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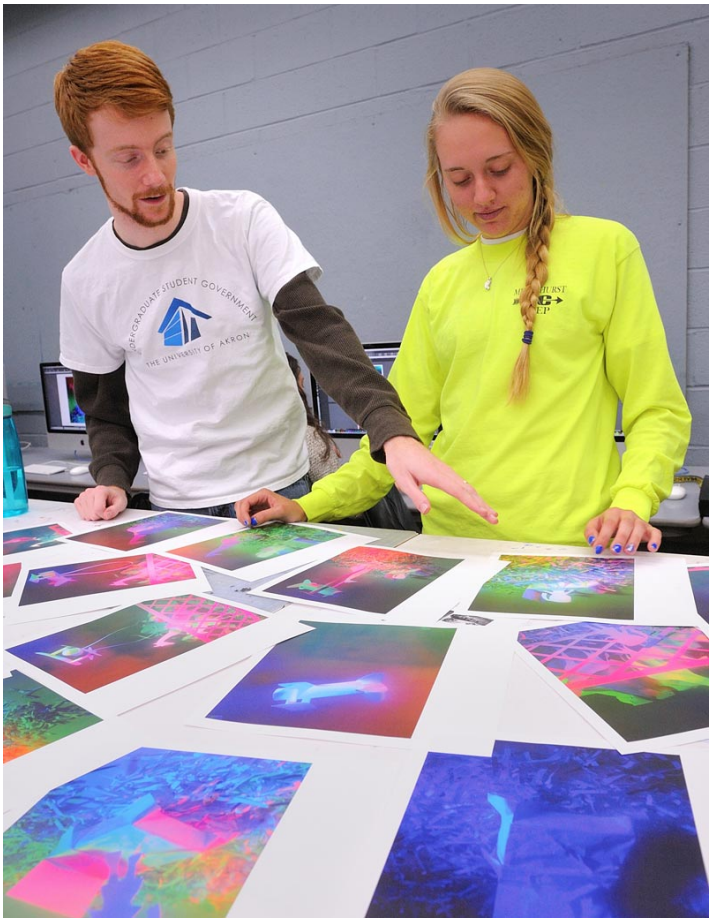
THE UNIVERSITY OF AKRON

UNDERGRADUATE BULLETIN



ABOUT THE BULLETIN

Inquiries

Address Inquiries Concerning

Admissions information, campus tours, and transfer of credits to the Office of Admissions (https://www.uakron.edu/admissions/undergraduate), The University of Akron, Akron, OH, 44325-2001. (330) 972-7100, or toll-free, (800) 655-4884. FAX (330) 972-7022.

Financial aid, scholarships, and loans to the Office of Student Financial Aid (https://www.uakron.edu/finaid), The University of Akron, Akron, OH 44325-6211. (330) 972-7032. Toll free (800) 621-3847. Fax (330) 972-7139.

Athletics (https://www.uakron.edu/campus-life/athletics) to the Director of Athletics, The University of Akron, Akron, OH, 44325-5201. (330) 972-7080.

Registration, records, graduation, degree progress reporting, and scheduling to the Office of the University Registrar (https://www.uakron.edu/registrar), The University of Akron, Akron, OH 44325-6208. (330) 972-8300.

Student advocacy and support, off-campus living and commuter resources, parents and family association, Ohio residency, and financial wellness education to ZipAssist (https://www.uakron.edu/zipassist), The University of Akron, Akron, OH 44325-6208. (330) 972-7272.

Graduate study to the Graduate School (https://www.uakron.edu/gradsch), The University of Akron, Akron, OH 44325-2101. (330) 972-7663.

The University switchboard number is (330) 972-7111.

Accredited By

Higher Learning Commission
Dr. Barbara Gellman-Danley, President
230 S. LaSalle Street, Suite 7-500
Chicago, IL 60604
800-621-7440

www.hlcommission.org (http://www.hlcommission.org)

For information on accreditation or to review copies of the accreditation documents, contact the Executive Vice President/Chief Administrative Officer, The University of Akron, Buchtel Hall 106, Akron, OH 44325-4703; (330) 972-8584.

Disclaimer

While every effort is made to provide accurate and up-to-date information, the University reserves the right to change, without notice, statements in the Bulletin series which include, but are not limited to rules, policies, procedures, fees, curricula, courses, programs, activities, services, schedules, course availability, or other matters. For example, programs may be modified due to limited resources or facilities, unavailability of faculty, insufficient enrollment, or other such reasons as the University deems necessary.

Please note that editions of this Undergraduate Bulletin prior to 1994-95 were titled the “General Bulletin.”

Equal Education and Employment Institution

Operating under nondiscrimination provisions of Titles VI, VII, of the Civil Rights Act of 1964 as amended and IX of the Educational Amendments of 1972 as amended. Executive Order 11246, Vocational Rehabilitation Act Section 504, Vietnam Era Veterans' Readjustment Act, and Americans with Disabilities Act of 1990 as related to admissions, treatment of students, and employment practices. It is the policy of this institution that there shall be no unlawful discrimination against any individual at The University of Akron because of race, color, creed, sex, age, national origin, handicap/disability or status as a veteran. The University of Akron will not tolerate sexual harassment of any form in its programs and activities, and prohibits discrimination on the basis of sexual orientation in employment and admissions. The nondiscrimination policy applies to all students, faculty, staff, employees and applicants. Complaints of possible sex and other forms of discrimination should be referred to:

EEO/AA Office

Daniel Nicholas, Director, EEO/AA

ASB, Room 138A
Akron, OH 44325-4709
Phone: (330) 972-7300
http://www.uakron.edu/hr/eeoaa/

Title IX - Policy Information and Inquiries Concerning the Application of Title IX

http://www.uakron.edu/title-ix/

Mark Stasitis, Title IX Coordinator, ASB, Room 125N, (330) 972-2352

Title IX - Issues for Students

Michael Strong, Deputy Title IX Coordinator for Students, Student Union, Room 152, (330) 972-6048

Mary Lu Gribschaw, Deputy Title IX Coordinator for Athletics, JAR 183, (330) 972-7080

Dale Adams, Director, Student Conduct and Community Standards, Simmons Hall 302, (330) 972-2580

Title IX - Issues for Employees

Michelle Smith, Deputy Title IX Coordinator for Employees, ASB 125C, (330) 972-5146
or
The United States Department of Education, Office of Civil Rights Policy Information on the Americans with Disabilities Act may be obtained from

ADA Coordinator
ASB 125C
Phone: (330) 972-5146

The *Undergraduate Bulletin* is published once each year by the Office of Academic Affairs (https://www.uakron.edu/provost), Buchtel Hall 102.

ACADEMIC CALENDAR

The Official Academic Calendar is maintained by the Office of the University Registrar (https://www.uakron.edu/registrar) and can be viewed at https://www.uakron.edu/registrar/dates/acadcal.dot.

A pdf of the Academic Calendar is also available: Download the pdf (http://www.uakron.edu/registrar/docs/AcadCal.pdf)

IMPORTANT POLICIES

Intent to Enroll and New Student Orientation

http://www.uakron.edu/nso/
Phone – 330-972-2622
Email – orientation@uakron.edu

The University of Akron requires students to submit a University Confirmation fee, indicating their acceptance of the University's offer of Admission. When the Confirmation fee is received, students are emailed their advising and registration information. This email includes their assigned dates to attend New Student Orientation: Advising & Registration, a full-day program where they meet with their academic advisors and register for classes. They also receive full student access to UA's online services, where they can view their class schedules, financial information, grades, and more.

All new freshmen, transfer students and students enrolled in the College Credit Plus program are required to attend an orientation program prior to registering for classes at The University of Akron. Orientation is conducted as a one-day program and is intended to ensure a smooth transition to the University. Content includes information about academic policies and procedures, registration and financial responsibility, and campus involvement. The weekend before classes begin, all incoming freshmen are also encouraged to attend New Roo Weekend for a chance to meet the rest of the incoming class, find out about campus involvement opportunities, and kick off their Akron Experience.

Multiple orientation sessions are available prior to each term and are filled on a first come, first served basis. Students should attend orientation as soon as possible to ensure the best selection of classes.

Academic Advising

New students are required to meet with academic advisors upon initial entry to the University and throughout the first year. Thereafter, academic advisors continue to serve as a resource for students to discuss degree requirements, career goals, major choice, course selection and other academic concerns.

Registration

Each term it is necessary for a student to select courses, formally register for those courses, and pay the appropriate tuition and fees. The student must register online via My Akron (http://my.uakron.edu).

Student Enrollment Status

Status	Undergraduate Credit Hours
Full-time	12 or more hours
Three Quarter-time	9-11.99 hours
Half-time*	6-8.99 hours
Less than half-time	0.5-5.99 hours

* For undergraduate aid award determination purposes, a three-quarter time student is registered for 9 - 11.99 credit hours.

Courses from which a student withdraws and receives a grade of 'WD' will not count in enrolled hours when determining a student's enrollment status.

Students are strongly encouraged to contact their lenders to determine continued eligibility for loan deferments before taking an action that will impact their enrollment status.

Level Status

The level status of each student is dependent upon the number of credit hours earned. The University identifies the following levels:

Will be Designated	If the Overall Credits Earned Are
Senior	90 credit hours or higher
Junior	60-89.99 credit hours earned
Sophomore	30-59.99 credit hours earned
Freshman	0-29.99 credit hours earned

Class Attendance

A student is expected to attend all class meetings for which the student is registered. A student may be dropped from a course in the current term by the dean if absence is repeated and the instructor recommends this action; a student can gain re-admission only with permission of both the instructor and the dean. A student dropped from a course receives an "F" which counts as work attempted whenever grade- point ratio calculations are made.

Student Schedules

Adding Courses

A student must register for a course in person before the end of the fifth day of a fall or spring term or online via My Akron (http://my.uakron.edu) by the end of the first week of the fall or spring term. Additions to the student's official schedule may be made through the end of the 14th calendar day, only with the permission of the student's advisor, instructor and dean or the dean's designee. Students who have not registered by this deadline may not attend classes or receive credit for the course. This deadline applies to all regular 15-week courses offered in the fall and spring semesters. For all other courses, such as those in intersessions or those which are flexibly scheduled, courses must be added, with appropriate permission, by the date when 20% of the course has been completed. Details regarding Summer session information may be found via My Akron (http://my.uakron.edu).

Withdrawal Policy

Students may drop a course through the second week (14th calendar day) of a semester or proportionally equivalent dates during summer session, intersession, and other course terms. No record of the course will appear on the student's transcript. For purposes of this policy, the course term for a course that meets during a semester but begins after the beginning of a semester and/or ends before the end of a semester begins when its class meetings begin and ends when its class meetings end. After the 14-day drop period, and subject to the limitations below, students may withdraw from a course through the seventh week (49th calendar day) of a semester or proportionally equivalent dates during summer session, intersession, or other course terms. A course withdrawal will be indicated on the student's official academic record by a grade of "WD."

Withdrawing from courses – applicable to undergraduate students only:

1. Undergraduate students may not withdraw from the same course more than twice. If a student attempts to withdraw from a course after having withdrawn from it twice before, he or she will continue

to be enrolled in the course and will receive a grade at the end of the semester.

2. Full-time undergraduate students who need to withdraw from all courses for extraordinary non-academic reasons (e.g., medical treatment or convalescence, military service) must obtain the permission of the dean of their college. For purposes of this paragraph:
   a. Students are considered full-time if they were enrolled as full-time students at the beginning of the term; and
   b. Courses for which the student has completed all requirements are excluded.
3. Undergraduate students who withdraw from two courses either before they have earned 30 credits, or after they have earned 30 credits but before they have earned 60 credits, are not permitted to register for additional courses until they have consulted with their academic advisor. The purpose of this consultation is to discuss the reasons for the course withdrawals and to promote satisfactory academic progress by helping students develop strategies to complete their courses successfully.
4. Except as otherwise provided below, undergraduate students may not withdraw from more than four courses before they have earned 60 credits. Students who attempt to withdraw from more than four courses will continue to be enrolled in those courses and will receive grades at the end of the semester.
5. Undergraduate students who need to withdraw from all courses for extraordinary, non-academic reasons (e.g. medical treatment or convalescence, military service) may, after consulting with their advisor, submit a written petition to the dean of their college requesting that these courses not be counted toward the four-course withdrawal limit. The dean may grant this permission if, in the dean's judgment, it is consistent with the best academic interests of the student and the best interests of the University.
6. Undergraduate students who have reached the four-course withdrawal limit as noted above may, after consultation with their advisor, submit a written petition to the dean of their college seeking permission to withdraw from one or more additional courses. The dean may grant this permission if the dean finds that the withdrawal is necessitated by circumstances beyond the student's control and is consistent with the best academic interests of the student and the best interests of the University.
7. Withdrawing from a course shall not reduce or prevent a penalty accruing to a student for misconduct as defined in the Student Code of Conduct.
8. Degree granting colleges may supplement this policy with more stringent requirements.

AP Information

AP Exam	AP Score	Course(s) Awarded	Credits Awarded
Art History	3	7100:210, Visual Arts Awareness	3
	4 or 5	7100:100, Survey of History of Art I	3
		7100:101, Survey of History of Art II	3
Biology	3	3100:103, Natural Science: Biology	4
	4	3100:100, Introduction of Botany	4
		3100:103, Natural Science: Biology	4
	5	3100:111, Principles of Biology I	4
		3100:112, Principles of Biology II	4
Calculus AB	3,4, or 5	3450:221, Analytic Geometry-Calculus I	4
Calculus BC*	3,4, or 5	3450:221, Analytic Geometry-Calculus I	4
		3450:222, Analytic Geometry-Calculus II	4
Capstone Research	3, 4, or 5	General Elective	3
Capstone Seminar	3, 4, or 5	General Elective	3
Chemistry	3	3150:101, Chemistry for Everyone	4
	4 or 5	3150:151, Principles of Chemistry I	3
		3150:152, Principles of Chemistry I lab	1
Chinese Language and Culture	3	3502:101, Beginning Chinese I	4
		3502:102, Beginning Chinese II	4
	4	3502:101, Beginning Chinese I	4
		3502:102, Beginning Chinese II	4
		3502:201, Intermediate Chinese I	3
	5	3502:101, Beginning Chinese I	4
		3502:102, Beginning Chinese II	4

		3502:201, Intermediate Chinese I	3
		3502:202, Intermediate Chinese II	3
Comparative Government & Politics	3	General Education Social Science	3
	4 or 5	3700:300, Comparative Politics	4
Computer Science A	3 or 4	3460:209, Computer Science I	4
	5	3460:209, Computer Science I	4
		3460:210, Computer Science II	4
Computer Science AB	3 or 4	3460:209, Computer Science I	4
	5	3460:209, Computer Science I	4
		3460:210, Computer Science II	4
Computer Science Principles	3, 4, or 5	3460:101, Essentials of Computer Science	3
English Language	3, 4, or 5	3300:111, English Composition I	3
English Literature	3, 4, or 5	3300:111, English Composition I	3
English Language & English Literature	3, 4, or 5	3300:111, English Composition I **and**	3
		3300:112, English Composition II	3
Environmental Science	3, 4, or 5	3370:211, Introduction to Environmental Science	3
European History	3	General Education Social Sciences	3
	4 or 5	General Education Social Sciences	3
		General Education Humanities	3
French Language	3	3520:101, Beginning French I	4
		3520:102, Beginning French II	4
	4	3520:101, Beginning French I	4
		3520:102, Beginning French II	4
		3520:201, Intermediate French I	3
	5	3520:101, Beginning French I	4
		3520:102, Beginning French II	4
		3520:201, Intermediate French I	3
		3520:202, Intermediate French II	3
French Literature	3	3520:101, Beginning French I	4
		3520:102, Beginning French II	4
		3520:201, Intermediate French I	3
	4 or 5	3520:101, Beginning French I	4
		3520:102, Beginning French II	4
		3520:201, Intermediate French I	3
		3520:202, Intermediate French II	3
German Language	3	3530:101, Beginning German I	4
		3530:102, Beginning German II	4
	4	3530:101, Beginning German I	4

		3530:102, Beginning German II	4
		3530:201, Intermediate German I	3
	5	3530:101, Beginning German I	4
		3530:102, Beginning German II	4
		3530:201, Intermediate German I	3
		3530:202, Intermediate German II	3
Human Geography	3, 4, or 5	3350:275, Geography of Cultural Diversity	2
Italian Language and Culture	3	3550:101, Beginning Italian I	4
		3550:102, Beginning Italian II	4
	4	3550:101, Beginning Italian I	4
		3550:102, Beginning Italian II	4
		3550:201, Intermediate Italian I	3
	5	3550:101, Beginning Italian I	4
		3550:102, Beginning Italian II	4
		3550:201, Intermediate Italian I	3
		3550:202, Intermediate Italian II	3
Japanese Language and Culture	3	3560:101, Beginning Japanese I	4
		3560:102, Beginning Japanese II	4
	4	3560:101, Beginning Japanese I	4
		3560:102, Beginning Japanese II	4
		3560:201, Intermediate Japanese I	3
	5	3560:101, Beginning Japanese I	4
		3560:102, Beginning Japanese II	4
		3560:201, Intermediate Japanese I	3
		3560:202, Intermediate Japanese II	3
Latin	3	3510:101, Beginning Latin I	4
		3510:102, Beginning Latin II	4
	4	3510:101, Beginning Latin I	4
		3510:102, Beginning Latin II	4
		3510:201, Intermediate Latin I	3
	5	3510:101, Beginning Latin I	4
		3510:102, Beginning Latin II	4
		3510:201, Intermediate Latin I	3
		3510:202, Intermediate Latin II	3
Latin Literature	3	3510:101, Beginning Latin I	4
		3510:102, Beginning Latin II	4
	4	3510:101, Beginning Latin I	4
		3510:102, Beginning Latin II	4
		3510:201, Intermediate Latin I	3
	5	3510:101, Beginning Latin I	4
		3510:102, Beginning Latin II	4
		3510:201, Intermediate Latin I	3

		3510:202, Intermediate Latin II	3
Latin: Vergil	3	3510:101, Beginning Latin I	4
		3510:102, Beginning Latin II	4
	4	3510:101, Beginning Latin I	4
		3510:102, Beginning Latin II	4
		3510:201, Intermediate Latin I	3
	5	3510:101, Beginning Latin I	4
		3510:102, Beginning Latin II	4
		3510:201, Intermediate Latin I	3
		3510:202, Intermediate Latin II	3
Macroeconomics	3, 4 or 5	3250:201, Principles of Macroeconomics	3
Microeconomics	3, 4 or 5	3250:200, Principles of Microeconomics	3
Music Theory	3	General Elective	3
	4 or 5	7500:121, Theory and Musicianship I	4
Physics 1	3, 4 or 5	2820:160, Technical Physics: Mechanics	4
Physics 2	3, 4 or 5	2820:163, Technical Physics: Electricity and Magnetism	2
		2820:164, Technical Physics: Heat and Light	2
Physics B	3, 4 or 5	2820:160, Tech Physics: Mech	4
		2820:163, Tech Physics: Electricity & Magnetism/lab	2
		2820:164, Tech Physics: Heat and Light/lab	2
Physics C: Electricity & Magnetism	3, 4 or 5	3650:292, Elem. Classical Physics II	4
Physics C: Mechanics	3, 4 or 5	3650:291, Elem. Classical Physics I	4
Psychology	3, 4 or 5	3750:100, Introduction to Psychology	3
Spanish Language	3	3580:101, Beginning Spanish I	4
		3580:102, Beginning Spanish II	4
	4	3580:101, Beginning Spanish I	4
		3580:102, Beginning Spanish II	4
		3580:201, Intermediate Spanish I	3
	5	3580:101, Beginning Spanish I	4
		3580:102, Beginning Spanish II	4
		3580:201, Intermediate Spanish I	3
		3580:202, Intermediate Spanish II	3
Spanish Literature	3	3580:101, Beginning Spanish I	4
		3580:102, Beginning Spanish II	4
		3580:201, Intermediate Spanish I	3
	4 or 5	3580:101, Beginning Spanish I	4
		3580:102, Beginning Spanish II	4
		3580:201, Intermediate Spanish I	3
		3580:202, Intermediate Spanish II	3

Statistics	3, 4 or 5	3470:261, Introductory Statistics I	2
		3470:262, Introductory Statistics II	2
Studio Art: 2-D Design	3, 4 or 5	7100:xxx, Studio Elective	3
Studio Art: 3-D Design	3, 4 or 5	7100:xxx, Studio Elective	3
Studio Art: Drawing	3, 4 or 5	7100:xxx, Studio Elective	3
U.S. Government & Politics	3, 4, or 5	3700:100, Government & Politics in the US	3
U.S. History	3, 4, or 5	3400:250, United States History to 1877	4
		3400:251, United States History Since 1877	4
World History	3	General Education Humanities	3
	4 or 5	General Education Humanities	6

* Students who intend to major in a STEM discipline and earn a 3 on the Calculus BC exam should consult with an advisor prior to accepting the credits

Alternative Credit Options

American Council on Education's College Credit Recommendation

The University of Akron accepts the American Council on Education's College Credit Recommendation Service (CREDIT). CREDIT evaluates and makes credit recommendations for formal educational programs and courses offered by organizations including business and industry, labor unions, professional and voluntary associations, schools, training suppliers, and government agencies. The program is based on the idea that it is sound educational practice for colleges and universities to grant academic credit for high-quality educational programs conducted by a variety of organizations provided that the courses are appropriate to an individual's degree program.

Advanced Placement Credit

Many high schools offer Advanced Placement courses through the auspices of the College Board for possible college credit. By enrolling in such courses during high school and taking Advanced Placement Tests at the end of each course, high school students may earn undergraduate credits in a number of different academic areas. The test score required to receive credit for a specific course is determined by the Ohio Board of Regents and the Academic Department in which the course resides. Credits earned in this manner are included in the total credits completed, but are not assigned a grade and do not count in the quality point ratio, class standing, or graduation with honors calculations. Students must take the tests while they are in high school. It is not possible to take the tests once a student is enrolled at The University of Akron. The State of Ohio, working through the University System of Ohio, has initiated policies to facilitate the ease of transition from high school to college as well as between and among Ohio's public colleges and universities.

Beginning in the Fall term 2009

- Students obtaining an Advanced Placement (AP) exam score of 3 or above will be awarded the aligned course(s) and credits for the AP exam area(s) successfully completed
- Credits received will be applied toward graduation and may also satisfy a General Education or Honor's Distribution requirement if the course(s), to which the AP area is equivalent, fulfill those requirements
- If an equivalent course is not available for the AP exam area completed, elective or area credit will be awarded in the appropriate academic discipline and will be applied toward graduation where such elective credit options exist within the academic major
- Additional courses or credits may be available when a score of 4 or 5 is obtained. Award of credit for higher score values varies depending on the institution and academic discipline
- In academic disciplines containing highly dependent sequences (Sciences, Technology, Engineering and Mathematics –STEM) students are strongly advised to confer with their academic advisor to ensure they have the appropriate foundation to be successful in advanced coursework within the sequence. The advanced placement table (p. 9) lists disciplines available for Advanced Placement Testing, scores required for accruing credit and courses at The University of Akron for which credit may be earned For questions concerning Advanced Placement Credit call 330-972-7066 or 330-972-7425.

Bypassed Credit

Certain courses designated in this bulletin by each academic department enable a student to earn "bypassed" credit. A student who completes such a course with a grade of "C" or better is entitled to credit for designated prerequisite courses which carry the same departmental code number. Credit for such bypassed prerequisite shall be included in the total credits earned, but shall not count in the quality point ratio, or class standing, or hours required for graduation with honors. Bypassed credit is not awarded on the basis of completing a course either by credit-by-examination or credit/noncredit.

College of Applied Science and Technology

Discipline	Course	Prerequisite	Approved for Bypass Credit
Computer Information Systems	2440:202	2440:201	2440:201
	2440:203	2440:201	2440:201
	2440:204	2440:202 & 2440:203	2440:201, 2440:202, & 2440:203
	2440:400	2440:201 & 2440:204	2440:201, 2440:202, 2440:203, & 2440:204
English	2020:222	2020:121	2020:121
Mathematics	2030:152	2030:151	2030:151

	2030:153	2030:152	2030:151 & 2030:152
	2030:154	2030:153	2030:152 & 2030:153
	2030:161	2030:151	2030:151
	2030:255	2030:154	2030:152, 2030:153 & 2030:154
	2030:356	2030:255	2030:154 & 2030:255

Buchtel College of Arts and Sciences

Discipline	Course	Prerequisite	Approved for Bypass Credit
Economics	3250:400	3250:201	3250:201
	3250:410	3250:200	3250:200
English	3300:112	3300:111	3300:111
Geography and Planning	3350:314	3350:310	3350:310
	3350:442	3350:305	3350:305
	3350:444	3350:305	3350:305
Theoretical and Applied Mathematics	3450:210	3450:145	3450:145
	3450:215	3450:145 or 3450:149	3450:145
	3450:221	3450:149	3450:149
	3450:222	3450:221	3450:149 & 3450:221
	3450:223	3450:222	3450:221 & 3450:222
Computer Science	3460:210	3460:209 & 3450:208	3460:209
Modern Languages	3500:102	3500:101	3500:101
	3500:201	3500:102	3500:101 & 3500:102
	3500:202	3500:201	3500:101, 3500:102 & 3500:201
	3500:422	3500:202	3500:101, 3500:102, 3500:201 & 3500:202
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	3550:301 or 3550:302	3550:202	3550:101, 3550:102, 3550:201 & 3550:202
	3560:102	3560:101	3560:101
	3560:201	3560:102	3560:101 & 3560:102
	3560:202	3560:201	3560:101, 3560:102 & 3560:201
	3560:422	3560:202	3560:101, 3560:102, 3560:201 & 3560:202
	3570:102	3570:101	3570:101
	3570:201	3570:102	3570:101 & 3570:102
	3570:202	3570:201	3570:101, 3570:102 & 3570:201
	3580:102	3580:101	3580:101
	3580:112	3580:101 or 3580:111	3580:101
	3580:201	3580:102	3580:101 & 3580:102
	3580:202	3580:201	3580:101, 3580:102 & 3580:201
	3580:211	3580:102 or 3580:112	3580:101 & 3580:102
	3580:212	3580:201 or 3580:211	3580:101, 3580:102 & 3580:201
	3580:301, 3580:302, 3580:303, 3580:307 or 3580:308	3580:202	3580:101, 3580:102, 3580:201 & 3580:202
	3580:340	two of 3580:301, 3850:302 & 3580:303	3580:101, 3580:102, 3580:201 & 3580:202
	3580:351	3580:301, 3850:302 and 3580:303	3580:101, 3580:102, 3580:201 & 3580:202
	3580:401, 3580:402 or 3580:403	3580:301 & {3580:302 or 3580:303}	3580:101, 3580:102, 3580:201 & 3580:202
	3580:404, 3580:405, 3580:406 or 3580:410	3580:340 and two of 3580:401, 3580:402 & 3580:403	3580:101, 3580:102, 3580:201 & 3580:202
	3580:409, 3580:411, 3580:412, 3580:416, 3580:418, 3580:419, 3580:422, 3580:425, 3580:427 or 3580:430	3580:407 or 3580:408	3580:101, 3580:102, 3580:201 & 3580:202
	3580:431 or 3580:432	two of 3580:401, 3580:402 & 3580:403	3580:101, 3580:102, 3580:201 & 3580:202
Statistics	3470:262	3470:261	3470:261

College of Health Professions

Discipline	Course	Prerequisite	Approved for Bypass Credit
American Sign Language	7700:102	7700:101	7700:101
	7700:201	7700:101 & 7700:102	7700:101 & 7700:102
RN-BSN Sequence (Limited to Licensed Registered Nurses)	8200:336		8200:211, 8200:217, 8200:230, 8200:350, 8200:360, 8200:370, 8200:380 & 8200:410

** Course no longer offered; bypass credit refers to historical credit only*

College Level Examination Program (CLEP)

The College Level Examination Program (CLEP) is a national program that offers the opportunity to obtain college credit by examination. A variety of experiences may have prepared a person to earn college credit. The qualifying score required to receive credit for a specific course is determined by the Ohio Board of Regents and the Academic Department in which the course resides. Credits earned in this manner are included in the total credits completed but are not assigned a grade and do not

count in the quality-point ratio, class standing, or graduation with honors calculations. Credit by CLEP may not be used to repeat for change of grade. CLEP tests are administered Monday through Friday. Contact the Counseling Center at 330-972-7084 to make a reservation and/or obtain more information.

The following guidelines outline the terms under which The University of Akron will accept the results of specified CLEP tests for college credit. Students may also refer to their academic advisor to determine whether CLEP and other prior learning exams (ie. DSST) apply toward University of Akron transcripts.

