independent study and research projects in such areas as analysis, aural perception, scoring, and arranging. May be repeated once. Prereq.: Permission of instructor. 2 s.h.

3750. *Analytical Techniques.* Analysis of representative repertoire from the Renaissance, Baroque, Classical, Romantic, and Contemporary periods. Prereq.: MUSTC 2632 with a grade of C or better. 3 s.h.

5821, 5822. *Composition for Minors.* Composition in two- and three-part forms, and other compositions of small scope, such as variation and sonatina. Works are composed both for piano alone, and in combination with other instruments or voice. May be repeated by composition majors to meet requirements for freshman and sophomore composition for majors. Prereq.: MUSTC 2632 with a grade of C or better, or permission of instructor for composition majors. 2+2 s.h.

5828. *Music Technology.* An exploration of the use of computers and technology in music. Applications related to composition, performance, analysis, teaching, and research. Prereq.: MUSTC 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.: MUSTC 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.: MUSTC 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.: MUSTC 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.: MUSTC 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, MUSTC 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.: MUSTC 2632 with a grade of C or better. 3 s.h.

NURSG–NURSING
Department of Nursing

Lower-Division Courses

2601. *Family Concepts for Providers.* Interdisciplinary study of family theories, dynamics, roles, and cultural considerations across the lifespan related to issues of concern for providers of health and human services. Open to nursing and non-nursing majors. 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.

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.: NURSG 2643, 2610, 2646 and BIOL 1560/L. 8 s.h.

2646. *Pathophysiology.* Concepts related to pathophysiologic mechanisms of illness. Emphasis on application to nursing using the nursing process. Prereq.: BIOL 1552/L and CHEM 1506/L. 4 s.h.

2650. *Pharmacology.* Concepts of pharmacology applies to major drug classes. Emphasis on application of nursing process to drug therapy across the lifespan. Prereq.: NURSG 2646. 3 s.h.

Upper-Division Courses

*3730. *Developing Family and Child Nursing 1.* Family-centered nursing concentrating on health promotion and illness prevention for parent(s) during the reproductive/expanding phase of the family life cycle and for children from conception through adolescence. Three hours lecture, six hours clinical experience in a variety of settings per week. Prereq.: NURSG 3741 and 3742. 5 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.: NURSG 2645. 6 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.: NURSG 2645. 5 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.: NURSG 3741 and 3742. 5 s.h.

3749. *Nursing Research.* Process of research using reasoning and scientific rigor in critical analysis of nursing research. Prereq.: NURSG 3741 and 3742. 3 s.h.

*4831. *Developing Family and Child Nursing 2.* Family-centered nursing concentrating on health acute and chronic health care needs for parent(s) during the reproductive/expanding phase of the family life cycle and for children from conception through adolescence. Three hours lecture, six hours clinical experience in a variety of settings per week. Prereq.: NURSG 3730. 5 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.: NURSG 3730 and 3743. 5 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.: NURSG 4831 and 4840. 5 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.: NURSG 4831 and 4840. 3 s.h.

4850. *Nursing Transitions.* Analysis, synthesis, and evaluation of care delivered by the health care team with emphasis on development of leadership and research roles. Serves as the nursing senior capstone course. Four hours lecture, nine hours clinical experience in a variety of settings per week. Prereq.: NURSG 4831 and 4840. 7 s.h.

Nursing Electives

3746. *Geriatric Health Nursing.* An in-depth view of the aging person with implications for determining systems of nursing care and for interpreting the impact of current theories of aging upon current nursing practices. Prereq: Admission to program or permission of department chairperson. 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.

4851. *Child Health Nursing.* Current trends, issues, and approaches in nursing practices with children from a wellness perspective. Emphasis on prevention of developmental self-care deficits. Nursing roles in child health specialities. Prereq: Admission to program or permission of department chairperson. 3 s.h.

4860. *Home Health Nursing.* Current trends, issues, and approaches related to caring for clients in the home environment. Emphasis on the nursing role in client transition from the acute care setting to home. Three hours lecture, three hours clinical experience in a variety of settings per week. Prereq.: NURSG 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.: NURSG 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.: NURSG 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.: NURSG 4870 and 5871 and RN status. 3-9 s.h.

OIS–OFFICE INFORMATION SYSTEMS

Department of Computer Science and Information Systems

Lower-Division Courses

*1520. *Beginning Keyboarding.* Beginning keyboarding for all students. Taught on microcomputers; some practice on electronic typewriters. Includes use of word processing procedures, report and business letter preparation. One hour lecture, three hours lab. 2 s.h.

*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 or equivalent. 4 s.h.

2600. *Concepts of Office Information Systems.* Analysis of office information systems, architecture, and trends. Study of training, job redesign, and change issues. Prereq.: CSIS 1590. 3 s.h.

2663. *Office Management.* Principles and practices of effective office systems. Office budgeting, information management through hardware and software selection and utilization, ergonomics, office design, proper procedures for conducting business meetings. Prereq.: CSIS 1590. 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.

*2676. *Multimedia Technology.* Fundamentals of graphic creation, manipulation, and exchange. Web and multimedia audio issues and technical configurations. Video conferencing on the Internet. Fundamental web utility tools. Storyboarding strategies, layout and design issues. Prereq.: CSIS 1590. 3 s.h.

2698. *Special Topics.* In-depth study of business information systems. Topics vary. May be repeated for different topics. Prereq.: Permission of chairperson. 1-3 s.h.

2699. *Internship.* An opportunity to apply classroom theory to on-the-job professional experience related to the student's major area of specialization. Participants work at an approved site, complete a related project, and attend biweekly seminars. Prereq.: Sophomore in good standing and permission of internship coordinator. 1-3 s.h.

Upper-Division Courses

3704. *Business Communication.* Communication theory and practice. Business letter writing; oral communication. Review of English usage. Prereq.: ENGL 1550. 3 s.h.

*3714. *Advanced Spreadsheets.* Includes macros, look-up tables, advanced problems, templates, and projects with emphasis on accounting and finance applications. Prereq.: CSIS 1514 or 1590. 3 s.h.

*3775. *Multimedia Authoring.* A study of multimedia authoring tools. Design principles of integrating text, graphics, sound, animation, and video. Project required. Prereq.: OIS 2676. 3 s.h.

*3790. *Integrated Office Systems.* Students organize and operate an information center utilizing decision-making skills; information systems procedures and components. Prereq.: OIS 3714 or CSIS 3723. 3 s.h.

5826. *Teaching Intensive and Cooperative Business Education.* Organization, administration, implementation, and evaluation of Intensive and Cooperative Business Education programs at the secondary and adult education levels. Selection, instruction, curriculum, and placement of vocational students. Prereq.: SEDUC 3706. 3 s.h.

*4875. *Advanced Multimedia Authoring.* Advanced study of multimedia authoring tools. Analysis of commercial applications. Group project required. Prereq.: OIS 3775. 3 s.h.

*4880. *Office Information Systems Analysis and Design.* Information systems integration and modeling. Analysis of dynamic information flow, functional requirements, and systems design in theory and practice. Prereq.: OIS 3775. 3 s.h.

*4887. *Training and Employee Development.* Theory and practice of designing training programs. Analyzing training needs, selecting instructional strategies, and implementing and evaluating training programs. Prereq.: OIS 3790. 3 s.h.

4895. *Special Topics.* Study of special topics in office information systems. May be repeated up to 8 s.h. Subject matter and credit hours announced in advance. Prereq.: At least 3 s.h. of upper-division departmental courses, and permission of chairperson. 2-4 s.h.

PHIL–PHILOSOPHY

Department of Philosophy and Religious Studies

The following have been approved as General Education courses in the domain of Personal and Social Responsibility: 2609, Technology and Human Values; 2625, Introduction to Professional Ethics. In Selected Topics: 2600, Introduction to Philosophy; 2619, Introduction to Logic; 2630, Critical Thinking.

Lower-Division Courses

2600. *Introduction to Philosophy.* The nature of philosophy and its relation to science, religion, and art; study of the philosophical approach and attitude, the basic problem areas in philosophy, and some typical philosophical viewpoints. 3 s.h.

2609. *Technology and Human Values.* Examination of the impact of technology and science on contemporary human values and investigations of social and political perspectives on modern technocracy, based on case studies in science, medicine, and engineering. 3 s.h.

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. 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.

2630. *Critical Thinking.* An examination of the logical skills needed for critical thinking in practical situations. Topics include procedures and guidelines for identifying and evaluating arguments, recognizing and eliminating informal fallacies, and writing and critiquing argumentative essays. 3 s.h.

Upper-Division Courses

3700. *Ancient and Medieval Philosophy.* An examination of philosophers and philosophical systems in Western civilization from the pre-Socrates until the Renaissance. Prereq.: One 2600-level PHIL course. 3 s.h.

3702. *History of Modern Philosophy.* Study of major Western philosophical figures and movements from the Renaissance through the 19th century. Prereq.: One 2600-level PHIL course. 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.3 s.h.

3706. *Philosophy in America.* A study of philosophers and philosophical systems in America from the colonial era to the present and their relation to philosophical developments abroad. Prereq.: One 2600-level PHIL course. 3 s.h.

3708. *Social and Political Philosophy.* A study of the philosophical foundations of democracy, dictatorship, and communism, especially their views of reality, knowledge, human nature, and morality, with attention to rights, duties, freedom, authority, dissent, censorship, crime and punishment, and religion. Prereq.: PHIL 2600. 3 s.h.

3709. *Feminist Philosophy.* Examination of feminist philosophical theory and issues concerning women, including gender and socialization, sexuality and reproduction, self-image, and the dialogue among various feminist philosophical movements. Prereq.: PHIL 2600 or WMST 2601. 3 s.h.

3710. *Philosophy of Art.* Study of classical and modern philosophical theories of beauty and aesthetic judgement, how they apply in criticism of the fine arts, and the problem of the relative and the absolute in matters of taste. Prereq.: One 2600-level PHIL course. 3 s.h.

3711. *General Ethics.* Examination and evaluation of the major ethical theories in classical, dialectic, pragmatic and naturalistic, analytic and positivist, and existentialist thought. Prereq.: PHIL 2600. 3 s.h.

3712. *Philosophy of Religion*. The philosophical investigation of religious questions such as existence and nature of the divine, the problem of evil, death and immortality, religion and science, and religious experience. Prereq.: PHIL 2600 or RELIG 2601. 3 s.h.

3714. *Language and Mind*. Introduction to the study of traditional philosophical problems in the analysis of linguistic structures and functions and of their implications for the nature of mind, including meaning, mental representation and causation, information processing, and psychological explanation. Prereq.: One 2600-level PHIL course. 3 s.h.

3715. *Philosophy of Science*. A philosophical consideration of some of the fundamental concepts and assumptions of the sciences: the nature of scientific knowledge; the relation of scientific to other kinds of knowledge and experience. Prereq.: PHIL 2600. 3 s.h.

3719. *Symbolic Logic*. The structure and properties of axiomatic systems; the theory of propositional and relational logic; the algebra of classes; related topics. Prereq.: PHIL 2619. 3 s.h.

3723. *Law and Criminal Justice Ethics*. Examination of major theories in philosophy of law and justice, concepts of legal and moral responsibility in law enforcement, rationales of reward and punishment in corrections administration, and methodologies of professional ethics for criminal justice roles. Prereq.: One 2600-level PHIL course. 3 s.h.

3725. *Biomedical Ethics*. An examination of ethical issues posed by biomedical research and technology, including issues of informed consent, patients' rights, experimentation, genetic research and intervention, death and dying, and the allocation of scarce resources. Prereq.: One 2600-level PHIL course or SOCIO 3708 or SOCIO 3750 or PSYCH 3780 or admission to the NEOUCOM-YSU program or the B.S. in Nursing program. 3 s.h.

3727. *Environmental Ethics*. Application of ethical theories in evaluating human interaction with the natural environment, analysis of rights and duties regarding other species and future generations, the ethics of environmental activism, and philosophical and religious perspectives on environmental issues. Prereq.: PHIL 2600 or ENST 2600. 3 s.h.

3728. *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. 3 s.h.

3730. *Metaphysics*. An examination of the major metaphysical issues in Western philosophy: problems of freedom and determinism, idealism vs materialism, personal identity, space-time problems, concepts of Being and Reality and other representative issues. Prereq.: PHIL 2600. 3 s.h.

3735. *Ethics and Scientific Research*. Definition and examination of the ethical basis of scientific conduct in reporting experimental results, using human and animal subjects, adopting protocols, and pursuing research with broad impact on human rights and social welfare. Prereq.: PHIL 2600 or 2625. 3 s.h.

3760. *Ethics of War and Peace*. Examination of reasons for making war, for restraint on the conduct of war, and for rejecting war as understood within a variety of western moral traditions, both secular and religious. Prereq.: PHIL 2600 or 2625 or RELIG 2601 or 2621. 3 s.h.

3780. *Theories of Knowledge*. The epistemological problem; position of the skeptic, pragmatist, empiricist, idealist, moderate realist, existentialist, and phenomenologist. Prereq.: PHIL 2600. 3 s.h.

4820. *Seminar in Philosophy*. Study in depth of a particular philosopher, topic, or area in philosophy, as determined by the instructor; may be repeated once with different course content. Prereq.: One 3700-level PHIL course. 3 s.h.

4861. *Senior Capstone Project*. Research and writing of a paper on a philosophical topic, under the supervision of a full-time faculty member and in consultation with a committee of at least two other members of the department. Prereq.: Philosophy major with senior standing and completion of at least 21 s.h. of PHIL courses. 3 s.h.

4870. *Internship in Ethical Practice*. Students work with professionals in a local organization, thereby gaining direct access to the ethical issues involved in such an environment. Students will be supervised by an appropriate working professional and either a faculty member of the Dr. James Dale Ethics Center or another faculty member in the department selected for this purpose. The course grade shall be assigned by the YSU supervisor, based on the project journal, an evaluation of the student's on-site work by the participating professional and the YSU supervisor, and a final project paper. Registration by permit only. Prereq.: One 3700-level PHIL or RELIG course. 1 s.h., repeatable to a total of 3 s.h.

PHYS–PHYSICS

Department of Physics and Astronomy

The following have been approved as General Education courses in the domain of Natural Science: 1500, Conceptual Physics; 2608, Sound. The following courses have been approved as substitutes in the domain of Natural Science. However, they are higher-level courses than the standard General Education courses; students should consult their advisors about taking them. They are: 1501 and 1501L, Fundamentals of Physics 1; 1502 and 1502L, Fundamentals of Physics 2; 2601 and 2601L, General Physics for Applied Medical Studies 1; 2602 and 2602L,

General Physics for Applied Medical Studies 2; 2610 and 2610L, General Physics 1; 2611 and 2611L, General Physics 2.

Lower-Division Courses

1500. *Conceptual Physics.* A conceptual treatment of selected theories and laws of classical and modern physics and their application to the understanding of natural phenomena. The evolution of these laws from hypotheses to functional relationships examined in a historical context. Not applicable to the major in Physics or to the combined major in Physics and Astronomy. 3 s.h.

*1500L. *Conceptual Physics Laboratory.* Experimental work designed to supplement PHYS 1500. Two hours per week. Prereq. or concurrent: PHYS 1500. 1 s.h.

1501. *Fundamentals of Physics 1.* Topics include kinematics, forces, energy, momentum, rotational kinematics, torque, angular momentum, simple harmonic motion, and mechanical waves. Not recommended for Mathematics, Chemistry, Physics, or Engineering majors. Prereq.: MATH 1507 or equivalent high school algebra and trigonometry. 4 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.

*1501L, *1502L. *Fundamentals of Physics Laboratory 1, 2.* Experimental work designed to supplement the PHYS 1501, 1502 sequence. Two hours per week. Prereq. or concurrent: PHYS 1501 for 1501L, PHYS 1502 for 1502L. 1+1 s.h.

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 NEOUCOM-YSU program or in premedical curricula. Prereq.: MATH 1507 or equivalent high school trigonometry. Prereq. or concurrent: MATH 1570, 1585H, or 1572. 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.

2608. *Sound.* The physical principles accounting for the production, propagation, and perception of sound waves. The relevance of these principles to phenomena ranging from hearing to the operation of various musical instruments. Introduction to auditorium acoustics. This course is designed for Music majors. Not applicable to the Physics major or to the combined Astronomy and Physics major. 3 s.h.

2610. *General Physics 1.* A course in mechanics; the kinematics and dynamics of masses in translation and rotation; Newton's Laws; gravity; the conservation laws of energy and momentum; simple harmonic motion and introduction to wave motion and sound. Prereq.: High school physics or PHYS 1501. Prereq. or concurrent: MATH 1571. 4 s.h.

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.

*2610L, *2611L. *General Physics laboratory 1, 2.* Experimental work designed to supplement the PHYS 2610, 2611 sequence. Three hours per week. Prereq. or concurrent: PHYS 2610 or 2601 for 2610L, PHYS 2611 or 2602 for 2611L. 1+1 s.h.

Upper-Division Courses

3701, 3702. *Intermediate Classical Mechanics 1, 2.* Kinematics and dynamics of particles and rigid bodies in inertial and non-inertial reference systems. Linear and nonlinear oscillations and oscillating systems. Gravitational and central forces. Lagrangian and Hamiltonian mechanics. Prereq.: PHYS 2611. Prereq. or concurrent: MATH 3705. 3+3 s.h.

3704. *Modern Physics.* Special Theory of Relativity. Quantum phenomena related to electromagnetic radiation and material particles. The Bohr model of the hydrogen atom; the Schoedinger equation; the Heisenberg Uncertainty Principle. Selected topics in atomic and nuclear physics. Prereq.: PHYS 2611 and MATH 2673. 3 s.h.

*3704L. *Modern Physics Laboratory.* Experimental work designed to supplement PHYS 3704. Three hours per week. Prereq. or concurrent: PHYS 3704. 1 s.h.

3705. *Thermodynamics and Classical Statistical Mechanics.* Principles and theorems of thermodynamics derived from the observable macroscopic properties related to temperature, heat, and the underlying statistical origins or thermodynamic processes. Includes the laws of thermodynamics, entropy, state functions, differential equations of state, Maxwell relations, and Maxwell-Boltzmann statistics. Prereq.: PHYS 2611 and 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 Fraunhoffer diffraction. Prereq.: PHYS 2611 and MATH 2673. 3 s.h.

*3722L. *Advanced Optics Laboratory.* Experimental work designed to supplement PHYS 3722. Three hours per week. Prereq. or concurrent: PHYS 3722. 1 s.h.

*3730. *Electronic Instrumentation.* Laboratory-based course in digital and analog electronics. Topics include AC and DC circuit theory; digital and analog electronics including filters, op amps, counters, digital integrated logic circuits, and A/D and D/A conversion; computer interfacing. Prereq.: PHYS 2611. 3 s.h.

3741, 3742. *Electromagnetic Field Theory 1, 2.* Intermediate theory of electric and magnetic fields. Topics include electric field, scalar potential, techniques for calculating scalar potential (method of images, Laplace's and Poisson's equations, multipole expansion, Green's Function approach), dielectrics and polarization, Maxwell's equations and their application to the propagation of electromagnetic waves including reflection, refraction, transmission, and absorption; guided waves, retarded potentials, radiating systems, special relativity. Prereq.: PHYS 2611 and MATH 3705. Must be taken in sequence. 3+3 s.h.

3750. *Mathematical Physics.* The mathematics techniques required in the study of classical, statistical, and quantum mechanics, and field theory. Prereq.: PHYS 2611 and MATH 3705. 3 s.h.

4805. *Undergraduate Physics Research.* Research conducted under the direction of a faculty member. May be repeated to a maximum of 6 s.h. Prereq.: PHYS 3702 and 3705. 3 s.h.

5801, 5802. *Quantum Mechanics and Quantum Statistical Mechanics 1, 2.* The postulates of wave mechanics, Matrix mechanics, angular momentum coupling, scattering, perturbation theory, intrinsic spin, emission and absorption of radiation. Fermi-Dirac and Bose-Einstein statistics with applications in quantum theory. Prereq.: PHYS 3702 and 3704, MATH 3705. Must be taken in sequence. 3+3 s.h.

5823. *Laser Physics and Photonics.* Emission and absorption of radiation, including stimulated emission. Optical cavities and wave guides. Introduction to lasers. Modulation and detection of light. Applications of lasers to information processing and other technologies. Introduction to nonlinear optical and opto-electronic phenomena and nonlinear optical materials. Prereq.: PHYS 3722. 3 s.h.

*5826. *Nuclear Physics.* General properties and behavior of the nucleus; nuclear models; nuclear reactions; radioactivity and decay processes; accelerators; current topics; elementary particles. Laboratory experiments. Prereq. PHYS 3705, 3705L, 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 3705. 3 s.h.

5835. *Spectroscopy.* Treatment of atomic, molecular, and nuclear structure based on the analysis of electromagnetic and other spectra. Prereq.: PHYS 3705. 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. 1-3 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. 1-3 s.h.

PHYTH-PHYSICAL THERAPY
Department of Physical Therapy

Note that many prerequisites are shown using quarter course numbers, even though many quarter prerequisites have been deleted. These courses will be offered for the last time in 2000-2001 to already admitted students.

*4805. *The Neuromuscular System.* Theories of neuropathology and neurophysiology with emphases on disorders, conditions, movement dysfunctions, medical, surgical, and physical therapy interventions. Assessment and treatment principles using problem-solving/clinical decision making approaches. Prereq.: PHYTH 704. 2 s.h.

4814. *Physical Therapy Research Project.* Individual study or research of a special problem or issue related to physical therapy culminating in a formal poster presentation that follows the American Physical Therapy Association format. Prereq.: PHYTH 812. 1 s.h.

*4822. *Physical Therapy Profession and Society.* Prepares the student to meet the needs of the health care consumer by specifically addressing the role of the health care educator's use of analysis, synthesis, and the application of the teaching-learning process. Prereq.: PHYTH 700 and 790. 2 s.h.

4823. *Clinical Education 2.* Clinical Application of appropriate physical therapy assessment, treatment skills and procedures under the supervision of a licensed physical therapist(s) in an assigned rehabilitation center or long-term care facility. Four hundred clinical hours. Prereq.: PHYTH 721. 6 s.h.

4824. *Clinical Education 3.* Terminal clinical application of appropriate physical therapy assessment, treatment skills, and procedures in an assigned clinical setting under the supervision of a licensed physical therapist(s). Primary placement to satisfy student's competencies; additional placement can occur in a nontraditional or specialty area. Four hundred clinical hours. Prereq.: PHYTH 4823. 6 s.h.

4831. *Applied Physical Therapy 2.* Discussion and analysis of principles and techniques relating to the physical therapy management of neuromuscular disorders/dysfunctions; theories of motor control, normal and abnormal movement, client assessment and therapeutic interventions. Concurrent with 4831L. Prereq.: PHYTH 830 and 830L. 2 s.h.

4831L. *Applied Physical Therapy 2 Lab.* Application and discussion of techniques designed to rehabilitate or minimize the effects of disease, developmental abnormalities, trauma or dysfunction of the neuromuscular system including traumatic brain injury, CVA, and spinal cord injury. Fours laboratory per week. Concurrent with PHYTH 4831. 1 s.h.

*4833. *Integrated Physical Therapy Special Topics.* Students are facilitated through the group process by a team of instructors to broaden their knowledge base in areas affecting the delivery of physical therapy. Specific area of focus: physical therapy administration, clinical practice, research, and education. Prereq.: PHYTH 790. 2 s.h.

*4845. *Physical Therapy Management.* Discussion of management principles in physical therapy practice with emphasis on managerial skills, personnel, finance, reimbursement and documentation, planning, marketing, law and ethics, practice opportunities, and the health care delivery system. Prereq.: PHYTH 720 and 790. 3 s.h.

POLIT–POLITICAL SCIENCE
Department of Political Sciences

The following have been approved as General Education courses in the domain of Societies and Institutions: 1550, Politics and Globalization; 1560, American Government; 2640, Comparative Governments.

Lower-Division Courses

1550. *Politics and Globalization.* Study of politics, government, and societal institutions at both the national and international levels, emphasizing the impact of international and globalizing trends in society. 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. *Comparative 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.: POLIT 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.: POLIT 1550 or 1560. 3 s.h.

2695. *Model United Nations.* A comparative study of foreign policy, contemporary global issues, international law, and international governmental organizations. Stresses interactive and role playing educational methodologies. Students are required to participate in one or more approved conference or field trips. May be repeated to a maximum of 3 s.h. Prereq.: Consent of instructor. 1 s.h.

Upper-Division Courses

3700. *American Presidency*. An examination of the role of the chief executive officer within the governmental framework. The offices of mayor and governor are treated, but the primary emphasis is on critical evaluation of the American presidency. Prereq.: POLIT 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.: POLIT 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.: POLIT 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.: POLIT 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.: POLIT 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.: POLIT 1560 or AFRST 2600. 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.: POLIT 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.: POLIT 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.: POLIT 1560, or admission to NEOUCOM-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.: POLIT 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.: POLIT 1560. 3 s.h.

3721. *Urban Government*. The structure and politics of urban government, with special attention to intergovernmental relationships. Prereq.: POLIT 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.: POLIT 1560. 3 s.h.

3725. *Individualized* Study. A supervised individual study of a special topic or issue in any area of contemporary politics and political science. An academic plan of study including a syllabus is required and will be placed in the student's file. May be repeated for up to 6 s.h. Prereq.: POLIT 1560 or 2640 or 2660, and permission of the chairperson. 1-3 s.h.

3741. *Russia and China: From Revolution to Reform*. A comparative analysis of politics in the Russian Federal Republic and the People's Republic of China, emphasizing contemporary issues of domestic governance and regional international relations as seen in the context of revolutionary Communism and the appearance of post-Communist reform politics. Prereq.: POLIT 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.: POLIT 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.: POLIT 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.: POLIT 2640 or 2660. 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.: POLIT 2660. 3 s.h.

3761. *U.S. Foreign Policy*. Examination of the domestic political formulation and international execution of U.S. foreign policy, emphasizing regional issues of security and political economy and the changing U.S. role in the post-Cold War world. Prereq.: POLIT 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.: POLIT 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.: POLIT 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.: POLIT 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.: POLIT 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.

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.

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.: POLIT 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.

PSYCH–PSYCHOLOGY
Department of Psychology

The following courses have been approved as General Education courses in the domain of Personal and Social Responsibility: 1560, General Psychology; 3707, Intimate Relationships; 3758, Lifespan Development.

Lower-Division Courses

1502. *Workshop in Applied Psychology.* Study of selected contemporary psychology-related topics requiring no previous exposure to psychological theory. The department announces the topic and determines the credit, based on frequency and duration of workshop meetings. May be repeated for a total of 4 s.h. with change in topics. Not applicable to the psychology major nor the social studies area requirement. 1-2 s.h.

1560. *General Psychology.* An examination of scientific and clinical approaches to understanding the relationships between one's physical, mental, and emotional well-being, and quality of life, including the basic principles governing the growth and maintenance of behavior, emotion, and cognition. 3 s.h.

1560H. *Honors General Psychology.* An examination of scientific and clinical approaches to understanding the relationships between one's physical, mental, and emotional well-being, and quality of life, including the basic principles governing the growth and maintenance of behavior, emotion, and cognition. 3 s.h.

*2613. *Statistical Methods in Psychology.* Basic methods of handling data, including frequency distributions, percentiles, and measures of central tendency and dispersion; and understanding of correlation, and the use of graphic methods. Prereq.: Psych 1560. 2 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 PSYCH 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 PSYCH 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 HSC 2692. 3 s.h.

Upper-Division Courses

3700. *Social Psychology.* Examination of the influence of social interactions on the thoughts, feelings, and behaviors of the individual and the group. Prereq.: PSYCH 1560 or SOCIO 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.: PSYCH 1560 or SOCIO 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: PSYCH 3700. 1 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.: PSYCH 1560. 3 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.: PSYCH 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: PSYCH 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.: PSYCH 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.: PSYCH 1560. 3 s.h.

3712. *Survey of Industrial/Organizational Psychology.* Principles of psychology applied to business and industry with emphasis upon both personnel and organizational behavior topics including job analysis, selection, performance appraisal, organizational development, job satisfaction, motivation, and leadership. Prereq.: PSYCH 2613 or 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 PSYCH 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.: PSYCH 2618. 3 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.: PSYCH 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. Concurrent: PSYCH 3730. 1 s.h.

3734. *Applied Behavior Analysis.* Extension of the results of laboratory findings to human behavior: development, maintenance, and extinction of behaviors, in institutional, industrial, home and educational settings. Prereq.: PSYCH 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.: PSYCH 2618. 3 s.h.

3745. *The Minority Individual.* Psychological research on the intrapersonal, interpersonal, and intergroup dynamics of being labeled a minority individual as the result of one's race, ethnicity, religion, or gender. The behavioral effects of minority group membership and its impact on the relationship between the individual and the society. Prereq.: PSYCH 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.: PSYCH 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.: PSYCH 1560. 3 s.h.

3755. *Developmental Psychology 1 (Child).* A study of human development from conception through approximately the first decade of life. Stresses the interaction between innate factors and experience in shaping behavior. Prereq.: PSYCH 1560. 3 s.h.

*3755L. *Developmental Psychology1 Laboratory.* Experimental and nonexperimental research methods for gathering data on the development of children. Two hours per week. Concurrent: PSYCH 3755. 1 s.h.

3756. *Developmental Psychology 2 (Adolescent).* A study of human development from preteen to young adulthood. Prereq.: PSYCH 1560. 3 s.h.

3757. *Developmental Psychology 3 (Adult).* A study of human development from adulthood through old age. Prereq.: PSYCH 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. Prereq.: PSYCH 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. Prereq.: PSYCH 2618. 3 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: PSYCH 3761L. Prereq.: PSYCH 2618. 3 s.h.

*3761L. *Cognition Laboratory.* Laboratory demonstrations and experiments using research techniques in cognition. Two hours per week. Concurrent: PSYCH 3761. 1 s.h.

3763. *Comparative Psychology.* The variety of behaviors within the animal world. Prereq.: PSYCH 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.: PSYCH 2618 or ENGL 3755. 3 s.h.

*3764L. *Psycholinguistics Laboratory.* Research techniques in basic and applied psycholinguistics. Two hours per week. Concurrent: PSYCH 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.: PSYCH 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.: Psych 1560 and consent of the chairperson. 1-2 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 PSYCH 3700. 3 s.h.

3780. *Psychological Aspects of Disease and Death.* The primary factors affecting an individual's attitude toward illness, bereavement, and mortality. The psychological and physiological aspects of disease processes and death. Prereq.: PSYCH 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.* Work in a community agency or organization. The work is supervised and evaluated on site. A paper is required which integrates the work experience with background reading. A maximum of 2 s.h. may be applied to the Psychology major. One s.h. for each 3 hours of field work per week. May be repeated up to 4 s.h. Prereq.: 9 s.h. in Psychology. 1-2 s.h.

4802. *Personality.* An investigation of the variables which determine personality. Normal patterns of behavior are discussed and consideration is given to the more prominent theories of personality. Prereq.: 15 s.h. in psychology. 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.: PSYCH 3700 or consent of chairperson. 3 s.h.

5807. *Introduction to Counseling.* The role of the pre-professional in helping the clinical and counseling psychologist; theories of adjustment; area resources; referral; professional problems. Prereq.: PSYCH 3702 or 4802. 3 s.h.

4810. *Psychophysiology and Behavioral Medicine.* An introduction to the relationship between the psychological and physiological bases of behavior. Response systems, such as cardiovascular, respiratory, and gastrointestinal, as well as applications of principles, theories, and research to health-related behaviors. Concurrent with 4810L. Prereq.: PSYCH 3728. 3 s.h.

*4810L. *Psychophysiology and Behavioral Medicine Laboratory.* Measurement and research techniques in basic and applied psychophysiology. Two hours laboratory-discussion. Concurrent: PSYCH 4810. 1 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: PSYCH 4833L. Prereq.: PSYCH 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: PSYCH 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.: PSYCH 3755 or 3756 or 3757 or 3758. 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. 2 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.: PSYCH 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 PSYCH 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. 1-2 s.h.

PREL–Public Relations
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. 3 s.h.

R&SK–READING AND STUDY SKILLS
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. 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. 3 s.h.

1570. *Thinking and Reading Critically.* A course designed to expand students' higher level thinking and reading essential to success in college courses. Students critically analyze the role of the learner in the university setting and then move on to develop their use of an information processing system, critical thinking, as well as reading and learning strategies. Students examine their values with regard to education, others, and self. Prereq.: CRPT results. 3 s.h.

RELIG–RELIGIOUS STUDIES
Department of Philosophy and Religious Studies

The following has been approved as a General Education course in the domain of Personal and Social Responsibility: 2621, Religion and Moral Issues. In the domain of Societies and Institutions: 2601, Introduction to World Religions; 2617, Introduction to Eastern Religions. In Special Topics: 2605, Myth, Symbol, and Ritual.

Lower-Division Courses

2601. *Introduction to World Religions.* A survey of the major world religions exploring their distinctive features and common threads. A study of their founders, systems of thought, symbols, and sacred literatures. 3 s.h.

2605. *Myth, Symbol, and Ritual.* An introduction to the nature and function of myth, symbol, and ritual. Myth interpretation, the relationship between societies and their myths, and the cultural use of myths, symbols, and rituals in religious and spiritual contexts. 3 s.h.

2617. *Introduction to Eastern Religions.* A survey of the religions of India, China, and Japan, their systems of thought, moral values, and methods of personal transformation. 3 s.h.

2621. *Religion and Moral Issues.* The relation of specific religious and moral issues to questions of personal conduct and social policy. 3 s.h.

2631. *Religion and the Earth.* A cross-cultural survey of the religious beliefs and values that have shaped our thinking about the earth. An exploration of the shifts in religious thought called for by the ecological crisis of sustainability. 3 s.h.

Upper-Division Courses

3708. *African-American Religion.* Development of African-American religion and theology from the days of slavery to the present. Prereq.: One 2600-level RELIG or AFRST 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.: RELIG 2601 or PHIL 2600 or AFRST 2600. 3 s.h.

3720. *Islam.* The study of the origins and development of classical and modern Islam, including the Prophet Muhammad, the Qur'an, and Muslims in America. Prereq.: RELIG 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.: RELIG 2601 or PHIL 2600. 3 s.h.

3724. *Judaism.* The study of the origin and development of Judaism, including scriptural legacy, the Talmudic period, and the transformations of the classical tradition in modern times. Prereq.: RELIG 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.: RELIG 2601 or 2617. 3 s.h.

3731. *Hebrew Scriptures.* A critical analysis of the Hebrew scriptures in terms of historical background, textual development, and religious and ethical themes. Prereq.: One 2600-level RELIG or PHIL course. 3 s.h.

3732. *Jesus and the Gospels.* The life and teachings of Jesus in their historical context. Examination of the ways in which Jesus is interpreted within the synoptic gospels. Prereq.: One 2600-level RELIG or PHIL course. 3 s.h.

3741. *Islamic Mysticism and Philosophy.* Investigates the rise and growth of Islamic mysticism, including its major themes and principle figures, and of the Islamic philosophical tradition and the Greek influences on it. Prereq.: One 2600-level RELIG course. 3 s.h.

3743. *Ethics and Politics in Islam.* Study of ethical reflection in Islam, including major works, principal themes, and Islamic ethics today; Muslim theories of the state, dissent and schism in Islamic history, the position of non-Muslims in Islam, and modern developments in political theory. Prereq.: One 2600-level RELIG course. 3 s.h.

3751. *Liberation Theologies and Revolutionary Change.* Study of liberation theologies in the Third World and in minority communities in the West, in relation to questions of underdevelopment, poverty, and oppression. Prereq.: RELIG 2601. 3 s.h.

3754. *Feminism, Ecology and Religion.* Investigation of religious perspectives related to women and nature, the relationship of the sacred to the natural world, scriptural and theological influences, and deep ecology and other environmental movements from a feminist perspective. Prereq.: RELIG 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.: PSYCH 1560 or one 2600-level RELIG 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.: RELIG 2601 or 2617. 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 RELIG 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 RELIG courses. 3-9 s.h.

4871. *Senior Capstone Project.* Research and writing of a paper 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 RELIG courses. 3 s.h.

RESPC–RESPIRATORY CARE
Department of Health Professions

Lower-Division Courses

*1503. *Respiratory Procedures 1.* Appropriate use of selected respiratory care procedures. Two hours lecture, three hours lab. Prereq.: RESPC 1530. 3 s.h.

*1520. *Respiratory Care Assessment 1.* Diagnostic techniques used in evaluating patients with cardiopulmonary disorders. Two hour lecture, two hours lab. Prereq.: RESPC 1530. 3 s.h.

*1530. *Foundations of Respiratory Care.* The scope of the profession including its role in health care industry, key personnel and organizations, basic equipment and therapeutic procedures. Three hours lecture, three hours lab. 5 s.h.

*2620. *Respiratory Assessment 2.* Advanced techniques in the assessment of cardiopulmonary disorders. Two hours lecture, two hours lab. Prereq.: RESPC 1520. 3 s.h.

2621. *Cardiopulmonary Disease.* Review of cardiopulmonary disorders encountered by respiratory care practitioners. Prereq.: RESPC 2620. 3 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.: RESPC 2621. 1 s.h.

*3706. *Respiratory Procedures 2.* Airway management techniques and other critical care procedures. Two hours lecture, three hours lab. Prereq.: RESPC 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.: RESPC 3706. 3 s.h.

*3709. *Neonatal/Pediatric Respiratory Care.* Respiratory care applications in neonatal/pediatric settings. Two hours lecture, three hours lab. Prereq.: RESPC 3706. 3 s.h.

*3720. *Mechanical Ventilation 1.* Basic theory and application of mechanical ventilation in critical care areas. Two hours lecture, three hours lab. Prereq.: RESPC 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.: RESPC 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.: RESPC 3725. 2 s.h.

*3740. *Clinical Practice 2.* Application of basic and advanced respiratory care modalities. Twenty-five hours per week. Prereq.: RESPC 2699. 5 s.h.

*3741. *Clinical Practice 3.* Application of basic and advanced respiratory care modalities for pediatric and adult patients. Fifteen hours a week. Prereq.: RESPC 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.: RESPC 3706. 2 s.h.

*3765. *Advanced R.C. Diagnostics.* RCPs role in EKG, EEG, and Holter monitoring. Clinical significance of various stress testing regimens. One hour lecture, two hours lab. Prereq.: RESPC 3708 or permission of instructor. 2 s.h.

4831. *Pulmonary Care Management.* Pathology as it relates to care of patients with pulmonary-related disorders. Prereq.: RESPC 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.: RESPC 3741. 3 s.h.

SCWK–SOCIAL WORK
Department of Social Work

Lower-Division Courses

1510. *Introduction to Social Work.* An overview of the values, systems, policy, theories and concepts central to the profession of social work. This course will also review roles, licensure requirements and history of the social work profession. This is the first course orienting students to the social work profession. Prereq: SOCIO 1500. 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. Arranged volunteer experience required. Three hours lecture, three hours of field. 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, or-

ganizations, groups, families, and individuals as they develop over the lifespan. Application of theory and research to social work. Prereq.: AHLTH 1500, 1501, SCWK 1510, and PSYCH 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.

Upper-Division Courses

3728. *Social Services for Children.* Social welfare agencies and services developed by communities for the care and training of children. Development of a conceptual framework for understanding the issues, problems, and policies in children's services. Prereq.: SCWK 1510. 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 1510. 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 1510. 3 s.h.

3736. *Social Work Methods 1.* 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 purpose, functions, and values are addressed from the systems perspective. Prereq.: Admission to SCWK Program. 3 s.h.

3737. *Social Work Methods 2.* In-depth analysis of problem solving strategies and skills in working with families and small groups. Theory and research relating to practice. Social work purpose, 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 2622, 2641, 2642, 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.

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, POLIT 1560. 3 s.h.

*5822. *Social Work Methods 3.* 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 3737. 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.

4825. *Field Work in Social Services.* Professionally supervised practice in approved social agencies. The student must spend 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. Prereq.: Completion of all courses for admission to the 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. 3 s.h.

SEDUC–SECONDARY EDUCATION

Department of Teacher Education

3704. *Classroom Management, Ethics, and Law.* Observation and study of basic elements of classroom management practices and their ethical and legal context; classroom organization, principles of discipline, relations between teaching methods and discipline, sources and remediation of misbehavior, development of a discipline plan, including due process and the determinants of student and teacher rights and responsibilities. Field experience and campus seminar. Prereq.: Admission to upper-division status in COE. 3 s.h.

3706. *Principles of Teaching Adolescents.* Lesson and unit planning using instructional strategies that motivate students with varying cultural, personal, ability, and exceptionality needs. Integrates content area knowledge with pedagogy, technology, assessment, and cross-disciplinary curriculum exploration as basics for effective classroom learning environments. Critical reflection and analysis of teaching experiences through peer teaching, videotaping, and classroom teaching in local secondary schools. Field experience. Prereq.: TERG 2601, SEDUC 3704, EDTC 3771. 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.: ACCTG 3701, ECON 2610, SEDUC 3706. 3 s.h.

4800C. *Special Methods: Science.* Using NSTA/NCATE and Ohio Model guidelines as the framework, students focus on establishing and maintaining learning environments that provide diverse students with a holistic, interdisciplinary understanding of science. Background for teaching science, instructional strategies, classroom management, planning instruction, assessment, and professional development. Integration of science content with inquiry processes that result in development of lifelong problem-solving skills. Field experience combining science pedagogy/methodology in a middle grades or adolescent classroom. Prereq.: Upper-division status in COE, SEDUC 3704, 3706, and 42 s.h. science. 3 s.h.

*4800E. *Special Methods: English.* Study of successes in teaching English. Reports, portfolios and teaching files . Prereq.: Admission to upper-division status in COE. Prereq. or concurrent with permission of instructor: SEDUC 3706 and senior standing. 3 s.h.

*4800M. *Reflective Teaching Methods for Adolescent Learning of 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.: EDTC 3771, FOUND 3708, SEDUC 3704, 3706. Concurrent: TERG 2601. 3 s.h.

*4800S. *Special Methods: Social Studies.* Study of the problems involved in teaching secondary social studies. Observation of teaching in secondary schools, reports, term paper may be required. Prereq.: SEDUC 3704, 3706, senior standing. 3 s.h.

4827. *Supervised Student Teaching: Language (K-12).* Grading is CR/NC. See requirements for student teaching under COE. Prereq.: SEDUC 3706, FOUND 3708 or equivalent method courses(s) in the subject field; senior status and the approval of the chairperson of the Department of Foreign Languages. 1-15 s.h.

4837. *Supervised Student Teaching: Computer Science (K-12).* Grading is CR/NC. See requirements for student teaching under COE. Prereq.: SEDUC 3706, FOUND 3708 or equivalent method courses(s) in the subject field; senior status and the approval of the chairperson of the Department of CSIS. 1-15 s.h.

4838. *Supervised Student Teaching: Drama/Theater (K-12).* Grading is CR/NC. See requirements for student teaching under COE. Prereq.: SEDUC 3706, FOUND 3708 or equivalent method courses(s) in the subject field; senior status and the approval of the chairperson of the Department of Communication and Theater. 1-15 s.h.

4842. *Supervised Student Teaching: High School.* Grading is CR/NC. Prereq.: Senior status and completion of SEDUC 3706, FOUND 3708 or the equivalent methods course(s) in the subject field; a grade of at least B in two-thirds of the minimum subject field requirements and professional education courses for certification with no subject field course grade in the minimum requirements below C; approval of the chairperson of the department of the student's major. See requirements for student teaching under COE. 1-15 s.h.

4843. *Supervised Student Teaching: Visual Art (K-12).* Grading is CR/NC. See requirements for student teaching under COE. Prereq.: SEDUC 3706, FOUND 3708, ART 4837, 4838; senior status and the approval of the chairperson of the Art Department. 1-15 s.h.

4844. *Supervised Student Teaching: Music (K-12).* Grading is CR/NC. See requirements for student teaching under COE. Prereq.: SEDUC 3706, FOUND 3708, MUSED 3715, 4825, 4823; senior status and the approval of the Director of the Dana School of Music. 1-15 s.h.

4845. *Supervised Student Teaching: Health (K-12).* Grading is CR/NC. See requirements for student teaching under COE. Prereq.: SEDUC 3706, FOUND 3708, HSC 3701L, 3703, 3704, 3705; senior status and the approval of the chairperson of the Department of Health Professions. 1-15 s.h.

4846. *Supervised Student Teaching: Physical Education (K-12).* Grading is CR/NC. See requirements for student teaching under COE. Prereq.: SEDUC 3706, FOUND 3708, HSC 3703; HPES 3750, 3767, 3780, senior status and the approval of the chairperson of the Department of HPES. 1-15 s.h.

4891, 4892, 4893. *Seminar in Secondary Education.* Various topics of current interest in the secondary education area as selected by staff. Prereq.: Admission to upper-division status in COE. 1-4 s.h.

SOCIO–SOCIOLOGY

Department of Sociology and Anthropology

The following has been approved as a General Education course in the domain of Societies and Institutions: 1500, Introduction to Sociology.

Lower-Division Courses

1500. *Introduction to Sociology.* An introduction to the science of human societies and groups: analysis of the structures, functions, and processes that bring about changes in societies, groups, communities, classes, and institutions. 3 s.h.

2601. *Social Problems.* A sociological overview of various contemporary social issues, analyzing significant discrepancies between standards of expectation and actual social behavior, attempting to ascertain possible causes, and discussing trends and possible changes. 3 s.h.

2630. *Criminology.* Study of the social context of crime in America. Review of historical theories offered in explanation of criminal behavior. 3 s.h.

2640. *Women in Society.* Attention to cross-cultural and historical issues. Major focus on the contemporary status of women in the U.S. Effects of the political and economic institutions upon women, particularly the effect of stratification, gender roles, and the socialization process. Prereq.: SOCIO 1500. 3 s.h.

Upper-Division Courses

3700. *Minority Groups.* Survey of the origins and characteristics of ethnic and racial minority groups, with emphasis on the significance of membership in such a group for in-group, out-group, and community solidarity. Prereq.: SOCIO 1500. 3 s.h.

*3701. *Social Statistics 1.* Measurement and interpretation of social data by use of descriptive techniques. Prereq.: SOCIO 1500 or ANTHR 2602. 3 s.h.