Business

CLEP Test	Qualifying Score	Course(s) Awarded	Credit Awarded
Financial Accounting	65 and above	6200:201 Principles of Accounting I	3
Introduction to Business Law	60 and above	6400:220 Legal and Social Environment of Business	3
Principles of Management	50 and above	2420:103 Essentials of Management Technology	3
Principles of Marketing	65 and above	6600:205 Marketing Principles	3

Composition and Literature

CLEP Test	Qualifying Score	Course(s) Awarded	Credit Awarded
American Literature	53 and above	OTM Arts and Humanities Credit	3
Analyzing and Interpreting Literature	59 and above	OTM Arts and Humanities Credit	3
College Composition/ College Composition Modular	50 and above	Remediation Free (Ready to Enroll in 2020:121 or 3300:111)	0
English Literature	50 and abo62	OTM Arts and Humanities Credit	3

History and Social Sciences

CLEP Test	Qualifying Score	Course(s) Awarded	Credit Awarded
American Government	56-62	OTM Social Sciences Credit	4
	63 and above	3700:100 Government and Politics in the United States	4
History of the United States I	56 and above	3400:250 U.S. History to 1877	4
History of the United States II	57 and above	3400:251 U.S. History since 1877	4
Human Growth and Development	58 and above	3750:230 Developmental Psychology	4
Humanities	55 and above	OTM Arts and Humanities Credit	3
Introduction to Educational Psychology	62 and above	OTM Social Sciences Credit	3
Introductory Psychology	59 and above	3750:100 Introduction to Psychology	3
Introductory Sociology	56 and above	3850:100 Introduction to Sociology	3
Principles of Macroeconomics	56 and above	3250:201 Principles of Macroeconomics	3
Principles of Microeconomics	57 and above	3250:200 Principles of Microeconomics	3
Social Sciences and History	62 and above	OTM Social Science Credit	3
Western Civilizations I	55 and above	3400:210 Humanities in Western Traditions I	4
Western Civilizations II	54 and above	OTM Arts and Humanities Credit	3

Modern Languages

CLEP Test	Qualifying Score	Course(s) Awarded	Credit Awarded
French Language	55 to 64	3520:101 Beginning French I	4
		3520:102 Beginning French II	4
	65 and above	3520:101 Beginning French I	4
		3520:102 Beginning French II	4
		3520:201 Intermediate French I	3
		3520:202 Intermediate French II	3
German Language	59 to 66	3530:101 Beginning German I	4

		3530:102 Beginning German II	4
	67 and above	3530:101 Beginning German I	4
		3530:102 Beginning German II	4
		3530:201 Intermediate German I	3
		3530:202 Intermediate German II	3
Spanish Language	56 to 62	3580:101 Beginning Spanish I	4
		3580:102 Beginning Spanish II	4
	63 to 67	3580:101 Beginning Spanish I	4
		3580:102 Beginning Spanish II	4
		3580:201 Intermediate Spanish I	3
	68 and above	3580:101 Beginning Spanish I	4
		3580:102 Beginning Spanish II	4
		3580:201 Intermediate Spanish I	3
		3580:202 Intermediate Spanish II	3

Science and Mathematics

CLEP Test	Qualifying Score	Course(s) Awarded	Credit Awarded
Biology	50 and above	OTM Natural Sciences without Labs Credit	3
Calculus	64 and above	3450:221 Analytic Geometry-Calculus	4
Chemistry	50 to 64	OTM Natural Sciences without Labs Credit	3
	65 and above	3150:151 Principles of Chemistry I	3
College Algebra	63 and above	3450:145 Algebra for Calculus	4
College Mathematics	57 and above	OTM Mathematics, Statistics, and Logic Credit	3
Information Systems	50 and above	General Elective	3

Credit by Examination

A student interested in earning credits by special examination may do so with the permission of the dean of the student's college and the dean of the college in which a particular course is offered and by payment of the special examination fee. The grade obtained in such an examination is recorded on the student's permanent academic record. Credit by examination is not permitted in the semester before graduation. Credit by examination may not be used to repeat for change of grade.

International Baccalaureate

The University of Akron recognizes the academic quality of the International Baccalaureate (IB) program and the efforts of students enrolled in IB coursework by awarding advanced-standing credit for the completion of the IB Diploma. Higher level examination scores are considered for departmental credit in the areas of French, Spanish, German, Geography, Latin, Greek, Economics, Chemistry, History, English, Social Anthropology, Mathematics, Music and Physics. Although minimum scores for the awarding of credit may vary by subject area, generally scores of four or five are sufficient. No credit is awarded for IB Subsidiary examinations, with the exception of some foreign languages.

IB Test	IB Score	Course No	Title	Hours
Biology	HL 4	3100:103	Natural Science: Biology	4
	HL 5	3100:111	Principles of Biology I	4
	HL 6 or 7	3100:111 & 3100:112	Principles of Biology I & II	8
	HL 6 or 7	3100:100 & 3100:103	Introduction of Botany & Natural Science: Biology (for non-science majors)	8
Mathematics	HL 4	3450:145	College Algebra	4
Chemistry	HL 4	3150:101 or 3150:152	Chemistry for Everyone or Principles of Chemistry I Lab	4 or 1

	HL 5	3150:110 & 3150:111	Introduction to General, Organic & Biochemistry I & Lab	4
	HL 6	3150:151 & 3150:152	Principles of Chemistry I & Lab	4
	HL 7	3150:151, 3150:152 & 3150:153	Principles of Chemistry I & Lab and Principles of Chemistry II	7
Economics	HL 4 or higher	3250:244	Introduction to Economic Analysis	3
English A1	Hl 4 or 5	3300:111	English English Composition I	3
	HL 6 or 7	3300:111 & 3300:112	English Composition I & II	6
English A: Language & Literature	HL 4 or 5	3300:111	English Composition I	3
	HL 6 or 7	3300:111 & 3300:112	English Composition I & II	6
English A: Literature	HL 4 or 5	3300:111	English Composition I	3
	HL 6 or 7	3300:111 & 3300:112	English Composition I & II	6
French	SL 4	3520:101	Beginning French I	4
	SL 5	3520:101 & 3520:102	Beginning French I & II	8
	SL 6	3520:101, 3520:102 & 3520:201	Beginning French I & II and Intermediate French I	11
	SL 7	3520:101, 3520:102, 3520:201 & 3520:202	Beginning French I & II and Intermediate French I & II	14
German	SL 4	3530:101	Beginning German I	4
	SL 5	3530:101 & 3530:102	Beginning German I & II	8
	SL 6	3530:101, 3530:102 & 3530:201	Beginning German I & II and Intermediate German I	11
	SL 7	3530:101, 3530:102, 3530:201 & 3530:202	Beginning German I & II and Intermediate German I & II	14
History of the Americas	HL 4 or 5	3400:250	United States History to 1877	4
	HL 6 or 7	3400:250 & 3400:251	United States History to 1877 & United States History since 1877	8
History of Europe/ME	HL 4 or higher	3400:289	World Civilization: Middle East	2
Physics	HL 5	3650:291	Elementary Classical Physics I	4
	HL 6 or 7	3650:291 & 3650:292	Elementary Classical Physics I & II	8
Psychology	HL 4 or higher	3750:100	Introduction to Psychology	3
Spanish	SL 4	3580:101	Beginning Spanish I	4
	SL 5	3580:101 & 3580:102	Beginning Spanish I & II	8
	SL 6	3580:101, 3580:102 & 3580:201	Beginning Spanish I & II and Intermediate Spanish I	11
	SL 7	3580:101, 3580:102, 3580:201 & 3580:202	Beginning Spanish I & II and Intermediate Spanish I & II	14

Military Credit

Ohio GI promise, created through Executive Order 2008-17S in July 2008, calls for all University System of Ohio institutions to participate in the Servicemembers Opportunity Colleges (SOC) Consortium. This membership guarantees that The University of Akron will work with veterans to award military credit towards degree completion.

Veteran students should request a copy of their credit from The American Council on Education (ACE) and send this transcript to the Transfer Student Services Center, Akron, Ohio 44325-2001. The credit will be evaluated and posted to the student's record upon enrollment at The University of Akron. Students should consult with academic advisors to determine how military training, experience and coursework credits can be used most effectively in meeting degree requirements.

The College Credit Plus Program (CCP)

The College Credit Plus Program was created by the Ohio Legislature to allow secondary school (7-12) students in Ohio to enroll in a college or university. The program is available to qualified students in grades 7-12 who are enrolled in any public, private, parochial, or home school.

Through the College Credit Plus Program, students are eligible to enroll in The University of Akron classes for the summer, fall and spring semesters. Itis recommended that prospective students work with their school counselors to discuss specific school policies.

College Credit Plus is not intended to be a substitute for the academic programs, social growth or maturing experience provided by Ohio's schools. It is not intended to interfere with or replace advanced placement courses nor the school's college preparatory curriculum available to students within their school system.

About the program

Advantages for college-level learning during 7th through 12th grade:

- Strengthening the middle and high school curriculum and raising expectations for high school students.
- Reducing the total number of credits needed to be earned in college.
- Potentially reducing the time required for the baccalaureate and costs to parents, students and taxpayers.
- Enriching the undergraduate college curriculum by lessening the need to take introductory courses, consequently allowing earlier entry into advanced courses, facilitation of double majors, or permitting additional electives.

CCP pays the following for students receiving dual credit:

- All tuition and fees applied to the bill at the time of registration.
- Registration fees including changes in a UA course schedule if changes are due to secondary school schedule conflicts initiated by a UA administrator.
- All required textbooks and non-consumable items. Please note: All required textbooks and non-consumable items must be returned at the end of the term.

Admission Requirements

Eligibility

Preferred Requirements for 7th through 12th grade applicants:

- 3.0 cumulative GPA and a 21 ACT composite or 1060 SAT math and Evidenced-based Reading & Writing combined score.
- The Office of Admissions will evaluate the cumulative GPA and ACT or SAT scores to determine college readiness for applicants.
- All applicants MUST meet at least one of the minimum College Readiness Standards in Writing, Reading or Mathematics as determined by the Ohio Department of Higher Education.

Application Deadlines

Application deadline for the summer and fall semesters is **April 15**. The application deadline for the spring semester is **October 15**.

Steps to apply for admission

1. Complete the Undergraduate Admission Application; select College Credit Plus as the type of student.
2. Complete the Signature Page. Signatures are required by the student, parent or guardian, and the school counselor.
3. Submit an official school transcript. For applicants in the 7th grade, the transcript should include 6th and 5th grades. For applicants in the8th grade, transcripts should include 7th and 6th grades.
4. Submit ACT or SAT test score results (testing must be completed prior to the application deadline).

Tech Prep

College Tech Prep is value-added education. This program integrates technical training and college preparatory academics beginning in high school and continuing through a minimum of an associate degree. College Tech Prep prepares students for highly skilled occupations supported by regional business and industry in the areas of business, information, health and engineering technologies. The College Tech Prep pathway is a skill-building curriculum jointly designed by business, high schools and colleges. The is pathway links the high school experience with a college degree program.

For additional information regarding the College Tech Prep programs, contact Kelly Herold at 330-972-8832.

Transfer Credit

The Transfer Credit policy is subject to the appropriate approval process and as such may be subject to change.

The University of Akron awards transfer credit for non-remedial, non-developmental college-level coursework completed with earned grades of "D-" or better at an institution of higher learning in the United States which is fully accredited or has been granted candidacy status by one of the following regional institutional accrediting agencies: Middle States Association of Colleges and Schools, Commission on Higher Education; New England Association of Schools and Colleges, Commission on Institutions of Higher Education; North Central Association of Colleges and Schools, Higher Learning Commission; Northwest Commission on Colleges and Universities; Southern Association of Colleges and Schools, Commission on Colleges; Western Association of Schools and Colleges, Accrediting Commission for Community and Junior Colleges; Western Association of Schools and Colleges, Accrediting Commission for Senior Colleges and Universities. A summary of the number of credits accepted will be listed on the official academic transcript along with the name of the institution and dates of attendance.

No grade point value will appear on the record, and no grade point average will be calculated for the coursework listed. 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 completed successfully at the receiving institution prior to the granting of a degree.

CLEP or Advanced Placement Credit posted on transcripts from previously attended regionally accredited Ohio colleges and universities is eligible for credit at The University of Akron. CLEP or Advanced Placement credit posted on transcripts from previously attended regionally accredited non-Ohio colleges and universities is not eligible for credit at The University of Akron. Students must present original documentation attesting to scores earned prior to receiving alternative credit considerations.

The University of Akron does not guarantee that a transfer student automatically will be admitted to all majors, minors or fields of concentration at the institution. For courses that have been taken at an institution of higher education noted in the reference above, the dean of the college in which the student intends to obtain a degree will specify which courses, other than General Education courses, will apply toward the degree requirements of the University. The office responsible for

transfer student services will specify which courses listed will apply toward the General Education program requirements.

Transfer students must meet all University of Akron residency requirements.

For other types of transferable credit, please see the section on Alternative Credit Options.

Note: Official transcripts and/or documentation for alternative credit can be obtained from the following web sites:

- www.acenet.edu (http://www.acenet.edu)
- www.collegeboard.com (https://www.collegeboard.com)
- www.collegeboard.org/clep (https://www.collegeboard.org/clep)
- www.getcollegecredit.com (https://www.getcollegecredit.com)

Credit Appeals

Appeals Regarding Transfer Credit: Following the evaluation of the student's transcript from another higher education institution or from ACE, the student will meet with an adviser or the Assistant Director of the Transfer & Adult Students Enrollment Center, to discuss how the credits apply. Should the student not be satisfied with the way the credits articulate to UA graduation requirements, the student may submit an appeal in writing to the Director of the Transfer and Adult Student Enrollment Center. The appeal should include a statement of why the appeal is being made, and should provide a syllabus of the course that the student completed, or the material that was covered in the course, including the amount of time devoted to various topics. The learning objectives of the course of study should also be provided.

If the appeal concerns transfer credit related to discipline requirements, the written appeal will be reviewed by the Chair/Director of the relevant department/school, or dean, as appropriate. If the appeal concerns transfer credit related to General Education requirements, the appeal will be directed to the appropriate individual at the University responsible for the General Education program.

Appeals Regarding UA Credit: In the event that a student seeks redress for the way in which a UA course is applied to General Education or degree requirements, students should first speak with their adviser. Any subsequent appeal would then be directed to the appropriate individual at the University (e.g. the person responsible for the General Education program, or the relevant Chair/Director/Dean).

Final appeals in all cases will be handled by the Office of Academic Affairs

Graduation Requirements

Requirements for Baccalaureate and Associate Degrees

A candidate for the baccalaureate or the associate degree must:

- File an application for graduation online with the Office of the University Registrar; If the candidate plans to complete degree requirements at the end of the fall semester, submit an application by or before July 1; If the plan is to complete degree requirements at the end of the spring semester, submit an application by or before December 1; Submit an application by or before April 1 for Summer Commencement
- Earn a minimum of 120 credits for a baccalaureate degree, 60 credits for an associate degree (some programs of study may require more credits) with a minimum 2.00 grade point average as computed by the Office of the University Registrar for work attempted at the University consistent with the Repeating Courses policy; Some of the colleges may have by action of their faculties, adopted a higher grade-point average for graduation with a degree from that college; The grade point average achieved at the time of completion of requirements for a degree will include repeated and reassessed courses which will be used to calculate graduation honors
- Meet all degree requirements including grade-point averages that are in force at the time a transfer is made to a degree-granting college; If the student should transfer to another major, then the requirements should be those in effect at the time of the transfer; For a student enrolled in an associate degree program, the requirements shall be those in effect upon entrance into the program
- For purposed of meeting foreign language requirements, all foreign language and "American Sign Language" courses can fulfill the foreign language requirement for those programs that have a non-specific foreign language requirement; For those majors or programs that specify specific language requirements, the applicable specific language requirement must be met to satisfy graduation requirements for that major or program
- Be approved for graduation by appropriate college faculty, Faculty Senate and Board of Trustees
- Complete the requirements for a degree in not more than five calendar years from the date of transfer, as defined below; In the event the student fails to complete the degree requirements within five calendar years from the date of transfer, the University reserves the right to make changes in the number of credits and/or courses required for a degree
- The date of transfer for a student in a baccalaureate program will be the date that the student is accepted by the degree-granting college; For a student enrolled in an associate degree program, the date of transfer refers to the date of entrance into the program
- Earn the last 30 credits in the baccalaureate degree total or 15 credits in the associate degree total in residence at The University of Akron unless excused in writing by the dean of the college in which the student is enrolled
- Earn a minimum of 30 credits in the baccalaureate degree total or 15 credits in the associate degree total in residence at The University of Akron
- If a student who has transferred from another institution wishes to present for the student's major fewer than 14 credits earned at The University of Akron, written permission of both the dean and the head of the department concerned is required
- Discharge all other obligations at the University

Requirements for Additional Baccalaureate and Associate Degrees

- Meet all of the requirements given above - Requirements for Baccalaureate and Associate Degrees
- Earn a minimum of 30 credits which have not counted toward a baccalaureate degree, for an additional baccalaureate degree, or 15 credits which have not counted toward an associate degree, for an additional associate degree; These credits shall be earned in residence at The University of Akron

Requirements for Minor Areas of Study

The University of Akron has approved minor fields of study that may be placed on a student's record when all requirements have been completed.

The following rules apply to all minors:

- The student must complete at least 18 credits. (Note: some minors mayrequire additional credits).
- At least six of the 18 credits must be at the 300/400 level, except where the department does not offer 300/400 level courses.
- A minimum grade-point average of 2.0 in each minor is required.
- A minor may be designated at any time during the student's career up to and including the time the degree clearance is processed.
- A minor will be placed on the student's record only at the time the student receives a baccalaureate degree and only if an application was processed.
- Courses to be applied toward the granting of a minor may not be taken credit/non-credit. A maximum of 6 bypassed credits may be used, but all other credits must be earned.
- The student must earn at least nine credits at The University of Akron in courses approved by the faculty granting the minor. Written permission of the dean and the head of the department which grants the minor is required for an exception.
- Courses required for a minor may carry prerequisites, which must be honored before the student may enroll.

Change of Requirements

To better accomplish its objectives and serve our students, the University reserves the right to alter, amend or revoke any rule or regulation. The policy of the University is to give advance notice of such change, whenever feasible.

Unless the change in a rule or regulation specifies otherwise, it shall become effective immediately with respect to the student who subsequently enters the University, whatever the date of matriculation.

Without limiting the generality of its power to alter, amend or revoke rules and regulations, the University reserves the right to make changes in degree requirements of the student enrolled prior to the change by:

- Altering the number of credits and/or courses required in a major field of study
- Deleting courses
- Amending courses by increasing or decreasing the credits of specific courses, or by varying the content of specific courses
- Offering substitute courses in the same or cognate fields

The Dean of the college, in consultation with the Department or Division Head of the student's major field of study, may grant waivers in writing if a change in rules affects degree requirements of a student enrolled before the change was effective. The action of the Dean of the college in granting or refusing a waiver shall be reviewed by the Senior Vice President and Provost and Chief Operating Officer on his motion, at the request of the Dean of the college of the student affected, or at the request of the student.

Credit and grade-point requirements for graduation as adopted by the college faculties are listed in this bulletin.

When deemed necessary and only in rare and unique circumstances that do not undermine the overall integrity of the various graduation requirements, the Senior Vice President and Provost and Chief Operating Officer, in consultation with the President, may waive specific requirements contained in this rule and report such waivers to the Board of Trustees for its information.

Graduation with Honors

Honors announced at the commencement ceremony are determined from the Grade Point Average as of the end of the term prior to the graduation term. The number of credit hours for the commencement ceremony included the total number of credit hours completed at The University of Akron plus the number of credit hours in progress at The University of Akron. Official honors are determined after ALL final grades have been reported on the academic record. All graded courses, including repeated and reassessed courses, are including in both determinations. The official honors designation will be posted to the diploma and academic transcript.

- The grade point average will be rounded to the nearest hundredth for the purposes of determining graduation with honors.
- Where deemed necessary, the Senior Vice President and Provost and Chief Operating Officer may waive these requirements for rare and unique circumstances and report such waivers to the Board of Trustees for its information.

Baccalaureate Degree

For a student who is being awarded a baccalaureate degree and who has completed 60 or more credits at The University of Akron, the degree:

Will be Designated	If the Overall Grade Point Average Is
Cum Laude	between 3.4 and 3.59
Magna Cum Laude	between 3.60 and 3.79
Summa Cum Laude	3.80 or higher

- A student who holds a baccalaureate degree from an accredited institution, including The University of Akron, and who earns a subsequent baccalaureate degree at The University of Akron per the academic policy requirements for second degrees, is eligible to graduate with honors.

Associate Degree

For a student who is being awarded an associate degree and who has completed 30 or more credits at the University, the degree:

Will be Designated	If the Overall Grade Point Average Is
with distinction	between 3.4 and 3.59
with high distinction	between 3.60 and 3.79
with highest distinction	3.80 or higher

- A student who holds an associate degree from an accredited institution, including The University of Akron, and who earns a subsequent associate degree at The University of Akron per the academic policy requirements for second degrees, is eligible to graduate with honors.

Grade Policy and Credit

Grades and the Grading System

A student will receive grades on various types of classroom performance during the progress of most courses and a final grade at the end of the term. At the end of the term, grades are available online. Individual tests are usually graded with percentage or letter marks, but official academic

records are maintained with a grade-point system. Overall scholastic averages are computed on a quality point ratio basis, wherein the sum of the quality points earned is divided by the sum of the credits attempted. The quality point value per credit for each letter grade is shown in the following tables:

Grade	Quality Points	Key
A	4.0	
A-	3.7	
B+	3.3	
B	3.0	
B-	2.7	
C+	2.3	
C	2.0	
C-	1.7	
D+	1.3	
D+	0.0	Graduate Courses Only
D	1.0	
D	0.0	Graduate Courses Only
D-	0.7	
D-	0.0	Graduate Courses only
F	0.0	Failure
I	0.0	Incomplete
IP	0.0	In Progress
AUD	0.0	Audit
CR	0.0	Credit
NC	0.0	No Credit
WD	0.0	Withdrawn
NGR	0.0	No grade reported
INV	0.0	Invalid grade reported
PI	0.0	Permanent Incomplete
R	0.0	Repeat

Notes: Prior to Fall Semester 1973 cumulative grade point averages included transfer work. A student cannot raise a grade through re-examination.

I - Incomplete: Indicates that the student has done passing work in the course but that some part of the work is, for good and acceptable reason, not complete at the end of the term. Failure to make up the omitted work satisfactorily by the end of exam week of the following term, not including summer sessions, converts the "I" to an "F." When the work is satisfactorily completed within the allotted time, the "I" is converted to whatever grade the student has earned. It is the responsibility of the student to make up the incomplete work. The faculty member should submit the new grade to the Office of the University Registrar via the grade roster, which is available through MyAkron. If the instructor wishes to extend the "I" grade beyond the following term for which the student is registered, the instructor should submit an incomplete extension form, which is available through MyAkron, before the end of the semester.

IP - In Progress: Indicates that the student has not completed the scheduled coursework during the semester because the nature of the course does not permit completion within a single semester, such as work toward a thesis. An "IP" grade should be assigned only in graduate courses.

PI - Permanent Incomplete: Indicates that the student's instructor and the dean with jurisdiction over the course may for special reason authorize the change of an incomplete "I" to a permanent incomplete "PI."

WD - Withdraw: Indicates that the student registered for the course but withdrew officially after the 15th day of the term.

NGR - No Grade Reported: Indicates that, at the time grades were processed for the current issue of the record, no grade had been reported by the instructor.

INV - Invalid: Indicates the grade reported by the instructor of the course was improperly noted and thus unacceptable for proper processing.

Importance of Grades

Grades determine whether a student is either eligible or ineligible to remain at the University. Eligibility to participate in the 200-plus registered student organizations and other co-curricular activities is dependent on the student's maintenance of good academic standing at the University. A student who has not been placed on probation or dismissed from the University is deemed to be in good academic standing. Some selective organizations such as honoraries and varsity athletics require special eligibility criteria. On the basis of grades, a student receives opportunities to take additional courses to accelerate academic progress. Acceptance for admission to a college depends on the approval of the dean of the college which the student chooses to enter and on the student's academic performance to date.

Dean's List

Undergraduate students who carry 12 graded credits or more without receiving an "Incomplete" or "In Progress" grade and earn a grade point average of 3.5 or better are eligible for inclusion on the Dean's List of their respective college. This is an undergraduate academic honor recognizing excellence in the classroom prior to the completion of the degree. Developmental Program course load hours do not carry academic credit toward a degree and are not considered in determining Dean's List honors but do count in computing a student's course load for financial aid or student employment, and are used in probation and dismissal decisions.

President's List

Undergraduate students who carry 12 graded credits or more without receiving an "Incomplete" or "In Progress" grade and earn a grade point average of 4.0 are eligible for inclusion on the President's List. This is an undergraduate academic honor recognizing excellence in the classroom prior to the completion of the degree. Developmental Program course load hours do not carry academic credit toward a degree and are not considered in determining President's List honors but do count in computing a student's course load for financial aid or student employment, and are used in probation and dismissal decisions.

Probation-Dismissal

Probation is a warning to the student whose academic record is unsatisfactory and who is in danger of being dismissed from the university. A student may, however, be dismissed without having previously been placed on probation.

An undergraduate student whose cumulative GPA falls below 2.0 is placed on academic probation and is subject to such academic action, including but not limited to mandatory repeat for change of grade, credit hour restriction, and student success programming, as may be imposed

by the dean of the student's degree-granting college, or by the dean's designee. While on probation, an undergraduate student may not change major or transfer to another degree-granting college.

An undergraduate student whose cumulative GPA falls below 2.0 for each of two consecutive semesters will be evaluated for dismissal or retention following the second semester, with the option to retain for one additional semester if the term GPA has improved significantly but the cumulative GPA remains below 2.0. An undergraduate student whose cumulative GPA falls below 2.0 for each of three consecutive semesters will be dismissed from the university.

Decisions regarding retention or dismissal will be made by the dean of a student's degree-granting college, or by the dean's designee. Students not yet enrolled in a degree-granting college will be evaluated by the head of the Division of Student Success, or by the head's designee.

To be eligible for readmission, previously dismissed students must have either:

- completed at a regionally accredited college or university at least 18 credit hours, with a 2.5 GPA or higher, that will apply toward a degree at the University of Akron or,
- waited a minimum of five calendar years from the date of dismissal and submitted a written statement outlining the causes of poor academic performance and steps taken toward improvement.

Students readmitted on probation will be evaluated for retention or dismissal immediately following the first semester after readmission, with the option to retain for one additional semester if the term GPA has improved significantly but the cumulative GPA remains below 2.0.

Repeating Courses

Any course may be repeated twice by an undergraduate student subject to the following conditions:

- To secure a grade ("A-F") a student may repeat a course in which the previously received grade was a "C-," "D+," "D," "D-," or "F," "CR," "NC," or "AUD." Registrations under the "CR/NC" option are subject to the restrictions in the "CR/NC" policy
- To secure a "CR," a student may repeat a course in which the previously received grade was a "NC." Registrations under the "CR/NC" option are subject to the restrictions in the "CR/NC" policy
- To secure a grade ("A-F"), "CR," "NC," a student may repeat a course in which the previously received grade was an "AUD." Registrations under the "CR/NC" option are subject to the restrictions in the "CR/NC" policy
- A graded course ("A-F") may not be repeated for a grade of "AUD"
- A course taken under the "CR/NC" option may not be repeated for a grade of "AUD"
- With the dean's permission, a student may substitute another course if the previous course is no longer offered. Courses must be repeated at The University of Akron
- Grades for all attempts at a course will appear on the student's official academic record
- Only the grade for the last attempt will be used in the grade-point average
- All grades for attempts at a course will be used in grade-point calculation for the purpose of determining graduation with honors and class standing
- For purposes of this section, credit for this course or its equivalent will apply only once toward meeting degree requirements

Course Substitution Policy

The University of Akron recognizes that some students may be unable to satisfy specific coursework requirements for degree completion. Therefore, the student may request a course substitution. A course substitution is not appropriate when the specific course(s) is essential to the degree being sought and a substitution would represent a fundamental alteration of the program. The process for requesting a course substitution is as follows:

The student contacts his/her advisor and requests a course substitution.

- If the request(s) is based on a disability, the Office of Accessibility shall be consulted and shall assist the advisor and student in the facilitation of a solution
- If the advisor approves, an appropriate substitution is agreed upon and the recommendation with rationale is forwarded to the department chair or school director for approval
- The student shall be advised of and sign an informed consent form which is forwarded with the recommendation and which states the following:
    - You have been advised that this substitution is only applicable in this college and is not binding on any other college within the University
    - You understand that a course substitution may ultimately affect further studies at this university or other colleges and universities including graduate studies
- If the department chair or school director approves, the recommendation with rationale is forwarded to the Dean
- If the Dean approves, the office of the Dean shall notify all parties concerned
- Approved course substitutions should be entered in the Degree Progress Report by the appropriate office
- If the Dean disapproves, the student may request a review by the Senior Vice President and Provost and Chief Operating Officer

Academic Reassessment

To be eligible for academic reassessment, a student shall:

- Have not attended The University of Akron for at least three calendar years. A semester or summer session in which the student received all "WD" grades cannot be counted as part of the separation period; and
- Have re-enrolled and maintained a grade point average of 2.5 or higher for the first 24 letter-graded ("A" through "F") hours attempted at The University of Akron; and
- Have not used academic reassessment before at The University of Akron; and

- Submit a written request for academic reassessment to the student's college dean's office. To apply for academic reassessment, the student shall complete the appropriate form in consultation with his/her academic advisor. The Office of the University Registrar shall confirm eligibility and make the adjustments to the student's academic record.
- The student begins with a new cumulative grade point average and adjusted credit hour totals. Credit hours are defined as semester hours. Only grades with a "C-" or lower may be reassessed. The student, in consultation with his/her academic advisor, shall identify the courses to be reassessed. Grades to be reassessed shall come from the time period prior to the student's re-enrollment following the three-year absence.
- Grades earned for the courses that are reassessed at The University of Akron are excluded from the calculation of the cumulative "GPA," but will remain on the student's official transcript
- Credit hours earned for courses at The University of Akron during the previous enrollment with a grade of "C" or better, including "CR," are retained
- Credit hours from all reassessed courses taken during the previous enrollment at The University of Akron with a grade of "C-" or lower are removed from the calculation of the cumulative "GPA" (although the grades are retained on the academic transcript with the notation "academic reassessment policy")

The Office of the University Registrar will apply the following provisions of the academic reassessment policy:

- When counting the first 24 credits attempted, if the 24th credit is part of other credits earned during a semester, the entire number of credits earned for that semester will be calculated into the grade-point average
- An undergraduate student may utilize this academic reassessment policy only one time in his/her career at The University of Akron
- This policy applies to undergraduate course work taken at The University of Akron and only for undergraduate students earning a first undergraduate degree
- Grades from all courses ever taken at The University of Akron and the resulting "GPA" (unadjusted by the academic reassessment policy) will be used for purposes of determining eligibility for university, departmental or professional honors or other recognition based upon the student's undergraduate academic career and record of academic performance
- Any academic probations, suspensions or dismissals from reassessed semesters shall not be forgiven. They will count when the probation-dismissal policy is applied to the student's record after readmission
- A student may seek an exception to this policy through an appeal to the senior vice president and provost and chief operating officer whose decision will be final

Academic Misconduct

It is each student's responsibility to know what constitutes academic misconduct. The University of Akron's Code of Student Conduct (http://www.uakron.edu/ogc/UniversityRules/pdf/41-01.pdf) defines academic misconduct as any activity that compromises the academic integrity of the student and university, and undermines the educational process. Academic misconduct includes but is not limited to:

Cheating, including but not limited to:

- Use of unauthorized assistance in taking quizzes, tests, or examinations.
- Submitting substantially the same work to satisfy requirements for one course or academic requirement that has been submitted in satisfaction of requirements for another course or academic requirement, without permission of the faculty member of the course for which the work is being submitted or supervising authority for the academic requirement.
- Use of sources prohibited by the faculty member in writing papers, preparing reports, solving problems, or carrying out other assignments.
- Inappropriate acquisition and/or improper distribution of tests or other academic materials without the permission of the faculty member.
- Engaging in any behavior specifically prohibited by a faculty member in the course syllabus or during class discussion.