*3702. *Social Statistics 2.* Continuation of SOCIO 3701. Methods of probability theory as a basis for statistical inference, hypothesis testing, correlation, chi-square, and variance analysis. Prereq.: SOCIO 3701. 3 s.h.

3703. *Aging and Society.* A multidisciplinary introduction to studies in aging. Examines the impact of population aging and its effect on the society at large. Individual aging processes as well as the social significance of aging. Prereq.: SOCIO 1500. 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.: SOCIO 1500 or ANTHR 2602. 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.: SOCIO 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.: SOCIO 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. Prereq.: SOCIO 1500. 3 s.h.

3735. *Juvenile Delinquency.* Social and psychological factors underlying delinquency; the juvenile court and probation; treatment and preventive measures. Prereq.: SOCIO 1500. 3 s.h.

3740. *Complex Organizations.* Structures and processes of large-scale organizations: leadership, control techniques, tensions, bureaucratic pathologies, organizational change. Prereq.: SOCIO 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.: SOCIO 1500. 3 s.h.

3742. *Small Group Processes.* A study of small group behavior; influence, attitudes, and values of social microsystems. Prereq.: SOCIO 1500. 3 s.h.

3743. *Social Stratification and Inequality.* Comparative analysis of social stratification systems with major emphasis on modern Western societies. Prereq.: SOCIO 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.: SOCIO 1500. 3 s.h.

3745. *Medical Sociology.* Social attitudes toward illness. Cultural and social factors in disease definition of illness, and organization of the health professions and health facilities. Prereq.: SOCIO 1500 or admission to NEOUCOM-YSU program. 3 s.h.

3749. *Sociological Theory.* The major theoretical traditions in Sociology emerging from the enlightenment period and evolving to the present. Prereq.: SOCIO 1500 or ANTHR 2602. 3 s.h.

3752. *Evaluation Research.* Introduction to the field of evaluation research of social policy and programs. Current procedures, concepts, and techniques. Social and ethical issues of research. Prereq.: SOCIO 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.: SOCIO 1500. 3 s.h.

3756. *Aging and Ethnicity.* Study of aging in various American subcultures, noting differences in status/role systems, demographic distributions, life styles, methods of dealing with the aged, and related problems. Prereq.: SOCIO 1500. 3 s.h.

3757. *Aging and Social Policy.* Critical examination of the social policies and social systems which affect aging and retirement. Prereq.: SOCIO 1500. 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.: SOCIO 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 SOCIO 1500, and junior standing. Listed also as BIOL 3789 and CEEGR 3789. 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.

4803. *Sociology of Aging.* Examination of major social institutions such as the family, state, religion, education, and economy as they relate to the elderly. Prereq.: SOCIO 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 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.: SOCIO 3701. Listed also as ANTHR 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.: SOCIO 4850. Listed also as ANTHR 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.

SPED–SPECIAL EDUCATION

Department of Teacher Education

The following course has been approved as a General Education course in the area of Special Topics and Electives: 2630, Individuals with Exceptionalities in Society.

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.: PSYCH 3755. 3 s.h.

5802. *Education of Exceptional Children.* Survey of the problems and issues in the education of exceptional children and their characteristics and needs. Field observation required. Prereq.: Admission to upper division COE status. 3 s.h.

5828. *Education of Seriously Emotionally Disturbed Children and Youth.* Instruction, curriculum and program development for youth in serious conflict. Advanced behavior change interventions. Practicum consisting of work in the field with emotionally disturbed youth required. Prereq.: Admission to upper division COE status, SPED 5835 and 5864. 4 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.: SPED 2631. 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.: Admission to upper division COE status, SPED 5802. 4 s.h.

5835. *Classroom Management for Exceptional Children and Youth.* Management of the exceptional person's behavior; adaptations of the classroom environment to facilitate learning and personal social adjustment. Communicating effective management programs to parents. Prereq.: SPED 5802. 4 s.h.

5836. *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. Field experience required. Prereq.: Admission to upper division COE status. 4 s.h.

4839. *Supervised Student Teaching: Moderate/Intensive Intervention Specialist.* Concurrent with SPED 4869. Grading is CR/NC. Prereq.: FOUND 1501, 3708; PSYCH 3709; EDTC 3771; SPED 5867, 5802, 5828,5866, 5853, 5863, 5835, 5851, 5854, 5864; senior status and approval of the chairperson; see requirements for student teaching under COE. 10 s.h.

4849. *Supervised Student Teaching: Mild/Moderate Disabilities.* Concurrent with SPED 4869. Grading is CR/NC. Prereq.: FOUND 3708, completion of the Reading Block and STEP, SPED 5802, 5835, 5853, 5863, 5866; senior status and approval of the chairperson; see requirements for student teaching under COE. 4-12 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.: Admission to upper division COE status, SPED 5802. 4 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.: SPED 5802 and 5863. 3 s.h.

*4854. *Cross-Curricular Interventions.* Field application of principles of reading in the content areas, organization and implementation of cross-curricular content areas across grade levels. Includes management of special education/inclusionary classrooms; part of a ten-week intensive field experience entitled STEP (Special Teacher Education Program). Prereq.: SPED 5802, 5853 and Reading Block. 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.

*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.: PSYCH 3755. 2 s.h.

5863. *Characteristics and Needs of Children and Youths with Mild/Moderate Disabilities: Learning 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.: Admission to upper division COE status, SPED 5802. 4 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.: Admission to upper division COE status. 4 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.: SPED 5802. 3 s.h.

4867. *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.: SPED 5802, 5863, 5866. 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.: SPED 5802, 5835, 5853, 5863, 5866, 5867. 4 s.h.

4869. *Student Teaching Seminar for Special Education.* Concurrent with student teaching. Applied behavior management and classroom environment, reflective teaching techniques. Daily lessons, the student teacher's interactions with children and youth, teachers and administrators. Prereq.: Admission to student teaching. See student teaching requirements. 2 s.h.

5870. *Independent Study in Special Education.* Individual work under special education staff guidance; curriculum development or special education areas; individual problems in community agencies or school. Prereq.: Admission to upper division COE status. 1-4 s.h.

*5871. *Characteristics and Needs of Gifted Children.* Introduction to gifted education. Overview of the theoretical and research base for gifted education, including appropriate classroom environments, teacher qualifications, and support services to meet the diverse social, emotional, and intellectual needs of gifted children. Current program standards. Prereq.: Admission to COE upper-division status. 3 s.h.

*5878. *Teaching Gifted and Talented Students.* Theory and organization of curriculum with design and integration of content subjects into varying models. Wide range of strategies and identification of resources and materials as well as investigations in educational technology and appropriate applications for gifted children. Prereq.: SPED 5871 or permission of instructor. 4 s.h.

STAT-STATISTICS
Department of Mathematics and Statistics

Lower-Division Courses

*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 1504 or equivalent. 3.s.h.

Upper-Division Courses

*3717. *Statistical Methods.* Probability and statistics designed for students majoring in the natural sciences. Topics include descriptive statistics, probability, estimation, testing hypotheses, analysis or variance, and regression. Use of personal computers and computer software. Credit will not be given for both STAT 2601 and 3717. 3 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, or concurrent with MATH 1572. Credit will not be given for both STAT 3717 and 3743. 3 s.h.

*3781H. *Biostatistics.* A course in statistics with applications relating to biological sciences. Specific topics include descriptive statistics, testing hypotheses, analysis of count data, correlation, regression, nonparametric statistics, and analysis of variance. Prereq.: MATH 1581H or equivalent. 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.

5820. *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.

*5840. *Statistical Computing.* Computational methods used in statistics. Topics include generation and testing of random numbers, computer intensive methods, and simulation studies. Prereq.: STAT 3717 or 3743. 3 s.h.

5843. *Theory of Probability.* The mathematical foundation of probability theory including the study of discrete and continuous distributions. Other topics selected from limit theorems, generating functions, stochastic processes, and applications. Listed also as MATH 5843. Credit for STAT 5843 will not be

given to students with MATH 5843. Prereq.: STAT 3743 and MATH 2673 or consent of department chairperson. 3 s.h.

5844. *Theory of Statistics.* The mathematical theory of statistical inferences including likelihood principle, sufficient statistics, theory of statistical estimation, hypothesis testing and related topics. Credit will not be given for MATH 5844 and STAT 5844. Prereq.: MATH 5843. 3 s.h.

*5846. *Categorical Data Analysis.* Discrete distributions, contingency table analysis, odds ratios, relative risk, logistic regression, hierarchical models. Prereq.: STAT 5817 or 5844, or MATH 5844. 3 s.h.

5847. *Nonparametric Statistics.* Nonparametric statistical inference including tests of hypotheses for one sample, two or more related independent samples, dependence, goodness-of-fit, trend, and related topics. Prereq.: STAT 3717 or 3743 or equivalent. 3 s.h.

*5848. *Regression Analysis.* Theory and application of regression analysis including simple linear regression, multiple regression, model fitting and diagnostics, correlation analysis and topics in nonlinear regression. Prereq.: STAT 5817 or MATH/STAT 5844. 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.

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.

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.

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.

STECH–SCHOOL OF TECHNOLOGY

*1505. *Introduction to Engineering Technology.* The role of the technician, technologist, and their relationships to the engineer; technical methods as applied to analysis, design, layout and testing; an introduction to BASIC programming on microcomputers; a study of the basic mathematical, scientific, computer, and communicative techniques as applied to the work of engineering technicians. Three hours lecture, three hours laboratory per week. Prereq. or concurrent: MATH 1504. 3 s.h.

2615. *Design Project.* The student undertakes a project designed to utilize principle methods studied in previous courses. The subject of the project is determined jointly by the student and instructor and developed formally by the student. The course is normally taken during the final stages of the student's program. Prereq.: Consent of instructor. 3 s.h.

3799. *Professional Practice in Engineering Technology.* This course provides students with cooperative education experiences in various engineering technology disciplines. To receive credit for the course, the student is expected to work at the assignment a minimum of 400 hours, submit a report of activities, and obtain approval of the department Professional Practice Committee. Course may be repeated up to a maximum of 3 s.h. toward the BSAS. Students are considered full-time even though only 1 s.h. is given for each course. Grading: PR, CR, NC. Prereq.: Consent of department chairperson. 1 s.h.

TCOM–TELECOMMUNICATION STUDIES

Department of Communication and Theater

Lower-Division Courses

1500. *Orientation to Telecommunication Studies.* Survey of University and Department programs, policies, practices and facilities with particular emphasis on needs of telecommunication studies majors. Creation of telecommunication studies portfolio materials and other aspects of the Telecommunication Studies program. To be taken prior to TCOM 2682 and 2683. 1 s.h.

*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.

*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 both. 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.: Prereq.: TCOM 2682 and 2683 with a grade of C or better in both. 1 s.h.

Upper-Division Courses

*3780. *Principles and Practices of Media Announcing.* A study of the announcer's role in electronic mass media. Examination of theories, techniques, and major styles of media announcing. Three hours lecture, two or more hours of individualized lab per week. Prereq.: TCOM 2682 and 2683 with a grade of C or better. 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. 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. 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. 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. 3 s.h.

*3785. *Studio Operations 2.* Individual projects or assignments in planning, coordinating and assessing production and programming related to studio procedures. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both; acceptance of project Proposal Form by coordinating faculty member and department chairperson. 1 s.h.

*3786. *Video Production 2.* Study and application of television production elements. Production values of composition, transition, and sequence explored from a communication perspective. Students produce, videotape, and critique several field-based productions. Three hours lecture, two hours lab. Prereq.: TCOM 3782. 3 s.h.

*3787. *Practicum in Telecommunication.* Individual study and practical application of communication principles to various telecommunication problems. Repeatable to a maximum of 6 s.h. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both. 1-3 s.h.

3788. *Professional Residency.* Professional telecommunication-related experience under direction of University faculty members and employees of firms participating in the residency program. The student is responsible for securing the professional residency with assistance of Telecommunication Studies program faculty. Prereq.: TCOM major, junior standing. 2 s.h.

3789. *Electronic Media Interviewing.* A study and application of interviewing and reporting techniques, emphasizing the local news interview and public affairs reporting. The equivalent of three hours lecture and two hours lab per week. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both. 3 s.h.

3791. *Electronic Media Sales and Promotion.* An examination of the principles and practices of selling electronic media. Analysis of rating-based sales and promotion strategies, as well as relations with agencies and station representatives. The equivalent of three hours lecture and two hours lab per week. Prereq.: TCOM 2682 and 2683 with a grade of C or better in both. 3 s.h.

4850. *Advanced Audio/Video Production.* Advanced techniques and procedures in audio/video production. Techniques include digital editing and video post-production procedures. Recognize current video and audio technology and how to troubleshoot problems associated with such technology. Prereq.: TCOM 3781 or 3782 with a grade of C or better. 3 s.h.

4881. *Telecommunication Management.* A study of the relationships of communication management with government, networks, ownership and other groups. Organization and procedures of typical units; common planning models. 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.

*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 nonquantitative 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. 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. May be repeated for a total of 6 s.h.. Prereq.: Junior standing in telecommunications and permission of internship coordinator. 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. 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 completing senior status as a telecommunications major. 2 s.h.

TEMC–TEACHER EDUCATION MIDDLE CHILDHOOD

Department of Teacher Education

3701. *Characteristics of Early Adolescents and Implications for Curriculum and Instruction.* Physical, social, emotional, intellectual, and moral development within social and cultural contexts to uncover implications for developmentally and culturally responsive curriculum and instruction. Prereq.: Admission to upper-division COE status. 3 s.h.

3702. *Methods of Teaching Early Adolescents.* Investigation and application of early adolescent instructional, classroom management, and assessment strategies: collaborative, interdisciplinary field experience including large and small group observation, participation, teaching, application of best practice information to develop responsive middle grades practices. Prereq.: Admission to upper-division COE 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 3701, 3702. 4 s.h.

3704. *Teaching Mathematic in the Middle School.* Prereq.: Admission to upper-division COE status. 3 s.h. with a mathematics concentration focus on identifying and modeling strategies used for problem solving, communicating, and reasoning in mathematics. Learning to use mathematical connections to stimulate diverse students' development of math concepts and skills and creating learning environments in which students feel free to take risks. Field experience combining mathematics pedagogy/methodology in a middle grade classroom. Prereq.: Prereq.: Admission to upper-division COE status, TEMC 3701 and 3702. 4 s.h.

*3705. *The Teaching of Science in the Middle School.* Using NSTA/NCATE and Ohio Model guidelines as a framework, students focus on establishing and maintaining learning environments that provide diverse students with a holistic, interdisciplinary understanding of science. Topics include goals formation, planning instruction, instructional strategies, resource selection, assessment procedures. Promotion of the use of science processes and problem-solving skills for life-long learning, the integration of science/technology/society. Field experience combining science pedagogy/methodology in a middle grades classroom. Prereq.: TEMC 3701 and 3702, 12 s.h. science. 4 s.h.

*3706. *Teaching Language Arts in the Middle School.* Integrated strategies for enabling diverse students to participate successfully in the activities of a literate society through listening, viewing, and communicating orally and in writing. Emphasis on integration of the language arts, higher order thinking skills, flexibility in applying the language arts in meaningful contexts across the curriculum. Prereq.: TEMC 3701 and 3702. 4 s.h.

3707. *Science/Technology/Society.* In-depth exploration of science/technology/society connections. A subject matter-problem-solving-learning environment triad provides opportunities for study of real-life, personal, and societal science and technology problems. Field experience in which students assess STS problems, devise solutions, apply and evaluate knowledge for community improvement. Prereq.: Admission to upper-division COE 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 t the needs of culturally diverse populations, and working with families, resource persons, and community groups. Concurrent with TEMC 4803. Prereq.: TEMC 3701, 3702, TERG 2601, completion of TEC requirement and approval of chairperson. 4 s.h.

4802. *Student Teaching in Middle Childhood Education.* Demonstration of ability to integrate knowledge of early adolescents, learning theory, and best practice information in diverse teaching/learning settings. Critical thinking, problem solving, decision making, counseling and lifelong learning. Full-time student teaching of at least 10 weeks in grades 4-9 supervised by University faculty and experienced middle-school practitioners. Concurrent with TEMC 4801 and 4803. Prereq.: TEMC 3701, 3702, TERG 2601, completion of TEC requirements, approval of chairperson. 6 s.h.

4803. *Senior Capstone Inquiry Experience.* As a capstone experience, designed to give pre-service teachers an opportunity to plan and implement an action research project that will enhance their instructional practices and improve the middle school inquiry community to which they have been assigned. Concurrent with TEMC 4801 and 4802. Prereq.: Completion of TEC requirements and approval of chairperson. 3 s.h.

TERG–TEACHER EDUCATION READING
Department of Teacher Education

2601. *Reading Applications in Content Areas.* Study of the development of comprehension skills, word attack skills, study skills and related problems in the content areas from early childhood through adolescence. Prereq.: Admission to COE upper-division status. 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 COE 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.

THTR–THEATER
Department of Communications and Theater

The following have been approved as General Education courses in the domain of Artistic and Literary Perspectives: 1560, Understanding Theater; 1590, History of Motion Pictures; 2690, The Art of Motion Pictures.

Lower-Division Courses

1500. *Auditions and Portfolios.* Survey of the department programs, policies, practices, and facilities, with particular emphasis on the needs of theater majors. Various aspects of theater study which may increase chances for success in the field. Cre-

ation of production records, portfolios, and vitae pertinent to the theater artist. To be taken within the first 30 hours of coursework. 1 s.h.

*1559. *Play Production.* An introduction to the processes of analyzing, directing, staging, and producing plays; demonstration and practice. Includes the equivalent of two hours lecture and four hours production lab per week. 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. Includes the equivalent of two hours lecture and four hours production lab per week. 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. Includes the equivalent of two hours lecture and four hours production lab per week. 3 s.h.

1558. *Ballet.* Theory and practice of classical ballet with emphasis on body placement and muscular awareness. Stressing fundamentals of vocabulary, structure, and placement. Identical with HPES 1572. 1 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.

2662. *Practicum in Theater.* Practical application of theater skills through participation in University Theater productions and supervised theater labs. Students should expect the equivalent of three hours of lab per week. May be repeated to a maximum of 8 s.h. Prereq.: THTR 1561 or 1559. 1 s.h.

2663. *Tap and Jazz.* Principles and practices of the basic techniques of tap dance, soft shoe, jazz, and the combinations of the fundamental forms of dance movement found in musical theater. 1 s.h.

2667. *Acting 2: Voice and Movement.* The technical elements of movement and voice for the stage. Physical exercises designed to improve stage movement, vocal projection, articulation, and speech clarity for the actor. Application of principles and skills to a variety of texts from a performer's perspective. Prereq.: THTR 2668 or permission of instructor. 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. Two hours lecture and four hours production lab per week. Prereq.: THTR 1559 or permission of instructor. 3 s.h.

*2690. *The Art of Motion Pictures.* Analysis of the structure of the motion picture, the development of the script, the function of editing, the approach to acting in film production, and the problems faced by a director in film production. Criteria of artistic film making. Examples from motion pictures are screened and discussed. Prereq.: Sophomore standing. 3 s.h.

Upper-Division Courses

*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. Includes the equivalent of two hours lecture and four hours production lab per week. Prereq.: THTR 1559 or permission of instructor. 2 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 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 1560 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 n stage lighting. Lab hours to be arranged. Prereq.: THTR 1559 and 1561 or consent of instructor. 3 s.h.

*3766. *Stage Combat.* A specialized approach to armed and unarmed combat for the stage. Safety factors in stage fighting, including the safe use of rapier and dagger. Performance in public required. Two hours lecture, four hours lab/recital. Prereq.: THTR 2668 or MUSEN 0012 or HPES 1514 or permission of instructor. 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 application of the performance aspects of a play. Credit given for significant acting roles, assistant directing, or stage management assignments in University Theater productions, For students with appropriate experience. May be taken twice. Prereq.: THTR 2668 and theater faculty committee 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.

4800. *Special Methods in Theater Education.* An investigation of current methods and materials in theater education. Prereq.: Senior standing. 1 s.h.

4860. *Dramatic Texts.* A study of dramatic texts in performance from antiquity to the present. Emphasis on performance histories and the production company's role as interpreter of the work. Prereq.: THTR 3762 or consent of the instructor. 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. Two hours lecture, four hours lab per week. Prereq.: THTR 1559 and 2668. 3 s.h.

4864. *Directing 2.* A study of specific theories, techniques, and various important styles in play directing. Prereq.: THTR 1559 and 3762. 3 s.h.

4866. *Summer Theater Workshop.* Participation in the summer theater program involving all aspects of theatrical production. Positions of significant responsibility. Prereq.: Junior standing in Theater, or permission of instructor. 1-3 s.h.

4868. *Children's Theater.* A study of the process of theater production by and for elementary school children, including theory, objectives, and methods. Prereq.: THTR 3762 or senior standing in Elementary Education with permission of instructor. 3 s.h.

4869. *Creative Dramatics.* Basic elements of 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. *History of Theater.* History of the physical theater from antiquity to the present. Emphasis on theater architecture, stagecraft, and audiences. Prereq.: Junior standing with at least 9 s.h. of THTR coursework, or consent of instructor. 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.* Independent study required of all seniors in theater degree programs. Significant demonstration of practical theater ability in one or more of the following: acting, directing, design/technology, theory/criticism, theater management. Portfolio/resume review. Prereq.: Senior standing in theater, with the exception of graduation by the end of the following semester. Grading is CR/NC/PR. 1 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.

WMST–WOMEN'S STUDIES

Interdisciplinary

The following has been approved as a General Education course in the domain of Societies and Institutions: 2601, Introduction to Women's Studies.

2601. *Introduction to Women's Studies.* Introduces key concepts, theoretical frameworks, and interdisciplinary research drawn from current scholarship about women. Concentrates on major issues relevant to the status and roles of contemporary women, including examination of effects of sexism, racism, ethnicity, and class distinction. 3 s.h.

4850. *Senior Research Project.* Research and writing of a paper on a topic in women's studies, under the supervision of full-time faculty. Prereq.: Senior standing and completion of a minimum of 15 s.h. in Women's Studies. 1-3 s.h.

COURSE AREA ABBREVIATIONS

Accounting ..... ACCTG
Advertising ..... ADVER
Africana Studies ..... AFRST
Allied Health ..... AHLTH
American Sign Language ..... ASL
American Studies ..... AMER
Anthropology ..... ANTHR
Art ..... ART
Arts and Sciences ..... A&S
Astronomy ..... ASTRO
Baritone Horn/Euphonium ..... BHORN
Bassoon ..... BASSN
Biology ..... BIOL
Business Administration ..... BUS
Business Information Systems ..... BIS
Cello ..... CELLO
Chemical Engineering ..... CHEGR
Chemistry ..... CHEM
Child and Family ..... CHFAM
Civil and Construction Engineering Technology ..... CCET
Civil/Environmental and Chemical Engineering ..... CEEGR
Clarinet ..... CLAR
Classical Studies ..... CLASS
Clinical Laboratory Technology ..... CLTEC
Computer Information Systems ..... CIS
Communication and Theater ..... SPCH
Composition ..... COMP
Counseling ..... COUNS
Computer Science ..... CSCI
Computer Science and Information Systems . CSIS
Criminal Justice ..... CRJUS
Dental Hygiene ..... DENHY
Drafting and Design Technology ..... DDT
Early and Middle Childhood Education .... EMCE
Economics ..... ECON
Educational Administration ..... EDADM
Educational Administration, Research and Foundations ..... EARF
Electrical Engineering Technology ..... EET
Elective ..... ELCTV
Electrical and Computer Engineering ..... ELEGR
Emergency Medical Technology ..... EMTEC
English ..... ENGL
Engineering ..... ENGR
Environmental Studies ..... ENST
Finance ..... FIN
Fine and Performing Arts ..... F&PA
Flute ..... FLUTE
Foreign Language ..... FNLG
Food and Nutrition ..... FNUTR
Foundations of Education ..... FOUND
French ..... FRNCH
French Horn ..... FHORN
Geography ..... GEOG
Geology ..... GEOL
German ..... GERMN
Greek ..... GREEK
Guitar ..... GUITR
Harpsichord ..... HARPS
Health Professions ..... HPROF
Health Sciences ..... HSC
History ..... HIST
History and Literature of Music ..... MUSHL
Hospitality Management ..... HMGT
Honors Program ..... HONOR
Human Performance and Exercise Science .. HPES
Human Ecology ..... HMEC
Humanities ..... HUMAN
Industrial and Systems Engineering ..... ISEGR
Italian ..... ITALN
Journalism ..... JOURN
Labor Studies Technology ..... LSTEC
Latin ..... LATIN
Linguistics ..... LING
Management ..... MGT
Marketing ..... MKTG
Materials Engineering ..... MTEGR
Mathematics ..... MATH
Mechanical Engineering ..... MECH
Mechanical Engineering Technology ..... MET
Medical Assisting Technology ..... MATEC
Merchandising: Fashion & Interiors ..... MERCH
Military Science ..... MILSC
Music—Applied Classes ..... MUSAC
Music—Conducting ..... MUSCO
Music Education ..... MUSED
Music—Ensembles ..... MUSEN
Nursing ..... NURSG
Oboe ..... OBOE
Office Information Systems ..... OIS
Organ ..... ORGAN
Percussion ..... PERC
Philosophy ..... PHIL
Physical Therapy ..... PHYTH
Physics ..... PHYS
Piano ..... PIANO
Political Science ..... POLIT
Public Relations ..... PREL
Psychology ..... PSYCH
Reading & Study Skills ..... R&SK
Religious Studies ..... RELIG
Respiratory Care ..... RESPC
Russian ..... RUSSN
Saxophone ..... SAX
School of Technology ..... STECH
Science ..... SCI
Secondary Education ..... SEDUC
Social Science ..... SOCSC
Social Studies ..... SOCST
Social Work ..... SCWK
Sociology ..... SOCIO
Spanish ..... SPAN
Speech Communication ..... COMM
String Bass ..... SBASS
Special Education ..... SPED
Statistics ..... STAT
Telecommunication Studies ..... TCOM
Theater ..... THTR
Theory and Composition of Music ..... MUSTC
Trombone ..... TROMB
Trumpet ..... TRUMP
Tuba ..... TUBA
Viola ..... VIOLA
Violin ..... VIOLN
Voice ..... VOICE
Women's Studies ..... WMST

Prerequisite Tables

Below is a list of current University prerequisites and their quarter equivalents.

Department Prefix	Semester Number	Quarter Number	Comments
ACCTG	2602	602	
	2603	603	
	*3701		*3701 & *3702 are
	*3702		703+704+705
	3709	709	
	3711	711	
	4801	801	
	4813	813	
ADVER	*3711		704+707
	3717	706	
AFRST	2600	600	
	2601	601	
AHLTH	1500	none	new course
	1501	none	new course
	3705	705	
	3708	708	
	4801	801	
	4805	805	
	4806	806	
	5807	807	
	4808	808	
	4812	812	
	5840	none	new course
AMER	2601	601	
	3701	701	
	4801	801	
ANTHR	2602	602	
	3701	none	new course
	3702	702	
	*3703		703+704
	3705	701	
	4850	none	new course
ART	1501	502	
	1502	504	
	1503	none	new course
	1521	501	
	1522	601	
	1541	none	new course
	1542	none	new course
	2611	730	
	2615	770	
	2625	612	
	2631	725	
	2650	none	new course
	2651	606	
	2661	655	

Department Prefix	Semester Number	Quarter Number	Comments
	2662	656	
	2671	780	
	2673	none	new course
	2691	650	
	3712	731	
	3713	812	
	3732	726	
	3733	810	
	3737	none	new course
	3743	708	
	3761	755	
	3762	756	
	3763	728	
	3768	830	
	3773	782	
	3775	none	new course
	3780	742	
	3792	none	new course
	3794	871	
	4834	none	new course
	4837	762	
	4838	763	
	4851	803	
	4852	804	
	4853	805	
	5871	880	
	4883	816	
ASTRO	1504	504	
BIOL	1551	551	
	1552	552	
	1560	560	
	*2601		509+510
	*2602		611+612
	2610	837	
	2621	721	
	*2630		792+793+793L
	*2640		700+765
	*2641		701+770
	3702	702	
	*3780		780+803
	3790	790	
	5834	834	
	4868	868	
BUS	1500	500	
CEEGR	*2601		*2601 & *2602 are
	*2602		601+602+603
	2610	610	
	3716	716	
	3720	720	
	3736	736	
	3749	749	
	*4881		881+882

Department Prefix	Semester Number	Quarter Number	Comments
CET	2604	604	
	2610	610	
	2611	611	
	*2612		607+612
	2614	617L	
	2617	617	
	2624	624	
	3717	717	
CHEGR	2630	none	new course
	2681	681	
	*2683		682+683
	3726	726	
	3772	772	
	*3786		785+786
	3787	787	
	4815	788	
	4882	882	
	*4887		*4887 & *4888 are
	*4888		887+888+889
CHEM	1505	505	
	1506	506	
	1515	515	
	*1516		*1516 & *1517 are
	*1517		515+516+517
	*2604		603+604
	3705	705	
	*3719		*3719 & *3720 are
	*3720		719+720+721
	3729	729	
	3737	none	new course
	*3739		*3739 & *3740 are
	*3740		739+740+741
	*3785		See department
	4850	850	
	5861	none	new course
CHFAM	1514	514	
	1531	531	
	1532	532	
	2664	664	
	3731	731	
	3790	790	
CIS	2640	640	
	3714	714	
CLTEC	1501	501	
	1502	502	
	2601	601	
	2609	609	
	2611	none	new course
	*2612		*2612 & *2622 are
	*2622		610+620+630
COMM	1500	500	
	1530	530	

Department Prefix	Semester Number	Quarter Number	Comments
	1545	545	
	2653	653	
	2656	656	
	2657	657	
	4852	852	
	4855	855	
	4859	859	
CRJUS	1500	500	
	2601	601	
	2602	602	
	2603	603	
	*3702		701+702
	3710	710	
	3712	712	
	3715	715	
	3720	720	
	*3735		630+735
	3740	740	
	3751	648	
	3765	765	
	*5825		722+825
CSCI	2610	none	new course
	3710	710	
	4885	885	
CSIS	1500	500	
	1514	514	
	1590	590	
	2610	610	
	2617	617	
	3701	CSCI 701	
	3722	CIS 818	
	3723	CIS 621	
	3730	CIS 730	
	3740	CSCI 740	
	3780	CSCI 780	
DENHY	*1511		*These courses
	1512	502	
	*1513		are not direct
	*1521		equivalents of any
	1535	535	
	*2614		quarter courses.
	*2622		Contact the
	*2628		department
DDT	*1505		*1505 & *2605 are
	*2605		605+606+607
ECE	2630	EMCE 630	
	3759	EMCE 859	
	4841	EMCE 841	
ECON	1501	510	
	*2610		*2610 & *2630 are
	*2630		610+630+632
	2650	650	

Department Prefix	Semester Number	Quarter Number	Comments
	3701	701	
	3710	710	
	3712	712	
	3780	none	new course
EDTC	3771	none	new course
EET	*1501		*1501 & *1592 are
	*1502		501+502+503
	*2605		*2605 & *2606 are
	*2606		605+606+607
	*2610		*2610 is 610+611
	2612	612	
	2620	620	
	2645	645	
	2670	none	new course
	*3725		625+725
	3730	730	
	3745	745	
ELEGR	1521	none	new course
	*2611		632L+633L
	2632	632	
	2633	633	
	3709	709	
	*3712		No direct equivalent
	3717	717	
	3731	831	
	3732	832	
	3741	741	
	3742	742	
	3771	771	
	3772	772	
	*4803		No direct equivalent
	5808	808	
	*4811		No direct equivalent
	*4844		844+845
EMTEC	1502	none	new course
	1503	none	new course
	1504	506	
	*1510		522+524+525
	1512	515	
	1516	528	
	2610	640	
	2611	641	
ENGL	1550	550	
	1551	551	
	2622	622	
	2646	646	
	2647	647	
	2651	651	
	2665	665	
	3701	none	new course
	3702	none	new course
	3740	740	

Department Prefix	Semester Number	Quarter Number	Comments
	3741	741	
	3743	743	
	3755	755	
	4856	856	
ENGR	*1550		*1550 & *1560 are
	*1560		550+560+570
ENST	2600	600	
	3700	700	
	3760	760	
FIN	3720	720	
	3730	730	
	4835	835	
	4853	853	
FNLG	1500	none	new course
	*1550		501+502
FNUTR	1543	543	
	1551	551	
	1553	none	new course
	2603	603	
	2609L	none	new course
	*2612		609+611
	3759	759	
	3760	760	
	4858	858	
	4858L	858L	
	4860L	860L	
FOUND	1501	501	
	3708	708	
	3710	710	
FRNCH	*1550		501+502
	*2600		503+601
	2605	602	
	2615	615	
	3715	none	new course
	3720	none	new course
	3725	none	new course
	3730	none	new course
	3750	750	
GEOG	1503	503	
	1505	none	new course
	2610	610	
	2626	626	
	2630	630	
	2640	640	
	2650	650	
	*3732		731+732
GEOL	1504	none	new course
	1505	505	
	1513	513	
	1514	514	
	2611	611	
	2615	615	

Department Prefix	Semester Number	Quarter Number	Comments
	3700	700	
	3704	704	
	3714	714	
	3718	718	
	5802	802	
GERMN	*1550		501+502
	*2600		503+601
	2603	none	new course
	2605	602	
	2610	610	
	*3740		755+874
	3750	750	
	3751	751	
	3765	765	
	4865	865	
GREEK	*1550		501+502
	*2600		503+601
	2603	none	new course
	3753	none	new course
HIST	*1511		*1511 & *1512 are
	*1512		511+512+513
	2605	605	
	2606	606	
	2611	611	
	2661	661	
	2662	662	
	2663	663	
	3715	715	
HMEC	1550	550	
	3799	799	
	4835	835	
HMGT	*1501		500+575
	2620	620	
	2691	691	
	3745	745	
HPES	1502	502	
	1512	512	
	1514	514	
	1519	519	
	1520	520	
	1522	522	
	1530	530	
	1540	540	
	1541	541	
	1567	567	
	1568	568	
	1570	570	
	1572	572	
	1574	574	
	1575	575	
	1589	589	
	1595	595	

Department Prefix	Semester Number	Quarter Number	Comments
	2605	none	new course
	2610	610	
	2615	613	
	2625	702	
	2628	628	
	2632	632	
	2661	661	
	2671	672	
	3700	616	
	3710	none	new course
	3720	795	
	3730	723	
	3750	780	
	3765	765	
	3767	767	
	3780	780	
	4820	none	new course
	4876	876	
HSC	1568	590	
	3701L	606L	
	*3702		596+700
	3703	680	
	3704	721	
	3705	794	
	3791	791	
	*4826		792+799
	4828	828	
ISEGR	3710	620	
	3716	716	
	3720	720	
	3723	725	
	3724	724	
	3727	727	
	5801	801	
	5850	850	
ITALN	*1550		501+502
	*2600		503+601
	2605	602	
	*3720		720+721
	*3730		730+731
LATIN	*1550		501+502
	*2600		503+601
	2603	none	new course
	3753	none	new course
MATEC	1501	501	
	1502	502	
	2605	605	
	2610	610	
	2611L	611L	
	2614	614	
	2620	620	
	2680	680	

Department Prefix	Semester Number	Quarter Number	Comments
MATH	*1501		500+501
	1504	none	new course
	1513	none	new course
	1548	none	new course
	1549	550	
	1564	none	new course
	*1570		*1570 & *2670 are
	*2670		570+670+770
	*1571		*1571 & *1572 & *2673
	*1572		are 571+572+673+674
	*2673		
	*1580H		*1580H+*1581H
	*1581H		are 580H+581H+681H
	*1585H		585H+586H
	2623	523	
	2651	none	new course
	2665	none	new course
	2683	683	
	*3705		705+706
	3720	720	
	*3721		721+722
	*3751		751+752
	3760	760	
	3767	none	new course
	3768	none	new course
	4830	730	
	5843	843	
	5844	841	
MECH	1500	500	
	*2603		603+604
	2606	MTEGR 606	
	2641	641	
	3720	830	
	3725	725	
	3742	742	
	3751	751	
	*3781		781+870
	4808	808	
MERCH	*2625		525+625
	2660	660	
	3730	730	
MET	1515	515	
	1516	516	
	2605	605	
	2606	606	
	2607	607	
	2610	610	
	2615	615	
	2616	none	new course
	2630	630	
	3700	700	
	3711	none	new course

Department Prefix	Semester Number	Quarter Number	Comments
	3715	715	
	3720	720	
	4820	820	
MGT	2604	604	
	3725	725	
	3734	none	new course
	3750	750	
	3761	761	
	3789	789	
	4870	870	
MKTG	3703	703	
MUSAC-PIANO	1502	503	
through PERC	2606	609	
	3706	708	
MUSAC	1525	525	
	1582	582	
	2668	668	
MUSTC	1520	520	
	*1531		*1531 & *1532 are
	*1532		530+531+532
	2602	603	
	2632	632	
	3705	708	
MUSED	*3715		716+717
	4823	823	
	4825	815	
	4826	817	
	4827	none	new course
MUSHL	3774	771	
NURSG	*2610		*These courses have no
	*2643		direct quarter equivalents.
	*2645		Contact the department.
	2646	646	
	*3730		
	*3741		
	*3742		
	*3743		
	*4831		
	4833	833	
	*4840		
	4870	870	
	5871	871	
OIS	1520	520	
	2663	663	
	2672	672	
	2676	none	new course
	3714	714	
	3775	775	
	3790	790	
PHIL	2600	600	
	2625	625	
	3719	703	

Department Prefix	Semester Number	Quarter Number	Comments
PHYS	1500	500	
	*1501		*1501 & *1502 are
	*1502		501+502+503
	2601	602	
	*2610		*2610 & *2611 are 510+
	*2611		610+611
	3702	703	
	*3704		*3704 & *3705 are
	*3705		704+705+710
	3722	722	
	5835	835	
PHYTH	4823	823	
POLIT	1550	550	
	*1560		604+605
	2640	640	
	2660	660	
	3702	702	
	*3742		740+742
	3760	760	
	3763	763	
PSYCH	1560	560	
	2613	613	
	*2617		*2617 & *2618 are 616+
	*2618		617+618
	3700	700	
	3702	702	
	3705	none	new course
	3707	707	
	3728	828	
	3755	755	
	3756	756	
	3757	757	
	3758	none	new course
	3780	780	
	4802	802	
RELIG	2601	601	
RESPC	1520	520	
	*1530		501+502
	2620	620	
	2621	621	
	2699	699	
	3706	701	
	3708	708	
	3720	720	
	3725	725	
	*3740		700+702
	3741	760	
RUSSN	*1550		501+502
	*2600		503+601
	2605	602	
	2606	615	
SCWK	1510	620	

Department Prefix	Semester Number	Quarter Number	Comments
	2622	622	
	2641	641	
	2642	642	
	2644	644	
	3736	736	
	3737	737	
	3750	750	
	4825	825	
	4826	826	
SEDUC	3704	704	
	3706	706	
	4842	842	
SOCIO	1500	500	
	3701	701	
	3703	703	
	3705	705	
	3708	708	
	4850	none	new course
SPAN	*1550		501+502
	*2600		503+601
	2605	602	
	2655	655	
	*3735		735+736+737
	3736	none	new course
	3752	752	
	*3753		753+754
	3756	756	
	*3757		757+758
SPED	2631	731	
	5802	802	
	5828	828	
	5835	835	
	5851	851	
	5853	853	
	5854	854	
	5863	863	
	5864	864	
	5866	866	
	5867	867	
	5871	871	
STAT	2601	601	
	3717	717	
	3743	MATH 743	
	5817	815	
	5844	MATH 841	
STECH	1505	505	
SWAH	1550	none	new course
TCOM	1580	580	
	2682	682	
	2683	683	
	3781	781	
	3782	782	

Department Prefix	Semester Number		Quarter Number		Comments	
	3785		785			
TEMC	3701		EMCE 710			
	3702		EMCE 707			
TERG	2601		EMCE 880			
	3701		EMCE 810			
	3702		EMCE 812			
	3703		EMCE 881			
	3705		EMCE 814			
THTR	1559		none		new course	
	1560		560			
	1561		561			
	2667		667			
	2668		668			
	3761		761			
	3762		762			
	3765		765			
	3769		769			
	3791		791			
	3792		792			
	4868		868			

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Professor and Chairperson Emeritus
Retired 1992

AGNES M. SMITH
Professor Emeritus of History
Retired 1984

CHARLES L. SMITH
Professor Emeritus of Special Education
Retired 1986

ROBERT K. SMITH
Professor Emeritus
Retired 1995

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

LEONARD B. SPIEGEL
Professor Emeritus
Retired 1995

ARTHUR G. SPIRO
Professor Emeritus
Retired 1992

DAVID E. STARKEY
Professor Emeritus
Retired 1996

ELIZABETH STAUDT
Professor Emeritus of Biological Sciences
Retired 1985

JAMES D. STEELE
Professor Emeritus of Elementary Education
Retired 1984

ANTHONY H. STOCKS
Professor and Chairperson Emeritus
Retired 1996

NICHOLAS STURM
Professor Emeritus
Retired 1995

GEORGE E. SUTTON
Dean Emeritus
Retired 1994

WILLIAM O. SWAN
Professor Emeritus
Retired 1992

CALVIN J. SWANK
Professor Emeritus
Retired 1995

DAVID SWEETKIND
Dean Emeritus
Retired 1997

PIERSON R. SYRING
Administrator Emeritus
Retired 1992

LESLIE V. SZIRMAY
Professor Emeritus
Retired 1997

FRANK TARANTINE
Professor and Chairperson Emeritus
Retired 1996
MARY PLACE THOMAS
Administrator Emeritus
Retired 1993
WILMA A. THOMPSON
Professor Emeritus of Health and Physical Education
Retired 1982
SARA THROOP
Professor Emeritus
Retired 1989
GLORIA D. TRIBBLE
Professor Emeritus
Retired 1998
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
PETER W. VON OSTWALDEN
Professor Emeritus
Retired 1992
CAROL WALL
Administrator Emeritus
Retired 1993
MARTHA Z. WALTON
Professor Emeritus of Business Education and Technology
Retired 1985
RICHARD G. WEBER
Administrator Emeritus
Retired 1990
MARY LOU WEDEKIND
Professor Emeritus of Health and Physical Education
Retired 1988
NELL G. WHIPKEY
Professor Emeritus of Mathematical and Computer Sciences
Retired 1986
CHARLES H. WHITMAN
Administrator Emeritus
Retired 1993
L. ANTHONY WHITNEY
Professor Emeritus
Retired 1996
JOHN WILKINSON
Professor Emeritus
Retired 1996
ROBERT J. WOLANIN
Professor Emeritus
Retired 1995
BARBARA L. WRIGHT
Professor and Chairperson Emeritus
Retired 1996
RALPH E. YINGST
Professor Emeritus
Retired 1992
BERNARD J. YOZWIAK
Dean Emeritus
Retired 1992
STANLEY ZAGER
Professor Emeritus
Retired 1996
JEROME E. ZETTS
Faculty Emeritus
Retired 1999

THE WALTER E. AND CAROLINE H. WATSON FOUNDATION DISTINGUISHED PROFESSOR AWARDS

1959-1960
Karl H. Benkne ..... Mechanical Engineering
Karl Washburn Dykema ..... English
Jay Rodkey ..... Accounting
George Milo Wilcox ..... Education

1960-1961
Mary Wagstaff Jones ..... Communication
Margarita Mills ..... Spanish
Eugene Dodd Scudder ..... Chemistry
Bernard James Yozwiak ..... Mathematics

1961-1962
Gus Mavrigian ..... Mathematics
Alvin Myerovich ..... Music
Edward Thomas Reilly ..... Business Organization
Clair L. Worley ..... Biology

1962-1963
Pauline Esterhay Botty ..... Sociology
Frank Angelo D'Isa ..... Mechanical Engineering
Francis Kravec ..... Biology
Willard L. Webster ..... Biology

1963-1964
David Marion Behen ..... History
Irwin Cohen ..... Chemistry
Thaddeus Michael Dillon ..... Mathematics
George Henry Schoenhard ..... Education

1964-1965
Christine Rhoades Dykema ..... French
Anthony Michael Land . Philosophy and Religion
Victor Anthony Richley ..... Electrical Engineering
Myron James Wisler ..... Music

1965-1966
Thomas D.Y. Fok ..... Civil Engineering
Philip Jerome Hahn ..... Economics
Vera Jenkins ..... Accounting and Business
Theodore T. Macejko ..... Business Administration

1966-1967
Jack Donald Foster ..... Sociology
Jon Michael Naberezny ..... Art
Paul C. Luginbill ..... Chemical Engineering
Lois M. Hopkins ..... Music

1967-1968
Catherine M. Bridgham ..... Chemistry
Frank M. Ellis ..... Physics
James W. Kiriazis ..... Sociology
Bernard J. Vojtko ..... Electrical Engineering

1968-1969
Ivis Boyer ..... Political Science
Marvin W. Chrisp ..... Education
Esther P. Niemi ..... Economics
William Petrych ..... Accounting

1969-1970
Leslie S. Domonkos ..... History
Joseph R. Lucas Philosophy and Religious Studies
Matthew Siman ..... Electrical Engineering
Paul D. Van Zandt ..... Biology

1970-1971
Margaret A. Braden ..... Education
Alfred L. Bright ..... Art
Raymond W. Hurd ..... Mathematics
Inally Mahadeviah ..... Chemistry

1971-1972
Frederick J. Blue ..... History
Frank A. Fortunato ..... Management
Thelma S. Miner ..... English
Duane Sample ..... Music

1972-1973
Dwight V. Beede ..... Biology
Ronald L. Gould ..... Music
Renee D. Linkhorn ..... Foreign Languages
Margaret I. Pfau ..... English

1973-1974
Barbara H. Brothers ..... English
E. Terry Deiderick ..... Marketing

1974-1975
Esotto Pellegrini ..... Music
James P. Rhonda ..... History

1975-1976
Larry E. Esterly ..... Political Science

THE WALTER E. AND CAROLINE H. WATSON FOUNDATION MERIT AWARDS

1977-1978
Donald W. Byo ..... Music
Frank A. D'Isa ..... Mechanical Engineering

1978-1979
Gilda M. Decapita ..... Nursing
Victor A. Richley ..... Engineering Technology

1979-1980
Barbara H. Brothers ..... English
Frank J. Seibold Advertising and Public Relations
John H. Yemma ..... Allied Health

1980-1981
Thomas N. 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

1993-94
Madeleine Haggerty ..... Allied Health
Ikram Khawaja ..... Geology

1994-95
James C. Morrison ..... Psychology
Susan Russo ..... Art

1995-1996
John J. Buoni ..... Mathematics and Statistics
Joseph Edwards ..... Dana School of Music

1996-97
Thomas A. Shipka ..... Philosophy & Religious Studies
Sandra W. Stephan ..... English

1997-98
Warren Young ..... Physics and Astronomy

1998-99
Daryl W. Mincey ..... Chemistry

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

APPENDIX A—Ohio Residency

Residency for State Subsidy and Tuition Surcharge Purposes

(A) Intent and Authority

(1) It is the intent of the Ohio Board of Regents in promulgating this rule to exclude from treatment as residents, as that term is applied here, those persons who are present in the State of Ohio primarily for the purpose of receiving the benefit of a state-supported education.