Plagiarism, including but not limited to:

- Intentional or unintentional representation of ideas or works of another author or creator in whole or in part as the student's own without properly citing the original source for those ideas or works.
- The use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

An incident of academic misconduct may be resolved and a sanction assessed in a meeting between the faculty member and student. The faculty member should confer with the Department of Student Conduct and Community Standards (https://www.uakron.edu/sja) to determine whether any prior academic misconduct has occurred. If there is no history of prior academic misconduct and the student and faculty member agree on the facts of the incident and the proposed sanction, the matter can be resolved informally through the use of the Academic Misconduct Notification Form located on the Department of Student Conduct and Community Standards webpage (https://www.uakron.edu/sja). If agreement has been reached and the Academic Misconduct Notification Form has been signed by both the student and faculty member a copy should be retained by the faculty member and student, and the original should be sent to the Department of Student Conduct and Community Standards (https://www.uakron.edu/sja).

If the student and faculty member disagree about the facts of the incident or the proposed sanction, or the student chooses not to sign the form, or the faculty member chooses not to resolve the matter informally, then the matter should be referred to the Department of Student Conduct and Community Standards for adjudication as provided in the Code of Student Conduct (http://www.uakron.edu/ogc/UniversityRules/pdf/41-01.pdf).

For additional information or resources concerning academic misconduct or the Code of Student Conduct, please contact the Department of Student Conduct and Community Standards (https://www.uakron.edu/sja).

Department of Student Conduct and Community Standards
Simmons Hall, Room 302
(330)972-6380
studentconduct@uakron.edu

www.uakron.edu/studentconduct

Credit/Noncredit Option (undergraduate and post baccalaureate only)

A student who takes a course on a "credit" or "noncredit" (CR/NC) basis, and who earns a grade equivalent to "A" through "C-," shall receive credit ("CR") for the course and have the grade, "CR," placed on the permanent record; a grade equivalent to "D+" through "F" will be recorded with the noncredit grade, "NC."

For the baccalaureate degree, no more than 16 credits of non-language courses and no more than 20 credits in total (including language courses) are permitted to be taken on a CR/NC basis. For the associate degree, no more than eight credits of non-language courses and no more than 10 credits in total, including language courses, is permitted.

A student is eligible for the CR/NC option if the student has:

- Completed 50% of the number of credits required for a degree
- A GPA of at least 2.30
- The consent of an advisor

The CR/NC option is available only at the time of registration for the course. After the first week of the term or first two days of a summer session, the status cannot be changed. The University Registrar will notify the instructor of those students utilizing the CR/NC option by means of the final class list.

Courses that can be taken on a CR/NC basis:

- One free elective (not in major field) course per term
- Any first- and/or second-year foreign language course at any time, regardless of grade-point average

Courses that cannot be taken CR/NC:

- Any General Education courses
- Courses required by colleges and departments of all undergraduate majors

Courses for which "CR" is awarded will be counted as hours completed only; courses for which "NC" is awarded shall not be counted as hours attempted; in neither case shall "CR" or "NC" be considered in calculating grade-point average, but in both instances the course shall be entered on the student's official academic record. A student may repeat a course for credit (CR), or a grade (A-F) after receiving a grade of "NC." A college may designate in the printed schedule, on an annual basis, a course as not available to be taken on a "CR/NC" basis. A student taking a course on a "CR/NC" basis is expected to meet the full requirements of the course as required by the instructor.

Audit Policy

A student choosing to audit a course must elect to do so at the time of registration. The student pays the enrollment fee and may be expected to do all the work prescribed for students taking the course for credit, except that of taking the examination. Any faculty member may initiate withdrawal for a student not meeting these expectations.

Transient Work at Another University

The purpose of transient work is to provide The University of Akron student with opportunity to: 1) take a course that is not offered at The University of Akron; or, 2) if the student is away in the summer, to take a course in a distant location; or, 3) in rare cases, a student who is only a few credits shy of graduation and must leave The University of Akron due to extenuating circumstances. These courses will be listed on The University of Akron official academic record. Each course will reflect the course number, title, grade and credit value; no grade-point value will appear on the record and the grade for such course will not be included in The University of Akron grade-point calculation. The name of the institution will be listed on The University of Akron official academic record as well as the date that the coursework was taken.

Any University of Akron student who wishes to take coursework at another regionally accredited institution of higher education must receive prior approval by the academic dean of the appropriate unit if the student intends to apply this coursework toward a degree at The University of Akron.

- A student can make an official request for transient credit by submitting a Transient Permission Form. If the coursework taken at another institution will be used to satisfy The University of Akron General Education requirements, prior written permission to take the course must be received from the office responsible for transfer student services unless the course has been previously approved as an equivalency by The University of Akron.
- If the coursework taken at another institution will be used to satisfy a degree granting college degree requirement or as elective credit, prior written permission to take the course must be received from the dean of the student's degree granting college unless the course has been previously approved as an equivalency by The University of Akron.
- A student must earn a grade of "D-" or better in the course at the other institution in order for the credits to apply toward the student's degree requirements at The University of Akron unless otherwise specified by the degree-granting college. The student must provide the official transcript for the course in order to receive credit.
- No more than 18 total credit hours of transient work may be approved prior to the granting of a baccalaureate degree. No more than nine total credit hours of transient work may be approved prior to the granting of an associate degree.
- Approvals for transient attendance at other institutions are valid for only the requested term and are subject to all restrictions of the dean of the college approving the request for transient credit.
- Students who are on probation, dismissed or are in the last 30 hours of a baccalaureate degree or are in the last 15 hours of an associate degree are restricted or denied transient permission by either the dean of the degree granting college or the dean of the University College except in rare and compelling circumstances.

Note: Coursework taken at another institution cannot be considered for The University of Akron's *Repeat for Change of Grade* policy or *Academic Reassessment* policy and will not be calculated into the UA grade point average.

COLLEGES AND PROGRAMS

The University of Akron offers comprehensive programs of instruction leading to the associate (two-year), bachelor's (four-year), master's (graduate), and doctoral (graduate or professional) degrees.

Buchtel College of Arts and Sciences

Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas) is the largest and oldest degree-granting college at The University of Akron. In addition to providing a world-class education in an array of bachelor's, master's and doctoral degree programs, Buchtel College provides the majority of general education courses for the University. E.J. Thomas Performing Arts Hall (https://www.uakron.edu/ej), the region's flagship performance venue, is home to many arts performances for the college.

The College has four administrative divisions: Fine Arts, Humanities, Natural Sciences and Social Sciences.

The Fine Arts Division includes the Mary Schiller Myers School of Art (https://www.uakron.edu/art); the Schools of Dance, Theatre, and Arts Administration (https://www.uakron.edu/dtaa) and Music (https://www.uakron.edu/music); and Departments of Fashion Merchandising (https://www.uakron.edu/fcs/fashionmerchandising) and Interior Design (https://www.uakron.edu/interior-design). The Humanities Division includes the Departments of English (https://www.uakron.edu/english), Modern Languages (https://www.uakron.edu/modlang), and Philosophy (https://www.uakron.edu/philosophy). The Natural Sciences Division includes the Departments of Biology (https://www.uakron.edu/biology), Chemistry (https://www.uakron.edu/chemistry), Computer Science (https://www.uakron.edu/computer-science), Geosciences (https://www.uakron.edu/geology), Physics (https://www.uakron.edu/physics), Mathematics (https://www.uakron.edu/math), and Statistics (https://www.uakron.edu/statistics). The Social Sciences Division includes the Departments of Anthropology (https://www.uakron.edu/anthropology-classics), Child and Family Development (https://www.uakron.edu/child-family), History (https://www.uakron.edu/history), Political Science (https://www.uakron.edu/polisci), Psychology (https://www.uakron.edu/psychology), Public Administration and Urban Studies (https://www.uakron.edu/paus) (graduate only), Sociology (https://www.uakron.edu/sociology), and the School of Communication (https://www.uakron.edu/schlcomm).

Qualified students seeking hands-on career exploration experiences can enroll in internships and co-op opportunities. Students wishing to enrich their majors by completing a certificate, a minor or a double major are encouraged to do so. Interdisciplinary studies are readily available to Arts and Sciences students through the Biomedical Science major, the Humanities Division major, the Social Sciences Division major and the Bachelor of Arts in Multidisciplinary Studies program.

- About the College (p. 28)
- Programs of Instruction (p. 29)
- College Website (https://www.uakron.edu/bcas)

College of Business Administration

The College of Business Administration (https://www.uakron.edu/cba) (CBA) is a professional college of the University that is dedicated to teaching, business research and public service. The College is accredited by AACSB International - The Association to Advance the Collegiate Schools of Business and offers accredited baccalaureate and master's degree programs during the day and evening. It is home to the George W. Daverio School of Accountancy (https://www.uakron.edu/cba/departments/accountancy), Department of Economics (https://www.uakron.edu/economics), Department of Finance (https://www.uakron.edu/cba/departments/finance), Department of Management (https://www.uakron.edu/cba/departments/management) and Department of Marketing (https://www.uakron.edu/cba/departments/marketing).

- About the College (p. 40)
- Programs of Instruction (p. 41)
- College Website (https://www.uakron.edu/cba)

LeBron James Family Foundation College of Education

The LeBron James Family Foundation College of Education (https://www.uakron.edu/education) is a community of professionals whose purpose is to provide leadership for community well-being through standard-setting programs that enhance teaching, learning and human development; research and inquiry; and outreach. It develops itself and others through continuous improvement and through a commitment to these core components of professional practice and scholarship: Knowledge, Technology, Diversity and Ethics.

The college is home to the departments of Curricular and Instructional Studies (https://www.uakron.edu/education/academic-programs/cis) and Educational Foundations and Leadership (https://www.uakron.edu/education/academic-programs/EFL), as well as numerous centers and clinics. The College's programs include a balanced offering of a foundation in general education, intensive study in the content area and professional courses and other learning experiences which combine theory and practice.

- About the College (p. 44)
- Programs of Instruction (p. 46)
- College Website (https://www.uakron.edu/education)

College of Engineering

The College of Engineering (https://www.uakron.edu/engineering) provides educational opportunities at both the undergraduate and graduate levels for students who wish to pursue careers in engineering. The faculty in the College of Engineering (https://www.uakron.edu/engineering/about-us/people-directory) perform research with the purpose of contributing new knowledge to the fields encompassed by engineering principles.

The College offers eight Bachelor of Science degrees accredited by the Engineering Accreditation Commission of ABET, www.abet.org (http://www.abet.org): Aerospace Systems Engineering (https://www.uakron.edu/academics_majors/undergraduate/programs_detail.dot?programId=1128604), Biomedical Engineering (https://www.uakron.edu/engineering/BME), Chemical and Biomolecular Engineering (https://www.uakron.edu/engineering/CBE), Civil Engineering (https://www.uakron.edu/engineering/CE), Electrical and Computer Engineering (https://www.uakron.edu/engineering/ECE), Corrosion Engineering (https://www.uakron.edu/academics_majors/undergraduate/programs_detail.dot?programId=1128286), and Mechanical Engineering (https://www.uakron.edu/engineering/ME).

The College's co-op program, one of the oldest in the nation, enables student engineers to integrate classroom learning with on-the-job experience while they earn their degrees. Students can alternate

semesters of paid employment in their major fields of interest with semesters on campus after they have completed five semesters of study.

- About the College and Programs of Instruction (p. 47)
- College Website (https://www.uakron.edu/engineering)

College of Health Professions

Students in nursing, dietetics, audiology, speech-language pathology, social work and other fields learn side by side so that as professionals, it will be natural to treat patients collaboratively.

Students benefit from close college ties with such health systems as the Cleveland Clinic Foundation, Summa Health System, Akron Children's Hospital, the Northeast Ohio Medical University and the Austin BioInnovation Institute in Akron. Students engage in state-of-the-art simulation experiences, gain clinical experience and spend ample time learning collaboratively with fellow students and seasoned professionals in many disciplines.

- About the College (p. 54)
- Programs of Instruction (p. 54)
- College Website (https://www.uakron.edu/health)

Williams Honors College

The Williams Honors College (https://www.uakron.edu/honors) supports high achieving and highly motivated students with challenging curriculum options, honors classes, academic scholarships, priority in registration, an opportunity to live in the Honors Residence Hall Complex, and enhanced computer and study facilities. Williams Honors College (https://www.uakron.edu/honors) students who complete the requirements of their academic majors and of the Williams Honors College (https://www.uakron.edu/honors/curriculum) with cumulative grade-point averages of at least 3.40 are recognized at graduation as Williams Honors Scholars.

- About the College (p. 56)
- College Website (https://www.uakron.edu/honors)

College of Applied Science and Technology

The College of Applied Science and Technology (https://www.uakron.edu/cast) prepares students for specialized professional and technology-based careers through applied degrees, many of which are nationally accredited. A campus leader in distance learning and online undergraduate instruction, the College is home to cutting-edge, in-demand academic programs, including degrees in Cybersecurity, Digital Forensics, Emergency Management and Homeland Security, and Corrosion Engineering Technology. The College's diverse, interdisciplinary, student-centered faculty promote creativity and innovation in the classroom and in partnerships with business, industry, and the community at-large.

- About the College (p. 57)
- Programs of Instruction (p. 58)
- College Website (https://www.uakron.edu/cast)

Wayne College

To meet the needs of the citizens of Wayne, Holmes and Medina counties, The University of Akron Wayne College (https://wayne.uakron.edu) opened its doors in 1972. Wayne College (https://wayne.uakron.edu/academics-majors) offers technical programs and certificate programs, as well as the first 60 credits of many baccalaureate programs. The following degrees are available from The University of Akron Wayne College: Associate of Arts; Associate of Science; Associate of Technical Studies; Associate of Applied Business in Business Management Technology; Health Care Office Management; Associate of Applied Science in Paraprofessional Education and Exercise Science Technology.

- About the College (p. 61)
- Programs of Instruction (p. 61)
- College Website (https://wayne.uakron.edu)

Graduate School

www.uakron.edu/gradsch

The Graduate Schoo (https://www.uakron.edu/gradsch)l offers advanced study to students who wish further education beyond the baccalaureate degree with programs leading to the master's degree as well as the doctoral degree. A separate publication detailing admission procedures and individual study requirements for graduate work is available from the Graduate School (https://www.uakron.edu/gradsch). The Graduate Bulletin may be obtained online at http://www.uakron.edu/gradsch

Graduate School,
The University of Akron,
Polsky Building, Room 469,
Akron, OH 44325-2101

School of Law

www.uakron.edu/law

The School of Law provides legal education through day and evening classes and full and part-time programs leading to the Juris Doctor degree. JD candidates typically begin studies in the fall semester, but they may begin in January. They may obtain Certificates in Litigation, Constitutional Law, Intellectual Property, and Health Law. JD candidates may also pursue the following joint degrees with other colleges: JD/MBA, JD/MTax, or JD/MSA in Financial Forensics (with the College of Business Administration),JD/MPA (Master of Public Administration, with the Department of Public Administration and Urban Studies), JD/MAP (Master of Applied Politics, with the Bliss Institute). The School of Law also offers an advanced degree, the LL.M. in Intellectual Property. JD students may enroll in the Joint JD/LL.M. Program, in which they can earn both degrees in three years. Otherwise, an applicant for the LL.M. program must have a JD degree from an American law school or an equivalent degree from a foreign law school. An applicant to the JD program must take the Law School Admission Test and have a baccalaureate degree from an accredited college or university for JD admission. No particular course of undergraduate study is required for admission. Also, an applicant with a foreign law degree may apply for an accelerated program to receive the JD in two years. The School of Law has recently added a Masters in the Studies of Law. An applicant to the MSL program is not required to take the Law School Admission Test. A separate publication detailing admission requirements and the procedure for applying may be obtained by calling (330)972-7331, or (800) 4-AKRON-U, or by e-mail: lawadmissions@uakron.edu.

College of Polymer Science and Polymer Engineering

www.uakron.edu/cpspe

The College of Polymer Science and Polymer Engineering (https://www.uakron.edu/cpspe) offers graduate degrees leading to the Master of Science and Doctor of Philosophy in both Polymer Science and Polymer Engineering. A non-thesis Master of Polymer Science and Polymer Engineering is offered with courses in Polymers, Business, and Law geared towards careers in the polymer industry. An undergraduate minor in Polymer Science and Polymer Engineering is available for undergraduate science and engineering majors. In addition, specializations that emphasize polymer engineering have been developed with the College of Engineering Departments of Chemical and Biomolecular Engineering (https://www.uakron.edu/engineering/CBE) and Mechanical Engineering (https://www.uakron.edu/engineering/ME) for undergraduate students interested in the polymer industry. An option has been developed in the Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas) in chemistry that emphasizes polymer science, including advanced materials. Research experiences for one to three credits per semester are also offered, starting at the freshman level.

University - Additional Locations

http://www.uakron.edu/provost/about/additional-locations.dot

The University operates five educational centers in our surrounding communities.

For a full listing of Baccalaureate, Associate, and Certificate Programs:
http://www.uakron.edu/academics_majors/curriculum-guides

Buchtel College of Arts and Sciences

College Requirements

Admission

The Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas) admits current University students who have satisfied the following criteria:

- Completed a minimum of 30 semester credit hours
- Completed at least 6 credits of English Composition for the general education requirement
- Completed at least 3 credits of mathematics or statistics earned in the Department of Mathematics or the Department of Statistics for the general education requirement
- Have a minimum grade-point average of 2.00 in all work attempted in the major field, including transfer work until 30 UA credits are earned (excluding Political Science which requires 2.2 and programs in Child and Family Development, Fashion Merchandising and Interior Design which require 2.3)
- Have a minimum grade-point average of 2.00 in all University work, including transfer work until 30 UA credits are earned (excluding Political Science, English, and Sociology which require 2.2; excluding programs in Child and Family Development, Fashion Merchandising and Interior Design which require 2.5; and excluding Communication which requires 2.1)
- Computer Science students must successfully complete 3450:208 Introduction to Discrete Mathematics and 3450:221 Analytic Geometry-Calculus I and 3460:209 Computer Science I and 3460:210 Computer Science II. Child Development students must complete 3760:201 Courtship, Marriage & Family Relations and 3760:265 Child Development with a C or better.
- Music students must test into at least Theory I Placement and audition into at least 100 Applied Instruction; Dance students must successfully audition
- Received approval of the Dean of the College

Transfer Students

Students transferring into the Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas) from universities other than The University of Akron must satisfy the same Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas) admission requirements as University of Akron students.

A student transferring to the School of Art (https://www.uakron.edu/art) from another institution must submit a portfolio of work for approval before admission. A student transferring from another college or institution into the music program must complete a placement examination and perform an audition. A student transferring from another college or institution into the Dance program must perform an audition.

Other Admission

Students accepted into the Williams Honors College (https://www.uakron.edu/honors) as arts and sciences majors are automatically admitted into the Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas). Incoming freshmen with appropriate credentials may receive direct admission to the Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas) upon application.

Baccalaureate Degrees

Requirements for the bachelor's degree include:

- Completion of the General Education (https://www.uakron.edu/general-education) requirement
- Three credits of mathematics or statistics earned in the Department of Mathematic (https://www.uakron.edu/math)s (https://www.uakron.edu/dtaa) or the Department of Statistics (https://www.uakron.edu/statistics)
- Completion of requirements in a major field of study in the college. A major consists of a specified number of credits in addition to the required General Education (https://www.uakron.edu/general-education) and, in the case of most Bachelor of Arts and Bachelor of Science degrees, foreign language courses/proficiency. The exact requirements for each major are found in the respective curriculum guide
- All degrees require a minimum of 40 credits consisting of:
  - 300/400-level courses in the student's major department
  - 300/400-level courses outside the student's major department, except workshops
  - Courses outside the major department as specified and approved by the student's major advisor and the department chair or school director (permission should be obtained prior to enrollment), except workshops
  - For programs with restrictive external accreditation requirements, 200 level courses within the major may be identified as constituting advanced work by the student's advisor and department chair or school director (permission should be obtained prior to enrollment)
- Demonstration of ability to use English and, in the case of most Bachelor of Arts and Bachelor of Science degrees, another language:

- For English, this ability will be shown by the completion of the General Education (https://www.uakron.edu/general-education) sequence for English Composition
- For the other language, this ability will be shown by completion of the second year (202 at UA) of a foreign language at the University level. A student may place at any point in the language sequence so this is **not** a credit hour requirement but rather a course completion requirement for an Intermediate II course. Students who place above the 202 level must take one course to demonstrate proficiency. Demonstration of equivalent competence gained through non-academic "life experience" may be allowed through a test approved by the Department of Modern Languages contingent upon the availability of an appropriate test. The Department of Modern Languages (https://www.uakron.edu/modlang) does not offer credit by examination. Native speakers of a language other than English may be exempted from the foreign language requirement upon providing evidence of competence in the four basic language skills (speaking, reading, writing and listening comprehension) at a level equivalent to or higher than successful completion of the second year of instruction in the language at the University level. No credit is granted for exemption from the foreign language requirement. Sign Language is acceptable toward the foreign language requirement. You must complete the five courses listed below (totaling 14 credits) in the sign language sequence to satisfy the requirement:
  - 7700:222 Survey of Deaf Culture in America 2
  - 7700:201 American Sign Language III, 2 American Sign Language IV 6
  - 7700:101 American Sign Language I, 2 American Sign Language II 6
- Students in the Schools of Art (https://www.uakron.edu/art) and Music (https://www.uakron.edu/music) may apply not more than two credits of physical education activities to their degree; students in the School of Communication (https://www.uakron.edu/schlcomm) and in Theatre programs may apply not more than two credits of physical education activities, eight credits of applied music or four credits of music organizations to their degree; students in Dance programs may apply not more than two credits of physical education activities and 12 credits of dance organizations to their degree
- Attaining a minimum grade-point average of 2.00 for all courses in the major Department/School at The University of Akron, unless otherwise required by the major Department/School
- Fulfilling the University requirements for a baccalaureate degree

Any student who wishes to receive a second baccalaureate degree must complete 30 credits of coursework in addition to the credits necessary for the first degree; 15 of the 30 credits must be in 300/400-level courses or other approved courses.

Degrees Awarded

- *Fine Arts Division*: Bachelor of Arts, Bachelor of Arts Fashion Merchandising, Bachelor of Fine Arts (Ceramics, Dance, Graphic Design, Jewelry & Metalsmithing, Photography, Painting/Drawing, Printmaking, Sculpture), Bachelor of Music
- *Humanities Division:* Bachelor of Arts
- *Natural Sciences Division:* Bachelor of Arts, Bachelor of Science, Bachelor of Science in Computer Science
- *Social Sciences Division:* Bachelor of Arts, Bachelor of Science in Geographic Information Sciences, Bachelor of Science in Political Science/Criminal Justice, Associate of Applied Science
- *Interdisciplinary Studies:* Bachelor of Arts, Bachelor of Science, Bachelor of Arts in Multidisciplinary Studies

Buchtel College of Arts and Sciences Programs of Instruction

Learn more about the undergraduate degree programs of instruction offered by the Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas). For specific curriculum guides for bachelor's degrees, minors and certificates offered through the College, see review the Undergraduate Curriculum Guides (https://www.uakron.edu/academics_majors/curriculum-guides).

Interdisciplinary and Divisional Programs

Bachelor of Arts in Multidisciplinary Studies

This degree meets the needs of students who have a multidisciplinary academic goal. It expands opportunities for non-traditional students to complete their degrees at The University of Akron by allowing them to combine courses in a structured manner from various colleges to design a program suited to their needs.

Bachelor of Arts in Family and Consumer Sciences Education (with Licensure in Family and Consumers Education)

Successful completion of this interdisciplinary degree qualifies students to obtain an initial Ohio Two-year Provisional License in Vocational Family and Consumer Science (FCS) Education, grades 4-12. The program is designed to assure that students will meet state standards and be ready to start successful careers. They take a wide variety of FCS and education courses and also complete an eleven-week student teaching field experience. Graduates are employed in middle schools, high schools, career centers, and adult education programs in Ohio and in numerous other states. Students must be admitted to Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas) to start their program. They will have a faculty advisor throughout the program. Students are required to complete all required content and elective courses and all teacher education courses with a minimum of a C grade. Students must qualify for additional admission to the LeBron James Family Foundation College of Education (https://www.uakron.edu/education) at the end of their sophomore year. They must have a 2.5 GPA overall, an ACT 22 or SAT 1050 or grades of B or better in required college-level math and English courses. They must also pass required computer literacy standards, speech and hearing tests, and Bureau of Criminal Investigation Clearance, and provide recommendations.

Divisional Majors

Biomedical Science

This divisional major provides for a broad background in science suited to students who intend to pursue careers or further education in a health science area. It is an appropriate major for those preparing for admission to professional programs in medicine, dentistry or veterinary science or for those desiring a Liberal Arts degree with a general emphasis in science. Additional coursework may be necessary for those planning graduate studies in a particular science discipline.

Humanities

This divisional major is appropriate for those desiring a Liberal Arts degree with a general emphasis in the humanities. The humanities division consists of the Departments of English (https://www.uakron.edu/english), Modern Languages (https://www.uakron.edu/modlang) and Philosophy (https://www.uakron.edu/philosophy). These disciplines and the disciplines of anthropology (https://www.uakron.edu/anthropology-classics), classical studies (https://www.uakron.edu/anthropology-classics), history (https://www.uakron.edu/history) and the creative and dramatic arts (art, music, theatre arts) are included in a prescribed manner in this divisional degree.

Natural Sciences

This divisional major provides for a broad background in science with planned concentration in selected areas. It is an appropriate major for those preparing for admission to professional programs in medicine, dentistry or veterinary science or for those desiring a Liberal Arts degree with a general emphasis in science. Additional coursework is often necessary for those planning graduate studies in a particular science discipline. The natural sciences division consists of the Departments of Biology (https://www.uakron.edu/biology), Chemistry (https://www.uakron.edu/chemistry), Geosciences (https://www.uakron.edu/geology), Mathematics (https://www.uakron.edu/math), Computer Science (https://www.uakron.edu/computer-science), Statistics (https://www.uakron.edu/statistics) and Physics (https://www.uakron.edu/physics).

Social Sciences

This divisional major is appropriate for those desiring a Liberal Arts degree with a general emphasis in the social sciences. The social sciences division consists of the Departments of Anthropology (https://www.uakron.edu/anthropology-classics), History (https://www.uakron.edu/history), Political Science (https://www.uakron.edu/polisci), Psychology (https://www.uakron.edu/psychology), Sociology (https://www.uakron.edu/sociology), Public Administration and Urban Studies (https://www.uakron.edu/paus) (graduate program only) and the School of Communication (https://www.uakron.edu/schlcomm). Students may select a general divisional major that includes these units or one of two specialized tracks:

- **Social Sciences — PPE Track:** The Social Sciences division PPE track consists of courses from the departments of Philosophy (https://www.uakron.edu/philosophy) and Political Science (https://www.uakron.edu/polisci).
- **Social Sciences — PSP Track:** The Social Sciences division PSP track (Understanding Ourselves and Others) consists of courses from the departments of Philosophy (https://www.uakron.edu/philosophy), Sociology (https://www.uakron.edu/sociology), and Psychology (https://www.uakron.edu/psychology).

Bacc/M.D. Program

Introduction

The Bacc/M.D. program is a partnership wherein current UA students apply for provisional admission to NEOMED in their sophomore year of college. Each year NEOMED will admit up to 35 UA students into the Bacc/M.D. program.

Phase 1 is the undergraduate portion of the partnership. UA students may pursue any of UA's degree programs; however, it is recommended that students pursue the Bachelor of Science in Biomedical Science under the Biology department. This coursework meets the NEOMED admission requirements and focuses chiefly on studies in the humanities, social studies, and all basic premedical sciences to prepare students for the medical school curriculum. After students apply to NEOMED in their sophomore year and are provisionally admitted to the Bacc/M.D. program, they complete their UA degree requirements, maintain the required grade point averages, achieve the required scores on the Medical College Admission Test (MCAT), and meet all other standards of readiness for medical education during their junior and senior years before being promoted directly to NEOMED for Phase 2 of the Bacc/M.D. program.

Phase 2 consists of a four-year medical school course of study, at the NEOMED campus and at selected clinical campuses, leading to the M.D. degree.

Fine Arts Division

7100: Art

Degrees

- Bachelor of Arts: Studio Art Option
  - The Bachelor of Arts Studio is an interdisciplinary, liberal arts degree, in which students are permitted to self-design the required suite of 42 studio electives around their interests in varying media within the School of Art. BA Studio Art Majors must complete a Minor Area Course of Study, two years of a foreign language, or five courses in American Sign Language.
- Bachelor of Arts: Art Education with P-12 Visual Arts Licensure
  - The Art Education program in the Mary Schiller Myers School of Art consists of a core curriculum of theory and practice that prepares students to work in a variety of organizational settings, from museums to recreational centers.
- Bachelor of Arts: History of Art
  - The Art History program in the Myers School of Art is for those fascinated by the potential of the visual arts to open windows onto other cultures, times, and places – and to offer a critical perspective on the world in which we live today. Our approach to art history is interdisciplinary. We weave together political, intellectual, religious, and cultural contexts with close analysis of form in order to create nuanced understandings of historically important art objects. Art History students here work closely with faculty, often one-on-one, to develop strong verbal and written skills, to master the analysis and synthesis of evidence, and to become adept at presenting their work with clarity and precision.
- Bachelor of Fine Arts: Emphasis in Ceramics
  - The Ceramics curriculum is structured to assure that students learn design and problem-solving as well as the importance of ceramic objects of all kinds to those who view them or participate in using them. The understanding of the historical and cultural meaning of ceramic materials and objects is fundamental to students staking a claim to making their own contributions to the field.
- Bachelor of Fine Arts: Emphasis in Graphic Design
  - Graphic Design is the largest program within the Myers School of Art. It is a professional program for students pursuing careers in the expanding multidisciplinary field of visual communication design. Critical thinking and logical problem solving in print, web and interactive media are emphasized.
- Bachelor of Fine Arts: Emphasis in Jewelry & Metalsmithing
  - The Jewelry & Metalsmithing program offers students a foundation in traditional and contemporary jewelry making and metalsmithing practices, while also emphasizing conceptual thinking, innovation in design, and refined craftsmanship. Students acquire an understanding of new technologies,

investigate alternative materials, and gain insight into the history of the field. The program may be pursued from a fine artist, designer, or craftsperson's perspective, and prepares students for a variety of careers in fine art, industrial or entrepreneurial settings.

- Bachelor of Fine Arts: Emphasis in Painting/Drawing
  - The Painting and Drawing program emphasizes that we are a community of people and ideas. Faculty and students are united in fostering curiosity and shared work ethic. Students explore studio work that demonstrates individual expression, critical thinking, and an awareness of art's historical and contemporary issues.
- Bachelor of Fine Arts: Emphasis in Photography
  - The Photography program provides in-depth experience in black and white and color fine art photography utilizing film and digital technologies as well as commercial photography and alternative approaches to the medium. Technical mastery and advanced conceptual thinking are emphasized, along with a solid grounding in historical and contemporary issues.
- Bachelor of Fine Arts: Emphasis in Printmaking
  - The Printmaking program is centered upon a dynamic investigation into the meaning of printed matter and the production of multiples in our complex world. Students energetically examine the visual and expressive potential of fine art printmaking while developing theoretical grounding in the historic context and contemporary applications of printmaking.
- Bachelor of Fine Arts: Emphasis in Sculpture
  - The Sculpture program provides a solid grounding in a wide variety of conceptual, technical and formal approaches for the creation of sculpture to enable students to explore and communicate their individual artistic concerns. The curriculum is designed to introduce students to the almost limitless possibilities of contemporary sculpture.

7300: Interior Design

The Interior Design program is also CIDA (Council for Interior Design Accreditration) accredited at the professional level. The National Association of Schools of Art and Design (NASAD) also granted institutional accreditation to the Interior Design program. The program has an active Advisory Board with representation from the profession, the industry, and from alumni.

Interior Design students receive faculty advisors as soon as they enter the major, but they do not sign a formal contract until the completion of their sophomore year and a portfolio review. Students who transfer from CIDA-accredited programs must have an overall grade-point average of 2.5 and Program Director approval of a submitted portfolio. All students in this professional program are required to earn a C or better in all Interior Design core courses and electives.

- **Bachelor of Arts in Interior Design:** The degree in interior design offers a comprehensive program of study which provides a balanced broad general education with specialized content integral to the interior design profession. This studio-centered program seeks to develop students' understanding of the role of the interior designer in serving in serving individuals and families in the built environments in which they live and work.

7350: Fashion Merchandising

The Fashion Merchandising program has a Bachelor of Arts Step-Up Program in cooperation with the College of Applied Science and Technology (https://www.uakron.edu/cast). In the first two years the student will be advised by faculty in the College of Applied Science and Technology (https://www.uakron.edu/cast) as they earn their Associates Degree in Marketing and Sales, with either a Fashion Option or a Retailing Option. In the last two years, they will transfer to Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas) to finish a B.A. degree and be advised by the fashion merchandising faculty in the S (https://www.uakron.edu/fcs)chool of Art (https://www.uakron.edu/art).

- **Bachelor of Arts in Fashion Merchandising:** This degree offers options in three areas of fashion merchandising: apparel and textiles, interiors and home furnishings, and fiber arts. Courses from the College of Business Administration (https://www.uakron.edu/cba) and/or the College of Applied Science and Technology (https://www.uakron.edu/cast) complement the degree by providing studies in marketing, promotion, sales, and retailing.

Students select the track they wish to complete:

- Apparel Track
- Home Furnishing Track
- Fiber Arts Track

7500: Music

Degrees

- **Bachelor of Arts:** The Bachelor of Arts program is intended as a cultural course or as a preparation for graduate study but not as preparation for a performance or teaching career
- **Bachelor of Music:**
  - Performance (emphasis in accompanying)
  - Performance (emphasis in brass)
  - Performance (emphasis in piano)
  - Performance (emphasis in strings)
  - Performance (emphasis in voice)
  - Composition
  - Jazz Studies
  - Music Education
    - Band-Wind and Percussion Instruments
    - Orchestra-String Instruments
    - Choral-General Music

Students wishing to major in music must complete the standard undergraduate application for admission and return it to the Office of Admissions (https://www.uakron.edu/admissions). A student cannot be formally admitted to the School of Music (https://www.uakron.edu/music) until admitted to the University.

To be accepted as a music major, both freshmen and transfer students must successfully complete an audition on their major applied instrument, complete The Undergraduate Placement Examination in Music Theory, and be evaluated in keyboard skills. Prospective students should contact the School of Music (https://www.uakron.edu/music) for information on specialized programs, as well as dates and times for The Undergraduate Placement Examination in Music Theory.

A student receiving a grade below "C-" in a required music course must repeat the course. Music Education majors receiving a grade below "C" in a required music course must repeat the course.

Changing Major Instruments

A student may later change his declared major instrument after being admitted to the School of Music (https://www.uakron.edu/music), but must then audition and satisfy all requirements for the new area as an entering student.

Applied Music Requirements

Studio Study (Private Lessons) - Skill in at least one major area of performance must be progressively developed to the highest level appropriate to the student's major. All students majoring in music are required to enroll in applied music on their declared major instrument every semester. A performance major in the Bachelor of Music program must enroll for four credits in applied music each semester which equates to a one-hour lesson or two half-hour lessons each week. All other students enroll for two credits in applied music on their declared major instrument each semester which equates to a half-hour lesson each week.

Because of the tutorial nature of applied music study, there is an additional fee for applied music registration beyond the normal credit-hour tuition and general service fee.

The offering of applied music instruction is dependent upon the availability of instructors. Although students may request study with a given instructor, the audition does not guarantee study with a particular member of the faculty. The priority for assignment is as follows: 1) collegiate music majors; 2) music minors; 3) non-music majors who are members of University performing ensembles; 4) pre-college students in the high school/college program of the School of Music (https://www.uakron.edu/music); and, 5) all others.

Students will not be eligible for applied music study if: 1) they fail to pass the entrance audition; 2) a particular instructor's studio is full; 3) the quality of work demonstrated is judged unacceptable by the applied instructor; or 4) faculty in the student's applied area conclude on the basis of a jury that a continuation of applied study is not merited. Students in the studio are expected to exhibit a mature attitude and productive behavior.

Levels of Applied Music Study

The study of applied music is divided into seven course levels. These conform to levels of proficiency and the requirements of the various degree programs. Entrance to applied music is by audition. Advancement in level is by promotional jury examination only.

7520:000 Level for elective credit in non-music programs, pre-college adults, preparatory program enrollment, and for correcting deficiencies before permission is granted to enroll at the 100 level. Credits in applied music at this level cannot be counted toward any degree requirements in music.

Music majors may apply a maximum of eight credits from any of the following levels to their degree program. A maximum of 32 credits may be counted toward degree requirements.

7520:100 - Freshman level
7520:200 - Sophomore level
7520:300 - Junior level
7520:400 - Senior level

Minimum Performance Levels Required by Degree Program

- **Bachelor of Arts** - Eight credits and completion of the 200 level in the primary applied performance area. No recital is required.
- **Bachelor of Music in Performance Major** — Thirty-two credits and completion of the 400 level in the primary applied performance area. A junior recital is required at the 300 level. A full senior recital is also required.
- **Bachelor of Music in Composition Major** — Sixteen credits and completion of the 200 level in the primary applied performance area. A full senior composition recital is required.
- **Bachelor of Music in Music Education** — Sixteen credits and completion of the 300 level in the primary applied performance area. A half senior recital is required.
- **Bachelor of Music in Jazz Studies** — Sixteen credits and completion of the 200 level in the primary applied performance area; additional completion of the 100 level in flute and clarinet for saxophone majors and the 200 level in classical guitar for electric guitar majors. A full senior recital is required.

Jury System in Applied Music

A promotional jury is the only way in which a student may advance from one course level to another. Each music major may take a promotional jury in his/her primary applied performance area once each year, after two semesters of study, and/or after the minimum number of credits is attained. However, a faculty member may require a student to take additional semesters of study prior to a promotional jury.

Each applied area is empowered to terminate applied study, and applied study will be terminated after three attempts at the same promotional jury level. A promotional jury may be used by a student studying applied music at the 000 level as an audition to the 100 level.

Applied Repertory of Study

Each applied music section (brass, composition, guitar, keyboard, percussion, piano, strings, voice, and woodwinds) has a published repertory of study requirements for each of the course levels. These requirements are available from the Applied Area Coordinator, individual applied instructors, and the School of Music (https://www.uakron.edu/music) office.

Studio Classes

Each music major is required to attend the weekly 50-minute class taught by his applied instructor. Attendance at studio class is part of the requirement for applied music study, and reflects in the student's grade in applied music. Performances in studio class are determined by the student's applied instructor.

Sectional Recitals

Each applied section holds a sectional recital each week. Attendance by students studying in the section is required. Performances in sectionals are determined by the student's applied instructor and area coordinator.

Applied Study for Non-music Majors

Non-music majors may enroll for applied music with the permission of the individual applied instructor or the area coordinator, whichever is appropriate to the area of study. Acceptance for studio study is based upon an audition, usually given the first week of classes. Only students who meet applied studio standards will be accepted for applied instruction.

Recital Attendance Requirements

Bachelor of Music majors are required to enroll and receive credit for eight semesters of 7500:157 Student Recital. Bachelor of Arts music majors are required to enroll and receive credit for four semesters. 7500:157 Student Recitalcarries no academic credit and has no fee.

Further information on the attendance requirement is available in the School of Music office.

Ensemble Requirement
Enrollment in all ensembles requires permission of the instructor.

Major Conducted Ensemble Requirement
Students who are music majors must enroll for eight semesters in a major conducted performance ensemble on their declared major instrument. Guitar and keyboard majors should refer to the Memo of Agreement for specific ensemble requirements. Auditions for membership are held each year and occasionally each semester. All music majors are required to enroll in the major conducted ensemble as assigned by faculty and appropriate to their primary performance area every fall and spring semester.

Students pursuing a Bachelor of Music major in Performance, Theory, Composition, and Music Education must complete a minimum of eight semesters. However, keyboard majors in Music Education may substitute one year of a major choral ensemble in place of a Keyboard Ensemble. Four semesters are required for Jazz Studies majors, music minors, and those pursuing the Bachelor of Arts degree in music. Students who do not complete degree requirements within eight semesters must continue to enroll in a major conducted ensemble each semester until all graduation requirements are met, except during the semester when student teaching.

Major conducted Ensembles include: Concert Choir, Guitar Ensemble, Keyboard Ensemble, Concert Band, Symphonic Band, University Band, and University Symphony Orchestra.

Non-major Conducted Ensemble Requirement
Non-major conducted ensembles may be taken in addition to, but not instead of, major conducted ensembles. Jazz Studies majors are required to complete eight credits in jazz ensembles in addition to four semesters of major conducted ensembles. Non-major conducted Ensembles include: the Akron Symphony Chorus, Brass Choir, Chamber Orchestra, Instrumental Ensembles, Jazz Ensemble, Jazz Lab Band, Madrigal Singers, Marching Band, New Music Ensemble, Steel Drum Band, Blue and Gold Brass (Basketball Band), and Opera/Lyric Theatre.

Unconducted Ensembles
Unconducted ensembles may be taken in addition to, but not instead of, major conducted ensembles. Unconducted ensembles include: Brass Ensembles, Jazz Combos, Mixed Ensembles, Percussion Ensembles, String Ensembles, Vocal Ensembles, and Woodwind Ensembles.

Ensemble credit is repeatable.

Minimum Proficiency Requirements in Keyboard and Voice
All music majors must meet minimum proficiencies in keyboard and voice. Keyboard proficiency is met by successfully completing keyboard Harmony I and II and passing a final keyboard examination. Vocal proficiency is met by successfully completing required Theory and Musicianship courses.

7800: Theatre
Degrees
- **Bachelor of Arts:** The Theatre Program is currently not accepting majors into the program. All UA students are welcome to take theatre courses as electives and are encouraged to participate in theatre production activities as part of their Akron Experience.

7900: Dance
Degrees
- Bachelor of Fine Arts: The BFA dance major is designed for the student who wishes to pursue professional training in dance through an emphasis in ballet and modern dance techniques. This program offers extensive training in technical, performing and choreographic skills and is supported by a core of coursework in dance history, pedagogy, and physical analysis. The BFA in Dance prepares students for performing, graduate studies in performance and choreography, fields related to dance such as arts administration, dance history, physical therapy, dance therapy, dance education, or dance ethnology, as well as teaching in private studios.

  Placement into the dance program for the first year of study as a probationary dance major is by audition only. Promotion in levels of dance techniques is by receipt of a “B+” grade or better for one semester for advancement from Ballet IV to V to VI to VII to VIII respectively, and by receipt of a “B” grade or better for one semester in all other technique classes.

  To be admitted to the BFA degree program in Dance in the School of Dance, Theatre, and Arts Administration (https://www.uakron.edu/dtaa), students must work for one year of study as a probationary dance major, demonstrate acceptable work habits, pass the Freshman Jury and Interview to gain admittance to the college and status as a BA in Dance major in preparation for auditioning for the BFA program at the end of the sophomore year. BFA students must maintain a 2.875 GPA in all dance classes for a total of two years and may be placed on artistic probation if they demonstrate less acceptable work habits. Full status must be regained to graduate. To graduate with the BFA in Dance, students must complete one full year of Ballet VIII with a minimum of “B” and be enrolled in a ballet technique class each semester until they satisfy their technique requirements and maintain an overall 2.875 GPA in all dance classes.
- **Bachelor of Arts in Dance Studies with a Business Cognate:** This BA degree is designed to offer students a broad learning experience in dance, including ballet, modern, tap. and jazz, supplemented by business studies. Core coursework includes choreography, dance history, pedagogy, and physical analysis. This program prepares students for dance studio management, graduate studies in the fields related to dance such as arts administration, dance history, physical therapy, dance therapy, or dance ethnology, as well as teaching in private studios.

  Placement into the dance program for the first year of study as a probationary dance major is by audition only. Promotion in levels of dance techniques is by receipt of a “B+” grade or better for one semester for advancement from Ballet IV to V to VI to VII to VIII respectively, and by receipt of a “B” grade or better for one semester in all other technique classes.

  To be admitted to the BA program in Dance in the School of Dance, Theatre and Arts Administration (https://www.uakron.edu/dtaa), students must complete one year of study as a probationary dance major, demonstrate acceptable work habits, pass the Freshman Jury and Interview and maintain a 2.785 GPA in all dance classes. All students are required to be enrolled in a dance technique class each semester until they satisfy their technique requirements. Completion of two semesters of Ballet V is required for the BA in Dance Studies with a Business Cognate.

Humanities Division

3200: Anthropology and Classical Studies

3200: Classics; 3230: Anthropology; 3240: Archaeology

Degree

- Bachelor of Arts in Interdisciplinary Anthropology
  - Archaeological Concentration
  - Biological Concentration
  - Cultural Concentration
  - Classical Studies Concentration

This interdisciplinary program allows students the flexibility to construct a program of study tailored to their interests in cultural anthropology, biological anthropology or archaeology.

3300: English

Degree

- Bachelor of Arts
  - Our course of study of literature, language, rhetoric, and creative writing fosters the development of critical thinking, skilled communication, appreciation of cultural contexts, informed citizenship, and knowledge of the various literary texts representing human thought and inquiry through the centuries. Students majoring in English studies go on to become successful professionals in their chosen fields. Graduates have taken the department's reputation into the world outside the campus gates and hold careers ranging from positions in successful law practices, to jobs as published authors, technical writers, and journalists.

Statement of Policies—Admission and Graduation

For students enrolled at The University of Akron and for students wishing to transfer directly into Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas) from other institutions, the following criteria must be satisfied for admission to the Department of English (https://www.uakron.edu/english):

- The student must be admissible to Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas)
- The student must have a minimum grade point average of 2.20 in all university coursework

In order to graduate with an English major, the following requirements must be satisfied:

- The student must achieve a grade of C- or higher in all these required courses:
  - 3300:300 Critical Reading & Writing;
  - 3300:301 English Literature I;
  - 3300:315 Shakespeare: The Early Plays or 3300:316 Shakespeare: The Mature Plays;
  - 3300:341 American Literature I;
  - 3300:371 Introduction to Linguistics and
  - 3300:492 Senior Seminar
- The student must earn a cumulative grade point average of 2.20 in English courses

3500: Modern Languages

3501: Arabic; 3502: Chinese; 3510: Latin; 3520: French; 3530: German; 3550: Italian; 3560: Japanese; 3570: Russian; 3580: Spanish

Degree

- Bachelor of Arts
  - The Department of Modern Languages (https://www.uakron.edu/modlang) is committed to preparing all University of Akron students to succeed in the global economy and to become productive and engaged global citizens. Our students achieve linguistic competencies and multicultural literacies, develop critical-thinking and problem-solving skills and connect with diverse local, national, and international communities.
    - French Language, Literature and Culture Track
      - More than 220 million people speak French on the five continents and that number is expected to rise to over 700 million by 2050. French is the second most widely learned foreign language after English. French is both a working and an official language of the United Nations and the European Union. Knowledge of French opens the doors of French companies in France and other French-speaking parts of the world (Canada, Switzerland, Belgium, and North and sub-Saharan Africa) as well as of multinational companies all over the world.
    - French and Francophone Studies Track
      - The French and Francophone Studies Track is designed for those students who are interested in developing their skills in the French language and in gaining a broader perspective on and a deeper understanding of French-speaking countries in Europe, Africa, North America, the Caribbean and Asia. This prepares students to function in a multicultural, global context, and enhances students' career choices and employment potential.
- Spanish
  - The Spanish Major is designed for those students who are interested in developing their skills in the Spanish language and in gaining a broader perspective on and a deeper understanding of Spanish-speaking countries in Europe and Latin America. Spanish is the second-most commonly spoken language after English within the United States, and in today's economy, getting a good job within any customer service-related industry is greatly enhanced by the ability to speak Spanish.

3600: Philosophy

Degree

- Bachelor of Arts

Philosophy is the process and practice of thinking—clearly, critically, logically, and rationally. It involves questioning issues and beliefs, identifying and analyzing arguments, examining foundations and motives for determining what is right and wrong, and distinguishing between good and bad reasoning. Philosophy enlarges the mind, enriches the intellectual imagination, and introduces new ways of thinking—a necessary component for any career and an excellent preparation for graduate school and law school.

Natural Sciences Division

3100: Biology

Degree

- Bachelor of Science

Biology is the fastest-growing field of science today and its impact is carried to many fronts: medicine and health care; the environment and climate change; and global food sources. A degree in Biology can prepare a student for professional schools, such as medical, dental, veterinary and pharmacy. Alternatively, in collaboration with the College of Education, the degree can prepare a student to teach high school biology. Graduates with Biology degrees from UA become physicians, dentists, pharmacists, veterinarians, and university professors, as well as conducting a variety of biological research in firms such as Enviroscience, Battelle Memorial Institute, Ohio EPA, Ohio Nature Conservancy, and Ohio DNR. UA students gain experience in these areas through research opportunities in academic laboratories, internships with local businesses, and with co-ops.

3150: Chemistry

Degrees

- Bachelor of Science
- Bachelor of Science in Chemistry - Polymer Option (degree certified by the American Chemical Society)
- Bachelor of Arts
- Bachelor of Science in Biochemistry

Chemistry is an experimental science that seeks to understand the structure and function of molecules. Chemists synthesize new materials, and study their properties and how they interact with other compounds. The B.S. degrees offered by the department prepare students for independent laboratory work and research. The B.A. degree is less strongly focused on research and prepares students for professional degrees like medicine, dentistry and pharmacy.

Admission, Retention and Graduation

- The student must maintain a minimum 2.00 grade point average
- The student must obtain a grade of C- or better in all required chemistry courses

Degree

- Bachelor of Science Polymer Chemistry/Master of Science Polymer Science (B.S./M.S. Polymer)

Introduction

In Northeast Ohio, there is a growing demand for professionals trained in polymer chemistry. The polymer industry is one of the major industrial sectors of the economy of Ohio. The BS/MS Polymer Chemistry degree was instituted to prepare students for jobs in this area. The program provides a quality undergraduate science degree coupled with a graduate degree from one of the premier polymer programs in the country.

Students who are admitted to this program can complete the undergraduate phase of the course of study in three years and then immediately begin graduate studies in polymer science. Under rare circumstances, a student can complete the undergraduate phase in four years after approval of the advisers. A student not proceeding to the graduate program in Polymer Science may complete the degree requirements for the BS Natural Sciences - Polymer Chemistry Concentration.

Students earn a Bachelors degree in Natural Science from the Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas) that is heavily weighted toward chemistry. They will be assigned an adviser in the Department of Chemistry (https://www.uakron.edu/chemistry) and a co-adviser in the Department of Polymer Science (https://www.uakron.edu/cpspe) who will advise them throughout their undergraduate program. Once the undergraduate degree is completed students begin studies to earn a Masters of Science from the College of Polymer Science and Polymer Engineering (https://www.uakron.edu/cpspe) that will require two years of courses and research.

Admission, Retention, and Graduation

- Honors Students who express interest will be admitted into the 3+2 program after an interview
- Students must have a 3.70 grade point average in all undergraduate science and math classes at the end of the first semester in the third year
- Students who earn a grade less than a C- in any required science or math class will have to repeat the course and earn a grade of C- or better

Cooperative Education Program in Chemistry

Qualifications

Arrangements for entry into the program are on an individual basis and are initiated by the student during the second year of undergraduate study. Full-time B.S. chemistry majors at The University of Akron must meet the following requirements:

- Satisfactory completion of 60 credits with a quality point average of at least 2.3 in chemistry courses and on schedule in their curriculum.
- Acceptance by a cooperative education coordinator or director following a series of interviews
- Part-time students must have completed 60 credits with a 2.3 average and be on schedule in their curriculum
- Transfer students must have preparation equivalent to the minimum requirements for The University of Akron students and must have completed at least one semester of full-time study at The University of Akron

Placement in an industrial or other position is not guaranteed, and foreign students should recognize that many companies require U.S. citizenship or possession of a permanent visa. In any case, final acceptance of a student for any position is the decision of the employer.

Schedule

The work-study schedule for students in the co-op program is as follows:

Fall	Spring	Summer
School	School	Vacation/School
School	School	Vacation/School/Work
School	Work	School
Work	School	Work
School	School	

Admission to Program

Interested students should attend a Cooperative Education orientation session. Students will be expected to remain with their employer for all co-op work periods in order to provide a progression of experience and responsibility. Employment must have approval of the department and the Cooperative Education director, but the University does not guarantee employment.

Registration

Students register for Cooperative Work Periods in the same manner that a student registers for any other University courses. The course is: 3000:301 Cooperative Education.

A registration fee for each work period is charged to offset the expenses of administering the Co-op Program. Upon completion of a work period, a statement will appear on the student's official transcript listing the course

number and title. In place of a grade, "credit" or "no credit" will be given, depending upon the student's satisfactory or unsatisfactory completion of the following:

- Work performance as evaluated by the employer
- Submission of a written Work Report and its approval by the Cooperative Education staff
- Submission of a Cooperative Work Period Summary Form

3460: Computer Science

Degrees

- Bachelor of Science in Computer Science (System Track)
- Bachelor of Science in Computer Science (Management Track)

Admission to Computer Science Major

The student must have completed 30 credits and have the approval of the Dean of the College. In addition, the student must have completed:

- 3450:208 Introduction to Discrete Mathematics,
- 3460:209 Computer Science I,
- 3460:210 Computer Science II and
- 3450:221 Analytic Geometry-Calculus I.

Cooperative Education Program

The work-study schedule for a student participating in the Cooperative Education Program is as follows:

Fall	Spring	Summer
School	School	Vacation/School
School	School	Vacation/Work/School
School	Work	School
Work	School	Work
School	School	

Admission

Arrangements for student entry into the program are on an individual basis, and must be initiated by the student during the second year of undergraduate study. The Cooperative Education Program is an optional program available only to full-time computer science students at The University of Akron who have satisfactorily met the following requirements:

- Sixty credits with a grade-point average of at least 2.00 out of a possible 4.00 in the program curriculum and be on schedule in the curriculum
- Acceptance by a cooperative education coordinator or director following interviews
- A transfer student must complete 16 credits of academic work at The University of Akron with a grade-point average of at least 2.00 out of a possible 4.00 and be on schedule in the curriculum
- The student is expected to have successfully completed 3460:306 Assembly and System Programming and 3460:316 Data Structures before the first work period

A student who desires to participate in the program will fill out a Personal Data form and submit it to the department chair. The student will then meet with a member of the cooperative education staff to discuss the availability of prospective employers. During this interview, the student will be asked to sign a Cooperative Educational Agreement and a grade release form which will become effective upon employment. Employment must be coordinated or have approval of the department and the cooperative education director. The University does not guarantee employment for the student. The student will be expected to remain with the employer for all cooperative work periods in order to provide a progression of experience and responsibility.

Registration

While no academic credits are assigned, each student must register for 3000:301 Cooperative Education in the same manner that a student registers for any other University course. See department adviser before enrolling for this course. A cooperative program fee for each work period is charged. Upon completion of a work period, a statement will appear on each student's official transcript listing the course number, title and name of the employer. In the place of a grade,

3370: Geosciences (encompassing Geology and Environmental Science)

Degrees

- Bachelor of Science
  - Geology
  - Geophysics
- Bachelor of Arts
  - Earth Science Track
  - Environmental Science Track

Geoscientists focus on problems related to how the Earth works, and our students are given opportunities to build the skills necessary for understanding the Earth System. Through a variety of field and laboratory experiences, our curriculum emphasizes hands-on learning. Students may find employment opportunities in the Earth resources field, environmental consulting, the government sector, or a variety of other career paths.

3450: Mathematics

Degrees

- Bachelor of Science in Mathematics
- BS/MS Program in Mathematics
- Bachelor of Science in Applied Mathematics
- BS/MS Program in Applied Mathematics
- BS/MS Program in Applied Mathematics/Polymer Engineering
- BS/MBA 5-year Program in Applied Mathematics/Business Administration
- BS/MA 5-Year Program in Applied Mathematics/Economics

BS/MS Program in Mathematics

This is an accelerated five-year BS/MS program. After successfully completing this program, a student will receive a bachelor's degree in either mathematics or applied mathematics, as well as a master's degree in mathematics. Under the supervision of a faculty adviser, a student in the program will finish the core course requirements and most of the electives for the bachelor's degree in the first three years. During the third year of the baccalaureate degree, a student will formally apply to the program through the Graduate School (https://www.uakron.edu/gradsch). Upon acceptance, a student will be cleared to complete the remaining electives of the bachelor's degree and 30 credits of graduate work for the master's degree in the last two years. A student will be eligible for a graduate assistantship only in these last two years and must be registered for at least nine graduate credits in each of those semesters.

BS/MS Program in Applied Mathematics
This is an accelerated five-year BS/MS program. After successfully completing this program, a student will receive a bachelor's degree in either mathematics or applied mathematics, as well as a master's degree in applied mathematics. Under the supervision of a faculty adviser, a student in the program will finish the core course requirements and most of the electives for the bachelor's degree in the first three years. During the third year of the baccalaureate degree, a student will formally apply to the program through the Graduate School (https://www.uakron.edu/gradsch). Upon acceptance, a student will be cleared to complete the remaining electives of the bachelor's degree and 30 credits of graduate work for the master's degree in the last two years. A student will be eligible for a graduate assistantship only in these last two years and must be registered for at least nine credits in each of those semesters.

BS/MS Program in Applied Mathematics/Polymer Engineering
This is an accelerated five-year BS/MS program. After successfully completing this program, a student will receive a bachelor's degree in applied mathematics as well as a master's degree in polymer engineering. Under the supervision of faculty advisers in applied mathematics and polymer engineering, a student in the program will finish the core course requirements and most of the electives for the bachelor's degree in the first three years. During the third year of the baccalaureate degree a student will formally apply to the program through the Graduate School (https://www.uakron.edu/gradsch). Upon acceptance a student will be cleared to complete the remaining electives of the bachelor's degree and 30 credits of graduate work for the master's degree in the last two years. A student will be eligible for a graduate assistantship only in these last two years and must be registered for at least nine graduate credits in each of those semesters.

BS/MBA 5-year Program in Applied Mathematics/Business Administration
After successful completion of this accelerated five-year BS/MBA program, students will receive a bachelor's degree in applied mathematics and a master's degree in business administration. Students of this program will be supervised by faculty advisors in applied mathematics and the College of Business Administration (https://www.uakron.edu/cba) (CBA), and are expected to finish the core course requirements and most of the electives for the bachelor's degree in the first three years of the program. Students are asked to formally apply to the accelerated program through the Graduate School (https://www.uakron.edu/gradsch) during the third year of their bachelor's degree. Upon acceptance, students will be expected to complete the remaining electives of the bachelor's degree and 36-39 credits of graduate work for the MBA degree in the last two years of the program, while registering for at least nine graduate credits each semester of the last two years of the program. Students will be eligible to apply for an industrial graduate assistantship in these last two years of the program.

BS/MA 5-Year Program in Applied Mathematics/Economic
After successfully completing this program, a student will receive a bachelor's degree in applied mathematics as well as a master's degree in economics. Under the supervision of faculty advisers in applied mathematics and economics, a student in the program will finish the core course requirements and most of the electives for the bachelor's degree in the first three years. During the third year of the baccalaureate degree a student will formally apply to the program through the Graduate School (https://www.uakron.edu/gradsch). Upon acceptance a student will be cleared to complete the remaining electives of the bachelor's degree and 30 credits of graduate work for the master's degree in the last two years. A student will be eligible for a graduate assistantship only in these last two years and must be registered for at least nine graduate credits in each of those semesters.