(2) This rule is adopted pursuant to Chapter 119. of the revised code, and under the authority conferred upon the Ohio Board of Regents by Section 3333.31 of the revised code.

(B) Definitions for Purposes of This Rule

(1) A "resident of Ohio for all other legal purposes" shall mean any person who maintains a twelve-month place or places of residence in Ohio, who is qualified as a resident to vote in Ohio and receive state welfare benefits, and who may be subjected to tax liability under section 5747.02 of the Revised Code, provided such person has not, within the time prescribed by this rule, declared himself or herself to be or allowed himself or herself to remain a resident of any other state or nation for any of these or other purposes.

(2) 'Financial Support' as used in this rule, shall not include grants, scholarships and awards from persons or entities which are not related to the recipient.

(3) An 'Institution of Higher Education' as used in this rule shall mean any university, community college, technical institute or college, general and technical college, medical college or private medical or dental college which receives a direct subsidy from the State of Ohio.

(4) For the purpose of determining residency for tuition surcharge purposes at Ohio's state-assisted colleges and universities, "Domicile' is a person's permanent place of abode; there must exist a demonstrated intent to live permanently in Ohio, and a legal ability under federal and state law to reside permanently in the state. For the purpose of this policy, only one domicile may be maintained at a given time.

(5) For the purpose of determining residency for tuition surcharge purposes at Ohio's state-assisted colleges and universities, an individual's immigration status will not preclude an individual from obtaining resident status if that individual has the current legal status to remain permanently in the United States.

(C) Residency for Subsidy and Tuition Surcharge Purposes

The following persons shall be classified as residents of the State of Ohio for tuition surcharge purposes:

(1) A dependent student, at least one of whose parents or legal guardian has been a resident of the State of Ohio for all other legal purposes for twelve consecutive months or more immediately preceding the enrollment of such student in an institution of higher education.

(2) A person who has been a resident of Ohio for the purpose of this rule for at least twelve consecutive months immediately preceding his or her enrollment in an institution of higher education and who is not receiving, and has not directly or indirectly received in the preceding twelve consecutive months, financial support from persons or entities who are not residents of Ohio for all other legal purposes.

(3) A dependent child of a parent or legal guardian, or the spouse of a person who, as of the first day of a term of enrollment, has accepted full-time employment and established domicile in the State of Ohio for reasons other than gaining the benefit of favorable tuition rates.

Documentation of full-time employment and domicile shall include both of the following documents:

(a) A sworn statement from the employer or the employer's representative on the letterhead of the employer or the employer's representative certifying that the parent or spouse of the student is employed full-time in Ohio.

(b) A copy of the lease under which the parent or spouse is the lessee and occupant of rented residential property in the state; a copy of the closing statement on residential real property located in Ohio of

which the parent or spouse is the owner and occupant; or if the parent or spouse is not the lessee or owner of the residence in which he or she has established domicile, a letter from the owner of the residence certifying that the parent or spouse resides at that residence.

(D) Additional Criteria Which May Be Considered in Determining Residency for the Purpose May Include But Are Not Limited to the Following:

(1) Criteria evidencing residency:

(a) If a person is subject to tax liability under section 5747.02 of the Revised Code;

(b) If a person qualifies to vote in Ohio;

(c) If a person is eligible to receive state welfare benefits;

(d) If a person has an Ohio driver's license and/or motor vehicle registration.

(2) Criteria evidencing lack of residency:

(a) If a person is a resident of or intends to be a resident of another state or nation for the purpose of tax liability, voting, receipt of welfare benefits, or student loan benefits (if the student qualified for that loan program by being a resident of that state or nation);

(b) If a person is a resident or intends to be a resident of another state or nation for any purpose other than tax liability, voting, or receipt of welfare benefits (see paragraph (D)(2)(a) of this rule).

(E) Exceptions to the General Rule of Residency for Subsidy and Tuition Surcharge Purposes:

(1) A person who is living and is gainfully employed on a full-time or part-time and self-sustaining basis in Ohio and who is pursuing a part-time program of instruction at an institution of higher education shall be considered a resident of Ohio for these purposes.

(2) A person who enters and currently remains on 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 or her employer beyond the territorial limits of the 50 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 and 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.

(F) Procedures

(1) A dependent person classified as a resident of Ohio for these purposes under the provisions of section (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 (C)(3), 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, upon the completion of twelve consecutive months of residency, must apply to the institution he or she attends for reclassification as a resident of Ohio

for enrollment if such person in fact wants to be reclassified as a resident. Should such person present clear and convincing proof that no part of his or her financial support is or in the preceding twelve consecutive months has been provided directly or indirectly by persons or entities who are not residents of Ohio for all other legal purposes, such person shall be reclassified as a resident.

Evidentiary determinations under this rule shall be made by the institution which may require, among other things, the submission of documentation regarding the sources of a student's actual financial support.

(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 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.

APPENDIX B—Scholarships and Awards

SCHOLARSHIPS FOR EXCELLENCE

These are scholarships awarded by the University and largely funded by **The YSU Foundation**. The YSU Foundation, with an endowment of over $125 million, is committed to providing this "edge of excellence" for the University, providing more than $3 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**. Students should apply for these scholarships before **February 15.** In addition, incoming freshmen should apply for admission before March 1 to be considered for these scholarships.

University Scholars Scholarships: These are four-year full-ride academic scholarships. These scholarships are awarded annually to incoming freshmen based on minimum criteria of an ACT of 28 or SAT of 1260 and upper 15% of the student's high school class.

Trustees' Scholarships: These are $3,000, four-year scholarships awarded to incoming high school valedictorians. Students must attend full-time and maintain at least a 3.5 cumulative GPA.

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

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

Leadership Scholarships: These are $1,000 non-renewable scholarships awarded to students in the upper 15% of their high school graduating class with a minimum GPA of 3.0 or ACT of at least 23 or SAT of 1070. See Department Scholarship for subsequent years.

Community College Scholarships: These are $1,500, three-year renewable scholarships available to transfer students with a minimum GPA of 3.5 and 36 transferable hours into YSU. Must attend at least half-time and maintain 3.5 GPA to renew.

Department Scholarships: These are $1,500, three-year scholarships awarded to students in continuing YSU students with minimum criteria of 24 hours completed and a cumulative GPA of 3.5. Must attend at least half-time and maintain 3.5 GPA to renew.

DEPARTMENT/COLLEGE AWARDS AND SCHOLARSHIPS

The following are scholarships/awards/prizes according to the relevant department or college. For more information, contact your particular college or department.

***Denotes YSU Foundation Scholarships**

COLLEGE OF ARTS AND SCIENCES

American Chemical Society Award is a cash award given by the Penn-Ohio Border Section to an outstanding junior Chemistry major. Awarded at the Honors Convocation.

American Chemical Society Student Affiliates Award is awarded to the graduating senior in chemistry with the highest cumulative point average. Awarded a the Honors Convocation.

***APCO Conservation Club** is for juniors or seniors majoring in environmental science.

B'Nai B'Rith Undergraduate History Award is given to the outstanding undergraduate history student. Awarded at the Honors Convocation.

*** Thomas J. Carney Scholarship** is awarded to a Political Science major, preferably a Mahoning County resident. Selection is made by the Political Science Department. Awarded at the Honors Convocation.

Frank M. Clark Scholarship was established to provide scholarship assistance to physics and astronomy majors on the basis of academic achievement and need. Awarded at the Honors Convocation.

CRC Press Freshman Chemistry Achievement Award is given for superior achievement in freshman chemistry and consists of the current edition of the Handbook of Chemistry and Physics, with a commemorative scroll. Awarded at the Honors Convocation.

*** James Dale American Studies Award** is presented annually to an outstanding upper division American Studies major. The award will be based on a combination of merit and financial need. Awarded at the Honors Convocation.

Delta Phi Alpha National German Honorary Society annually extends membership to a German major who has excelled in the study of German. Awarded at the Honors Convocation.

Charles Dobson Memorial Award is given each year in memory of Dr. Dobson as recognition for achievement in research by an undergraduate psychology student. Awarded at the Honors Convocation.

Kenmore B. Drake Memorial Award was established by students and faculty of the Business Education and Technology Department in memory of Kenmore B. Drake. Applicants must be juniors preparing for certification for teaching one of the following areas: business education comprehensive, bookkeeping and basic business, or stenography. Selection criteria is by a committee of the Department of Computer Science and Information Systems which will include a minimum of 2.5 GPA, leadership, and a demonstrated commitment and enthusiasm for teaching business education. Awarded at the Honors Convocation.

*** Karl W. Dykema Scholarship** was established in 1972 as a memorial to Karl Washburn Dykema, a nationally known authority on English grammar and a former dean of YSU's College of Arts and Sciences. It is awarded annually to a full-time College of Arts and Sciences student with a distinguished academic record. Given at Honors Convocation. Cannot be applied for by students. For Information contact the College of Arts and Sciences.

*** Dr. E. Eugene Eminhizer Scholarship** is awarded to a YSU student with a major or minor in Religious Studies. Apply in Philosophy & Religious Studies Department.

Candace Gay Memorial Awards were established by Professor Thomas Gay and the late Dr. Carol Gay of the Department of English in memory of their thirteen-year-old daughter, Candace McIntyre Gay, who died in 1977. This fund provides $750 or three $250 prizes for junior and senior high school students who exhibit distinctive writing ability in the Candace Gay Memorial Essay Contest. A grand total of $1875 in prizes are presented at the annual YSU English Festival.

Geology Department Scholarship is awarded to a sophomore, junior, or senior who is a Geology major to help defray tuition at an appropriate field camp, and is based on academic achievement.

Sister Jean Gillespie Memorial Award in Religion was established in 1984 by Marie Weyrick and Mildred Gedeon in memory of their sister, Dominican Sister Jean Gillespie, O.P., who died in 1982 and who was deeply committed to the ecumenical work of the Jewish/Christian Dialogue Group of Youngstown. It provides income from an endowment of $2500 to a distinguished senior in Religious Studies whose academic program best exhibits an interest in comparative religion. Awarded at the Honors Convocation.

Emily Goldstein Award was established in memory of Emily Goldstein, a former member of YSU Faculty. Presented for academic excellence for Outstanding Achievement in Statistics. Selection is made by the Department of Mathematics and Statistics. Awarded at the Honors Convocation.

Mildred N. Graebing Scholarships were established in 1973 by Mildred N. Graebing. The income from an endowment makes available annual grants to deserving Ohio or Pennsylvania students enrolled full-time in degree programs in business education or secretarial studies.

Gary L. Green Award was established in 1990 in memory of Dr. Gary L. Green, an English Department faculty member. An annual award will be presented to an English major with 48-107 hours who has done outstanding work in Introduction to Literary Studies and otherwise shown strong academic promise. Award given by the English Department at the Honors Convocation. Cannot be applied for by student. For information, contact the College of Arts and Sciences.

Dorothy Zola Greenberger Memorial Scholarship is one $300 scholarship awarded per year. This scholarship was established in 1971 by Sidney Greenberger in memory of his wife, Dorothy Zola Greenberger, a former member of the YSU faculty. The income from an endowment makes possible an annual scholarship for a student in the College of Arts and Sciences who is committed to peace or social justice issues. Apply in the Political Science Department and submit a letter specifying your major, grade point average, and a statement that reveals a demonstrated commitment to peace and social justice. Application deadline: middle of spring semester. Must reapply each year.

Albert A. Guerrieri, Jr. Memorial Scholarship is presented to a student majoring in Physics or Physics and Astronomy chosen on the basis of academic achievement. Awarded at the Honors Convocation.

*** Hilda George Hanna Scholarship** was established in 1964, given annually to a woman who is a full-time student in the secretarial field.

Robert R. Hare Award for Distinction in Journalistic Writing was established in 1974 by Dr. Mary Virginia Hare in memory of her husband Dr. Robert R. Hare, a distinguished member of the English faculty of Youngstown State University. The award provides $100 each year to each of two full-time students who have demonstrated distinction in journalistic writing. Special consideration for one of the awards will be given to work published in *The Jambar*. The recipients are chosen by the Journalism faculty and outside experts designated by them. Awarded at the Honors Convocation.

Robert R. Hare Award for Distinction in Creative and Critical Writing was established in 1974 by Dr. Mary Virginia Hare in memory of her husband, Dr. Robert R. Hare, a distinguished member of the English faculty of Youngstown State University. The award provides $100 each year to each of three students who demonstrate distinction in one of the following categories of writing: poetry, fiction and drama, and literary criticism. The recipients are chosen by the Hare Awards Committee composed of members of the English faculty. Awarded at the Honors Convocation.

Harris Scholarship is an annual award to help defray the cost of summer field camp of a student majoring in Geology or Earth Science. Must be a junior or senior who has demonstrated an above average potential in the geological sciences and needs financial assistance. Chosen by the students in the Youngstown State University Geological Society. Apply at YSU Geological Society. Complete the application and return to YSU Geological Society c/o Geology Department. Application deadline: 8th week of Spring Semester.

***The Heart Center Scholarship in Honor of Arthur V. Whittaker, M.D. F.A.C.C.** Eligible candidates must be a declared major in Pre-Med, Medical Services or Nursing who reside in the Ohio counties of Mahoning, Trumbull, or Columbiana or the Pennsylvania counties of Mercer or Lawrence and maintain a 3.25 or better GPA. This scholarship is renewable. Apply through the YSU Foundation. Selection is made by the scholarship committee of the Heart Center.

Department of History Chairperson's Award is a monetary award given for the best undergraduate research paper in any field of history. Awarded at the Honors Convocation.

***The Robert Hogue Writing Scholarship** is awarded annually to the outstanding student in composition, creative and technical writing by the English department at Youngstown State University. To apply for consideration, check this scholarship on YSU's Institutional Aid Application. Deadline is February 15 each year.

Hypercube Scholars Award is given to a graduating BS Chemistry student who has conducted research and is going to graduate school. The award consists of the HyperChem Software Program and a plaque.

The Italian League Award For a student who has demonstrated exceptional achievement in Italian studies.

David Scott Ives Memorial is an annual prize presented to an upper division student to recognize achievement in classical languages. The recipient is chosen by a Foreign Language Professor. Awarded at the Honors Convocation.

Clingan Jackson Scholarship in Political Science is awarded annually at the Honors Convocation for scholarship invigorated by the traditions of a free and inquiring press and by active participation in the work of a government agency or a political party. Awarded at the Honors Convocation.

Ferdinand S. Jagatich Scholarship was established in 1998 by the Jagatich family in honor of their father, Ferdinand S. Jagatich. The recipient must be a student majoring in math, physics or engineering and demonstrate financial need. The student must maintain a 2.5 GPA or better, may be at any level of their degree and be a full or part-time student. If a part-time student, the student must maintain employment to be eligible for the award. This scholarship is a renewable scholarship. The recipient will be selected by the Office of Financial Aid and Scholarships at YSU.

Michael Klasovsky Scholarship in Geography is awarded to a student majoring in geography. The Department of Geography faculty will select the recipient.

Albert & Adele Krotzer Fund This scholarship provides an annual scholarship to a declared business major who maintains at least a 3.0 GPA with at least 96 hours completed. May be full or part-time. Must complete studies within two consecutive academic years (45 credit hours per year). Must not have any other major sources of tuition funding. Financial need will be considered. Candidates must be approved by Krotzer Scholarship official.

Ronald Barnes and Emily Parker Mackall Scholarship Endowment is a scholarship for a junior or senior who has at least a 2.8 GPA. The student must have completed one year of basic economic principles and one year of fine arts classes. The selection committee shall consist of the department chair or the assistant provost as well as two to three faculty members. This scholarship is available to students in the five county area as well as in Beaver County, PA.

***Dr. Donald Marcy Scholarship** was established to memorialize a former professor of Biology at Youngstown State University. The recipient must be a biology major. Apply through the Biology Department.

Evangelos Meshel Memorial Award in Greek is given to the best student in elementary or intermediate Ancient Greek. Awarded at the Honors Convocation.

***Lewis B. Miller/Retter Barge Miller Outstanding Geography Paper Award** is awarded annually for the best undergraduate research paper in any field of Geography.

Ohio Chapter of the American Institute of Chemists Award is given to an outstanding chemistry senior, consists of a one-year Student Associate membership in the Institute and a subscription to *The Chemist*, a monthly publication. Awarded at the Honors Convocation.

Omicron Lambda Honorary Biology Fraternity Award for Scholarship is an award given to an outstanding graduating biology student.

***Judge Joseph O'Neill** is for a prelaw student. Apply within the College of Arts and Science.

Outstanding Student in Mathematics To a senior whose academic record in Mathematics is outstanding. Selection is made by the Department of Mathematics and Statistics. Awarded at the Honors Convocation.

Outstanding Undergraduate in Mathematics Award is a book award given annually to a student selected by the Department of Mathematics. Awarded at the Honors Convocation.

* **Margaret I. Pfau Scholarship** was founded in 1973 by the friends of Margaret I. Pfau, who served with distinction as Chairperson of the Department of English. Income from the fund provides two annual awards to students majoring in English who have demonstrated academic excellence while attending YSU. Awarded at the Honors Convocation.

Edna J. Pickard Memorial Scholarship is awarded annually to a student pursuing a degree in Office Information Systems (or related field of study) or Business Teacher Education. The award was established in 1991 by Yo-Mah-O Chapter of the International Association of Administrative Professionals. Applications are available at CICS department or the Office of Financial Aid. For more information, contact the Dean's Office at the College of Arts and Science. Deadline: Februrary 15.

Rawson-Moritz Memorial Award is given to the outstanding freshman in biological sciences.

* **Dr. James Reeder Graduate Scholarship** is for a graduate student in chemistry. Apply in the Chemistry Department.

* **John R. Rowland English Scholarship** was established in 1957 and is available to an outstanding student majoring in English. Awarded at the Honors Convocation but cannot be applied for by students. For more information contact the College of Arts and Sciences.

* **Anne Bernard Schafer Scholarship** is available for a non-traditional English major. Apply within the English Department. Awarded at the Honors Convocation.

* **Kenneth L. Schafer Scholarship** is available to a member of the TKE Fraternity. Preference will be given to history majors. Apply with the TKE Advisor.

Ann and Jerome Schmerin Scholarship was established by Drs. Susan and James Bochert and is for a full or part-time, non-traditional Arts and Sciences student with a 2.5 GPA or higher who demonstrate a financial need. Apply by completing and submitting YSU's Institutional Aid Application from YSU's Office of Financial Aid and Scholarships.

***Dr. Eugene D. Scudder Graduate Student Teaching Award** is a cash award given to a chemistry graduate student for outstanding performance in teaching. For more information, contact the Chemistry Department.

***Dr. Eugene D. Scudder Organic Chemistry Award** is a cash award given to a chemistry undergraduate student for outstanding performance in organic chemistry. Awarded at the Honors Convocation. For more information, contact the Chemistry Department.

* **Dr. Eugene D. Scudder Physical Chemistry Award** is a cash award given to a chemistry undergraduate student for outstanding performance in physical chemistry. Awarded at the Honors Convocation. For more information, contact the Chemistry Department.

***Miller, Lewis & Retta Shaklee Award** is given annually to the student with the outstanding geography paper. Awarded at the Honors Convocation. For more information, contact the Geography Department.

* **Vere Stalker Shaklee/Nina Pierce Shaklee Outstanding Geography Major Award** is given annually to the outstanding undergraduate Geography major. Awarded at the Honors Convocation.

***Anthony Sgambati in Pre-Law** is awarded to a needy student who may have a family member in a labor organization.

Georgene M. Smith Scholarship was established in 1972 for students in botany, geology, or forestry, with funds bequeathed by Georgene M. Smith, an ardent conservationist and a past president of the Trumbull Arboretum and Conservation Association.

* **Joseph E. Smith Scholarship** provides funds for a worthy and needy student. The scholarship was established in 1971 by friends as a memorial to Dr. Joseph Earle Smith, a former dean of the College of Arts and Sciences and the first dean of the University. Awarded at the Honors Convocation. For more information, contact the College of Arts and Sciences.

Society for Analytical Chemists of Pittsburgh Award is a cash award given to a chemistry junior or senior with a 3.0 GPA or better. The award recognizes student participation in chemistry-related projects, special honors and awards received, and overall accomplishments in the field of chemistry. Awarded at the Honors Convocation. For more information, contact the Chemistry Department.

Paul and Marguerite K. Thomas Scholarships in Economics are three scholarships awarded to junior or senior students majoring in economics. Students will be nominated by faculty from the department. Students determined from overall academic achievement and performance. Students nominated shall be selected by the dean of the College of Arts and Sciences. Given at Honors Convocation, but cannot be applied for by students.

Undergraduate Award in Analytical Chemistry is sponsored by the Division of Analytical Chemistry of the American Chemical Society to encourage student interest in analytical chemistry and to recognize students who display an aptitude for a career in this field. The award consists of a subscription to the journal *Analytical Chemistry* and an honorary membership in the Division of Analytical Chemistry. Awarded at the Honors Convocation. For more information, contact the Chemistry Department.

*** John C. Vitullo Political Science Scholarship** is given in honor of John C. Vitullo, former Mahoning County Democratic Party Chairman. Awarded to a junior or senior political science major. Preference will be given to Mahoning County residents. Awarded at the Honors Convocation. For more information, contact the Political Science Department.

Myron C. Wick, Jr. Scholarships were established in 1985 by a $93,000 endowment by Alice Tod Wick Hall in memory of her father, Myron C. Wick, Jr. The endowment makes possible three academic scholarships, two in physical sciences and one in engineering. Applicants must be full-time students who have completed at least 100 quarter hours by the end of the Winter quarter and have a minimum cumulative grade point average of 3.0 and a declared major in Chemistry, Earth Science, Geology or Physics. Award is based primarily on academic performance, but involvement in University activities and a personal statement of educational and career goals will be taken into consideration by the selection committee. Apply at the Dean's office of Arts and Sciences or departments of Chemistry, Geology, or Physics and Astronomy. Awarded at the Honors Convocation.

Wolves Club Awards in Advanced Latin presented for meritorious work in Latin on the upper division level. Awarded at the Honors Convocation.

Wolves Club Awards in Intermediate Latin presented for meritorious work in Latin on the intermediate level. Awarded at the Honors Convocation.

*** Ralph E. Yingst Scholarship in Chemistry** is for a junior or senior who has completed various inorganic chemistry courses. Awarded at the Honors Convocation. For more information, contact the Chemistry Department.