Cooperative Education Program: Mathematics or Applied Mathematics
The work-study schedule for a student participating in the Cooperative Education Program is as follows:

Fall	Spring	Summer
School	School	Vacation/School
School	School	Vacation/Work/School
School	Work	School
Work	School	Work
School	School	

Admission
Arrangements for student entry into the program are on an individual basis, and must be initiated by the student during the second year of undergraduate study. The Cooperative Education Program is an optional program available only to all full-time mathematics or applied mathematics students at The University of Akron who have satisfactorily met the following requirements:

- Sixty credits with a grade-point average of at least 2.00 out of a possible 4.00 in the program curriculum and be on schedule in the curriculum
- Acceptance by a cooperative education coordinator or director following interviews
- A transfer student must complete 16 credits of academic work at The University of Akron with a grade-point average of at least 2.00 out of a possible 4.00 and be on schedule in the program curriculum.

A student who desires to participate in the program will fill out a Personal Data form and submit it to the department chair. The student will then meet with a member of the cooperative education staff to discuss the availability of prospective employers. During this interview, the student will be asked to sign a Cooperative Educational Agreement and a grade release form which will become effective upon employment. Employment must be coordinated or have approval of the department and the cooperative education director. The University does not guarantee employment for the student. The student will be expected to remain with the employer for all cooperative work periods in order to provide a progression of experience and responsibility.

Registration
While no academic credits are assigned, each student must register for 3000:301 Cooperative Education in the same manner that a student registers for any other University course. See department adviser before enrolling for this course.

A cooperative program fee for each work period is charged. Upon completion of a work period, a statement will appear on each student's official transcript listing the course number, title and name of the employer. In the place of a grade,"credit" or "no credit" will be given, depending upon the student's satisfactory or unsatisfactory completion of the following:

- Work performance as evaluated by the employer
- Written work report as approved by department chair and cooperative education staff
- Cooperative Work Period Summary form

Usually, work progresses satisfactorily on the job and a grade of "credit" is assigned at the end of the semester. If all the above conditions are not met, a grade of "no credit" will be submitted.

3650: Physics

Degree

- Bachelor of Science

This degree is intended for the student seeking the most detailed and quantitative preparation in physics available in an undergraduate curriculum.

Students can enhance their program of study in areas of research in the Department (https://www.uakron.edu/physics/research):

- Chemical Physics
- Polymer Physics
- Physics (Pre-Graduate School)

3470: Statistics

Degrees

- Bachelor of Science, Statistics
- Bachelor of Science, Statistics/Actuarial Science

The BS Statistics program prepares students to enter the workforce or pursue graduate studies. Students learn how to use numerical information to solve problems in a wide variety of fields, ranging from business and industry to medical research.

In addition to providing students with a solid background in Statistics, the Actuarial Science option prepares students for careers in the actuarial field.

Social Sciences Division

2200: Early Childhood Development

Degree

- Associate of Science in Early Childhood Development

This program prepares students for employment in a variety of staff positions in child care centers, nursery schools, and Head Start programs that service infants, toddlers, and pre-Kindergarten children. Graduates can be classroom assistants or head teachers, run their own center or be a center administrator.

7600: Communication

The School of Communication offers students a liberal arts education combined with professional and practical experience to meet the social, professional and personal challenges of the 21st century marketplace. Steeped in the tradition of free, accountable, and effective expression of thoughts and ideas, the broad-based curriculum equips students to think critically, write and speak eloquently, work in groups effectively, develop creatively, act ethically and interface proactively with converged media platforms.

Students choose from three academic concentrations: Strategic and Organizational Communication, Public Relations and Media Studies. Additionally, students are encouraged to participate in internships that lead to careers in media, business, sales and marketing, public relations, journalism and conference planning.

Additional information about the school, its faculty and its programs is available at http://www.uakron.edu/schlcomm

Requirements for transferring into the School of Communication:

- Admission to the Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas) and a 2.5 GPA or above

Degree

- Bachelor of Arts in Communication

Concentrations within the School of Communication (https://www.uakron.edu/schlcomm) are listed below:

- Public Relations Concentration
- Strategic and Organizational Communication Concentration
- Media Studies Concentration

Exit requirement

To graduate with a degree from the School of Communication (https://www.uakron.edu/schlcomm), a student must attain a minimum 2.0 GPA overall, a minimum 2.30 GPA for all courses taken in the School of Communication (https://www.uakron.edu/schlcomm) and have passed

- 7600:105 Introduction to Public Speaking/7600:106 Effective Oral Communication,
- 3300:111 English Composition I,
- 3300:112 English Composition II,
- 3300:113 African American Language and Culture I: College Composition or
- 3300:114 African American Language and Culture II: College Composition

with a "C" or better.

3350: Geosciences (encompassing Geography):

Degrees

- Bachelor of Science in Geography/Geographic Information Sciences

The coursework in our the BS-Geographic Information Science degree focuses on data handling, analysis, and graphic communication of simple and complex geographic data and information. Students study how to map, model, and query large amounts of information. Students may also learn how to acquire remotely sensed imagery and how to display and analyze images acquired using many different kinds of sensors.

3400: History

Degrees

- Bachelor of Arts in History
- BA/MA Program in History

In addition to the knowledge conveyed through the study of the past, students of history obtain practical skills that empower them no matter what career direction they take. History students learn to read widely and critically. They develop analytical and writing skills and gain experience with oral communication, all of which can be employed in any career or profession. Tens of thousands of attorneys, teachers, civic and business leaders, military professionals, and others have developed successful careers as a result of their decision to study history. The intellectual skills and cultural sensitivity that history teaches can be applied in all walks of life. People who study history learn to ask questions, think for themselves, and become better citizens.

BA/MA Program in History
This is an accelerated five-year BA/MA program. Students can take this accelerated BA/MA program with the goal of applying for admission into PhD programs in History. In addition, students can take this accelerated program to pursue careers as educators in the public school system or in private schools, careers as researchers in cultural organizations and policy think tanks, and careers in museums, libraries and historical societies.

After successfully completing this program, a student will receive a bachelor's degree as well as a master's degree in history. Under the supervision of faculty advisors in history, a student in the program will finish the core course requirements and most of the electives for the bachelor's degree in the first three years. During the third year of the baccalaureate degree a student will formally apply to the program through the Graduate School (https://www.uakron.edu/gradsch). Upon acceptance, a student will be cleared to complete the remaining electives of the bachelor's degree and 30 credits of graduate work for the master's degree in the last two years. A student will be eligible for a graduate assistantship only in these last two years and must be registered for at least nine graduate credits in each of those semesters.

3700: Political Science

Degrees

- Bachelor of Arts
- Bachelor of Science in Political Science/Criminal Justice

Successful graduates of this program go on to graduate or law school, manage campaigns, run for office, work in state and local government or for various federal government agencies, including the U.S. Marshall's Office, U.S. State Department, Federal Bureau of Investigation, Environmental Protection Agency, and Amnesty International.

Statement of Policies – Admission

For students enrolled at The University of Akron and for students wishing to transfer directly to Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas) from other institutions, the following criteria must be satisfied for admission to the Department of Political Science (https://www.uakron.edu/polisci):

- The student must be admissible to Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas)
- A minimum grade point average of 2.20 must be met in all university work, including transfer credits
- A minimum grade point average of 2.20 must be met in all work in Political Science, including university and transfer credits. Only credits earned at an accredited institution of post-secondary education, as recognized by The University of Akron, will be considered for transfer credit, and only those grades will be considered in the grade point average.

Retention

Students in the Political Science programs must maintain a minimum grade point average of 2.20 overall and a minimum of 2.20 grade point average in Political Science courses (including transfer credit) in order to remain in the program. A student who fails to maintain the 2.20 cumulative average (including transfer credit) will be placed on academic probation. Failure to raise the average after one semester will result in dismissal from the program. The student may not apply for readmission for at least one semester.

3750: Psychology

Degree

- Bachelor of Arts

Psychology majors learn about human and animal behavior, and are prepared for diverse careers in health, business, industry, and research. The Department of Psychology (https://www.uakron.edu/psychology) offers an extensive and varied curriculum coupled with an active faculty and student-driven research program that develops the analytical and problem-solving skills desired by employers and graduate programs. The academic background and applied experiences provided by the major enable students to seek regional postgraduate employment and successfully compete for graduate school opportunities leading to advanced degrees.

3760: Family and Child Development

Degree

- Bachelor of Arts
  - Family Development
  - Child Development

Students in the Family Development and Child Development programs complete coursework in early childhood, adolescence, curriculum development, parent-child relations, families living in poverty, consumer education, marriage and family relations, family financial management, and much more. Faculty members personally advise every student and help them maximize their degree by adding possible minors and certificates to their program. Students in both programs complete a 200-hour internship experience which gives them the opportunity to work with professionals and apply their academic knowledge to real-world settings.

3800: Criminal Justice Studies

Degrees

- Associate of Science
  - Criminal Justice Technology
  - Criminal Justice Technology - Corrections
  - Criminal Justice Technology - Law Enforcement
  - Criminal Justice Technology - Public Safety and Security Administration Technology

The Criminal Justice program develops critical thinking, problem solving techniques, effective communications and the ability to use technology while examining crime and the methods used to prevent it, as well as investigate and punish those who violate the law. It provides a professional perspective of the Criminal Justice field, including policing, corrections and security administration.

3850: Sociology

Degrees

- Bachelor of Arts
  - Sociology
  - Sociology/Criminology & Law Enforcement

Sociology graduates obtain positions in local, state, and federal law enforcement; in non-profit organizations related to health care, community services, victim assistance, and education; and in business corporations. Job titles include police officer, fraud investigator, case worker, hospital administrator, youth counselor, director of market research, lawyer, professor, probation officer, community service coordinator, and human resources manager. Graduates also continue their education in graduate programs or law schools.

Statement of policies - Admission

For students enrolled at the University of Akron and for students wishing to transfer directly to Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas) from their institutions, the following criteria must be satisfied for admission to the Department of Sociology (https://www.uakron.edu/sociology):

- The student must be admissible to Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas)
- A minimum grade point average of 2.20 must be met in all university work, including transfer credits until 30 UA credits are earned. Only credits earned at an accredited institution of postsecondary education, as recognized by The University of Akron, will be considered for transfer credit, and only those grades will be considered in the grade point average.

Graduation

A Sociology, Sociology/Criminology and Law Enforcement major must earn a cumulative 2.20 grade point average in Sociology and overall to graduate with such a declared major.

College of Business Administration

Effective Instruction

The College of Business Administration (CBA) emphasizes effective teaching and participatory learning as the primary means to educate and prepare future business leaders. Faculty members are strongly committed to being involved with and accessible to CBA students. The CBA attempts to provide relatively small class sections throughout the curriculum.

Effective teaching and participatory learning includes challenging our students through a variety of teaching methods. The College relies upon the case method, seminar presentation, skills performance methods (oral and written), discussion method, and experiential learning in addition to traditional lectures in the classroom. Relevant learning experiences, such as internships and co-ops, are also important components of the CBA curriculum. These methods are used to: 1) involve students actively in their own education by requiring preparation and engagement; 2) instill in students the ability to educate themselves as a life-long habit; and 3) prepare students to more effectively and quickly bridge the gap to competent business leadership.

CBA students receive a well-rounded business education. Students acquire integrated business knowledge the following set of robust business skills:

- Quantitative
- Analytical
- Collaboration and teamwork
- Written communication and presentation
- Problem solving

CBA faculty are especially focused on preparing students to be data savvy and well-versed in business analytics.

Exposure to business practitioners - in and out of the classroom - assists in achieving these goals. The CBA introduces students to an understanding of professionalism, public service responsibilities and the role of business in society. This requires that students develop a respect for learning and a preference for solutions that advance the public good. Further, the CBA emphasizes creativity, open-mindedness, ethical behavior, and diverse cultural perspectives.

Since the College's inception, equal emphasis has been placed on broad basic theoretical principles and immediate applied practices within the curriculum. Classroom knowledge is supplemented with a strong professional development program, contact with business practitioners, the College's excellent tradition of vibrant student organizations, and invited speaker programs, to help students engage with the business community.

College Requirements

Requirements for Admission

To be admitted to a major in The College of Business Administration, students must have completed the courses listed below and have an overall grade-point average of 2.5 or higher.

- 3300:111 English Composition I and 3300:112 English Composition II
- 7600:105 Introduction to Public Speaking or 7600:106 Effective Oral Communication
- 3250:200 Principles of Microeconomics or 3250:201 Principles of Macroeconomics
- 6200:201 Accounting Principles I OR
- 6200:250 Spreadsheet Modeling & Decision Analysis OR
- 6300:201 Introduction to Entrepreneurship OR
- 6400:220 Legal & Social Environment of Business OR
- 6600:205 Marketing Principles

Other Admissions

Students accepted into the University Honors College as business majors are automatically admitted to a major in the College of Business Administration. Incoming freshmen with appropriate credentials may be admitted directly to a major in the College upon application to the University.

Freshmen who begin study in another major at the University, and would have met the requirements to be directly admitted to a major in the College of Business Administration, from high school, have until the last day of instruction in the first semester of their freshman year to change their major to the College of Business Administration.

Transfer Student Admission

Transfer students from accredited two-year and four-year colleges are welcome. Students from outside the University must meet the same grade-point average, credit hours and coursework standards of University of Akron students. Transfer students who have not met the above coursework and academic performance standards will be admitted as pre-major to the College until all admission requirements are met.

Transfer/Transient Course Work

Some courses taken out of the University may be accepted in lieu of college requirements. The College will consider transfer/transient coursework from regionally accredited community colleges and other AACSB accredited institutions in accordance with the State of Ohio transfer policies and requirements laid out in this Bulletin. Courses will be evaluated based on content, complexity, grading standards and an earned grade of "C" or higher.

If transferring from another regionally accredited community college, it is anticipated that students will have devoted the major share of their

academic effort to the completion of basic requirements in the general education and pre-business areas. The College will evaluate courses from regionally accredited non-AACSB accredited colleges for course-to-course transfer/transient substitution for CBA 100 and 200 level course only.

Continuation of the Baccalaureate Program

A CBA student shall be subject to academic probation if the accumulated grade-point average for all courses is less than 2.0. CBA students who are on academic probation for two consecutive semesters will be considered for academic dismissal. Probation and dismissal are decided by the Dean of the College in accordance with policies laid out in this Bulletin.

Degrees

The College of Business Administration offers the following baccalaureate degrees: the Bachelor of Science in Accountancy, the Bachelor of Business Administration, the Bachelor of Arts in Economics, and the Bachelor of Science in Labor Economics

Integrated Core Curriculum

The Integrated Core Curriculum is made of 36-39 credits and serves as the foundation of the business curriculum. The purpose of the Integrated Core Curriculum is to provide a basic understanding of the business disciplines, to contribute to a student's choice of major, and to fulfill pre-requisites for courses in the major. See an advisor for more information on the core curriculum and related requirements.

The following learning goals form the foundation of the learning activities that occur within the Integrated Core Curriculum:

1. Demonstrate integrated business knowledge (accounting, business finance, marketing, business law, supply chain and operations management, management principles, business statistics and analytics, spreadsheet modeling, international business, and s strategic management)
2. Analyze data using quantitative techniques
3. Be informed decision makers
4. Develop leadership and collaboration competencies
5. Use writing and oral communication skills to persuade and to mobilize action
6. Demonstrate a global perspective and cross-cultural awareness
7. Recognize and understand how to address ethical concerns

Based on the declared major, the Integrated Core Curriculum will consist of at least 11 courses arranged in sequential order on which to build a foundation.

College of Business Administration Programs of Instruction

Learn more about the undergraduate degree programs of instruction offered by the College of Business Administration. For specific curriculum guides for bachelor's degrees, minors and certificates offered through the College, see the Undergraduate Curriculum Guides (https://www.uakron.edu/academics_majors/curriculum-guides) section of the Undergraduate Bulletin.

3250: Economics

Economics is the study of choice in a world with scarce resources. Students majoring in economics develop their analytical and problem-solving skills while exploring theories of economic systems and their application to a large number of fields. These fields range from finance and international trade to poverty reduction and environmental problems.

Graduates are employed in both the private and public sectors in a wide range of careers. For example they can be found as financial analysts, management trainees, human resource managers, city and state economists, bank examiners or health care administrators. An economics degree is an excellent background for entrance into professional programs such as law or the MBA. A joint major is a very useful option for students studying in other fields.

Degrees

- BA in Economics
- BS in Labor Economics.

Bachelor of Arts

The BA program has core courses in theory and in quantitative and computer methods as well as a number of economics electives. If they wish, students can choose field electives relating to career tracks: business, banking and international economics, public policy or graduate school (see below). In one of their final field courses, students develop and carry out a senior project that shows their ability to apply what they have learned, both analytically and quantitatively. For potential employers, it provides an important demonstration of what an economics graduate can do

Bachelor of Science in Labor Economics

The BSLE is a more focused program relating to issues involving human resources, from the analysis of wages and labor markets to the investigation of social policy problems like health, education and discrimination. Career opportunities exist for labor market analysts and for social and labor policy experts in state and local government (like the Department of Job and Family Services or Summit County Children's Services) and in local and international firms. The BSLE program has core courses in labor theory and application plus quantitative and computer methods. The culmination of the program for each student is to bring together all these areas in a labor market analysis and evaluation project. This project demonstrates students' ability to apply what they have learned both in analytical thinking and quantitative methods. For employers, it is a valuable demonstration of what a labor economics graduate can do.

6100: General Business

This degree program is intended to offer flexibility to the student. Some students who intend to pursue careers in small business management, whether by creating or acquiring a business, or perhaps taking over a family business enterprise, may find the flexibility of this degree program best for them. Other students with more full-time professional experience may also prefer the broader course selection available in this degree program.

The Bachelor in Business Administration (BBA) General Business program requires students to complete the CBA core curriculum and 27 credit hours from specified courses. Students majoring in general business must complete an approved college of business minor.

6200: Accountancy

The George W. Daverio School of Accountancy prepares students to become competent and responsible accounting professionals and business leaders. Accounting is essential for planning, decision-making, control and performance evaluation in all types of organizations,

including business, government and non-profit entities. Accounting also supports the need for accountability and transparency in every organization, regardless of size, complexity or location. Government and regulatory organizations (e.g. the Internal Revenue Service and the Securities & Exchange Commission) rely heavily on accountants to support compliance with various laws and regulations. A need for accounting exists whether an organization is small or large, global or domestic, for profit or not-for-profit, listed or not listed on a stock exchange. Thus, an accounting major offers a wide range of opportunity for future success as a professional.

Students who major in accounting at The University of Akron are generally recruited for professional careers in financial reporting, cost management and control, financial management, financial analysis, internal auditing, external auditing, taxation, information systems audit and control, financial forensics and consultancy. Organizations that recruit accounting majors include public accounting firms, major corporations, small and medium size enterprises, government agencies and non-profit organizations. There are exceptional opportunities for professional advancement regardless of career path and the type of institution a graduate may choose.

Professional certification is vital for accounting professionals. We recommend the Certified Public Accountant (CPA) credential for all of our graduates. Ohio law requires 150 semester credit hours of college level education as a prerequisite for the CPA examination. We strongly encourage our students to pursue the Accelerated BS/MS Accounting or the Accelerated BS/Master of Taxation program as a path to earning the 150 credits needed for CPA exam eligibility.

CPA certification is needed for successful careers in public accounting; it is also highly valuable for careers in corporations, government agencies and other organizations. In addition to the CPA, other certifications that students may pursue include Certified Management Accountant (CMA), Certified Internal Auditor (CIA), Certified Information Systems Auditor (CISA) and Certified Fraud Examiner (CFE).

6400: Finance

The primary mission of the Department of Finance is to provide a quality education to students that will prepare them for leadership positions within the finance profession in business. Students acquire financial knowledge and skills that can be applied in a variety of environments.

UA's four-year finance degree provides students with the opportunity to acquire general business and financial problem-solving skills – with a concentrated study in Financial Management, Financial Planning, or Risk Management and Insurance (RMI).

Graduates in finance develop the skills to: Succeed in financial management of both businesses and not-for-profit organizations; Make effective decisions regarding financial analysis, cash management, raising capital, funding new products, and mergers and acquisitions; Advise people in planning their personal finances to enhance their standard of living during their working years and in retirement; and Identify, analyze, and manage financial and operational risks that are inherent in both personal and business settings.

Financial Management develops students' ability to apply the principle of finance to management of a firm. While the curriculum focuses on the corporation, the skills acquired apply to any organization requiring financial management. Career opportunities include: Chief financial officers; Bank loan officers, credit managers, operations managers and financial analysts; Corporate credit managers; and Participants in all phases of mergers and acquisitions

Financial Planners do what many people don't like doing for themselves: Figure out how to manage their money. By meeting with clients and then helping them determine budgeting plans, investing decisions, insurance needs and other financial to-do's, financial planners get clients on track and help them stay focused on meeting their financial goals. This major qualifies students to sit for the Certified Financial Planner™(CFP®) Exam. Career opportunities include: Financial Planner; Paraplanner; Customer Service Associate; Wealth Management; and Portfolio Manager

RMI prepares students to identify, analyze and manage financial and operational risks that are inherent in both personal and business settings. They study property, liability, health and life insurance, employee benefit programs and government insurance programs. The RMI industry is dynamic and changing rapidly and employment opportunities are high. Careers in this field encompass three broad categories: corporate risk management, corporate insurance professional and insurance sales. Career opportunities include: Loss control specialist/underwriter; Risk analyst/auditor; Claims adjuster/manager; Agency sales/service; and Bank compliance officer.

6500: Management

The Department of Management provides opportunities for students to prepare for three different majors: Human Resources Management, Supply Chain/Operations Management and Information Systems Management. Each major provides a solid foundation of general management skills needed by organizations today. Businesses, as well as non-profit institutions, face complex environments with multiple challenges and opportunities. The Department of Management faculty members interact regularly with business leaders to ensure that our students are prepared with the cutting-edge knowledge and skills required to obtain the best jobs.

The Human Resource Management major prepares students for jobs as Human Resource Management (HRM) professionals, as well as general managers. It is generally the people with talent that make one organization more successful than another. HRM professionals are the keys to the acquisition and use of talent in organizations to support strategy. HRM professionals oversee the recruitment, hiring, training and compensation of employees. They also design systems for performance management, guide labor relations, ensure legal compliance and monitor employee safety.

The Supply Chain/Operations Management major is central for the success of almost every business. Supply Chain/Operations deals with getting the right product, to the right place, at the right time, in the right condition, at the right price. It is a growing interdisciplinary field that involves building relationships with organizations around the world. Professionals in this area must understand procurement and sourcing, inventory control, logistics and transportation, import and export management, manufacturing and service operations, and negotiation and customer satisfaction skills. This major prepares students to be professionals in the broad supply chain field.

The Information Systems Management major prepares students to be business professionals that direct the technology-related activities of organizations. Graduates understand how to design and access computer systems in order to ensure good business decisions. Information Systems (IS) professionals work with executives to define, plan and achieve the technical goals of the company. IS professionals understand databases, networks, data analytics and system analysis.

Students graduate from this program with the combination of technical and business expertise that organizations need for success.

A graduate with a degree in a management discipline will have many employment opportunities with firms in staff, supervisory and other professional positions. In addition, the graduate has the fundamental preparations to undertake advanced studies leading to a graduate degree.

6600: Marketing

Marketing is about the creation of value. The object of this creation can be a product, a service, a cause, a person or an idea. The American Marketing Association defines marketing as "the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large." Ultimately, great marketing is about creating customer commitment to the products, services and ideas that one produces. The discipline is built on learning the core practices associated with bringing a product/service/idea to market including product design and development, distribution, promotion and pricing. It also focuses on how to keep products competitive through branding, customer service and innovation. It is now generally accepted that the marketing perspective, a perspective that puts the customer first, can improve the operation of any organization, including not-for-profit organizations and government agencies.

Given the rather broad and encompassing view of marketing, it is not surprising that a significant proportion of the work force is employed in some aspect of the field. Many individuals with a marketing degree, particularly in smaller firms, become marketing managers responsible for all marketing related activities of the firm. Many others specialize in one specific area. Some of the more common areas include digital marketing, advertising and promotion, sales and sales management, brand management, product development and planning, marketing research & analytics, customer relationship management, media management and retail buying or merchandising. To accommodate the various career track options in marketing, the marketing department offers three majors: Marketing Management, Sales Management and Integrated Marketing Communications.

Each program is designed to provide the student with a full set of fundamental skills and work place competencies essential for success and advancement. Both theory and practice are stressed through a series of foundation courses that focus not only on "what to do," but "how to do it" and professional capstone experiences though projects with real companies, internships and/or professionally taught specialty courses on state-of-the-art marketing practices.

Our majors must meet all requirements of

1. the General Education Program,
2. the Pre-major Program,
3. the College of Business Administration Core Program,
4. the required foundation courses within each program,
5. the electives within each program, and
6. the professional experiences component of the program.

Students should give careful thought to the pursuit of a dual major. By adding a limited number of credit hours, students can combine any two of the four majors offered by the Department of Marketing. For example, a student could pursue a double major in sales management and marketing management or marketing management and international business. Double majors are one of the best methods for expanding your career specializations and opportunities. Check with your CBA advisor to determine the specific requirements for the double major of your choice.

6800: International Business

Rapid globalization of business is converging around dynamic changes in the physical, political, economic, and cultural environments of organizations. This unprecedented wave of rapid change creates new opportunities and challenges that must be managed effectively. Our curriculum is designed specifically to prepare graduates to effectively manage the change and complexity that the wave of globalization brings with it. Special emphasis is placed on the process of foreign market entry. Carefully articulated course offerings and contents cut across accounting, finance, management, marketing and technology. Notable highlights include a required approved study abroad program, proficiency in a foreign language and a minor specialization. The integrative nature of our program stands at the intersection of theory and practice to provide a balanced approach, functional specialization and a broader cultural perspective.

Students majoring in International Business must complete one of the approved minors for a minimum of 18 credits. The areas that can be used for the minor include: in the College of Business Administration – Consumer Marketing, Database Marketing, Entrepreneurship, Finance for Business Majors, Financial Planning, Human Resource Management, Management Information Systems, Supply Chain/ Operations Management and Sales Management; in the College of Arts & Sciences – Economics, Labor Economics, English, Mathematics/Applied Mathematics and General Philosophy.

All International Business majors must also participate in an approved study abroad program which includes the completion of 6800:406 Travel Abroad. To satisfy the study abroad program, foreign students must choose a country other than their home country. All approved study abroad programs should meet at least 40 contact hours of learning to satisfy the completion requirement for 6800:406 Travel Abroad.

All International Business majors must complete a language requirement, which requires completion of English and another language. The other language must be an approved foreign language sequence with a minimum of 11 credits. Students with a native language other than English, can opt out of the second language (their native language) requirement by getting a 'pass' grade in the 'language placement test' administered by the Counseling Center, bypassing the credits for the second language.

To receive a Bachelor in Business Administration degree with a major in International Business, each student must successfully complete the

1. General Education program requirements,
2. Pre-Business program requirements,
3. College of Business Administration Core requirements,
4. required courses within the International Business major,
5. completion of two languages, with one being English,
6. specialization in a minor, and
7. participation in an approved study abroad program.

LeBron James Family Foundation College of Education

College Requirements

Selection, Admission, Retention, and Teacher Licensure

The LeBron James Family Foundation College of Education (https://www.uakron.edu/education) has selective admission, retention, and graduation requirements for the completion of a program at The University of Akron.

For all students applying to a College of Education's Professional Education program, the admission and degree requirements outlined in the current UA Undergraduate Bulletin will be used to determine admission (or readmission) and degree requirements for all programs.

From admission through graduation, all decisions are made following the College's or department's approved criteria. Prior to admission to a program, Ohio requires all colleges and universities preparing teachers and educational personnel to assess students in the areas of verbal communication and academic achievement. The University of Akron's College of Education admission procedures are designed to establish admission criteria, provide for assessments, allow for skills enhancement, reassessment and reapplication where appropriate.

General Education Requirements: To be admitted to the LeBron James Family Foundation College of Education (https://www.uakron.edu/education), all students must be able to meet the following criteria: A student must have completed at least 29 semester hours of coursework. This coursework must include a minimum of three (3) semester hours in each of the required courses in mathematics, natural science, social science, and public/oral communications, and six (6) semester hours in English composition. Appropriate General Education equivalencies for transfer students will be determined by the University College Dean's Office. The remaining 10 semester hours must consist of general education coursework that meets the requirements of the University and the admission requirements of the department's program studies area.

Grade-Point Average: For admission, a grade point average of 3.0 or better overall and 2.5 or better overall in prerequisite credit hours from specific courses identified by College.

Academic Achievement: Competency in math skills as evidenced by: a composite score of 21 or higher on the ACT; 980(Math and Verbal) on the SAT; a grade of "B" or better in a minimum of 3 credits of mathematics that meets the University's General Education mathematics requirement. Competency in reading comprehension and writing as evidenced by: a composite score of 21 or higher on the ACT; 980(Math and Verbal) on the SAT or a grade of "B" or better in a course that meets the University's General Education English Composition I requirement.

Bureau of Criminal Investigation Clearance: A signed Criminal Background Check Acknowledgement Form (https://www.uakron.edu/dotAsset/f67bd1f1-825f-4322-ba91-a05d0350009c.pdf) must be submitted. Current Ohio Bureau of Criminal Identification and Investigation (BCII) and Federal Bureau of Investigation (FBI) background checks are required before you may participate in coursework with field experience.

College of Education Application: All students must complete College of Education application (https://www.uakron.edu/education). Responses to the questions on the application will help College of Education advisors offer the most effective and efficient advisement. It will also help advisors know students as individuals with unique backgrounds and experiences. **Undergraduate** students should apply during the semester in which all College of Education Pre-admission requirements will be met.

Admission Timeline: Admission to a College of Education Professional Education program is in effect for five years from the date of admission. All criteria and procedures regarding selective admission and retention are available in The LeBron James Family Foundation College of Education, Zook Hall, The University of Akron, Akron, OH 44325-4201, phone (330) 972-7750 or http://www.uakron.edu/education.

Application for Admission to Professional Education Programs

All students are required to have completed the application process no less than six weeks prior to the semester in which they wish to begin coursework in the College of Education. Additional information and applications are available on the LeBron James Family Foundation College of Education website at https://www.uakron.edu/education/academic-programs/CIS/how-to-apply.dot

Program Area of Study: All students are expected to comply with requirements specified by the program to which they are applying. These are available in the department.