B.J. Yozwiak Mathematics Award Established in 1996 in honor of Bernard J. Yozwiak, former Dean, College of Arts and Science and YSU Faculty member. Presented to a senior in Mathematics who has demonstrated outstanding academic performance overall and particularly in Mathematics. Selection is made by the Department of Mathematics and Statistics. Awarded at the Honors Convocation.

WILLIAMSON COLLEGE OF BUSINESS ADMINISTRATION

***Advertising Club of Youngstown Scholarship** - Must be a junior, or senior majoring in Advertising, Marketing or Communications with at least a 3.0 GPA. Residents of the Ohio counties of Mahoning, Trumbull or Columbiana and the Pennsylvania counties of Mercer or Lawrence are preferred. Need will be considered. To apply, contact the Williamson College of Business Administration.

Alpha Delta Sigma National Professional Advertising Society is an award made annually to an outstanding senior who is a member of the advertising fraternity. Awarded at the Honors Convocation.

Alpha Tau Gamma Fraternity Student of the Year Award is given annually to the member of the fraternity who has contributed the most to the University through a combination of academic proficiency and extracurricular activities.

American Society for Women Accountants Scholarship was established in 1963 for a woman majoring in accounting with at least a 3.5 GPA. To apply, contact the Williamson College of Business.

American Business Women's Association Scholarship was instituted in 1957. Provided by the Youngstown Chapter of the American Business Women's Association for a woman student in business administration.

Arby's 25th Anniversary Youngstown State University Scholarship Program was established in the Fall of 1989 and is awarded annually for 25 years from that date. Scholarship will be offered to a junior or senior student from Mahoning, Trumbull, or Columbiana counties in Ohio, or from Mercer County in Pennsylvania, who is majoring in business management. Student must be attending YSU on at least a half-time basis. Students shall be recommended by the faculty and selected by the Dean of the Williamson College of Business Administration on the basis of scholastic achievement and contribution to the College of Business.

ASQ Quality Management Scholarship is presented to a management major with a minimum grade point average of 3.0, membership in ASQ, and nominated by a faculty member for showing promise in quality management.

*** The Bank One Scholarship in Business** is for eligible business majors from Mahoning, Trumbull, Columbiana, Mercer, or Lawrence counties with a minimum 3.0 GPA.

*** Salomon Smith Barney Minority Scholarship Program.** Must be a business major from Mahoning, Trumbull, Columbiana, Mercer or Lawrence counties with at least 2.5 GPA and demonstrate financial need.

*** William W. Battin Scholarship** is given to a junior or senior WCBA student active in extracurricular activities and hold a leadership position in a WCBA organization or club. To apply, contact the Williamson College of Business.

Becker CPA Review Award is presented to 2 accounting seniors who are outstanding in scholastic achievement and interested in careers in public accounting. Recipients each receive tuition and materials for the Becker CPA Review Course to prepare

for the CPA examination. Recipients must take the Becker Course before taking the examination. Awarded at the Honors Convocation.

Better Business Bureau. Four scholarships for incoming freshmen in business. Must reside in Mahoning, Trumbull, or Columbiana County. To apply, contact the Williamson College of Business Administration.

Business and Professional Women's Club Scholarship is given annually to an upperclass woman by the Business and Professional Women's Club of Youngstown.

Cohen & Company Award is for a junior or senior accounting major with at least a 3.5 GPA. To apply, contact the Williamson College of Business. Awarded at the Honors Convocation.

***Cope Farm Equipment Scholarship** is for an accounting and finance, management or marketing major with at least a 3.0 GPA. To apply, contact the Williamson College of Business.

* **Credit Reporting Services Scholarship** is awarded to a junior or senior, enrolled full-time, with a declared major in WCBA and have at least a 3.0 GPA in your academic major. To apply, contact the Williamson College of Business.

Deloitte & Touche Alumni Award Two scholarships are awarded annually to a junior or senior accounting major with at least a 3.5 GPA. To apply, contact the Williamson College of Business.

District Directors Tax Institute Award Four scholarships are awarded annually to a junior or senior accounting major with at least a 3.5 GPA. To apply, contact the Williamson College of Business.

Conviser Duffy CPA Review Award Each recipient receives tuition and materials for the Conviser Duffy CPA Review Course to prepare for the CPA examination. Recipients must take the Conviser Duffy Course before taking the examination. Awarded at the Honors Convocation.

Farmers Insurance Group of Companies Scholarships. Must be a WCBA student in an insurance related field. Recipients must maintain a 2.5 GPA. Need will be considered.

Mildred N. Graebing Scholarships were established in 1973 by Mildred N. Graebing. The income from an endowment makes available annual grants to deserving Ohio or Pennsylvania students enrolled full-time in degree programs in business education or secretarial studies.

Eugene Green Memorial Scholarship Fund was established in 1984 in memory of Attorney Eugene Green. This scholarship will provide aid to students selected by the director of the Labor Studies Program. Two recipients will be selected annually. Recipients must be members of local trade unions and must be full-time students with high academic promise. To apply, contact the Williamson College of Business.

Grocery Manufacturers Representatives of Youngstown is given to students enrolled in the College of Business Administration with preference given to students whose parents work in the Youngstown area grocery business.

Abe Harshman Scholarship This scholarship is awarded to a junior or senior accounting major with at least a 3.5 GPA. To apply, contact the Williamson College of Business. Awarded at the Honors Convocation.

* **Hilda George Hanna Scholarship** was established in 1964, given annually to a woman who is a full-time student in the secretarial field.

Institute of Management Accountants Award Given annually to a junior or senior accounting major with at least a 3.5 GPA. To apply, contact the Williamson College of Business. Awarded at the Honors Convocation.

* **Arthur L. Jones Accounting Scholarship** This scholarship provides three annual awards to full-time accounting majors with financial need. To apply, contact the Williamson College of Business. Awarded at the Honors Convocation.

Albert & Adele Krotzer Fund This scholarship provides an annual scholarship to a declared business major who maintains at least a 3.0 GPA with at least 60 semester hours completed. May be full or part-time. Must complete studies within two consecutive academic years (30 semester hours per year). Must not have any other major sources of tuition funding. Financial need will be considered. Candidates must be approved by Krotzer Scholarship official. To apply, contact the Williamson College of Business. Awarded at the Honors Convocation.

* **John V. Maglery Scholarship** for a junior or senior accounting major with a 3.0 cumulative GPA. Financial need is considered. To apply, contact the Williamson College of Business. Awarded at the Honors Convocation.

* **Mahoning National Bank Minority Scholarship** for a WCBA minority student from Mahoning, Trumbull, Columbiana, Lawrence, or Mercer counties. To apply, contact the Williamson College of Business.

Mahoning Valley Chapter of Certified Public Accountants This scholarship is awarded to a junior or senior accounting major with at least a 3.5 GPA. Awarded at the Honors Convocation.

Mahoning Valley Chapter of Certified Public Accountants Wives Auxiliary Recipient must be a junior or senior accounting major with at least a 3.5 GPA. Awarded at the Honors Convocation.

Mahoning Valley Chapter of Certified Public Accountants Outstanding Intern Must be a junior or senior accounting major with at least a 3.5 GPA. Awarded at the Honors Convocation.

*Robert P. Mayberry, Sr. Scholarship for a junior or senior marketing major with a concentration in entrepreneurship. To apply, contact the Williamson College of Business.

*Metropolitan National Bank Scholarship. Will be awarded to a student majoring in Finance at Youngstown State University. The recipient must be have a minimum GPA of 2.75, demonstrate financial need, and be a resident of Mahoning or Trumbull Counties.

* Harry & Helene Meyer Freshman Scholarship This scholarship is awarded to a freshman planning to major in business administration or economics. Awarded on the basis of superior scholarship and financial need. To apply, contact the Williamson College of Business.

Dean Robert L. Miller Scholarship The recipient of this award must be a junior or senior accounting major with at least a 3.5 GPA and with financial need. Awarded at the Honors Convocation. To apply, contact the Williamson College of Business.

* The National City Bank Scholarship in Business Must be a business major from Mahoning, Trumbull, Columbiana, Mercer or Lawrence counties and maintain a 2.7 or better GPA.

Peter George Parthemos Scholarship Recipient must be a WCBA student with at least a 3.0 GPA in high school or college and be from Greece or of Greek descent. To apply, contact the Williamson College of Business.

William Petrych Memorial Scholarship awards one or two scholarships annually to a junior or senior student majoring in accounting. The recipient should demonstrate financial need and maintain a 3.2 GPA. The scholarship is renewable each year until the student graduates. The recipient will be selected by the Dean of the College of Business or their designee. To apply, contact the Williamson College of Business. Awarded at the Honors Convocation.

* J. Ronald Pittman Memorial Scholarship is for a WCBA student who displays leadership and community commitment. Created by the Citizens League of Greater Youngstown as a memorial to the life of J. Ronald Pittman, who was a charter member and officer. Recipient is chosen by a selection committee of the Greater Youngstown Citizens League. To apply, contact the Williamson College of Business.

S.C.O.R.E.(Service Core of Retired Executives) Three scholarships awarded to a junior or senior marketing major with at least a 3.0 GPA. To apply, contact the Williamson College of Business.

*Second National Bank Recipient can be an accounting, marketing, or general business major, and be interested in a career in banking. Must live in a county served by the bank. To apply, contact the Williamson College of Business.

*Raymond J. Shuster Award for Excellence in Human Resources Management is an award given annually to undergraduate and graduate students.

Paul J. and Marguerite K. Thomas Scholarships in Accounting and Finance Three scholarships awarded to a junior or senior accounting or finance major with at least a 3.5 GPA. To apply, contact the Williamson College of Business.

Wall Street Journal Student Achievement Award is presented to a senior in the Williamson College of Business Administration for academic excellence and outstanding performance.

Western Reserve Public Relations Society Scholarship is awarded to a Williamson College of Business Administration student majoring in advertising and public relations. The student must be a junior, have a 3.0 GPA, show financial need, and complete a 500 word essay. Recipient will be selected by the Board of the Western Reserve Public Relations Society. Awarded at the Honors Convocation.

WCBA Alumni Scholarship. Three scholarships for incoming freshmen business students. To apply, contact the Williamson College of Business Administration.

*Williamson Leadership This scholarship is given to freshman with a WCBA major. Student must have at least a 3.0 high school GPA.

Youngstown Business and Professional Women's Scholarship is a scholarship awarded to a female student who is accepted into an accredited school of higher education in an undergraduate or graduate program. Financial need is considered.

Youngstown District Purchasing Management Association This scholarship is awarded to a student who is a marketing major with financial need.

* Youngstown Traffic Club, Inc. Scholarship is for a WCBA student and a full-time sophomore with a minimum 2.8 GPA and demonstrated financial need. Recipient must attend Club's annual dinner meeting. To apply, contact the Williamson College of Business.

BEEGHLY COLLEGE OF EDUCATION

*Eugene Capone Memorial Scholarship was established in memory of Eugene A. Capone, a YSU graduate who spent his life in elementary and secondary education. Offspring of elementary and secondary school teachers in Trumbull, Mahoning, and Columbiana county schools are eligible. A brief essay is required.

Margaret Davis (Youngstown Education Association) Award. One award per academic year is given to a full-time education major with a 3.3 GPA or better. Student must be a graduate of a

Youngstown City School or a dependent of a Y.E.A. member.

Delta Kappa Gamma (Mu Chapter) Award is a scholarship is awarded to a junior who is enrolled full-time in the teacher education program with a 3.0 GPA or better.

Delta Kappa Gamma Society International (Alpha Delta State) Award is a scholarship awarded to a resident of Ohio who is enrolled full-time in a teacher education program. Student must be in the junior level with senior status in the Fall. Financial need is considered.

* **Bartley and Sarah Doyle Scholarship** is a scholarship awarded to an incoming freshman who is a recent graduate of a Mahoning, Trumbull, or Columbiana private or public high school and is pursing a degree in education. Apply at Office of Student Services, Beeghly College of Education. Deadline: to be announced Spring or Summer. Scholarship is renewable and reapplication for renewal is not necessary. Requirements for renewal: at least a 3.0 GPA.

* **Thomas G. and Ellen H. Fitzsimons Scholarship** is awarded to an incoming freshman who is a recent graduate of a Mahoning, Trumbull, or Columbiana private or public high school and pursuing a degree in education.

* **Anjulie Fitzsimons-Keegan Scholarship** is awarded to a high school senior at time of application in a Mahoning, Trumbull, or Columbiana private or public high school and seeking a degree in education. Apply in the College of Education, Fedor Hall. Reapplication is not required for renewal. Requirements for renewal: full-time, at least 3.0 GPA.

Fleming Education Scholarship. This scholarship is awarded annually by the Youngstown-Mahoning County Retired Teachers Association to a Mahoning county resident who is a senior with at least a "B" grade point average and who plans to teach upon graduation.

* **Lions Club of Youngstown Special Scholarship** was established in 1987 by the Lions Club of Downtown Youngstown. Provides a one year award to a junior or senior student majoring in special education. Recipients are selected by a committee within the Beeghly College of Education.

Kappa Delta Pi Award is given annually by the society to a member who, as a senior, exhibits outstanding scholarship, leadership, character, and service to the organization.

O.E.A. Jean Kershaw Award is an award given to an undergraduate sophomore, junior, or fourth-year student currently enrolled in an approved teacher education program; or a senior in a teacher education program who has been accepted for graduate study at an Ohio college or university. The applicant must be a current member of O.S.E.A. and N.E.A. student program.

Harvey Neal Kretzer Memorial Scholarship Fund This scholarship is for a College of Education Master's candidate in school counseling and/or related pupil personnel services. If no recipient is available, it may be awarded to undergraduate students pursuing a career in teaching disadvantaged students, based upon scholarship and need.

Bernadine Marinelli Memorial Scholarship is awarded in memory of Bernadine Marinelli, the first female high school principal in the Youngstown City Schools. The scholarship is given to an outstanding upper division secondary education major who is a graduate of the Youngstown City Schools. Awarded at the Honors Convocation in May. Contact Ms. K.J. Fatrum, Kilcawley Center.

Medina County Retired Teachers Award The recipient of this scholarship must be a graduate of a Medina County high school. Student must be enrolled as a junior or senior in the Beeghly College of Education.

Ohio Council of Teachers of Mathematics (Len Pikaart Memorial) Award is given to a resident of Ohio who is working toward math teacher certification which includes teaching of math in grades K-12. Individuals who have taught professionally are not eligible for this scholarship.

Department of Special Education Award is awarded annually to a special education major who, as a senior, exhibits exemplary scholarship and potential for work with exceptional individuals. Awarded at the Honors Convocation in May.

Helen Edward Stoll Scholarship Fund was established in 1993 with an endowment from David Edward. This scholarship provides an award for an education major with an interest in learning disabilities. Recipient must have an overall GPA of 2.5 and be a resident of Mahoning County.

Elvin W. and Margery Swander Memorial Scholarship (Mahoning County Retired Teachers Association) This scholarship is designed for a graduating senior enrolled in the Beeghly College of Education and is non-renewable. Application deadline: to be announced or posted in Spring or early Summer for the next academic year.

George M. Wilcox Award is an annual award to a secondary education major who shows evidence of becoming an outstanding secondary school teacher. Awarded at the Honors Convocation in May.

COLLEGE OF ENGINEERING

Adlaka and Associates Scholarships established in 1986, provides five partial scholarships, three to senior civil or structural engineering students and two in computer information systems. Recipient shall be a son or daughter coming from a family

where the head of the household is presently unemployed.

American Institute of Chemists Foundation Award is presented annually to the graduating senior with the highest cumulative point average in chemistry and chemical engineering courses as a full-time student. Students cannot apply for this. Awarded at the Honors Convocation.

American Institute of Chemical Engineers Award is awarded to the best junior chemical engineering student. The award is one copy of *Chemical Engineer Handbook* published by McGraw Hill. Students cannot apply for this. Awarded at the Honors Convocation.

American Society of Civil Engineers, Youngstown Branch, Award in Civil Engineering is granted annually to the outstanding graduate in civil and environmental engineering.

Builders Association of Eastern Ohio and Western Pennsylvania Scholarship is a tuition scholarship awarded each year to an entering freshman in civil engineering technology. The recipient, who must be a full-time student, receives tuition for two years until graduation with an associate degree, as long as academic standards are met and full-time status is maintained.

Louis A. Deesz Memorial Award is given by the Mahoning Valley Chapter of the Ohio Society of Professional and Registered Engineers, Tri-County Section, to the graduating engineering student outstanding in overall achievement. Students do not apply for this scholarship. The recipient is automatically chosen by the college.

* **The John W. Guffey, Jr. Scholarship** is given annually to a student from New Springfield High School, preferably for a student in the College of Engineering. Renewable for an additional three years based on academic performance. Apply at New Springfield High School.

Robert E. Heltzel, Sr. Memorial Scholarship is awarded on the basis of academic achievement and financial need to an undergraduate engineering student who has completed the first year of the engineering program.

* **Ronald J. Hepp Memorial Fund** was established in 1985 in memory of the late Ronald J. Hepp, and provides an award each year to a graduating electrical engineering student who exemplifies hard work, dedication, and service to others. Students cannot apply. Awarded at the Honors Convocation.

Virgil A. Hobart Scholarship is a scholarship awarded annually to an engineering student based on need or merit. Apply at the College of Engineering.

Institute of Electrical and Electronics Engineers, Youngstown Section, Award in Electrical Engineering is given annually to the outstanding graduate in electrical engineering. Students cannot appply. Recipient selected by department.

Institute of Industrial Engineers Award in Industrial Engineering is given to the outstanding graduating industrial and systems engineering student.

Ferdinand S. Jagatich Scholarship was established in 1998 by the Jagatich family in honor of their father, Ferdinand S. Jagatich. The recipient must be a student majoring in math, physics or engineering and demonstrate financial need. The student must maintain a 2.5 GPA or better, may be at any level of their degree and be a full or part-time student. If a part-time student, the student must maintain employment to be eligible for the award. The scholarship is a renewable scholarship.Tthe recipient will be selected by the Office of Financial Aid and Scholarships at YSU.

Professor Paul Luginbill Chemical Engineering Award goes to the best all-around senior student in chemical engineering. Students cannot apply. Awarded at the Honors Convocation.

* **Minority Engineering Scholarships** are available to minority students studying engineering. Applications may be obtained at the YSU Office of Financial Aid and Scholarships, the YSU Foundation, or the scholarship department of the various colleges. Award created by LTV Steel.

ms Consultants award in Civil Engineering Technology recognizes the students who work full-time while completing the program on a part-time basis. Outstanding students are recommended by the faculty for the certificate and monetary award. Students cannot apply. Awarded at the Honors Convocation.

* **National Electrical Contractors' Association Scholarships** are available for a junior and senior majoring in electrical engineering. Applications available at the Department of Electrical Engineering or the YSU Foundation.

***The Paul J. Powers Scholarship in Engineering** was established to honor the president and chairman of the board of Commercial Intertech by his many friends and associates in honor of his being named the Distinguished Citizen by the Youngstown State Universiy Alumni Association. The scholarship is available to an eligible junior or senior majoring in Engineering who has a 3.0 or better GPA. Mechanical engineering is preferred.

Lenora and Jack Reel and Joe, Steve, and Pete Fabek Memorial Scholarship was established in 1991 by Thomas M. Fabek and is given to a student with the rank of sophomore or higher with a financial need and in good standing in electrical engineering.

Nicola and Rocchina Richley Memorial Award is an annual award given to a sophomore student of engineering or engineering technology. Established by family and friends in memory of Nicola

and Rocchina Richley. Applicants must have completed at least one term of the sophomore year of their program, have a 3.0 GPA, and demonstrate a commitment to complete the program. The recipient will be selected by a committee of engineering and engineering technology faculty. Apply within the College of Engineering

Michael A. Rigo Memorial Scholarship is awarded to Mechanical Engineering students who have completed 95 hours. Awards will be based on academic achievement determined by the faculty of the Rayen College of Engineering and financial need determined by the Office of Financial Aid and Scholarships. Students must be residents of Mahoning County. The scholarship is renewable. Students cannot apply. Awarded at the Honors Convocation.

Edmund J. Salata Scholarship provides assistance to a civil engineering student with a GPA of at least 3.0.

Gerhardt M. Stein Electrical Engineering Scholarship provides an award each year to an electrical engineering student. It was established in memory of Dr. Stein, a former professor of electrical engineering at YSU, by a daughter, Dr. Waltraut J.H. Stein of Atlanta and his son, Dr. Ronald P. Stein of Seattle. Apply within the department.

Myron C. Wick, Jr. Scholarships was established in 1985 by a $93,000 endowment by Alice Tod Wick Hall in Memory of her father, Myron C. Wick, Jr. The endowment makes possible three academic scholarships, two in the physical sciences and one in engineering.

COLLEGE OF FINE AND PERFORMING ARTS

***The Michael Abrams Memorial Scholarship** is awarded annually to an outstanding student in vocal performance by the Dana School of Music to commemorate his lifelong love of the opera.

Alpha Psi Omega Award is given annually to a freshman student who has demonstrated distinguished accomplishment in dramatic arts through participation in University Theater productions.

* **Florence Simon Beecher Art and Theater Talent Awards** are renewable grants-in-aid given to incoming art or theater students who demonstrate outstanding talent.

* **Larue R. Boals Scholarship** was established in 1961 and is awarded to a student in the Dana School of Music.

Charles A. Borawski Memorial Art Award is a cash award for artistic accomplishment given in memory of art student Charles A. Borawski (1951-1978). It is presented annually at the Youngstown State University Student Art Exhibition at the McDonough Museum of Art.

* **B. Carrol Cubbison Music Scholarship** is funded by a gift from attorney Theodore R. Cubbison in honor of his wife, B. Carrol Cubbison. Recipients will be selected on a basis of talent and need from YSU's Dana School of Music's Department of Voice. Awarded at the Honors Convocation.

Doris I. Dalrymple Award is given to an outstanding ensemble participant.

Dusi Memorial Scholarship Fund was established in 1993 with an endowment from Joseph Dusi, Sr. The scholarship provides an award for students in the Dana School of Music who demonstrate musical talent in any area in the study of music. Awarded at the Honors Convocation.

* **R. Donald Elser Award** is given to an outstanding junior or senior in the Department of Communication and Theater for scholarship and achievement. Preference for graduates of South Range High School.

Fine and Performing Arts Dean's Awards Three awards are given each year to outstanding seniors. Awarded at the Honors Convocation.

* **Dolores Fitzer Scholarship** was established in 1979 to honor former member of the Dana School of Music piano faculty. This annual award is presented to a freshman piano student.

Forensics Grant-in-Aid. This award is given to a student in the Department of Communication and Theater. The student must be full-time and participate on the speech team. An interview/audition is required.

Friends of Music Award is given annually to two outstanding students in the field of music.

* **George A. Gabler Music Scholarship** provides scholarships to those students who are attending the Dana School of Music and who are majoring in piano. Awarded at the Honors Convocation.

***Patricia Good Scholarship** is awarded to entering freshman from South Range high school who are enrolled in the college of fine and performing arts.

Ronald Barnes and Emily Parker Mackall Scholarship Endowment is for a junior or senior with at least a 2.8 GPA. The student must have completed one year of basic economic principles and one year of fine arts classes. The selection committee shall consist of the department chair or the assistant provost as well as two to three faculty members. This scholarship is available to students in the five-county area as well as in Beaver County, PA.