Advisement: All students will be assigned an advisor and will need to complete an individualized Program Course Distribution (PCD) with their advisore. This PCD must be completed during the first semester of admission. Students are encouraged to see their program advisor when necessary to assure they are maintaining progress in their program.

Retention: Retention of students in each program will be evaluation based. Students will have opportunities to upgrade their skills and achievement in areas where such needs may exist. Completion of program requirements will be reviewed by the student and faculty advisor. Approval to student teach is contingent on the student's progress through the program of study with satisfactory grades. Graduation is contingent on completion of coursework, student teaching, GPA of 2.50 overall, 2.50 in education classes, and 2.50 in the student's major.

Licensure: After graduation, students may apply for licensure through the Ohio Department of Education. The State of Ohio requires all applicants for licensure to submit a current BCII/FBI Clearance. A BCII/FBI Clearance is valid for 12 months from the date of issue. Ohio also requires all applicants for licensure to pass appropriate examination(s) for intended area(s) of licensure. Information about specific licenses can be obtained from the College of Education.

Transfer Students: Transfer students will be expected to meet the same admission standards as University of Akron students.

Post-Baccalaureate Students: Qualified post-baccalaureate students seeking licensure will be admitted to the LeBron James Family Foundation College of Education (https://www.uakron.edu/education) and to the appropriate program once they meet all admission requirements.

Bachelor's Degrees

The Professional Education Program prepares students to teach in one or more of the following areas/fields: early childhood inclusive teacher preparation (age 3 through grade 3); middle childhood (grades 4 through 9); the conventional academic fields found in programs for adolescent to young adult students (grades 7 through 12); in special education as an intervention specialist for early childhood (P-3 mild/moderate/

intensive); mild/moderate (K-12); or moderate/intensive (K-12); and multi-age (grades PK through 12). To qualify for the bachelor's degree, the minimum credits as required by the student's degree program at the time of admission with a grade-point average of 2.50 overall, 2.50 in education classes, and 2.50 in the student's major must be completed.

The specific subjects required for degrees in certain fields are set forth in subsequent pages. In all cases, the requirements include courses in general education, professional education and content areas.

The Bachelor of Arts in Education degree is granted to those whose major is in one of the academic fields. The Bachelor of Science in Education is granted to those whose major is in the other special fields or in early childhood or middle childhood education.

Professional Education Programs

The conceptual framework theme, "Educator as Decision Maker," is central to The University of Akron's Professional Education Program. This was chosen because the complexity of teaching is increasing and the professional knowledge base is growing. Decision-making is stressed in the standards-based programs that prepare teachers and other school personnel for professional practice. Initial professional education programs are aligned with the Ohio Standards for the Teaching Profession, and Specialized Professional Association Standards. Advanced Programs for practicing teachers are aligned with the Ohio Standards for the Teaching Profession. For more complete information about the professional education program, consult the College of Education at (330)972-7750.

Students must complete appropriate professional education courses with grades of 'C' or better before progressing through the program.

Professional Preparation

Built on a foundation of general studies that begins prior to admission, the Professional Education Program is organized into four phases that reflect how teachers can learn to make good decisions.

- **Learning About Learners,** "How can I use information about myself and others to understand decisions about students and learners?"
- **Learning About Teaching,** "How do I use principles of learning to make instructional decisions?"
- **Learning to Apply the Principles of Teaching,** "How do I make instructional decisions for specific groups of students?"
- **Learning to Teach,** "How do I make the best decisions for students?"

During each phase of the program, teacher candidates take a combination of core courses, field experiences, and courses in their program studies area. Students should note the sequence of core and program courses. The core courses cover the knowledge base that is common for all teachers, regardless of their teaching field. The field experiences provide teacher candidates with experience in schools from the beginning of their program. Additionally during their field and clinical experiences, teacher candidates learn to apply what they are learning in courses.

Program content area courses are related to teacher candidates' intended area of licensure. In addition, teacher candidates have a faculty advisor to help plan what to study and to review what has been accomplished.

The culminating experience for teacher candidates is student teaching. Under the supervision of a team of college faculty and a classroom teacher, each student teacher begins to put newly-developed competencies into practice.

For candidates seeking to graduate without licensure, substitute courses for this culminating experience of student teaching and colloquium will be determined with recommendation by the advisor and subject to approval by the Dean to assure that candidates meet an equivalent number of Education hours for the program. Candidates must meet all other program requirements. If the student wishes to seek licensure after graduation, the student would need to apply to be admitted to the appropriate program. The student will be required to complete all necessary requirements for licensure in place at the time admission.

Clinical and Field-Based Experiences

All teacher candidates are required to participate satisfactorily in clinical and field-based experiences prior to recommendation for licensure to teach in Ohio. These clinical and field-based experiences are designed to provide teacher candidates with the opportunity to apply theory and skills related to their areas of licensure in diverse clinical and field-based settings. Clinical experiences are those planned activities in which professional education students apply the principles of teaching.

Student Teaching

Student teaching is an all-day, full-time, planned teaching experience for 16 weeks in an approved public or private school. Placements are made in schools selected and supervised by the College of Education in collaboration with school districts and faculty.

All teacher candidates must have an approved student teaching application on file to be considered for placement.

To qualify for student teaching, teacher candidates must have a 2.50 average overall, a "C" or better in professional education classes, a minimum of a 2.50 and/or a "C" or better in the teacher candidate's major, and in methods courses as defined by departments. Satisfactory completion of field and pre-clinical experience is also required before student teaching.

Licensure

Every teacher in Ohio public schools is required to have a teaching license covering the fields in which teaching is being done. This license is issued by the Ohio Department of Education upon recommendation of the Dean of the College of Education. The teacher candidate must provide evidence of a current BCII/FBI Clearance, must pass appropriate examination(s) required in Ohio, complete the appropriate program requirements successfully, and be recommended for a teaching license.

Endorsements

TESOL Endorsement (Teaching English to Speakers of Other Languages)

This program introduces teacher candidates to the key issues in teaching English to non-native speakers through coursework in linguistics, second language theory and methods, and related disciplines.

Teacher candidates seeking this endorsement must have studied a foreign language at some time during their academic career.

Students who do not have English as a native language must demonstrate adequate proficiency in English with a valid TOEFL score of 580 or above and a score of 240 or above on the TSE (Test of Spoken English).

LeBron James Family Foundation College of Education Programs of Instruction

Department of Curricular & Instructional Studies

The Department of Curricular and Instructional Studies includes the areas of early childhood inclusive, middle childhood, secondary (adolescent to young adult), preschool to grades 12 (P-12) education and the areas of special education as an intervention specialist for mild to moderate (K-12) or moderate to intensive (K-12). Initial Professional Education programs are available at the undergraduate, post-baccalaureate and master's degree levels.

- The early childhood inclusive program prepares teachers to work in inclusive educational settings, serving needs of three to eight year old typically developing children and/or with mild/moderate/intensive educational needs.
- The middle childhood program prepares teachers to teach grades four through nine with specialization in each of two areas selected from reading/language arts, mathematics, science and social studies.
- The secondary program prepares teachers of grades seven to twelve to teach language arts, mathematics, science, social studies or family and consumer science (grades 4-12).
- The P-12 program prepares teachers of music, drama, or visual arts.
- The special education options prepare undergraduates as intervention specialists/teachers for children with special needs and graduate students to be master teachers.
- Endorsements are available in reading and teaching English as a second language.

Departments

5200: Early Childhood Education

Courses and experiences prepare our teacher candidates to work in preschools, childcare centers, or to teach in primary schools. Various techniques to establish positive learning environments are taught as students learn to plan, implement, and evaluate instructional programs, and to select, develop and implement methods and materials for the introduction of science, language arts, math and social sciences to children in an integrated curriculum which stresses critical thinking and problem solving.

Upon receipt of an initial teaching license, a student may be eligible to return for additional licensure, based on additional coursework.

Endorsements such as Teaching English to Speakers of Other Languages (TESOL) and Reading can be added to licenses.

For additional information, teacher candidates should contact The LeBron James Family Foundation College of Education in Zook Hall, call (330) 972-7750 or at www.uakron.edu/education.

5250: Middle Childhood Education

These Education majors work toward licensure in Middle Childhood Education. All teacher candidates in Middle Childhood Education are also required to have two areas of concentration from outside the College of Education. Teacher candidates may choose from natural sciences, social studies, mathematics, and language arts and reading.

Prior to admission, teacher candidates must complete a minimum of 31 credit hours of coursework with a 2.50 GPA. These requirements provide Middle Childhood Education majors with the breadth of knowledge (science, written and oral communication, math and social studies) they will need to make decisions in the Middle Childhood setting. Teacher candidates admitted to Middle Childhood Education must achieve a grade of "C" or higher in all professional education courses to be eligible to student teach and graduate from the College of Education.

Courses and experiences prepare teacher candidates to work in elementary, middle and junior high schools. Various techniques to establish positive learning environments are taught as teacher candidates learn, plan, implement and evaluate instructional programs, and select, develop and implement methods and materials for the introduction of science, language arts, math and social sciences to children in an integrated curriculum that stresses critical thinking and problem solving.

Upon receipt of an initial teaching license, a student may be eligible to return for additional licensure, based on additional coursework. Endorsements such as the 4-6 Generalist, Teaching English to Speakers of Other Languages (TESOL) and Reading (Graduate only) can be added to licenses.

For additional information, teacher candidates should contact The LeBron James Family Foundation College of Education in Zook Hall, call (330) 972-7750 or at www.uakron.edu/education.

5300: Secondary (Adolescence to Young Adult) Education

Prior to admission, students must complete a minimum of 29 credit hours of coursework with a 3.00 GPA. These requirements provide Adolescence to Young Adult Education, P-12 and Specialty Program majors with the breadth of knowledge they will need to make decisions in the secondary school setting. Students admitted to Secondary Education must achieve a grade of "C" or higher in all professional education courses to be eligible to student teach and graduate from the College of Education.

The program mandates an expert knowledge in a specific content area. This knowledge prepares and encourages teachers to be decision-makers by adapting and applying content knowledge to the needs and interests of a diverse student population. Upon graduation, teacher candidates are ready to teach in school settings appropriate to their licensure.

The Department offers teacher licensure in the following areas: Language Arts (7-12), Math (7-12), Science (7-12), Social Studies (7-12), and Drama/Theatre (P-12). Licensure is also available in Visual Arts (P-12), Music (P-12).

For additional information, students should contact The LeBron James Family Foundation College of Education in Zook Hall, call (330) 972-7750 or at www.uakron.edu/education.

5610: Special Education

Prior to admission, teacher candidates must complete a minimum of 27 credit hours of coursework with a 3.00 GPA. This program is designed to prepare educators to meet the needs of children and adolescents with exceptionalities. The College of Education offers four licensure options: Early Childhood Intervention Teacher Preparation (P-3); Intervention Specialist Early Childhood (P-3); Intervention Specialist Mild to Moderate (K-12); and Intervention Specialist Moderate to Intensive (K-12).

These programs prepare teacher candidates to work effectively with pupils who experience physical, learning, and/or emotional special

education needs. Graduates of these programs are trained to put theory into practice by providing instruction for students with special needs in a variety of educational settings. These settings include the classroom setting, individual and small group tutoring, and special classes.

For additional information, teacher candidates should contact The LeBron James Family Foundation College of Education in Zook Hall, (330) 972-7750 or at www.uakron.edu/education.

College of Engineering

Objectives

The College of Engineering (https://www.uakron.edu/engineering) provides educational opportunities for students at both the undergraduate and graduate levels who wish to pursue careers in engineering. The faculty in the College of Engineering (https://www.uakron.edu/engineering) perform research with the purpose of contributing new knowledge to the fields encompassed by engineering principles. Professional service is in concert with the objectives of the University.

College Requirements

Direct Admission

A new first-year student can be a Direct admit to the College of Engineering (https://www.uakron.edu/engineering) if they meet the following requirements:

- High school GPA of 3.4 or higher
- At least 24 composite ACT or at least 1110 composite SAT
- At least 24 math ACT or at least 560 math SAT

University Admissions

Students interested in engineering who do not meet the academic requirements for direct admission to the College of Engineering (https://www.uakron.edu/engineering) can still be admitted to The University of Akron as a student with an intended major in engineering, with a pre-admission status. After certain criteria are met, students with pre-admission status can apply for full admission to the College of Engineering (https://www.uakron.edu/engineering).

For Current UA Students and Transfer Students

Current UA students who have not yet been admitted to the College of Engineering (https://www.uakron.edu/engineering) and students transferring to UA from another institution may apply for the College of Engineering (https://www.uakron.edu/engineering) when they meet the following criteria:

- Complete at least 30 semester hours of coursework post high school
- Complete Calculus 2 with a C- or higher
- Have a 2.3 grade point average in at least three of the following categories:
  - in all coursework
  - in all engineering coursework
  - in all required mathematics coursework
  - in all required science coursework (chemistry, physics, computer science, biology)

Admission of students who do not meet the above requirements will be considered by the dean or representative only if the request originates by an Engineering department head or representative.

Continuation in the Baccalaureate Programs

Academic Warning/Probation/Suspension/Dismissal

A student's term and cumulative GPA determine if a student is in "good standing" or on "academic warning", "probation", "suspension" or dismissed from the College of Engineering (https://www.uakron.edu/engineering). Evaluation is done at the end-of-term based on the term GPA and the cumulative GPA. Specific details on the process are found at http://www.uakron.edu/engineering/academics/images/COE_WPSD_policy.pdf

Students are on academic warning if their term GPA drops below a 2.0, but their cumulative GPA is above a 2.0. Continued poor performance or if a student's cumulative GPA drops below a 2.0, they are placed on academic probation. Students on academic probation may not register for classes without first consulting a faculty advisor and obtaining permission to take an approved group of courses. Those students will have academic "holds" placed on their account and cannot register for classes until such a meeting occurs. Students whose performance does not improve on academic probation are suspended from the College; while suspended, they are provided a contract (agreed to by the Associate Dean for Undergraduate Studies and the student). If the student does not meet the terms of the contract, they are dismissed from the College of Engineering (https://www.uakron.edu/engineering). If the student's cumulative GPA at the time of dismissal is below a 2.0, they are also dismissed from The University of Akron.

Degrees

The College offers Bachelor of Science degrees in Aerospace Systems Engineering (https://www.uakron.edu/academics_majors/undergraduate/programs_detail.dot?programId=1128604), Biomedical Engineering (https://www.uakron.edu/engineering/BME), Chemical and Biomolecular Engineering (https://www.uakron.edu/engineering/CBE), Civil Engineering (https://www.uakron.edu/engineering/CE), Corrosion Engineering (https://www.uakron.edu/academics_majors/undergraduate/programs_detail.dot?programId=1128286), Electrical and Computer Engineering (https://www.uakron.edu/engineering/ECE), Mechanical Engineering (https://www.uakron.edu/engineering/ME), and Engineering (https://www.uakron.edu/engineering/departments).

Requirements for Graduation

- Compliance with University requirements (p. 20)
- Completion of the requirements in the appropriate list of courses and a minimum of 136-140 credits of coursework
- Recommendation of the student's department
- Achievement of 2.00 grade point average in all engineering coursework attempted with 4XXX course prefix

Engineering Accreditation

Engineering is a profession in which knowledge of mathematics and natural sciences, gained by study, experience, and practice, is applied, with judgment, to develop ways to economically utilize the materials and forces of nature for the benefit of mankind.

Admission to the engineering profession is normally through a university undergraduate program in one of the disciplines of engineering. Curricular criteria are established by academic and industrial representatives that sit on the accrediting board, ABET, Inc. The curricular criteria under which Akron's Engineering programs are currently accredited are:

- One year of mathematics and basic science
- One-half year of humanities and social sciences
- One year of engineering science
- One-half year of engineering design

In addition, the ABET Criteria requires that (1) each program shall make a formal assessment of each student's ABET Required Abilities and (2) that a process must exist by which the student assessments can be used to modify the educational delivery process. The ABET Required Student Outcomes are:

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

The Biomedical Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Mechanical Engineering, Mechanical Polymer Engineering, and Aerospace Systems Engineering programs are accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Cooperative Education

The optional cooperative education program provides for a coordinated sequence of alternating periods of classroom instruction and employment during a five-year program.

The cooperative program simultaneously provides for the development of fundamental principles in the classroom and for their application in practice. The student has the opportunity to find the type of work and organization in which the student can best apply individual ability. The student gains an appreciation of the problems of labor and management by first-hand experience. The student develops mature judgment by coping with everyday problems. The employer of a coop student has the ability to train and select a student whose abilities and aptitudes can be adapted to the needs of technical staff requirements.

While a student is at work, all rules and regulations prescribed by the employer must be obeyed. In addition, the student is subject to all current labor laws and conditions. The student is considered a full-time student by the University while on industrial assignments.

The University does not guarantee employment, but makes every effort to place a student in the best learning situation that is consistent with the acquisition of sound professional experience.

Programs of Instruction

4200: Chemical Engineering

The Chemical Engineering program helps students develop intellectual capacity and the ability to apply the principles of transport phenomena, thermodynamics, and chemical reaction kinetics to the creative resolution of technological problems.

All engineers are trained in the application of mechanics, materials, economics, systems, and controls. Chemical engineers, however, apply chemical principles to design, evaluate, build, and operate systems capable of converting inexpensive raw materials into marketable products via chemical reactions, biological processes, and physical separations.

Graduates of the Chemical Engineering program find career opportunities in the chemical process industries, usually involving polymer production, petroleum refining, environmental remediation, materials research and development, process design and development, and process operations and control. In addition, chemical engineers are increasingly in demand in such areas of current interest as process simulations, biotechnology, supercritical fluid processes, and solids processing. Critical thinking skills developed throughout the curriculum enable chemical engineers to succeed in other fields including medicine, patent law, and international business.

The Chemical Engineering program maintains a balance between theory and practice to prepare students for careers in a highly technical global society. The curriculum stresses the integration of mathematics, science, and chemical engineering fundamentals throughout the program. At each level of the program, from freshman through seniors, students have the opportunity to gain experience in a wide range of emerging technologies through laboratory courses and design or research electives. Exciting work is performed in biocompatible polymeric materials, biological cellular and enzymatic processes, nanocomposite materials, chemical vapor deposition, computational molecular science, microscale separations, green chemistry, and novel catalytic reactions. Students are also encouraged to gain important practical experience through the optional cooperative education program.

Mission: The goal of the Chemical and Biomolecular Engineering Department is to prepare baccalaureate graduates with the necessary skills so that they can contribute to a highly technical global society through their professional careers. The philosophy of the Chemical

and Biomolecular Engineering faculty is to provide a strong theoretical foundation supported by practical applications of that knowledge, which is consistent with the mission of The University of Akron.

The specific educational objectives of the chemical engineering program are that:

1. Our graduates will apply their technical proficiency to make positive contributions as chemical engineers or any other career path they choose.
2. Our graduates will continue life-long learning through professional activities and training, the pursuit of higher educational degrees, and individual professional improvement.
3. Our graduates will contribute to the professional practice of their chosen field through effective communication, leadership, teamwork and service, while exhibiting high ethical and professional standards.

The Chemical Engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org. The following student outcomes describe what students are expected to know and be able to do by the time of graduation with a B.S. degree in Chemical Engineering from The University of Akron:

- Have a good grounding in chemistry and working knowledge of advanced chemistry
- Can relate chemical structure to material properties
- Able to apply first principles to analyze and solve chemical engineering problems, including comprehensive open-ended design problems
- Develop experiments from proposed hypotheses and interpret data
- Pose and develop practical solutions to chemical engineering problems which include the limitations of environmental, safety, ethical, and economic issues
- Design and select optimal processes for chemical production
- Select and use computational tools to design, analyze and solve chemical engineering problems
- Work effectively in teams
- Write and speak effectively in a technical setting
- Independently assimilate new concepts to facilitate life-long learning
- A knowledge of contemporary issues

The chemical engineering program also meets the curriculum requirements specified by the American Institute of Chemical Engineers. Graduates must demonstrate:

- A thorough grounding in chemistry including organic and physical and a working knowledge of advanced chemistry such as inorganic, analytical, materials, polymers or biochemistry
- A working knowledge of material and energy balances, thermodynamics, heat, mass, and momentum transfer, chemical reaction engineering, separation processes, process dynamics and control, and process economics and design

The Chemical and Biomolecular Engineering Department provides a unique opportunity to master teamwork and design project management skills. Teams of freshmen through senior Chemical and Corrosion Engineering undergraduates work on a realistic engineering design project. Besides experience with a range of current engineering topics, the projects allow students to develop teamwork, communication, presentation, project management and information technology skills.

4250: Corrosion Engineering

The corrosion engineering degree program is a comprehensive engineering program that incorporates the fundamental and applied aspects of aqueous and high temperature corrosion. The program incorporates laboratory and project management experiences throughout the curriculum. Students will be prepared to enter into the engineering workforce and make an impact in industries including Refining, Transportation Systems, Water Distribution, Energy, Food and Chemical Processing and others.

The corrosion engineering program is administered by the Department of Chemical and Biomolecular Engineering. The goal of the Chemical & Biomolecular Engineering Department is to prepare baccalaureate graduates with the necessary skills so that they can contribute to a highly technical global society through their professional careers. The philosophy of the department is to provide a strong theoretical foundation supported by practical applications of that knowledge, which is consistent with the mission of The University of Akron.

The specific educational objectives of the corrosion engineering program are that:

1. Make positive technical contributions to their business, profession, and/or community
2. Continue to develop their educational background and/or professional preparation
3. Enhance the quality of their work as practicing engineers by communicating well, working effectively on (multidisciplinary) teams, participating in service activities, and acting ethically in their professional duties

Graduates of the Corrosion Engineering Program will:

- Have a good grounding in math, chemistry, and physics
- Be able to apply math, chemistry, physics, and engineering principles
- Have knowledge of materials and mechanical properties of materials in particular
- Have knowledge of corrosion principles and degradation due to interaction with corrosive media
- Be able to identify, formulate, and solve corrosion engineering problems
- Be able to pose and develop solutions to corrosion problems considering environmental, health, safety, social, political, ethical, manufacturing, sustainability, and economic issues
- Be able to design structures to mitigate/avoid corrosion considering environmental, safety, ethical and economic issues
- Be able to design and conduct experiments and interpret the resulting data to measure and interpret the corrosion event (e.g. rate of corrosion and time to failure)
- Write and speak effectively in a technical setting
- Work effectively on (diverse) teams
- Be able to independently assimilate new information to sustain life long learning
- Understand ethical and professional responsibility
- Have broad education necessary to understand the impact of engineering in a global society
- Have knowledge of contemporary issues

- Be able to use modern engineering tools necessary for engineering practice

4300: Civil Engineering

Civil Engineers plan, design, build, and operate the infrastructure of modern society. This includes highways, bridges, buildings, power plants, industrial facilities, tunnels, seaports, airports, offshore structures and almost anything else needed as the basis of modern life. Civil engineers are also vigorously engaged in environmental activities, particularly creating safe water supplies and transporting it to where it is needed, collecting and treating wastewaters, cleanup of environmental problems, and insuring the safe disposal of solid wastes.

To achieve the high level of professional competence needed, an extensive study of mathematics, mechanics (both solids and fluids), engineering materials, structural design and environmental reactions is required. The civil engineering sub-topics that utilize these fundamentals are environmental, geotechnical, hydraulic, structural, and transportation engineering. The civil engineering curriculum at The University of Akron insures a firm grounding in all these sub-topic areas, while allowing a specialization, if desired, in the environmental, geotechnical, transportation, and structural areas. Engineering design problems are incorporated into courses in each area. The senior capstone design course presents a problem involving one, or possibly all, of these areas in the design of complex systems.

Most civil engineering graduates work for design consultants, construction companies, or governmental agencies. Others work for industrial firms and utilities. Many civil engineers own their own businesses.

Program Educational Objectives have been established that represent the projected abilities of a program graduate within a few years of graduation. The Civil Engineering Program Educational Objectives are the foundation of the program. The Civil Engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Program Objective #1: Successfully and accurately complete Civil Engineering projects as part of a team, on time and within budget, in an ethical and professional manner, and using modern engineering tools-software

Program Objective #2: An ability to communicate effectively with written, oral, and visual means in both technical and non-technical settings

Program Objective #3: Professional service as evidenced by participation in a professional society and/or educational outreach activities

Program Objective #4: Engage in lifelong learning as evidenced by participation in continuing education courses, workshops, graduate courses, and by pursuing professional licensure

Program Objective #5: A basic knowledge of the business of engineering including how the private and public sector operate separately and collectively

The curriculum is designed to emphasize the fundamentals which place the graduate in a strong position to pursue further education, formally or informally, and to begin a career in any of the above areas. To meet the curriculum requirements specified by the American Society of Civil Engineers (ASCE), the civil engineering program will prepare students who have the following attributes:

Civil Engineering Student Outcomes

Foundational

- Solve problems in mathematics through differential equations and apply this knowledge to the solution of engineering problems
- Solve problems in calculus-based physics, chemistry, and one additional area of natural science and apply this knowledge to the solution of engineering problems
- Demonstrate the importance of the humanities in the professional practice of engineering
- Demonstrate the incorporation of social sciences knowledge into the professional practice of engineering

Technical

- Use knowledge of materials science to solve problems appropriate to civil engineering
- Analyze and solve problems in solid and fluid mechanics
- Specify an experiment to meet a need, conduct the experiment, and analyze and explain the resulting data
- Formulate and solve an ill-defined engineering problem appropriate to civil engineering by selecting and applying appropriate techniques and tools
- Evaluate the design of a complex system, component, or process and assess compliance with customary standards of practice, user's and project's needs, and relevant constraints
- Analyze systems of engineered works, whether traditional or emergent, for sustainable performance
- Analyze the impact of historical and contemporary issues on the identification, formulation, and solution of engineering problems and analyze the impact of engineering solutions on the economy, environment, political landscape, and society
- Analyze the loading and capacity, and the effects of their respective uncertainties, for a well-defined design and illustrate the underlying probability of failure (or nonperformance) for a specified failure mode
- Formulate documents to be incorporated into the project plan
- Analyze and solve well-defined engineering problems in at least four technical areas appropriate to civil engineering
- Evaluate the design of a complex system or process, or evaluate the validity of newly created knowledge or technologies in a traditional or emerging advanced specialized technical area appropriate to civil engineering

Professional

- Plan, compose, and integrate the verbal, written, virtual, and graphical communication of a project to technical and non-technical audiences
- Apply public policy process techniques to simple public policy problems related to civil engineering works
- Apply business and public administration concepts and processes
- Analyze engineering works and services in order to function at a basic level in a global context
- Organize and direct the efforts of a group
- Function effectively as a member of a multidisciplinary team
- Demonstrate attitudes supportive of the professional practice of civil engineering
- Plan and execute the acquisition of required expertise appropriate for professional practice

- Justify a solution to an engineering problem based on professional and ethical standards and assess personal professional and ethical development

4400: Electrical Engineering

Electrical Engineering Fundamentals

Every aspect of modern life is influenced by electrical engineers. They design and develop systems ranging from massive power grids and global communications networks to tiny integrated circuits inside computers and personal electronics. Branches of electrical engineering include communications, controls, electromagnetics, electronics, and power systems. Important applications include power generation and distribution, sustainable energy systems, manufacturing automation, aerospace systems, robotics, sensors and instrumentation, imaging systems, and many others.

The Electrical Engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org. Our comprehensive curriculum prepares students to identify, formulate, and implement solutions to real-world problems. Students learn how to use modern engineering tools in well-equipped laboratories, with activities that reinforce the concepts learned in the classroom. The curriculum emphasizes design and teamwork, and culminates in a capstone senior design project that integrates the material learned in earlier courses. Our well-established co-op program enables students to strengthen the connections between theory and practice in a professional setting, and provides valuable industrial experience.

The educational objectives of the Electrical Engineering program are that its graduates:

- Achieve competitively compensated electrical engineering positions or related professional positions, or entry into programs of advanced study
- Prove to be highly competent and productive in electrical engineering or related practice
- Continue to develop professionally through both practical experience and a lifelong commitment to learning
- Exhibit high standards of ethical conduct, societal responsibility, and professionalism in engineering.

In order to achieve these objectives, students graduating from the Electrical Engineering program have:

- an ability to apply knowledge of mathematics, science, and engineering
- an ability to design and conduct experiments as well as to analyze and interpret data
- an ability to design a system, component, or process to meet desired needs within realistic contraints
- an ability to function on multi-disciplinary teams
- an ability to identify, formulate, and solve engineering problems
- an understanding of professional and ethical responsibilities
- an ability to communicate effectively
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- a recognition of the need for, and ability to engage in life-long learning
- a knowledge of contemporary issues
- an ability to use techniques, skills, and moden engineering tools necessary for engineering practice
- an understanding of safety issues in electrical engineering

4450: Computer Engineering

In addition to traditional large computer applications, devices containing some form of embedded computing system are becoming pervasive in our society. Computer engineers design and develop hardware and software for all of these systems, ranging from software applications to communication networks to components in computing systems to small embedded sensors. Branches of computer engineering include operating systems, embedded systems design, digital circuits, algorithms, software design, and computer architecture among others. Important applications include wired and wireless networks, simulation, automation, digital control, sensing, robotics, “apps,” data management, and many others.

The Computer Engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org. Our comprehensive curriculum prepares students to identify, formulate, and implement solutions to real-world problems. Students learn how to use modern engineering tools in well-equipped laboratories, with activities that reinforce the concepts learned in the classroom. The curriculum emphasizes design and teamwork, and culminates in a capstone senior design project that integrates the material learned in earlier courses. Our well-established co-op program enables students to strengthen the connections between theory and practice in a professional setting, and provides valuable industrial experience.

The educational objectives of the Computer Engineering program are that its graduates:

- Achieve competitively compensated computer engineering positions of related professional positions, or entry into programs of advanced study
- Prove to be highly competent and productive in computer engineering or related practice
- Continue to develop professionally through both practical experience and a lifelong commitment to learning, and
- Exhibit high standards of ethical conduct, societal responsibility, and professionalism in engineering.