* **Richard A. Martin and Aurora Ragaini-Martin Piano Award** was given by a YSU graduate who, with her husband's support, dedicated her life to teaching and playing the piano professionally. The recipient will be the outstanding graduate who has

demonstrated excellence in the field of piano and intends to continue in this field. This is an undergraduate graduation award. It is a prize, so students cannot apply for it.

Nellie P. Nick Music Scholarship was established in 1971 by Mildred N. Graebing in memory of her mother, Nellie P. Nick, in recognition of her 100th birthday anniversary. The income from an endowment makes possible annual awards to deserving female students in the Dana School of Music.

* **Don Oliver Memorial Fine Arts Scholarship** is for an art student at Youngstown State University with a 2.5 or higher GPA. Preference will be given to African-American students. Apply to the Art Department Chair.

Esotto and Vera Pellegrini Brass Scholarship is awarded to an outstanding brass student who is enrolled full-time, maintains a 3.0 GPA, and is a member of a major ensemble.

* **Rudy and Wealthie Prince Scholarship** is a renewable scholarship to assist a worthy and needy student studying music at the Dana School of Music at YSU. The selection is made by the scholarship committee of the Dana School of Music.

Mary P. Rigo Memorial Scholarship was established in 1986. This endowment will be awarded to students in the Dana School of Music who have completed 95 hours. Students must be music majors with emphasis in keyboard instruments. Selection, made on the basis of talent, will be determined by the Dana School of Music faculty. Students must be residents of Mahoning County. The scholarship is renewable. Recipients are awarded at the Honors Convocation.

* **Herman C. Ritter Scholarship for the Violin** is an endowment from the estate of Miss Juliet L. Ritter and was made available in 1957. The annual income provides a scholarship for a needy student who intends to make a career of music and shows particular promise on the violin. Awarded at the Honors Convocation.

SAI Honor Certificate is a music award given to the graduating Sigma Alpha Iota women's fraternity member with the highest grade point average.

Joe Salvatore Award. An award provided to a senior studio art major who has demonstrated outstanding effort in the face of exceptional adversity.

Scholastics Award is renewable scholarship given to the outstanding Scholastics portfolio selected during the annual Scholastics exhibition

Trumbull County Fine Arts Scholarship. A renewable scholarship selected from the award winners in the annual Trumbull County Arts Exhibition.

Gina Tenney Memorial Scholarship is for applicants who have a 3.4 GPA or higher, be a sophomore, a fine arts or humanities major, and be involved in extra-curricular activities.

Theater Grant-in-Aid. Four grants of $1,800 each are available to full-time students who agree to major in theater with a minimum of a 3.0 GPA and have demonstrated ability. Participation in the theater production program required.

Miriam S. Ullman Scholarship is provided annually by the Monday Musical Club of Youngstown. It is intended primarily for students who attend the Dana School of Music. This scholarship is renewable.

* **Bessie Wilson Music Scholarships.** The income from an endowment from the estate of Katharine Wilson in memory of her sister, Miss Bessie Wilson, is used for scholarships for music students. Applications may be sent to the Director of the Dana School of Music, who makes the recommendations to the Scholarship Committee.

Youngstown Music Teachers Association Scholarship is a scholarship awarded to an upplerclass music major chosen through a competitive audition each Spring.

THE BITONTE COLLEGE OF HEALTH AND HUMAN SERVICES

* **Dr. Jean Aboul-Ela Graduation Prize** is a one year membership in the American Dietetics Association to a senior graduating from the Coordinated Program in Dietetics. Apply in the Department of Human Ecology, 3043 Cushwa Hall, 742-3344. Application deadline: May 1. Not renewable.

American Legion Post 15 Awards are given to two cadets who rank in the top 25% of their academic class and have demonstrated outstanding leadership traits.

American Society For Healthcare Food Service Administrators is available to Food and Nutrition or Hospitality majors. Students may be full or part-time. Applications available in the Department of Human Ecology. Deadline March 1.

Association of the United States Army Medal is awarded to the cadet completing the first year of advanced courses who is the most outstanding in all academic subjects and who has completed one full year of the ROTC program at YSU.

* **Mary J. Beaubien Human Ecology Alumni Scholarship** is given to a student who has completed the sophomore year and majored in a four-year degree program in the Department of Human Ecology while maintaining a 3.0 GPA and who produces the outstanding essay on a current public policy issue. Applications are in the Department of Human Ecology. If you have questions, call 742-

3344 or fax 742-2309. Not renewable. Recipients are announced at the Honors Convocation.

* **Colonel Lloyd Booth Scholarship** was established in 1965 by the Mahoning Chapter of the Reserve Officers' Association as a memorial to Colonel Lloyd Booth. It pays $250 for the Military Science tuition during the recipient's junior year in the advanced course. Selection is based on the student's academic and military records and on financial need.

* **Doris Burdman Scholarship** was created in 1983 by the grandchildren and great grandchildren to honor the memory of Doris Burdman who worked tirelessly for the benefit of mentally, physically and emotionally handicapped persons. The scholarship will be awarded on the basis of financial need and scholastic achievement to an upper-level undergraduate student of Youngstown State University majoring in the field of social work.

The Theodore P. and Evelyn H. Chengelis Memorial Scholarship was established in 1997 by Patricia, Perry, Nicholas, and Dr. James Chengelis in honor of their parents, Theodore P. and Evelyn H. Chengelis. The scholarship will be awarded to a student of Hellenic heritage who is enrolled in the College of Health and Human Services with a pre-med curriculum. The recipient will be selected by the Chengelis family of Boston, Massachusetts.

***Crime Clinic of Greater Youngstown Scholarship** rewards students planning a career in Criminal Justice. Apply through the YSU Foundation. Selection is made by the Crime Club Scholarship Committee.

Daughters of the American Revolution Award is a gold medal presented annually to the graduating cadet in the top 25% of the ROTC and the academic class.

Gilda DeCapita Award is given annually by the nursing chapter of the YSU Alumni Association to an honors student in the nursing program. The student must be in good standing and in need of financial assistance. The amount of the award given is determined annually by the chapter's board.

* **James W. Degarmo Criminal Justice Scholarship in Law Enforcement** was established in 1976 by the Law Enforcement Honor Society of the Department of Criminal Justice of YSU. Its purpose is to give recognition to the contributions of James W. Degarmo to the profession of law enforcement and criminal justice education. Upperclass students evidencing outstanding scholastic performance in criminal justice studies are eligible for this award. Recipients are announced at the annual Honors Convocation.

Department of the Army Superior Cadet Ribbon Award is given to the outstanding student in Military Science.

Dr. Joan Ferry DiGiulio Social Work Scholarship was established in 2000 to give recognition to the contributions made to the social work profession by Dr. Joan Ferry DiGiulio, a long-time professor and chairperson of the Department of Social Work. The recipient must be a non-traditional female student majoring in social work or pre-social work, have a GPA of 2.75 or better and have attained sophomore status. Applications are available in the Department of Social Work, Cushwa Hall. Scholarship is renewable through the selection process. Awarded at the Honors Convocation.

Distinguished Military Graduate Honor Award is presented by the president of YSU to designated distinguished military graduates.

* **Ilajean Feldmiller Scholarship** is an annual award established in 1985 to honor Ilajean Feldmiller, a long-time faculty member and former chairperson of the Human Ecology Department. Its purpose is to assist in the development of concerned professionals. The recipient is selected by a committee of the faculty and the students must be currently enrolled in one of the Human Ecology programs.

* **Mary Ferry Memorial Paper Competition** was established in 1996 by Dr. Joan Ferry DiGiulio, Chair of the Social Work Department, to honor the memory of her mother. Two awards are given yearly to declared social work majors. The scholarship committee of the Department of Social Work determines the topic for the papers each year. This committee also judges the entrants. Students submit papers to the Scholarship Committee, Department of Social Work at Cushwa Hall. Students may call 742-1598 with questions. Awarded at the Honors Convocation.

Dean Gillespie Award is presented to the ROTC senior who has demonstrated the most facets of leadership.

Lori Grenich Student Nurse Award is issued by District #3 of the Ohio Nurses Association to a student demonstrating excellence in clinical nursing as judged by the faculty.

* **Maria LaConte Hackman Scholarship** was established to honor a former Army nurse by her husband. Recipients must be a nursing major who has been accepted into BSN program, with a 3.0 GPA or higher. Awards selected by the YSU Department of Nursing Honors and Awards Committee and the YSU foundation. A varied amount is awarded with a maximum of $2,500 given to one to three students per year. Must maintain a 3.0 GPA to renew. Apply at the Department of Nursing by April 1.

Nathan Hale Chapter, Sons of the American Revolution Awards are presented to the ROTC cadet completing the basic course who is selected for and enrolls in the advanced course, and to the cadet completing the advanced course who is com-

missioned in the Officers Reserve Corps of the Army of the United States and who best exhibited the qualities of leadership.

* **Health-O-Rama Scholarship** is a one year scholarship awarded to a student of sophomore rank or higher majoring in pre-med or other health-related field. Student must have a 3.2 GPA, demonstrate financial need and have graduated from high school in Mahoning, Trumbull or Columbiana counties in Ohio or in Mercer or Lawrence counties in Pennsylvania. Selection is made by a committee of CHHS faculty through review and evaluation of applications.

* **Jermaine Hopkins Academic Scholarship** is awarded to a hospitality management major, junior or senior, who exemplifies the career planning, community service, and academic dedication of Jermaine Hopkins. Apply in the Department of Human Ecology to the Hospitality Management Program Coordinator. A selection committee composed of interested faculty and 2 students selected by the Hospitality Management Society Board review the applications. Apply at Cushwa Hall 3043, or call 742-3344 for details. Deadline: Feb. 1. Not renewable. Announced at the Honors Convocation.

* **Margaret C. Horvath Scholarship** provides financial assistance to Human Ecology Department students to attend professional meetings at which they will be presenting papers or posters. Complete an application in the Department of Human Ecology, 3043 Cushwa Hall or call 742-3344. Deadline, varies. Based on students' requests to attend professional meetings. Not renewable.

* **Hynes-Finnegan Scholarship in Nursing** is awarded to a qualified nursing student at YSU. Must be accepted into the Nursing Program; have met full eligibility requirements; have 3.0 or higher GPA; be a graduate of an accredited high school in Mahoning, Trumbull, or Columbiana counties in Ohio or in Mercer or Lawrence Counties in Pennsylvania; and must have a financial need. Applications at the Department of Nursing. Not renewable.

Lake Erie Section International Food Technologists available to juniors majoring in Food and Nutrition. Applications available in the Department of Human Ecology. Deadline Feb 15.

Mahoning Chapter, Reserve Officers Association, ROTC Honor Awards are medals presented to the cadet completing the basic course who is selected for and enrolls in the advanced course, and to the cadet completing the advanced course who is commissioned in the Officers Reserve Corps of the Army of the United States and who best exhibited the qualities of leadership.

Mahoning - Trumbull Council Black Nurses Association, Inc is awarded to high school seniors, LPN, RN-BSN, BSN students who can provide proof of 2.0 GPA and letters of recommendation. Varied amount awarded for tuition and books. Applications available in the Nursing Department. MTCBNA reviews applicants and decides on awardee. Applications accepted February 1 through March 15. Not renewable.

Mahoning Valley Dietetic Association is open to all Food and Nutrition majors. Applications available in the Department of Human Ecology. Deadline April 1.

Ohio Nurses Association District III Award is given annually to the member of the graduating class in the nursing program who has the best scholastic record in clinical nursing.

Ohio Nutrition Council is open to all Nutrition or Family and Consumer Service majors. Applications available in the Department of Human Ecology. Deadline Feb 1.

Outstanding Human Ecology Student Award is given to a graduating senior chosen by the faculty for superior academic achievement and service.

Corydon Palmer Dental Society Award is presented tat the YSU Honors Convocation to two dental hygiene students who have demonstrated outstanding academic achievement in the first year of their professional education.

* **Nicholas Paraska Scholarship** was created in 1982 by friends and colleagues to honor Nicholas Paraska for his service as dean of the College of Applied Science and Technology, now the Bitone College of Health and Human Services. It is awarded annually on the basis of academic achievement and need to a student majoring in one of the Bitonte College of Health and Human Services programs or a School of Technology program who is completing an associate degree.

President-Professor of Military Science Award is presented to the senior cadet judged by the Military Science Cadre to be the most outstanding student in the class.

* **Barbara Lewis Roberts Memorial Scholarship** was established in 1997 by family members and former employees of Northeast Ohio Adoption Services to honor Barbara Roberts, who was instrumental in founding this agency. One to two scholarships per year are awarded to declared majors in Social Work. Preference will be given to applicants with the intention of employment in the field of child welfare and/or special needs adoption. Applications are available in the Department of Social Work, Cushwa Hall, 742-1598. Scholarship is not renewable. Awarded at the Honors Convocation.

***ROTC Alumni Scholarship** is for a full-time Military Science cadet. Apply at the Military Science Department.

* **Lieutenant Colonel Joseph Louis Sacchini R.O.T.C. Scholarship** is for a full-time Military Science cadet. Apply at the Military Science Department.

Alice W. Tod Scholarship is awarded by the Women's Board of the Youngstown Hospital Asso-

ciation to an upperclass student seeking a Bachelor of Science in Nursing degree. It is awarded on the basis of academic excellence and is renewable for a second year provided the recipient maintains full-time status and meets the established academic standards governing the award. Selection of the recipient is based on the recommendation of the director of the Associate Degree Nursing Program and the Women's Board of the Youngstown Hospital Association, in cooperation with the University's Director of the Office of Financial Aid and Scholarships.

Roseann Waindel Memorial Foundation Nursing Scholarship is awarded to a student who is planning a career as an emergency room/trauma nurse, who has a 3.0 or higher GPA, and who demonstrates financial need.

Trumbull County Voiture #1182 - 2018 is awarded to senior BSN students who are residents of Trumbull County. Applications available in the Nursing Department. Not renewable.

Woman's Board of Youngstown Hospital Association Award for Excellence in Nursing is awarded annually to the member of the graduating class in the nursing program who has the highest grade point average.

GENERAL SCHOLARSHIPS

The following are general scholarships/awards/prizes awarded by the University, organizations, individuals, and/or state agencies. To find out more, contact the Office of Financial Aid and Scholarships or the particular organization or agency.

***Designates YSU Foundation Scholarships**

American Association of University Women, Youngstown Branch, Scholarship was established in 1950. A grant is awarded each year to an upperclass woman student, on the basis of high scholarship and financial need.

Army Four-Year R.O.T.C Scholarship pays full tuition, mandatory and miscellaneous fees, $450 per year for books and an annual stipend of $2,000 ($200 per month of the school year). Students must apply as high school seniors, must be American citizens with an ACT of at least 19 or SAT score of 850. Results in commission as an officer in the U.S. Army upon graduation.

Army Two and Three Year R.O.T.C. Scholarships are available for current freshmen or sophomores. Pays tuition, mandatory and miscellaneous fees, $450 per year for books, and $2,000 annual stipend ($200 per month for the ten months). Must be a U.S. citizen and have a cumulative GPA of 2.5. Results in commission as an officer in the U.S. Army upon graduation.

Army R.O.T.C. Graduate School Scholarship is available to current college seniors who will complete graduate degree requirements in two years of graduate school. Some entitlements are obligations as Army Two and Three Year R.O.T.C. Scholarships.

*** Eugene C. Beach Memorial Scholarship** was established in 1976 by the members and friends of First Christian Church of Youngstown, Ohio, as a memorial to Dr. Eugene C. Beach, minister and national president of Tau Kappa Epsilon Fraternity. The income from the endowment provides an annual scholarship for a worthy and needy member of Epsilon Iota, the local chapter of Tau Kappa Epsilon. The board of control of Epsilon Iota recommends a recipient.

Brier Hill Scholarship was established in 1992 by residents and former residents of Brier Hill. This endowment provides a scholarship to descendants of Brier Hill residents and former residents. Applicants must have an overall GPA of 2.8 or above. Preference will be given to non-traditional students with the rank of junior or above. Financial need will be considered where more than one student qualifies.

Buechner Foundation Scholarships The Lucy R. Buechner Foundation, which operates a 75-bed residence hall for women on the YSU campus, provides two $7200 scholarships each year to freshman women who will reside in Buechner Hall. These scholarships are for full-time students and are payable at the rate of $900 per academic semester. Eligible women will have a 2.5 or higher cumulative GPA at YSU for renewal. Financial need is a factor in these scholarships. Contact the Office of Financial Aid and Scholarships at YSU for application forms. Women need not be residents of Buechner Hall to apply, but must reside there to receive the award. To apply for consideration, check this on YSU's Institutional Aid Application.

***Glen M. Burns Memorial Scholarship** will be awarded to an eligible graduating high school senior or current YSU student from Mathews High School. The individual must demonstrate qualities of citizenship, volunteerism and community support. The recipient will be selected by the Vienna Kiwanis Club gaged on a detailed biography submitted by the candidate. The scholarship is renewable for three years providing the recipient maintains a 3.0 GPA or higher. Special consideration will be given to applicants who demonstrate financial need. Apply through the Vienna Kiwanis Club.

*** James Campbell Scholarship** provides assistance to residents of Mahoning County. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 of each year.

Theodore P. & Evelyn H. Chengelis Memorial Scholarship was established in 1997 by Patricia, Perry, Nicholas, and Dr. James Chengelis, in memory of their parents, Theodore and Evelyn Chengelis. The scholarship will be awarded to a student of Hellenic heritage who will matriculate to medical school. The scholarship will be awarded

at the Honors Convocation. The recipient will be selected by the Chengelis family of Boston, Massachusetts.

Betty J. Connors Memorial Scholarship is intended to provide aid to a mother over 35 who wishes to begin or resume a college education but requires financial assistance to do so. Applicants are reviewed by a committee established by the University, and the recipient is chosen on the basis of her life experience, financial need and academic potential. For more information and application procedures contact the Office of Financial Aid and Scholarships.

Copperweld Steel Company's Warren Employees' Trust Scholarships are provided by the employees of the Copperweld Steel Company in Warren, Ohio, to aid deserving and able employees of the company, or their dependents, to secure a college education. The number of scholarships and the amount of each depend on available funds, the number of applicants, and each applicant's financial need and academic promise.

J. Ford Crandall Memorial Foundation Scholarships provide tuition for full-time undergraduate students from Mahoning County and are renewable for a maximum of 7 additional academic semesters. Recipients are selected on the basis of scholastic record from among students nominated by the Buckeye Elks Lodge of Youngstown. To apply, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

***Father DeCrane-Judge Houser Scholarship** is awarded annually to a student active in the Newman Association.

* **Cora E. Emerson Memorial Scholarship** was founded in 1972 by a bequest of Cora E. Emerson to provide assistance annually to a deserving and needy full-time student.

Thomas M. Fabek and Peter A. Fabek Scholarship is for a student who is an orphan or a foster child from Youngstown with a grade point average of 2.5 or higher. If a candidate from Youngstown does not qualify, candidate may come from any city in Mahoning County. First year students may apply. The scholarship is renewable for recipient that maintains a 2.5 GPA. Candidate may be suggested by Youngstown Catholic Services or Mahoning County Juvenile Department.

Fifth Third Bank Minority Scholarship/Internship Program Ohio Foundation of Independent Colleges, Inc. will administer the program. Minority students must have financial need as determined by the FAFSA, carry a 3.2 minimum GPA and major in a business related field. Awards will be made primarily to sophomores, juniors and seniors in the amount of $5,000. Recipients must be willing to complete a paid internship with Fifth Third Bank following the academic year during which the award is received.

General Extrusion, Inc., Scholarship was established to help deserving and able employees of General Extrusion, Inc., or their dependents to secure an education at YSU. It is awarded annually to an entering freshman who is a three-year employee with the company, or a dependent of a three-year employee, retiree or former employee who died while still associated with the firm. It is renewable for up to four academic years provided the student maintains the scholarship level and fulfills the requirements governing the scholarship. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15.

* **Hindu Community Scholarship** is for students of the Hindu and Vedic cultures. The recipient must be of Asian-Indian ancestry and must maintain a GPA of 3.0 or above. Application forms may be obtained from the Hindu Community Foundation or the YSU Foundation.

***Home Savings and Loan Scholarship** is available to children of active employees of The Home Savings and Loan Co. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

* **Neil D. Humphrey Scholarship** was established by family and friends of Dr. Neil D. Humphrey, fourth president of Youngstown State University. This scholarship is awarded annually at the Honors Convocation to a YSU student completing his or her junior year. Applications are reviewed by a three-member committee consisting of the president of the YSU Foundation, the provost and the vice president of Student Services. Students will be selected on the basis of scholarship and participation in campus activities.

* **Hynes Industries, Inc. Scholarships** provides two annual grants to children of Hynes employees, with first consideration given to incoming first-year students. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

* **IGS Scholarships** are awarded annually to incoming freshmen, one each from Liberty and Lowellville. Recipients must attend YSU full-time, maintain good academic standing and have demonstrated financial need.

The Interfraternity Council Awards for Scholarship is given annually to the fraternity 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 semesterss. The awards are presented during the Spring semester at the Greek Sing.

JAD Scholarship is awarded annually to a full-time student in good academic standing with a minimum GPA of 2.5 and demonstrated financial need.

***Ronald and Patricia Janci Scholarship** is awarded annually to an entering freshman who

graduated from Struthers high school.

***The Emma B. Jones Scholarship** is awarded annually to an East Side resident of Youngstown.

* **Judge Nathaniel R. Jones Scholarship** is awarded to minority and/or economically disadvantaged students with a 2.5 GPA who are pursuing careers designed to advance intergroup relations. Includes a public service requirement.

* **Howard W. Jones Scholarship** was created in 1980 to honor Dr. Howard Jones, the University's first president, who served for more than 35 years and was subsequently president of the Youngstown State University Foundation for an additional 11 years. It provides an award for a YSU student in need of financial assistance who has a good academic record in high school and/or college. The recipient is selected by a committee of the Youngstown State University Foundation.

Junior Civic League Scholarships were established in 1961, provides for worthy students by the Junior Civic League of Youngstown.

* **Michael B. Kaufman Memorial Scholarships** are funded by an endowment created by GEN. Jack D. Kaufman and Beatrice Kaufman in memory of their son, Michael B. Kaufman. Michael B. Kaufman Memorial Scholarships are available to members, spouses or the children of members of United Steel Workers of America. Officers, directors, staff persons, employees of this Union or their offspring are not eligible for these scholarships. No individual will be eligible for more than one scholarship. Recipients will be selected by the YSU Office of Financial Aid and Scholarships on the basis of need, from the first 20 applications received. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

Martin T. Kennedy Scholarship was established by the will of Martin T. Kennedy. This scholarship is used to assist needy students.

Michael Klasovsky Fund for Urban Studies This scholarship is awarded to a student majoring in geography who is employed in the Department of Urban Studies.

* **William F. Maag, Jr. Scholarship** was established in 1947 in honor of William F. Maag, Jr. by his friends. Awarded to an upperclass student and is non-renewable. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

* **William F. Maag, Jr. Vindicator Scholarship** provides annual awards to worthy students based on academic excellence and financial need. First consideration will be given to students majoring in the humanities. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

Ronald Barnes and Emily Parker Mackall Scholarship is for a junior or senior with at least a 2.8 GPA. The student must have completed one year of basic economic principles and one year of fine arts classes. The selection committee shall consist of the department chair or the assistant provost as well as two to three faculty members. This scholarship is available to students in the five county area as well as Beaver County, PA.

* **Mahoning National Bank Scholarship** is for full-time freshman students whose parent(s) are employed by Mahoning National Bank. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

Honorable Erskine Maiden, Jr. Scholarship provides annual awards to worthy students based on financial need and academic excellence. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

Paul E. Martin Scholarship was established by a northeast Ohio area business leader. Provides financial aid to Youngstown State University students for Mahoning and Trumbull counties. Applicants may be enrolled in either associate or bachelor's degree programs as either full- or part-time students. They must have at least a 3.0 GPA. The scholarship is awarded on the basis of academic achievement and financial need, without regard to sex, race or creed. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

* **Martin Family Scholarships** are for YSU junior or senior students who are residents of Mahoning, Trumbull, or Columbiana counties in Ohio, or Lawrence or Mercer counties in Pennsylvania. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

* **Pete Matsouris Scholarship** is available for worthy and needy students who are residents of Mahoning or Trumbull counties. Applications may be obtained at YSU's Office of Financial Aid and Scholarships.

Edna K. McDonald Cultural Awareness 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.

***R.E. Mills-Mudville Fire Company Scholarships** are awarded annually to relatives of Youngstown city fireman.

* **Minority General Scholarship Awards** were created during the 1995-1998 Capital Campaign to encourage and reward promising minority students. A committee of various college personnel, the YSU Foundation and the minority community will make the selection. Apply at the various colleges.

National Guard Scholarship Program. The state funds this program to assist persons who enlist in

the Ohio National Guard after September 1, 1977 for at least six years. Awards cover 60% of the cost of instructional and general fees. Eligible guardsmen should contact the Adjutant General's Office to apply for this program.

* **Carl Nunziato Scholarships** are awarded annually to high school seniors who have received the Army Four-Year R.O.T.C. Scholarship. This scholarship pays for room and board at a YSU dormitory. Apply through R.O.T.C.

Ohio Academic Scholarship Program The state funds this program to assist undergraduate students who exhibit exceptional academic ability. High school seniors who are residents of Ohio and who plan to attend an approved Ohio institution of higher learning on a full-time basis may apply. The recipients are chosen by the Ohio Board of Regents on the basis of grade point average and performance on a competitive examination. The scholarships are awarded in the amount of $1,000 per academic year for four years of undergraduate education.

Ohio Masonic Lodge Scholarship was established in 1963 by Grand Lodge of Masons of Ohio and is given to a worthy student. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

Ohio War Orphans Scholarship This undergraduate tuition scholarship is awarded on a renewable basis to children of members of the U.S. Armed Services who incurred disability or died while in service. This program is sponsored through the Ohio Board of Regents. Each recipient must have a cumulative grade point average of at least 2.0 by the end of the freshman year and must maintain no less than a 2.0 cumulative grade point average for each following year.

Panhellenic Council Award for Scholarship is given annually to the sorority chapter with the highest aggregate point index and to the member of a sorority with the highest individual point index, based on the academic work of the previous two semesterss. The awards are presented during the Spring semester at the Greek Sing.

The Willis Park Scholarship is a scholarship awarded to an eligible student who graduated from the Rayen High School or South High School of Youngstown, Ohio. Additional criteria and applications are in the Office of Financial Aid and Scholarships.

* **Tom Pemberton Memorial Scholarships** provide for graduates of Mahoning County high schools in the upper two-thirds of their high school classes. Preference given to those with deceased fathers. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

* **Joseph Potochny Scholarship** is made possible by a bequest of Joseph Potochny in 1963, and is granted to needy and deserving students of Ukrainian descent. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

Rudy M. Prince Memorial Scholarship was established in 1991 by the Boardman Rotary Club and the Prince family. This endowment will be awarded annually to a student from the Mahoning County Vocational School who will attend Youngstown State University.

***Protestant Campus Ministry Scholarships** awards the accomplishments of students active in Protestant Campus Ministries.

* **Haig Ramage Scholarships** provide scholarships for the freshman year. Selection of recipients is based on scholastic and leadership qualities and need for assistance.

***Ruth Roberts Scholarship** was established in 1998 to assist needy and worthy students attending Youngstown State University. Columbiana County residents are preferred. Apply through the Office of Financial Aid and Scholarships.

* **Kenneth L. Schafer Scholarship** is available to a member of the TKE fraternity. Preference will be given to history majors.

* **Irving Schwebel Memorial Scholarship** was created in 1985 by the Schwebel Baking Company in memory of the late Irving Schwebel who was its president and chairman of the board. The Irving Schwebel Memorial Scholarship is available for the children of full-time Schwebel Baking Company employees who have at least two years of continuous service. First priority will be given to incoming freshman students. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

* **Mary B. Smith Scholarship** was established in 1980 to honor Mary B. Smith on her completion of 41 years of exemplary service at YSU. Provides scholarship aid to a deserving adult student who cannot otherwise qualify for specific financial assistance. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline:February 15 each year.

Louis and Julia Spitzer Memorial Scholarships were established in 1961 for students of the Jewish faith who need financial assistance. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

Stavich Education Fund was established for graduates of Campbell High School who meet certain criteria and elect to attend YSU.

* **Stephens Family Scholarships** are available to Ohio residents with a minimum 2.5 GPA. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

Strouss Scholarship established in 1984, provides aid to two students nominated by the Buckeye Elks Lodge of Youngstown, Ohio.

* **C.J. Strouss Memorial Scholarship** is awarded annually to an upperclass student in memory of the late Clarence J. Strouss, a longtime trustee and devoted friend of the University.

Louis D. Tauro Scholarship was established in 1986. Awards are available to entering freshmen based on financial need and high school academic achievement. The scholarship is renewable for four years provided the student maintains a 3.0 GPA. Recipients may be nominated by the donor. The annual award will be in the amount sufficient to cover the instructional fee for a full-time student. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

UAW Local 1112-BOC Lordstown Assembly Joint Scholarship was established in 1990, to assist spouses and other legal dependents of UAW Local 1112 and full-time, salaried employees of BOC Lordstown Assembly Plant with one year or more affiliation. Full-time students with the rank of sophomore or higher, with at least a 2.5 GPA, and receiving no other financial aid other than a student loan are eligible. Application process is through the union locals.

* **Grace and Blanche Vail Scholarship** is available for worthy and needy students. Applications may be obtained at YSU's Office of Financial Aid and Scholarships.

* **The Lia N. Vouros Memorial Scholarship** was created by Attorney Joseph E. Vouros and friends in memory of Attorney Vouros's wife, the late Lia N. Vouros, available for YSU students whose parents are members of St. Johns Greek Orthodox Church of Boardman, Ohio. Recipients are selected on the basis of academic performance from a list of candidates provided by an advisory committee of St. John's Greek Orthodox Church. Apply at the church.

***Walker-Fleming Scholarships** are awarded to minority students from Youngstown by the Roberts Deliberating Club.

* **Sally Watson Scholarships** were established in 1969 by friends of the late Sally Watson, to provide assistance to worthy students. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15.

Norma and Jim White Scholarship was established in 1998 for dependents of full-time employees at Professional Risk Management who will be attending Youngstown State University. Employees must have a two year affiliation with PRM prior to application. Applications will be submitted to PRM and be reviewed by the Office of Financial Aid and Scholarships at YSU based on academic achievement and financial need. The recipient must maintain a 3.0 or better GPA and maintain full-time status. The scholarship is renewable for up to three years. Students must complete the FAFSA and YSU's Institutional Aid Application to qualify for all need-based and merit scholarships.

* **Walter Wollet Family Scholarships** are available for worthy and needy students. Applications may be obtained at YSU's Office of Financial Aid and Scholarships.

Wolves Club Scholarship is for worthy and needy Mahoning County high school graduates. Renewable up to four years. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

Youngstown Claims Association Scholarship is provided to a dependent child of an active member who is in good standing of the Youngstown Claims Association, Inc. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15.

* **YSU Retired Women's Club Scholarship** is awarded to a full-time female junior or senior in good academic standing. Apply at the Women's Center.

***Youngstown State University Women's Club Scholarship** is awarded to a full-time female student with a minimum GPA of 3.3 who has achieved 48+ hours and has a declared major. Apply in the Women's center.

* **William Zemko Memorial Scholarship** is available to a student majoring in Emergency Medical Technology (EMT) with a minimum 2.0 GPA.

* **Isadore Zobel Scholarship** was established in 1966 under the will of Isadore Zobel. This scholarship provides assistance to needy students of the Jewish faith. To apply for consideration, check this on YSU's Institutional Aid Application. Deadline: February 15 each year.

ATHLETIC SCHOLARSHIPS/ AWARDS/PRIZES

* **Gene D'Antonio Memorial Golf Scholarship** was established in 1980 in memory of the late Gene D'Antonio, who took great joy in teaching golf to young people. For a member of the YSU golf team who lives in Mahoning or Trumbull County. The recipient is selected by the Athletic Director and the Head Golf Coach at Youngstown State University.

***Steve Bartolin Sr. Scholarship** rewards the accomplishment of a student athlete on the baseball team.

***Dr. Robert Candella Scholarship** rewards the accomplishment of a student athlete on the golf team.

*The Don Constantini Scholarship rewards the accomplishment of a student athlete on the football team who is enrolled in a business related curriculum.

Bill Dailey Scholarship This award is available to a former member of the YSU intercollegiate basketball team to continue and/or complete his or her undergraduate studies. Recipient is recommended by the Dailey family and the Athletic Director.

* **Lester F. Donnell Memorial Athletic Scholarship** Lester F. Donnell's interest in athletics and higher education prompted the creation of this scholarship fund. This scholarship addresses the belief in development of the total person. It seeks to encourage the student athlete to strive for excellence in his or her academic and athletic pursuits. Sophomore, junior, and senior students who have a cumulative grade point average of at least 3.0 and are members of a YSU intercollegiate athletic team in a non-revenue sport are eligible to apply.

* **Bill Dunn Scholarship** is given in memory of a YSU graduate who was an all-american tennis player.

Harry K. Graebing Athletic Scholarship was established in 1969 by Mildred N. Graebing in memory of her husband, Harry K. Graebing. The income from an endowment makes possible annual grants to deserving Ohio or Pennsylvania students participating in YSU athletics as recommended by the Athletic Director.

* **Jermaine Hopkins Scholarship** is given in memory of an all-american football player.

*Tony Joy Sr Scholarship rewards the accomplishment of a student athlete on the golf team.

*The William Lackey Scholarship honors a 1937 graduate of Youngstown College who captained the basketball team and was active in many University related groups. Any Men's or women's basketball player with a 2.5 GPA or better is eligible. Apply through the Athletic Department.

* **William Lakin Scholarship** is given in memory of a Dollar Bank employee who enjoyed golf.

* **YSU Lineman Leadership Award** is given to an interior offensive lineman.

*William G. Lyden Scholarship rewards the accomplishment of a student athlete on the football team who is active in community service.

* **Richard Mayberry Scholarship** is a general athletic scholarship.

* **The Drs. Diane B. and Michael J. Miladore Scholarship** rewards a Youngstown State University student athlete with a 2.8 GPA. The scholarship alternates between females and males. Apply through the Athletic Department.

*The Thomas F. Mosure Scholarship rewards the accomplishment of a student athlete on the football team who is active in community service.

*The Clarence R. Smith Jr. Scholarship rewards the accomplishments of a student athlete from Boardman, Ohio.

* **Lawrence M. Stolle Athletic Scholarships** were established in 1973 by the Greater Youngstown Old Timers Association and other sports enthusiasts to honor Lawrence M. Stolle as sports editor of the Youngstown *Vindicator*. The income from an endowment makes possible annual scholarships for deserving students who participate in the University's athletic program.

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DEPARTMENT PHONE NUMBERS

(When calling from off-campus, add the prefix (330) 742-)

Accounting and Finance, Dept. of, WCBA602 3084
Adult Learner Services, KILCWest 2308
Affirmative Action & Disability Services, Office of, JONE2002 3370
Africana Studies Program, DEBH422 3097
Alumni Association, ALUM1st Floor 3497
American Studies, DEBH539 1607
Anthropology (See Sociology & Anthropology) . 3442
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Bursar, Office of the, MESH201 3133
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Cafaro House 4742
Campus Ministry
Protestant Campus Ministry 743-0439
Catholic Campus Ministry
The Newman Center 747-9202
Campus Recreation/Intramurals, BEEG103 3488
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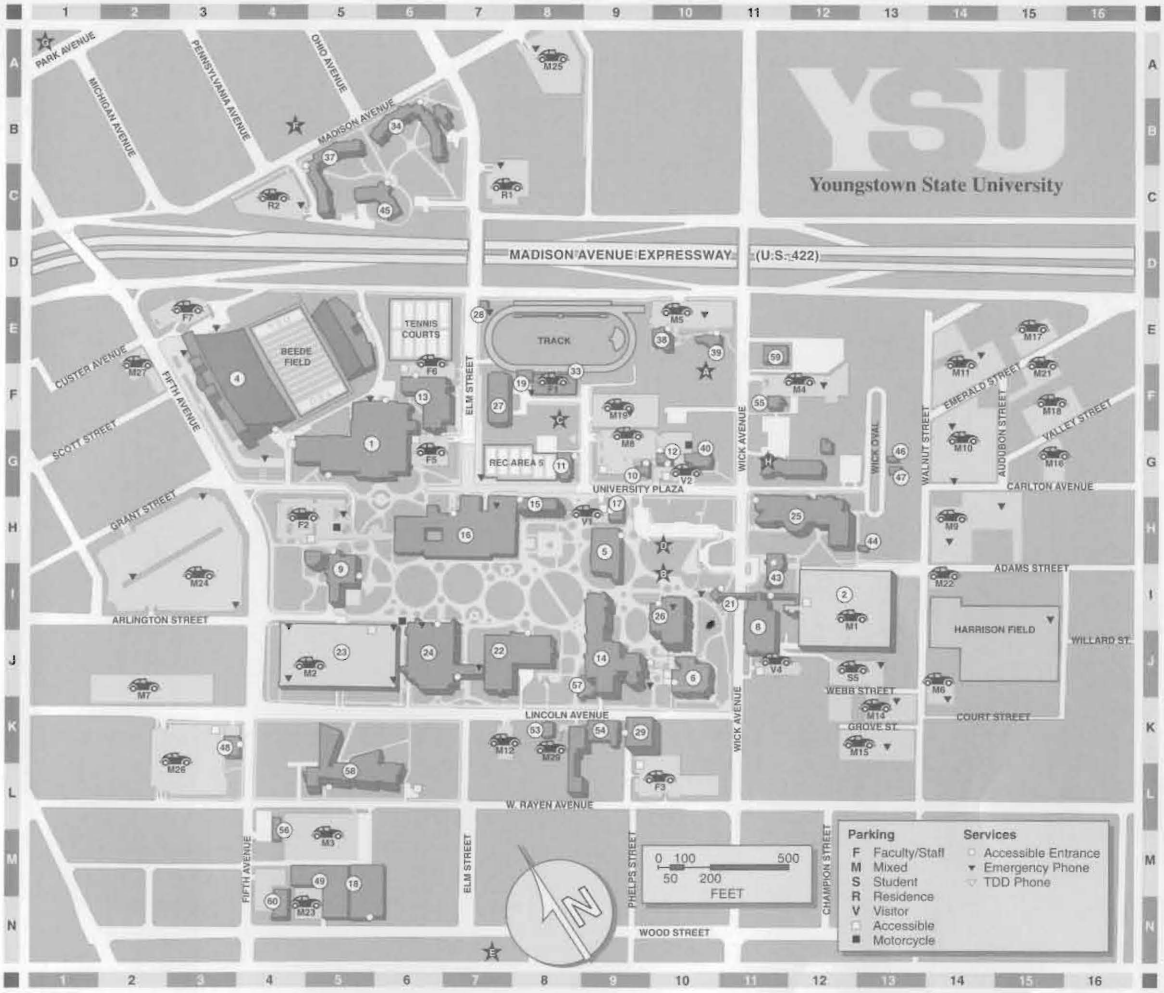
Financial Aid and Scholarships, Office of, MESH, 2nd Floor 3505
Fine and Performing Arts, College of, BLSS3006 3625
First-Year Student Services, KILCWest 3746
Foreign Languages and Literatures, Dept. of, DEBH501 3461
Geography, Dept of., CUSH2033 3317
Geology, Dept. of, ENGR213 3612
Graduate Studies, School of, TODA 359 3091
Health and Human Services, Bitonte College of, CUSH2064 3321
Health Professions, Dept. of, CUSH1074 3327
Health Sciences, CUSH1080 1901
History Dept. of, DEBH518 3452
Honors Degree Program, CAFH 4740
Housing Services, KILH 3547
Human Ecology, Dept. of, CUSH3044 3344
Human Performance & Exercise Science, Dept. of, BEEG307 3654
Information Center, KILC2nd Floor 3516
International Business, Williamson Center for, PHLP 3030
International Studies and Programs, Center for, PHLP119 2336
Intramural Recreation, BEEG103 3488
Islamic Studies, DEBH406 1625
Jambar, FDRH 0013 3094
Kilcawley Center 3571

Department Phone Numbers

Kilcawley House 3547
Labor Studies, WCBA630 1783
Language Learning & Resource Center, DEBH561 3465
Lyden House 1981
Maag Library
Library Hours 3677
Circulation, 230 3678
Management, Dept. of, WCBA649 3071
Marketing, Dept. of, WCBA534 3080
Mathematics Assistance Center, CUSH3090 3274
Mathematics and Statistics, Dept. of, CUSH 1055 3302
McDonough Museum of Art 1400
Mechanical and Industrial Engineering, Dept. of ENGR2510 3016
Mechanical Engineering Technology, CUSH3065 3287
Metropolitan College, METS 965-5800
Metro College—Austintown Plaza 270-2919
Metro College—Eastwood Mall 652-2828
Metro College—Southern Park Mall 965-4711
Metro College—Southwoods 965-5800
Military Science, Dept. of, STAM1112 3205
Multicultural Student Services, KILCWest 7175
Northeastern Ohio Universities College of Medicine Local Number (NEOUCOM) 747-2247
Nursing, Dept. of, CUSH2042 3293
Parking Services, 318 Fifth Ave. 3546
Peace and Conflict Studies, DEBH429 3437
Penguin Review, KILCWest 3169
Philosophy and Religious Studies, Dept. of, DEBH401 3448
Physical Therapy, Dept. of, CUSHB080 2558
Physics and Astronomy, Dept. of, WBSH2014 3616
Planetarium, WBSH2001 3616
Police, University, POLC 3527
Political and Social Science, Dept. of, DEBH444 3436
President, Office of the, TODA215 3101
Professional Practice, Office of, WCBA408 1405
Provost, Office of the, TODA222 3103
Psychology, Dept. of, DEBHB319 3401
Reading and Study Skills Program, FDRH2014 3099
Records Office, JONE1013 3182
Registration, MESH 242 3178
Social Work, Dept. of, CUSH3030 1598
Sociology and Anthropology, Dept. of, DEBH418 3442
Student Activities, Office of, KILC 3575
Student Affairs, Vice President for, TODA141 3532
Student Government, KILC2099 3591
Student Health Services, BEEG200 3489
Student Life, Office of, KILC-WEST 4703
Student Progress, Ctr. for, KILCWest 3538
Student Tutorial Services, KILCWest 7253
Teacher Education Dept. of, BEGH 3251
Technology, School of, CUSH3065 3287
Testing Office 3175
Ticket Office, Athletics, STAM2036 3482
Ticket Office, University Theater, BLSS1008 3105
Transcript Office, JONE1013 3184
Undergraduate Recruitment and Admissions, DANA 2000
University Outreach, METS, Suite 200 3221
University Scholars Program, CAFH 2772
University Theater, BLSS1008 3105
Veterans' Office, JONE2013 2373
Weller House/Wick House 1974/ 1982
Women's Programs, KILC2114/2115 2311
Women's Studies, Center for, DEBH355 2320
Working Class Studies, Center for, WCBA630 1783
Writing Center, COFF3002 3055
WYSU-FM Radio Station, CUSHB066 3363
YSU Federal Credit Union, TODAB106 ..... 3204/3781
YSU Website 3519/www.ysu.edu

BUILDING KEY

ALUM ..... Alumni House
BEEG ..... Beeghly Health & Physical Education Center
BEGH ..... Beeghly Hall
BLSS ..... Bliss Hall
COFF ..... Coffelt Hall
CUSH ..... Cushwa Hall
DANA ..... Dana Hall
DEBH ..... DeBartolo Hall
ENGR ..... Engineering Science Building
FDRH ..... Fedor Hall
JONE ..... Jones Hall
KILC ..... Kilcawley Center
MAAG ..... Maag Library
MESH ..... Meshel Hall
METS ..... Metro College, 100 DeBartolo Place, Youngstown (Southwoods Commons)
PHLP ..... Phelps Building
POLC ..... YSU Police
STAM ..... Stambaugh Stadium
TODA ..... Tod Hall
WBSH ..... Ward Beecher Science Hall
WELL ..... Weller House
WICK ..... Wick House
WSBA ..... Williamson Hall



Name	Grid Location	#
UNIVERSITY BUILDINGS		
127 Lincoln	8K	53
266 West Wood Street	4N	60
Alumni House	10G	40
Beeghly Center	5G	1
Beeghly Hall	5L	58
Bliss Hall	12H	25
Cafaro House	6B	34
Central Service Building	9H	17
Central Utility Building	7F	27
Chemical Storage	8J	57
Chilled Water Storage	8F	33
Christman Dining Commons	5C	45
Coffelt Hall	9G	10
Comfort Station	7E	28
Center for Historic Preservation	11F	55
Cushwa Hall	6J	24
Dana Hall	8G	11
DeBartolo Hall	5I	9
E.J. Salata Complex	5M	18
Engineering Science Building	7J	22
Fedor Hall	6F	13
Jones Hall	10J	6
Kilcawley Center	7H	16
Kilcawley House	8H	15
Lyden House	5B	37
M-1 Parking Deck	12I	2
M-2 Parking Deck	5J	23
Maag Library	10I	26
Materials Management	4M	56
McDonough Museum of Art	11I	43
Melnick Hall	11E	59
Meshel Hall	11I	8
Outdoor Kiln	13H	44
Pedestrian Bridge	11I	21
Phelps Building	9K	54
Public Service Institute	3K	48
Stambaugh Stadium	3F	4
Tod Hall	9H	5
Track Storage Building	7F	19
Ward Beecher Hall	9J	14
Weller House	10E	38
Westinghouse Building	5M	49
Wick House	10E	39
Wick Oval Building	13G	46
Wick Oval Garage	13G	47
Williamson Hall	9K	29
YSU Police	10G	12
NON-UNIVERSITY LOCATIONS		
Arms Family Museum of Local History	10E	A
Beecher Center for Technology in the Arts	10I	B
Buechner Hall	8F	C
Butler Institute of American Art	10H	D
Museum of Industry and Labor	7N	E
Newman Center	4B	F
Wick Park	1A	G
Wick-Pollock Inn	11G	H

YSU

Youngstown State University

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