In order to achieve these objectives, students graduating from the Computer Engineering program have:

- an ability to apply knowledge of mathematics, science, and engineering
- an ability to design and conduct experiments as well as to analyze and interpret data
- an ability to design a system, component, or process to meet desired needs within realistic constraints
- an ability to function on multi-disciplinary teams
- an ability to identify, formulate, and solve engineering problems
- an understanding of professional and ethical responsibilities
- an ability to communicate effectively
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- a recognition of the need for, and ability to engage in life-long learning
- a knowledge of contemporary issues

- an ability to use techniques, skills, and moden engineering tools necessary for engineering practice
- an understanding of safety issues in computer engineering

4600: Mechanical Engineering

Mechanical engineers design and analyze physical systems and are employed in a variety of industries in different capacities. Mechanical engineers play important roles in many types of companies, including automotive, petroleum, energy generation and conversion, aerospace, tire, consulting, chemical, electronic, and manufacturing.

The Mechanical Engineering curriculum at The University of Akron is designed to give the student knowledge of fundamental principles of the (1) thermal/fluids stem, (2) structures and motion stem, and (3) controls stem of mechanical engineering, as well as the application of these principles to pertinent problems. A significant measure of the mechanical engineering education is the degree to which it has prepared the graduate to pursue a productive engineering career that is characterized by continued professional growth.

The Mechanical Engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org. The Mechanical Engineering program identifies program educational objectives that describe what their graduates are expected to attain within a few years of graduation. They are as follows:

1. Practice the mechanical engineering discipline successfully within community accepted standards
2. Acquire teamwork and communications skills to develop a successful career in mechanical engineering
3. Fulfill professional and ethical responsibilities in the practice of mechanical engineering, including social, environmental and economic considerations
4. Engage in professional service, such as participation in professional society and community service
5. Engage in life-long learning activities, such as graduate studies or professional workshops
6. Develop a professional career in the prevailing market that meets personal goals, objectives and desires

To meet those program educational objectives as well as the curricular requirements specified by the American Society of Mechanical Engineers (ASME) for accreditation, the Mechanical Engineering program identifies student outcomes, which are what students are expected to know and be able to do by the time of graduation. They are as follows:

1. Apply knowledge of mathematics, science and engineering in a logical and discerning manner
2. Design and perform laboratory experiments for thermal, fluid, materials and mechanical systems; know how to analyze and interpret results
3. Design thermal, fluid, mechanical, materials, and control systems to meet specifications within environmental, social, political, ethical, health and safety, manufacturability and sustainability constraints
4. Participate effectively in teams involving several disciplines
5. Identify, formulate, and solve thermal, fluid, materials, and mechanical problems by applying first principles, including open-ended problems
6. Develop practical solutions for mechanical engineering problems under professional and ethical constraints
7. Communicate effectively with written, oral, and visual means in a technical setting
8. Understand the impact of engineering in a global, economic, environmental, and societal context
9. Be prepared for a lifetime of continuing education
10. Know about contemporary issues in engineering
11. Have an ability to use modern modeling and simulation techniques, and computing tools

4800: Biomedical Engineering

Biomedical Engineering is a highly interdisciplinary field of engineering which combines a fundamental understanding of engineering principles with an appreciation of the life sciences. Biomedical Engineers are prepared to solve problems in the health care industry and interact equally with other engineers and health care professionals. Students are prepared to embark on careers in research, design and development of medical devices, instrumentation, analysis tools, clinical evaluation methods, systems and processes, and other forms of medical technology.

The development of an in-depth understanding of the fundamentals of engineering is essential and therefore a degree in Biomedical Engineering focuses first on core engineering coursework, followed by advanced applications specific to the field of Biomedical Engineering. To maintain a core understanding of engineering, the program is divided into three tracks: Biomechanics; Instrumentation, Signals and Imaging; and Biomaterials and Tissue Engineering. The Biomechanics track is designed for those students who would pursue a Mechanical Engineering background with specialization in the areas of cardiovascular, orthopedic, rehabilitation engineering or system simulations. The Instrumentation, Signals and Imaging track is designed for those students who wish to pursue an Electrical Engineering background with specialization in biomedical instrumentation, signal and image processing, imaging devices, detectors, or system simulations. The Biomaterials and Tissue Engineering track is designed for those students who desire to focus on the cellular aspects of Biomedical Engineering with specialization in the areas of material interactions with the human body, design and development of biomaterials, including tissue engineering and drug delivery systems.

Students in the Department of Biomedical Engineering receive individual advising in their areas of interest. Graduates of the program will be prepared to apply their knowledge of engineering and medicine to design, test and evaluate systems or system components to be used in the health care industry, to design and develop research projects, including the analysis and interpretation of data and the dissemination of results, and to participate in other biomedical engineering problem solving activities. Graduates will also be well prepared to enter graduate study in Biomedical Engineering, Medical School or other professional professionals.

The Biomedical Engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org. The Biomedical Engineering program identifies program educational objectives that describe what their graduates are expected to attain within a few years of graduation. Accordingly, the educational objectives of the Biomedical Engineering program are to educate biomedical engineers who:

1. Are viewed as technically competent at the interface between engineering and medicine as evidenced by:
   a. Creative and innovative problem solving
   b. Performance as a contributing team member

   c. Ethical and professional actions
   d. An ability to interface with diverse constituencies
   e. A knowledge of intellectual property and federal regulations
2. Possess an ability to communicate effectively with written, oral and visual means in both technical and non-technical settings
3. Exhibit continual professional development as evidenced by:
   a. Attendance at conferences, workshops or other training courses
   b. Enrollment in graduate, medical or other professional schools
   c. Active participation in professional societies.
4. Exhibit continual professional service as evidenced by:
   a. Active participation in professional societies
   b. Service as a mentor
5. Are advancing on their chosen career path

Evaluation of the Bachelor's Degree Program in Biomedical Engineering is ensured through the use of exit-interviews and alumni tracking and survey procedures. The Department of Biomedical Engineering has established the following student outcomes. Graduates of the undergraduate program in Biomedical Engineering will possess:

- The ability to demonstrate a basic knowledge of biology, anatomy, and physiology, fundamental engineering conservation laws and track-specific engineering principles as applied to biomedical engineering
- The ability to devise, design, and conduct biomedical engineering experiments and analyze the results
- The ability to design medical devices, systems or techniques to meet specific goals
- The ability to participate effectively as a member of a multi-disciplinary team
- The ability to recognize, define, evaluate and solve biomedical engineering problems
- An understanding of professional and ethical responsibility in biomedical engineering
- The ability to communicate effectively with multi-disciplinary groups using written, oral and visual means
- The ability to appreciate the impact of biomedical engineering on society
- The ability to pursue/sustain active professional growth
- A knowledge of contemporary issues in medicine and engineering, as well as an awareness of current developments in society and technology
- An ability to use modern techniques, skills and tools for biomedical engineering practice
- The ability to apply advanced mathematics (including differential equations and statistics), science and engineering to solve problems at the interface of engineering and biology
- The ability to make measurements on and interpret data from living systems, and
- The ability to address the problems associated with the interaction between living and non-living materials and systems

4900: Aerospace Systems Engineering

The Bachelor of Science in Aerospace Systems Engineering degree program is intended to produce engineers who possess both a broad, interdisciplinary knowledge of aerospace engineering fundamentals and who will be able to move quickly into the role of project managers, the precursor position to program managers and ultimately, senior managers. These engineers can lead multidisciplinary teams and bring about the integration of components in a variety of systems. The program includes basic engineering and aerospace courses and will also include specific non-engineering courses, selected to meet the goal of developing future senior technical leaders for our aerospace industries. The program features a mandatory co-op component that begins following the sophomore year. The co-op requirement is expected to fill out the student's technical background as well as provide a basis for broad personal growth that is part of the aim of the General Education requirement. Three fewer hours of General Education courses are required for Aerospace Systems Engineering due to the mandatory co-op.

To meet the curriculum requirements specified by the American Institute of Aeronautics and Astronautics for ABET accreditation, the undergraduate program in Aerospace Systems Engineering must satisfy the following program outcomes:

- Apply knowledge of mathematics, science and engineering in a logical and discerning manner
- Design and perform laboratory experiments for thermal, fluid, mechanical, and aerospace systems; know how to analyze and interpret results
- Design thermal, fluid, mechanical and control systems as well as airborne structures or propulsion systems to meet specifications within environmental, social, political, ethical, health and safety, manufacturability and sustainability constraints
- Participate effectively in teams involving several disciplines
- Identify, formulate, and solve thermal, fluid, mechanical and aerospace systems problems by applying first principles, including open-ended problems
- Develop practical solutions for aerospace systems engineering problems under professional and ethical constraints
- Communicate effectively with written, oral, and visual means in a technical setting
- Understand the impact of engineering in a global, economic, environmental, and societal context
- Be prepared for a lifetime of continuing education
- Know about contemporary issues in engineering
- Have an ability to use modern modeling and simulation techniques, and computing tools

Bachelor of Science in Engineering

This degree program was established to introduce flexibility into the College of Engineering. Within the 66 credits of the option portion of the program, a student can pursue a focused curriculum in areas such as business administration, industrial management, environmental engineering, biomedical engineering, and pre-medicine. The program of study may be very narrow as in the case of a student wishing to specialize in structural design, foundation and soil mechanics. For another student interested in patent law, the program may be broad, touching on chemical, mechanical, and electrical engineering subjects. The individual's program is designed to meet each student's goals.

Admission

Admission to the program is restricted. A student requests admission by letter to the associate dean of the College of Engineering, outlining in

some detail the particular objective and how the Bachelor of Science in Engineering program may enable the student prepare for career goals.

General Curriculum Requirements

General Education and Science Core (must include the following): 61

3150:151 Principles of Chemistry I
3150:152 Principles of Chemistry I Laboratory
3150:153 Principles of Chemistry II
3450:221 Analytic Geometry-Calculus I
3450:222 Analytic Geometry-Calculus II
3450:223 Analytic Geometry-Calculus III
3450:335 Introduction to Ordinary Differential Equations
3470:401 Probability and Statistics for Engineers
or
3470:461 Applied Statistics
3650:291 Elementary Classical Physics I
3650:292 Elementary Classical Physics II

Program Options Engineering 40
Program Options 26
Free Electives, advisor approval 10

College of Health Professions

The College of Health Professions brings together the School of Nursing, School of Nutrition/Dietetics, School of Social Work and School of Speech-Language Pathology and Audiology. Learn more about the schools and their admissions requirements:

- School of Nursing (https://www.uakron.edu/nursing)
- School of Nutrition/Dietetics (https://www.uakron.edu/nutritiondietetics)
- School of Social Work (https://www.uakron.edu/socialwork)
- School of Speech-Language Pathology and Audiology (https://www.uakron.edu/sslpa)

College of Health Professions Programs of Instruction

Learn more about the undergraduate degree programs of instruction offered by the College of Health Professions. For specific curriculum guides for bachelor's degrees, minors and certificates offered through the College, please review the Undergraduate Curriculum Guides (https://www.uakron.edu/academics_majors/curriculum-guides).

Nursing

Bachelor of Science in Nursing

- Full-time Option
- Part-time Option

R.N. to B.S.N. Program

(This sequence is limited to registered nurse graduates of Associate Degree and Diploma nursing programs.)

The RN to BSN program is designed for the registered nurse with a diploma or associate degree of nursing. It is specifically designed for those who are interested in obtaining the baccalaureate degree in nursing and/or continuing on to a master's degree in nursing. The RN program consists of 32 hours of upper-division baccalaureate coursework. During the RN-BSN program, students may opt to take up to 3 graduate courses for a total of 8 credits towards their MSN. Continuation in the graduate program is predicated on meeting graduate program requirements and acceptance into the graduate nursing program.

Accelerated Option for the Basic Baccalaureate in Nursing Program

The accelerated option is designed for those students with a baccalaureate degree and prerequisites to earn a Bachelor of Science Degree in Nursing in four semesters - one academic year and two summers.

LPN/BSN Sequence

The sequence is designed for LPNs who completed a practical nursing curriculum, as well as LPNs with bachelor's degrees in an area other than nursing. The pathway provides learning activities that build on prior knowledge and experience.

Nutrition & Dietetics

Bachelor of Science in Dietetics

To become a registered dietitian (RD), a student must complete the academic requirements, complete a minimum of 1,200 hours of supervised experience in dietetic practice, obtain appropriate verification, and pass the dietetic registration examination. Only accredited programs like those at The University of Akron are recognized by the Academy of Nutrition and Dietetics.

The University of Akron has two routes to prepare a student for a career in dietetics – the Didactic Program (DP) and the Coordinated Program (CP). The Didactic Program includes all required coursework necessary to apply for a dietetic internship. The Coordinated Program allows students to complete 1,200 hours of supervised experience along with regular coursework during their junior and senior years. Regardless of the option chosen, students must have successfully completed their coursework and clinical experience before they are eligible to take the registration examination.

The University of Akron students apply through the College of Health Professions Dean's Office to be considered for admission into the dietetics major. Students must meet the minimum criteria listed below:

- 3.0 overall GPA
- Completion of prerequisite courses with a grade of “C” or better

The curriculum for DP and CP are the same for the first year. Students who desire to be admitted to the CP may apply to the program when CP program prerequisites have been completed. Seats are limited and entry is competitive. Students who do not enter the CP program but meet other program requirements will continue in the DP program.

Bachelor of Science in Food and Environmental Nutrition

Students obtaining a Bachelor of Science degree in Food and Environmental Nutrition will qualify for the food industry in food marketing, entrepreneurship, quality control, quality assurance, and food product design. This major creates professionals to provide the expertise to meet the challenges of the food industry. Employment is generally with food manufacturers and related businesses with an emphasis on marketing and the consumer.

Students must meet the requirements to be admitted to the College of Health Professions. the School of Nutrition & Dietetics, and the Food and Environmental Nutrition program.

Social Work

7750: Social Work

Consistent with the mission of The University of Akron and the College of Health Professions, the mission of the undergraduate social work program is to prepare students for competent and effective generalist practice. The goals of the undergraduate social work program are to: 1) prepare students to integrate the knowledge, values and skills of the social work profession for competent and effective generalist practice with diverse client systems in various practice settings; 2) prepare students to identify the strengths and abilities of diverse client systems to foster empowerment toward social justice and systematic well-being; and 3) prepare students to utilize theoretically-based social work research, knowledge and critical thinking skills for effective and ethical social work practice. The social work major is an accredited undergraduate professional program preparing students for entry-level practice positions in social service agencies employing Social Workers.

Elective courses are available in such areas as health, child welfare, mental health, grant writing, family service, corrections, etc. Certificate programs in Pan-American Studies, Addiction Services, Gerontology (Aging) and Victim Studies can be scheduled within the elective framework of the curriculum.

The Bachelor of Arts degree with a major in social work requires completion of 14 credits of a foreign language (Spanish is recommended; sign language as well as other foreign languages are accepted). The Bachelor of Arts in Social Work degree does not require a second language. Both degrees require 120 hours. Students who complete an associate degree program with a social services emphasis can complete either the B.A. or B.A./S.W. curriculum in social work by completing the required courses.

The Social Work Program at The University of Akron is fully accredited by the Council on Social Work Education.

Students wishing to major in social work must request an intercollege transfer to the College of Health Professions, School of Social Work from their current college. A 2.75 grade point average and 30 credit hours is required for admission to the School. Once admitted to the School, a separate admissions packet must be completed with the School in order to be admitted as a social work major in good standing.

Speech-Language Pathology and Audiology

7700: Speech-Language Pathology and Audiology

The program in Speech-Language Pathology of The University of Akron is accredited by the Council on Academic Accreditation of The American Speech-Language-Hearing Association. The Doctor of Audiology program at the University of Akron, in association with the Northeast Ohio Audiology Consortium, is also accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association.

The School of Speech-Language Pathology and Audiology offers an undergraduate (preprofessional) program of academic training in speech-language pathology and audiology. Audiologists are hearing care specialists for evaluation and treatment of individuals with hearing and balance disorders. Scope of practice includes conducting hearing assessments, selecting and fitting hearing aids/assistive listening devices, programming cochlear implants, testing balance, and counseling regarding hearing loss. Speech-language pathologists work with children and adults with language, voice, fluency, articulatory and phonologic, cognitive and swallowing disorders. They provide assessment and treatment for these disorders as well as working in prevention of them.

Course work focuses on the evaluation and treatment of the many disordered communication processes. Students who qualify academically may also take the elective course: 7700:446 Observation and Clinical Techniques. This course includes accumulation of a minimum of 25 hours of supervised observation, as required for graduate study by the American Speech-Language-Hearing Association. The preprofessional undergraduate program prepares students to pursue a master's degree, which is required for employment and licensure as a speech-language pathologist. A doctoral degree (Au.D.) is required for licensure as an audiologist.

Typical work settings for speech-language pathologists and audiologists include: schools, hospitals, clinics, private practice, physicians' offices, industry and universities.

Allied Health

Bachelor of Science in Respiratory Therapy

This Bachelor of Science program is accredited by the

Commission on Accreditation for Respiratory Care,
1248 Harwood Road,
Bedford Texas, 76021,
817-283-2835;
www.coarc.com (https://www.coarc.com).

The program prepares graduates to perform respiratory therapy procedures, under the direction of a physician. This program emphasizes critical thinking and assessment of patients with cardiopulmonary disorders. Admission is selective due to space availability in the clinical component of the program.

Associates of Science

2740: Medical Assisting Technology

This program provides students with the background to perform a wide range of tasks in the physician's office and other ambulatory health care settings. Administrative tasks include ICD-9-CM & CPT coding and medical software usage. Clinical tasks include injections, phlebotomy, assisting with minor surgery, minor office procedures, and CLIA waived laboratory tests.

The Medical Assisting Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), on recommendation of the Curriculum Review Board of the American Association of Medical Assistants

Endowment (AAMAE). CAAHEP,
1361 Park St.,
Clearwater, Fla.,
(727) 210-2350,
http://www.caahep.org.

2760: Radiologic Technology

This program prepares graduates to perform radiologic examinations under a physician's direction for diagnosis and treatment of physical diseases and injuries. The University of Akron offers this associate degree in conjunction with an area hospital school of radiology, which

maintains national accreditation. Upon completion of the accredited program in radiologic technology the student will earn the associate in applied science degree at The University of Akron, and become eligible for the registry exam. (Selective Admission)

2770: Surgical Technology

This program trains people to prepare equipment and assist the physician and other members of the surgical team with patient care and related services in the hospital operating room. (Selective Admission with a deadline for application of April 15)

2780: Healthcare Simulation Technology

This program provides the healthcare student with a simulated clinical environment through high-fidelity mannequins that breathe, blink, talk, and bleed. The healthcare student can also start IV's as well as perform many medical procedures that simulate the real life experience of taking care of a patient. As a Simulation Technologist you are the operator that runs this technology.)

Sport Science & Wellness Education

5550: Physical Education

The Department of Sport Science and Wellness Education offers the following undergraduate programs:

- Physical Education (Pre K-12)
- Athletic Training Education Program
- Exercise Science
- Sport Studies
- Licensure in Dance (Pre-K-12)

Students must earn a "C" or better in all Physical Education courses to be recommended for licensure.

5560: Outdoor Education

Admission Suspended

5570: Health Education

- Health Education with Licensure

5570: Community Health and Wellness Education

- Community Health (Admission Suspended)

Students must earn a "C" or better in all Physical Education courses to be recommended for licensure.

Williams Honors College

Selective Admission

Students who have been accepted to The University of Akron, who are pursuing a bachelor's program as a full-time student, and who meet the Williams Honors College criteria may apply separately for admission to the Williams Honors College. A student may be admitted to the Williams Honors College upon graduation from high school, upon transfer from another college or university, or as a continuing student at The University of Akron.

Selective admission criteria for the Williams Honors College:

- Separate application for the Williams Honors College
- Pursuing a bachelor's program
- High school grade-point average of 3.5 or above and either an ACT score of 27 or above or SAT of 1280 or above

Other applicants, whether transfer students or continuing undergraduates, must satisfy the following:

- Grade-point average of 3.6 or above
- Completed fewer than 64 credits of college coursework

Honors Curriculum

Academic Majors

A Williams Honors College student completes the requirements for a major in one of the colleges awarding bachelor's degrees and enrolls in select honors classes. The Honors Research Project counts as advanced coursework.

Honors Distribution

In place of The University of Akron General Education requirements, a Williams Honors College student completes an individually selected set of courses to meet the Honors Distribution. The Honors Distribution consists of the following four group requirements totaling at least 25 credits:

Group I (The Humanities)

Six or more credits in courses offered by these departments:

- 2040: Black Experience
- 3001: Women's Studies
- 3002: Pan-African Studies
- 3200: Classical Studies
- 3240: Archaeology (depending on the course)
- 3400: World Civilizations
- 3400: Humanities in the Western Tradition
- 3400: History
- 3220: Latin
- 3600: Philosophy

Group II (Languages and the Arts)

Six credits of English Composition (Honors) and/or other English; and three or more credits from the other departments listed below:

- 2020:222 Technical Report Writing (with certain restrictions)
- 3300: English
- 3500: Arabic
- 3500: Chinese
- 3500: Japanese
- 3520: French
- 3530: German
- 3550: Italian
- 3570: Russian
- 3580: Spanish
- 7100: Art
- 7500: Music
- 7520: Applied Music Lessons
- 7600: Communication
- 7700: Sign Language

- 7800: Theatre
- 7900: Dance

Group III (The Social Sciences)
Six or more credits in courses offered by the departments below:

- 2040: Human Relations
- 2040: American Urban Society
- 2040: Diversity in American Society
- 3006: Institute for Life-Span/Gerontology
- 3230: Anthropology
- 3240: Archaeology
- 3250: Economics
- 3350: Geography and Planning
- 3700: Political Science
- 3750: Psychology
- 3850: Sociology

Group IV (The Natural Sciences and Mathematics)
Three or more credits in mathematics, computer science, or statistics; and four or more credits of science courses, including a lab:

- 3100: Biology
- 3150: Chemistry
- 3230:151 Human Evolution
- 3370: Geology
- 3450: Mathematics (135 or higher)
- 3460: Computer Science
- 3470: Statistics
- 3650: Physics

Each student must complete at least 17 Honors credits of coursework prior to graduation. Students should select an honors section of a course if an honors section is offered. Suggested courses and special cases are noted on the Williams Honors College web page.

Honors Colloquia
All Williams Honors College students participate in the Honors Colloquium series: Humanities, social sciences, and natural sciences. These one-semester, three-credit courses are interdisciplinary seminars open only to Williams Honors College students.

- 1870:350 Honors Colloquium: Humanities
- 1870:340 Honors Colloquium: Social Science
- 1870:370 Honors Colloquium: Natural Science

Honors Research Project
Williams Honors College students are required to complete an Honors Research Project. This capstone of the WHC student's academic and pre-professional studies begins with a choice of faculty adviser and submission of a proposal in the junior year. Students work intensively, with the guidance of a faculty sponsor, on a thesis, investigation, production, or problem of the student's choice. In designing, completing, and reporting on their Honors Research Projects. The students have unique opportunities to apply their learning and test their abilities. Students should register for Honors Research Project course credit, totaling at least two credits but not more than 6 credits, in their major department.

Other Features
Scholarships
Students admitted to the Williams Honors College are eligible for academic scholarships awarded by the Office of Admissions, ranging from $500 to $6000. The Lisle M. Buckingham/Orr Prestigious Scholarships, which provide tuition and general fees, room and board, for up to eight continual semesters, is awarded to students who are selected after an interview process.

Advising
An Honors Faculty Adviser is available to advise Williams Honors College students in each academic department. With this Honors Faculty Adviser's guidance, the student plans the Honors Distribution and schedules what is needed to meet departmental, college, and Williams Honors College degree requirements. Professional Honors advisers are also available in the Williams Honors College office to assist with general academic advisement issues, personal and career counseling.

Priority in Registration and Residence Assignment
Williams Honors College students are among the first students to register for classes each semester. In addition, new Williams Honors College students have exclusive access to the Honors complex, which also houses the Williams Honors College offices, computer facilities, seminar, individual and group study rooms, and meeting spaces for the use of commuting WHC students.

Access to Graduate Courses
With the permission of the WHC Faculty Adviser and the graduate program instructor, a Williams Honors scholar may enroll in graduate courses for either undergraduate credit or up to 12 credits of graduate credit.

The Honors Advisory Council
Consisting of faculty representing the colleges granting the bachelor's degree and the Dean of the Williams Honors College, the Honors Advisory Council is responsible for decisions on the definition of policies and procedures appropriate to the mission of the WHC.

College of Applied Science and Technology

Cooperative Education
Minimum requirements for cooperative education students include the following:

- Enrollment in a program of study offered by the College of Applied Science and Technology (https://www.uakron.edu/cast) wherein cooperative education has been established.
- For the CIS Cybersecurity program, minimum grade-point average of 3.00 in all 2440, 2235, and 2030 courses. See your adviser for details.
- For all other programs, minimum grade-point average of 2.00 for all University of Akron coursework and a minimum of 2.00 for all coursework applicable to the program of study.
- Completion of specific courses and/or credits for a particular program as approved by the college faculty.

College of Applied Science and Technology Programs of Instruction

Learn more about the programs of instruction offered by the College of Applied Science and Technology. For specific curriculum guides for associate and bachelor's degrees, minors and certificates offered through the College, see the Undergraduate Curriculum Guides (https://www.uakron.edu/academics_majors/curriculum-guides) section of the Undergraduate Bulletin.

Baccalaureate Degree Programs of Instruction

Computer Information Systems, Networking Option (Step-Up)

Baccalaureate level graduates have learned business computer and network applications and practices consistent with the requirements of the modern information technology professional. This program emphasizes the knowledge and applied skills necessary to succeed in today's environment.

The networking option allows students to attain an in-depth study of network management, including building, securing, managing, and troubleshooting multimedia wired and wireless LAN and WAN networks.

Students entering the Computer Information Systems program must demonstrate a fundamental knowledge of computers by examination or take the necessary courses prior to enrolling in the program.

Computer Information Systems, Cybersecurity Option

Students in the Computer Information Systems Cybersecurity track Bachelor of Science degree program will learn about computer network configuration, computer network and data security, network intrusion prevention and detection, computer networking forensics, and digital forensics. Students also will benefit from in -depth study of modern cryptography and cryptanalysis (encrypting and decrypting information) as they relate to cybersecurity and computing.

Computer Information Systems, Specialized IT Applications Option

The bachelor of science in Computer Information Systems, Specialized IT Applications Option, is designed to prepare an individual to manage a technical lab environment in a specific field of study, such as health care or manufacturing. The student learns equipment repair, maintenance and management techniques, as well as deploying a networked set of equipment specific to the application field of study.

Computer Information Systems, Programming Option (Step-Up)

The bachelor of science in Computer Information Systems, Programming option, allows students to attain an in-depth study of effective business application development, client/server database application development, and database management.

Computer Information Systems, Web Development Option (Step-Up)

The bachelor of science in Computer Information Systems, Web Development option allows students to attain an in-depth study of effective web design and management, web application development, and database management.

Computer Information Systems, Digital Forensics

Students in the program will acquire the skills and knowledge that are needed by the digital forensics professional. This program requires students to study and master network security; intrusion detection; infrastructure protection; cyber attacks; cryptography; and the collection, preservation, examination, analysis, documentation, and presentation of digital artifacts.

Emergency Management and Homeland Security Degree Programs, Full Four Year and Step-up

Bachelor of Science in Emergency Management and Homeland Security

Emergency Management and Homeland Security studies events or threats, such as natural disasters, terrorist incidents, and technological hazards. Students will acquire specialized knowledge in disaster management through prevention/mitigation, preparedness, response, and recovery actions utilizing an All-Hazards focused approach. This dynamic discipline prepares graduates for careers in the governmental, corporate, public health, and nonprofit sectors. Emergency Management and Homeland Security can be a career that makes a difference in people's lives.

The program offers a Bachelor of Science degree, along with a minor and certificate, which is accredited by the International Fire Service Accreditation Congress (IFSAC). Students can step-up from responder-related Associates Degrees, such as criminal justice or fire protection. Students choose to follow a traditional college program with little or no bridgework.

All university general education requirements must be completed as outlined in this Bulletin.

This program is accredited by the International Fire Service Accreditation Congress (IFSAC) Oklahoma State University, 1700 West Tyler Stillwater, OK 74078-8075; Phone: (405) 744-8802; ifsac.org (https://ifsac.org).

Bachelor of Organizational Supervision (Step-Up)

The degree builds on the skills and knowledge acquired at the associate degree level. The baccalaureate program provides graduates with advanced supervisory and leadership competencies critical for professional career advancement.

Engineering and Science Technology (Step-Up)

The baccalaureate-level programs in Engineering Technology are intended to fill the widening gap in industry between the professional engineer and the engineering technician. The graduate of these programs works in close support of engineers, translating conceptual ideas into functioning systems and providing supervisory direction for the implementation of these ideas by technicians and craftspeople.

These transfer programs permit the qualified engineering technology student to continue education to the baccalaureate degree. During the first and second years of full-time study, a student follows an associate degree program in the corresponding engineering technology field. The third and fourth years of full-time study provide the additional coursework required for the baccalaureate degree. Emphasis is placed on advanced training in the student's field of specialization, broadened knowledge of related technical fields, extended general education, and basic management training.

Programs are available in automated manufacturing engineering technology, electronic engineering technology, mechanical engineering technology, surveying and mapping, and construction engineering technology. It is intended that a graduate will find employment in manufacturing, technical sales and service, application engineering, inspection and testing, and the more standardized aspects of engineering design.

Bachelor of Science in Automated Manufacturing Engineering Technology

The Bachelor of Science in Automated Manufacturing Engineering Technology is an upper-level degree program designed to provide the student with additional education beyond an AAS degree. A Manufacturing Engineering Technology associate degree program serves as the first two years. Although an associate manufacturing program is cited, graduates from other related associate programs can frequently enter the program with little or no bridgework.

Bachelor of Science in Electronic Engineering Technology

Accredited by the Engineering Technology Accreditation Commission of ABET (http://www.abet.org).

Graduates of the Electronic Engineering Technology program will work with engineers in developing, manufacturing, testing, and servicing Electrical/Electronic components, equipment, and systems.

Bachelor of Science in Mechanical Engineering Technology

Accredited by the Engineering Technology Accreditation Commission of ABET (http://www.abet.org).

This program prepares individuals to work as Technologists in applying specific principles to the analysis, design, development, implementation, or oversight of advanced mechanical systems or processes.

Bachelor of Science in Construction Engineering Technology

Accredited by the Engineering Technology Accreditation Commission of ABET (http://www.abet.org).

The B.S. in Construction Engineering Technology is a three year, upper level degree program designed to provide the student with additional education beyond the AAS degree in Construction Engineering Technology. This degree is also designed to meet the formal education requirements for registration as a Professional Engineer in the State of Ohio. This upper degree program is defined as follows: The first two years are completed as an AAS degree in Construction Engineering Technology or similarly based program. Two of the remaining three years are for the completion of prescribed coursework. The remaining year of the three years is devoted to a cooperative work experience in the construction field. The student normally enters the co-op segment between the junior and senior years.

The B.S. in Construction Engineering Technology degree program includes classroom, laboratory, and industry experiences which prepare students for careers in the construction industry and other allied industries.

Bachelor of Science in Surveying and Mapping

Accredited by the Applied Natural Science Technology Accreditation Commission of ABET (http://www.abet.org).

The Bachelor of Science in Surveying and Mapping is an upper level degree program designed to meet the formal education requirements for registration as a Professional Surveyor (P.S.) in the State of Ohio. The first two years are completed as an Associate of Applied Science (A.A.S.) degree in Land Surveying or a program that has similar content. Two of the three remaining years are for the completion of courses for the degree. The remaining year is devoted to cooperative work experience.

Associate Degree Programs of Instruction

Specialized technical programs are offered in the following departments of the college:

- Engineering and Science Technology
- Applied General and Technical Studies
- Disaster Science and Emergency Services
- Business and Information Technology

These programs lead to the Associate in Applied Science, Associate in Applied Business (carrying a designation of the specific program), and Associate of Technical Study. In addition, programs in liberal arts leading to the Associate of Arts and Associate of Science is offered in the Department of Applied General and Technical Studies.

Requirements for Graduation

Candidates for the associate degree must:

- Complete the required courses listed in the program.
- Complete, as a minimum, the number of credits listed for each program.
- Earn a minimum grade-point average of 2.00 at The University of Akron.
- Be recommended by the faculty.
- Earn a minimum of 16 credits and spend the last semester in residence at the University unless excused by the dean of the college.
- Complete other University requirements.
- A student who expects to receive a second associate degree must earn a minimum of 16 credits in residence that have not counted toward the student's first degree.

Applied General and Technical Studies

202000: Associate of Arts

The Associate of Arts degree cultivates in students the habit of life-long learning through a diverse curriculum and teaches students to think critically and creatively about their perceptions of ideas, events, and people. This degree is designed to position the student for successful employment, career advancement, or more focused study at the baccalaureate level.

202005: Associate of Science

The Associate of Science degree teaches students to think critically and creatively about their perceptions of ideas, events and people. This degree is for students who would like to pursue a science based degree. Core curriculum emphasizes mathematics and science, but it also includes English, history, and social studies, as well as fundamental skills in analysis, research, composition and reading comprehension. This science intensive degree is designed to position the student for successful employment, career advancement, or more focused study in STEM (science, technology, engineering and mathematics) fields at the baccalaureate level.

230000ATS: Associate of Technical Studies

The Associate of Technical Studies (ATS) program is available for adult students whose educational objectives and interests cannot be met through one of the formal associate degree programs.

This program enables students to combine certifications (institutional, state, national) earned through an educational entity or a place of employment, with general education courses to meet the associate degree requirements.

Business and Information Technology

2280: Hospitality Management

Provides the general knowledge and skills necessary for success within the multi-faceted hospitality industry.

Students wishing to enter the Hospitality Management program must pass a department placement test, successfully complete bridge course, or gain permission from the program director.

2420: Business Management Technology

This program provides comprehensive training in varied business activities which prepare students for beginning management or supervisory-level positions in business, industry, or self-employed management.

2440: Computer Information Systems

This program prepares graduates to enter the job market as Information Technology (IT) professionals. Emphasis of the curriculum is on providing graduates with the skills and knowledge to solve computer-related business problems.

2520: Marketing and Sales Technology

This program equips graduates to fill entry-level positions in distributed business areas, including retailing, industrial distribution, and fashion.

Engineering and Science Technology

The Department of Engineering & Science Technology (E&ST) offers market-driven, applied degrees (associate and bachelor) and certificates. E&ST faculty expertise (discipline education and real-world work experience) is a key component to our program success and facilitates the effective, experiential learning brought to our students. Strategic partnerships within the region help ensure student success and job placement. The majority of our programs are ABET accredited, ensuring program quality and continuous improvement. E&ST students have various learning opportunities outside of the classroom, including co-ops, service-learning and professional student organizations. Program courses are offered during the day and evenings in formats that include online, hybrid, and flipped.

2850: CORROSION ENGINEERING TECHNOLOGY

The AAS in Corrosion Engineering Technology prepares students to evaluate corrosion of materials in the field and apply strategies for mitigating corrosion. The program strives to balance classroom instruction with relevant field and lab work. The Department of Defense has provided funds that will directly support the degree.

2860: Electronic Engineering Technology

Accredited by the Engineering Technology Accreditation Commission of ABET (http://www.abet.org).

This program prepares individuals for work as technicians in developing, manufacturing, installing, testing, and maintaining electronic equipment and systems.

2880: Manufacturing Engineering Technology

Through the study of basic technical subjects and through concentration on work measurement, manufacturing computer applications, quality control, robotics, manufacturing work cells, and MRPII, this program educates the student in the areas of analysis, and the design and management of the resources, facilities and people involved in modern manufacturing.

2920: Mechanical Engineering Technology

Accredited by the Engineering Technology Accreditation Commission of ABET (http://www.abet.org).

This program prepares individuals to work as technicians in developing, designing, manufacturing, testing, and servicing mechanical equipment and systems.

2980: Land Surveying

Formerly known as Surveying Engineering Technology and accredited by the Applied Natural Science Technology Accreditation Commission of ABET (http://www.abet.org).

The Associate of Applied Science in Land Surveying degree program is designed to prepare students for employment as a surveying and mapping technician, working under the direct supervision of a registered professional surveyor. The program provides a foundation in mathematics, natural science, and communication skills, as well as the surveying skills necessary to become a Certified Surveying Technician (CST) under the National Society of Professional Surveyors (NSPS) testing program. Upon completion of the AAS in Land Surveying, a student may proceed to the Surveying and Mapping Bachelor of Science degree.

2985: Geographic and Land Information Systems (GIS/LIS)

Accredited by the Applied Natural Science Technology Accreditation Commission of ABET (http://www.abet.org).

This program prepares graduates to enter the job market as GIS/LIS technicians for business and industry. Emphasis of the curriculum is on understanding digital geographic data, software applications in solving geographic problems, and graphic communication techniques.

2990: Construction Engineering Technology

Accredited by the Engineering Technology Accreditation Commission of ABET (http://www.abet.org).

Students in the AAS CET program are prepared to work in the field of construction engineering technology using knowledge of construction methods, business operations, and management skills to support construction projects. They work on residential and commercial buildings, bridges, roads, dams, wastewater treatment systems, or other similar projects. Common jobs assumed by graduates of this program include but are not limited to engineering technician, construction coordinator, cost estimator, scheduler, field engineer, and assistant project engineer.

Disaster Science and Emergency Services

2230: Fire Protection Technology

This program prepares persons to serve governmental, industrial, and other fire protection agencies in fire fighting and prevention, property protection, and handling emergency situations.

2240: Emergency Medical Services Technology

This program is for Certified National Registry Emergency Medical Technician-Paramedics seeking to better understand social values and to develop technical knowledge and skills.

Wayne College

Admissions

Admission materials can be obtained by writing the Admissions Office at Wayne College or the Office of Admissions of The University of Akron, or by calling (330) 683-2010 in the Orrville/Wooster area, or 1-800-221-8308 in Ohio.

The student enrolled at Wayne College may also take courses at the main campus of The University of Akron while attending Wayne College. Likewise, a student enrolled on the main campus may take courses at Wayne College.

Wayne College Programs of Instruction

The following associate degree programs are available at Wayne College. The structure of these programs may differ from similar programs within the College of Applied Science and Technology of The University of Akron. All required courses for these programs are available at the college for students attending day or evening classes. A diploma issued as a result of the completion of one of these programs carries The University of Akron Wayne College designation. In some instances, specific course sequencing is necessary, especially for the student attending full time, to accommodate completion of the program in two years. Please consult an advisor at Wayne College for further details.

For specific curriculum guides for associate degrees, minors and certificates offered through the College, see the Undergraduate Curriculum Guides (https://www.uakron.edu/academics_majors/curriculum-guides) section of the Undergraduate Bulletin. For information on Wayne College General Education/Transfer Program, visit the General Education (p. 78) section of the Undergraduate Bulletin.

Associate Studies

Associate of Technical Studies

The Associate of Technical Studies (ATS) provides an integrated program of study for those students whose educational objectives and interests cannot be met through the college's formal associate degree programs. The Associate of Technical Studies permits students to combine various courses from two or more of the college's existing programs with other University credits, with credits earned at other postsecondary institutions, and/or with training received through other educational enterprises.

The Associate of Technical Studies is administered through the Office of the Dean and coordinated by the Associate Dean of Instruction. Interested students must complete a formal Associate of Technical Studies application. Upon application, the Associate Dean of Instruction makes an initial assessment of any transfer work and assists the applicant in selecting relevant areas of study. The application is then forwarded for review by the faculty most closely associated with the proposed area of study. Upon faculty acceptance, the application is submitted to the Associate of Technical Studies Committee who, upon approval, forwards the application to the dean of Wayne College for final approval.

2020: Associate of Arts/Associate of Science

The Associate of Arts and Associate of Science degree programs are intended to help individuals understand effective social behavior and appreciate scientific fact and human values. The programs are designed to impart specific skills essential to effective adult functioning. These include the abilities to write and speak effectively, to calculate, and to think constructively and critically. The programs also provide a broad foundation of general knowledge about the physical and social universe as preparation for advanced baccalaureate study.

Most recipients of the Associate of Arts and the Associate of Science degrees transfer to bachelor's degree-granting institutions to complete their intellectual, professional, and cultural goals. The Associate of Arts and the Associate of Science degrees meet the general education requirements for most baccalaureate degree programs at The University of Akron and other colleges and universities throughout the country.

Completing the Associate of Arts or the Associate of Science degree also fulfills the Transfer Module as outlined by the Ohio Board of Regents.

Business and Office Technology

2420: Business Management Technology

Students entering the program must demonstrate a fundamental knowledge of computer software and keyboarding by examination (CISBR) or take the bridge courses prior to enrolling in the program. See an advisor for details.

General Business Option

The General Option provides training in varied business activities in preparation for an entry-level management position in business, industry, government, nonprofit organizations or as a self-employed manager. Students wishing to enter the program must demonstrate a fundamental knowledge of computer software by examination (CISBR) or take the bridge courses prior to enrolling in the program. See an advisor for details.

2530: Health Care Office Management

The Health Care Office Management program is designed to meet the needs of current health care office employees and others to develop skills to prepare for technical, supervisory, or management positions in the health care field. Graduates will be trained for the daily operation and management of the health care practice. The responsibilities include all administrative, financial, human resources, clerical and supply functions, with a special emphasis on medical coding, insurance billing, and financial analysis.

Sport Science and Wellness Education

2670: Exercise Science Technology

The Exercise Science Technology program prepares graduates for paraprofessional positions in fitness and wellness settings. Graduates are trained to instruct and coach both groups and individuals in various exercise activities. They assist clients in assessing physical fitness levels and they help clients in setting and reaching fitness goals. Graduates are prepared to enter careers as fitness trainers, wellness coaches, or other health and fitness paraprofessional positions, or to continue their education towards a bachelor's degree in areas including exercise science, sports science or pre-physical therapy.

This associate degree articulates with the following baccalaureate degrees in the Department of Sport Science and Wellness Education: 555230BS/Exercise Science-Physiological Sciences; 555231BS/Exercise Science - Coaching and Conditioning; 555232BS/Exercise Science - Pre-Physical Therapy; 555233BS/Exercise Science - Fitness Management;

555235BS/Sports Studies-Coaching Education; and 555236BS/Sport Studies- Sport Management.

Paraprofessional Education

The goal of the Paraprofessional Education program at Wayne College is to create a cadre of paraprofessionals who will serve the diverse needs of students in the educational community. These educational paraprofessionals will be trained to perform the following activities within their roles in educational programs — provide instructional support to individuals and small groups of students, implement behavior plans, collaborate with teachers to ensure educational programming is consistent across settings and personnel, assist teachers with technology integration for students, collect data on students and educational practices, and provide personal care assistance.

2650: Paraprofessional Education – Blended Early Childhood

The Associate of Applied Science degree in Paraprofessional Education —Early Childhood is designed for individuals who want to serve children ages 3 to grade three. Students study theories of child development, developmentally appropriate practices to serve young children, and the importance of collaborative skills to work with parents and a variety of service providers. Students also develop the skills necessary for placement into early childhood settings as teacher assistants. The program serves as a pathway to the bachelor's degree program for students interested in obtaining licensure as an early childhood educator.

2650: Paraprofessional Education – Intervention Specialist

The Associate of Applied Science degree in Paraprofessional Education — Intervention Specialist is designed for individuals who want to serve students with disabilities in a variety of educational settings. You will study how children learn and develop; how to support students with diverse learning needs within their school settings; how to effectively collaborate with teachers and other related service personnel; and the historical foundations for special education programs. The program serves as a pathway to the Bachelor's degree program for students interested in obtaining licensure as an Intervention Specialist.

STUDENT SUPPORT AND SUCCESS

Students attend the University to learn and grow in all aspects of their lives. The University delivers programs and services that are designed to assist our diverse student body to maximize opportunities for academic, social, cultural, personal and physical growth and development. Sensitive to the changing needs of today's college student, The University is committed to helping students meet their individual academic and personal goals. This responsibility will be accomplished by our commitment to these objectives:

- Creating a civil, supportive learning environment
- Providing academic support systems to increase student persistence and encourage satisfactory educational progress
- Moving beyond tolerance to embrace and celebrate the rich dimensions of difference within each individual and within each culture, subculture and identity group, diversity is a core value that embodies inclusiveness and excellence within the University community
- Collaborating with all constituencies within the University to increase enrollment and improve the quality of the student experience
- Encouraging students to assume responsibility for their educational decisions and experiences
- Identifying and addressing student needs in an evolving environment
- Addressing the student and community needs through programs, activities and services

Student Life and Living

Off Campus Living

www.uakron.edu/offcampus
Phone: 330-972-6441
Email: uazipassist@uakron.edu

Off Campus Living serves as a resource center dedicated to helping students living off-campus. The office part of ZipAssist and is located in the first floor lobby of Simmons Hall. Students may stop in for resources and assistance about various issues related to commuting, budgeting, advice for renting, and referrals to legal aid.

Student Recreation and Wellness Services

www.uakron.edu/rec
Phone: 330-972-2348
Fax: 330-972-6715

With Student Recreation and Wellness Services, there is so much to explore! Their mission is to serve and engage all students to learn, develop and succeed through innovative recreation and wellness opportunities that encourage healthy and balanced lifestyles. The department includes the following: 1) Club Sports, 2) Aquatics, 3) Intramurals, 4) Outdoor Adventure Center, 5) Fitness.

SRWS are comprised of the following facilities:

- Student Recreation & Wellness Center (SWRC): Amenities include a leisure pool with a current river and vortex, spa, jogging track, cardio and strength equipment, five multi-function gyms, group exercise studios, rock climbing wall and adventure equipment rental.
- Ocasek Natatorium (ONAT): Amenities include an Olympic-size swimming pool, racquetball courts and wallyball courts.
- Central Hower South Gym: This gym provides opportunities for informal (drop in) recreation, Intramural Sports, and Club Sports practice and competition.
- Buchtel Field: This grass field located on the corner of Brown St. and Wheeler St. provides outdoor recreation space for students, faculty, and staff.

Residence Life and Housing

http://www.uakron.edu/reslife
Phone: 330-972-7800
Email: reslife@uakron.edu

The Department of Residence Life and Housing is administratively responsible for managing the University's student housing program. The University provides reasonably priced, clean, convenient and secure residence hall facilities. In addition, the residence hall program is committed to providing a meaningful living/learning environment which directly supports the education, social and personal development of each student. The Department of Residence Life and Housing supervises and manages 10 on-campus residence hall facilities accommodating approximately 2,800 students. Students are encouraged to apply for residence hall accommodations as soon as possible.

Freshman Residential Policy Requirement

The University of Akron is committed to providing a learning environment supportive of its academic mission and complementary to its academic programs. The University acknowledges that national studies find that first-year freshman uniquely benefit from a residence hall experience. Social integration and access to faculty, staff and institutional resources are enhanced through an on-campus residential experience. The University considered and accepted findings that living on-campus positively influences academic persistence and success, including degree completion. For all these reasons, all first-year freshman students at The University of Akron are required to reside in University residence halls for the duration of their freshman academic year at the University as long as space is available. Upon admission to the University, all first-year freshman students will be required to make application for residence in University housing and will be assigned and assessed appropriate room and board fees, so long as space is available and/or unless the student is subject to one of the exemptions below.

Exemptions to the Freshman Residential Policy include:

- Permanent home residence with parents or legal guardians who reside in: Summit, Portage, Stark, Wayne or Medina counties
- Registered for fewer than 6 credit hours
- 21+ years of age
- Military experience 1+ years (proof of service required)
- Married (proof of marriage required)
- Student is parent with custodial care responsibilities (proof of custody care required)
- Permanent home residence of parents or legal guardians who reside outside Medina, Portage, Stark, Summit, or Wayne countries AND such residence is 25 miles or fewer from main campus (proof of residence is required).
- Other extenuating circumstances, including but not limited to special dietary needs or conditions, cultural or religious needs or accommodations, undue hardship, or an other circumstance(s) in

support of an exemption which, if not granted, would undermine or contravene the purpose of the Freshman Residential Requirement Policy

Students seeking exemption from the Freshman Residential Policy should log into MyAkron (http://my.uakron.edu) and click on the Manage Housing portal. Here students will find a link to fill out the appropriate online form.".

Jean Hower Taber Student Union

https://www.uakron.edu/studentunion/
Phone: 330-972-7866

Within the Student Union, there are many offices and services to enhance your collegiate experience. The staff is committed to building community through collaborative learning experiences that provide our students the opportunity to engage, serve and lead. The department includes the following: 1) Student Organization Resource Center (SOuRCe) (https://www.uakron.edu/studentlife/involvement/source), 2) serveAkron (https://www.uakron.edu/studentlife/involvement/serve), 3) LeadAkron (https://www.uakron.edu/studentlife/involvement/lead), 4) Fraternity and Sorority Life (https://www.uakron.edu/studentlife/involvement/fraternityandsororitylife), 5) Zips Programming Network (https://www.uakron.edu/studentlife/involvement/zpn), and 6) Campus Programs (https://www.uakron.edu/studentlife/involvement/campusprograms).

The Student Union is comprised of the following facilities:

- Amenities include a bank (https://www.uakron.edu/studentunion/amenities/bank.dot), bookstore (https://uakron.bncollege.com/webapp/wcs/stores/servlet/BNCBHomePage?storeId=19072&catalogId=10001&langId=-1), restaurants (https://akron.campusdish.com/LocationsAndMenus), coffee house, mail services (https://www.uakron.edu/printing/docuzip.dot), game room (Roo Lounge) (https://www.uakron.edu/studentunion/amenities/gameroom), study space, meeting rooms and ballroom (https://www.uakron.edu/studentlife/resources/eventsandconferenceservices/ballrooms.dot), a theatre (https://www.uakron.edu/studentlife/movie-schedule.dot). Other offices located in the Student Union include: Dean of Students Office and Rape Crisis Center (https://www.uakron.edu/deanofstudents), Career Services (https://www.uakron.edu/career), Vice President for Student Affairs (https://www.uakron.edu/student-success), and ESports (https://www.uakron.edu/esports).

Support Services for Students

Academic Advising

www.uakron.edu/advising

Career Services

www.uakron.edu/career
Phone – 330-972-7747
Email – career@uakron.edu

Career Services assists students with career planning by offering programming, events, individual career advising and opportunities to network with employers for experiential learning and employment.

The Career Services staff is knowledgeable regarding current employment trends, in-demand jobs in Ohio, and internship and job search strategies. Career Advisors actively assist students at every stage of their career development. This includes exploring career paths, resume and cover letter writing skills, interview preparation, graduate school preparation, finding experiential learning opportunities such as internships or co-ops, and creating a job search strategy.

Handshake, UA's online job board, is where students and alumni can apply for positions, connect with employers, register for events, download resources guides, schedule an appointment and more! Log in at http://uakron.joinhandshake.com with your UAnet ID and password.

Counseling and Testing Center

www.uakron.edu/counseling
Phone – 330-972-7082

The Counseling and Testing Center provides comprehensive, culturally competent psychological counseling, career planning, educational counseling, testing, outreach and consulting services to the University community. The Center is staffed by a culturally diverse group of psychologists and psychology trainees. Counseling services are free and confidential to enrolled students. There is a fee for testing services.

Office of Accessibility

www.uakron.edu/access
Phone – 330-972-7928
TDD: 330-972-5764
E-mail: access@uakron.edu

The goal of the Office of Accessibility is to provide reasonable accommodations and a supportive, well-resourced environment to students with disabilities in order to promote student success in the university environment. The mission of the Office of Accessibility is to provide students with full access to and the opportunity for full participation in the academic environment. We are advocates of social justice for students with disabilities and work to end oppression by examining social, cultural and institutional barriers to inclusion of all students. We embrace the diversity of our student body, and celebrate a culturally sensitive and accessible campus through outreach, partnership, and advocacy with all university departments.

Student Health Services

www.uakron.edu/healthservices
Phone – 330-972-7808

Student Health Services, located in Suite 260 of the Student Recreation and Wellness Center, assists students in achieving their educational and personal goals by addressing their health care concerns while they are enrolled at The University of Akron. Our Advanced Practice Nurses are able to diagnose and treat illness, and perform screenings and physicals that will assist you in getting well and staying healthy.

Tutoring & Writing Centers

www.uakron.edu/tutoring

The University has two tutoring centers on campus that provide free assistance to currently enrolled students. The centers are located in Bierce Library and the Polsky Building.

Bierce Library

- Bierce Writing Commons: For students seeking assistance with a paper assignment for any of their courses, including help with citation styles, visit Bierce Writing Lab

- Bierce Math Lab: Bierce Math Lab offers support for students having difficulty in entry-level math classes. Drop-in hours are available every weekday
- Tutorial Services: Peer tutors are available to students in a wide variety of General Education courses, with emphasis on classes in math and the sciences
- Learning Assistants Program: Specific sections of many courses include a trained Learning Assistant, who holds regular study sessions for students. The Learning Assistant Program provides assistance in the classroom throughout the semester, with professors and learning assistants working as a team encourage student success.

Polsky

- Tutorial Services are located on the third floor of the Polsky Building, near College of Applied Sciences and Technology Advising
- **Polsky Math Lab:** The Polsky Math Lab (https://www.uakron.edu/tutoring/math-lab.dot) provides one-on-one assistance to students having difficulty in basic math courses, College of Applied Sciences and Technology math courses and entry level math courses
- **Polsky Writing Lab:** The Polsky Writing Lab (https://www.uakron.edu/tutoring/writing-lab.dot) provides one-on-one assistance with all phases of the writing process, including subject development and organization, grammar and citation. Help is available for writing assignments from any course.
- **Polsky Study Skills Lab:** The Polsky Study Skills Lab (https://www.uakron.edu/tutoring/study-skills-lab.dot) helps students develop stronger study skills, including reading comprehension, test preparation, note taking, time management and vocabulary development
- Appointments for tutoring sessions are recommended and can be made by calling 330-972-7046. A limited number of walk-in sessions are available on a first-come, first-served basis.

General Student Services

Admissions

www.uakron.edu/admissions
Phone – 800-655-4884
Email – admissions@uakron.edu

New Student Orientation

www.uakron.edu/nso/
Phone – 330-972-2622
Email – orientation@uakron.edu

Bursar

www.uakron.edu/student-accounts/
Phone – 330-972-5100
Email – cashier@uakron.edu

Office of Financial Aid

www.uakron.edu/finaid/
Phone – 800-621-3847
Email – finaid@uakron.edu

Information Technology Services

https://www.uakron.edu/it/
Phone – 330-972-6888

SPECIAL ACADEMIC PROGRAMS AND SERVICES

Study Abroad

http://www.uakron.edu/study-abroad

Global awareness and intercultural communication are critical competencies for graduates entering the workforce, regardless of intended profession. Participation in an Education Abroad program is an opportunity to develop these skills while enhancing one's academic and personal growth. Students at The University of Akron have the opportunity to study in almost any country for a few weeks to a full academic year. The International Center at UA cultivates exchange relationships with universities in countries such as France, South Korea, China, Vietnam, Japan, and the Netherlands. UA also maintains affiliation agreements with several outside organizations that offer a wide variety of education abroad opportunities. In addition, several academic units sponsor short-term faculty-led programs. For more information, students may schedule an advising appointment or attend the Education Abroad Fair in September.

Learning Communities/Living-Learning Communities

https://www.uakron.edu/admissions/undergraduate/learning-communities/

http://www.uakron.edu/reslife/llc/index.dot

A Learning Community is a group of students who take two to four classes together. Faculty members integrate topics and assignments across the courses so that what is being learned in one course reinforces and complements what is being learned in the other courses. Many courses in Learning Communities apply toward baccalaureate and associate degree requirements; some courses fulfill General Education requirements. Students in any major are welcome to participate in a Learning Community.

Living-Learning Communities (LLC) are established to provide distinctive settings where student academic success is supported through residential experiences.

Living-Learning Communities bring academics into the residence halls through mentorship by upperclass leaders, faculty and staff support, specialized programs and linkage between coursework. From Outdoor Adventure to ROTC; Business to Pre-Med, there is an LLC available to hundreds of students each year.

Academic Achievement Programs

https://www.uakron.edu/aap/

Academic Achievement Programs is dedicated to the mission of preparing Akron middle and high school students for greater access and success in higher education. Systematic academic, social and cultural experiences are provided through four distinct programs during the academic year, along with a six week summer enrichment component. These experiences expand and enhance their academic instruction and adds value to the overall development of students. Activities are intended to empower students to make better decisions at home, in school and in personal relationships, which will help improve their self worth, impact high school graduation rates and facilitate the successful admission to and graduation from post secondary educational institutions.

The Reserve Officer Training Program (Army ROTC)

https://www.uakron.edu/academics_majors/undergraduate_programs/rotc.dot

The University of Akron supports and promotes a robust officer training program — Army Reserve Officer Training Corps (ROTC). ROTC produces leaders for the Army while building better citizens for America. ROTC is a military educational program designed to give men and women the opportunity to become officers while earning a college degree. The program requires a set of classes and labs in addition to your other college courses. Typically, ROTC credits can be applied as general elective credits toward your degree. Students can also earn a Military Science Minor by completing 18 credit hours. ROTC offers generous scholarships, leadership training, and many other experiences simply not available through any other college course. ROTC classes and leadership training will help you sharpen your analytical skills**;** you'll learn to evaluate changing conditions and make appropriate decisions. Upon successful completion of the prescribed coursework and training, students receive a commission in either the active duty Army, Reserves or National Guard.

Office of Multicultural Development

https://www.uakron.edu/omd/

The mission of the Office of Multicultural Development (OMD) at The University of Akron is to prepare students to live and excel in a global society. As an advocate for equity and social justice, they ensure that students of diverse ethnic, social and cultural backgrounds achieve their fullest potential in an affirming environment which supports access, retention, and successful completion of goals. This mission is characterized by extensive student-focused collaboration with all segments of the campus community.

Services of The Office of Multicultural Development include our Peer Mentoring program, Learning Communities and academic advising. Peer Mentoring, one-on-one relationship between an experienced student-mentor dedicated to student success. Our Peer Mentors go through intense and thorough training in order to meet the needs of students of all backgrounds and provide them a safe, stable and confidential place to be mentored. OMD's Learning Communities help to support the growth, retention, support and completion of a bachelors program by students from various ethnic, social and cultural backgrounds. OMD also provides first-year advising as a wrap-around services for students as well as a two-day New Student Orientation experience known as our ADVANCE New Student Orientation program.

The Office of Multicultural Development is also heavily involved with the planning and execution of the nationally recognized Black Male Summit which is held each spring, and created for educators, employers, parents/guardians of black males and other males of color in an effort to support this vulnerable demographic in the successful acceptance, attendance and completion of high school and college.

Adult Focus

https://www.uakron.edu/uaaf/

Adult Focus is an academic support service designed to assist adults and military veterans as they transition in their role as students to The

University of Akron. It offers academic support, transitional coursework, advocacy, and scholarship referral and assistance throughout their academic career. Any student, regardless of age, whose primary life roles and responsibilities exist independent of the University and take precedence over the role of student in times of crisis or stress is considered to be an adult student.

UA Solutions

https://www.uakron.edu/uas/

UA Solutions offers professional certification and noncredit courses to businesses, organizations and individuals. Classes are scheduled weekdays, evenings and weekends. Many courses are approved by professional, national and state organizations for certificate and license re-certification. More than 300 classroom and online courses are available each semester.

UA Solutions is a full service consulting firm operating from The University of Akron. We exist as a liaison between the immense collection of resources within the University, and our region's corporations of all sizes and industries. Our value, both to the University and to our clients, is a powerful and customizable solution-based service that identifies development opportunities and produces programs and solutions that can only come from the expertise of The University of Akron.

UA Solutions instructors customize and conduct employee training onsite for companies and organizations.

Additional Locations

https://www.uakron.edu/academics_majors/locations.dot

The University operates several educational centers in our surrounding communities.

University Partnership Program - Lorain County Community College (LCCC)

http://www.lorainccc.edu/UP

The University Partnership Program brings colleges and universities, including The University of Akron, to the LCCC campus to offer the coursework and programs that students need for bachelor's and master's degrees. Degrees offered parallel those that LCCC offers, enabling students to move into higher level degrees without leaving LCCC. More information is available by calling the University Partnership at 800-995-5222 ext. 4949.

FEES AND EXPENSES

Fees subject to change without notice.

Student Expenses

Following are comprehensively outlined fees for students at the University who are studying for credit and noncredit in all areas of instruction. Included also are the additional expenses required for special academic services available to students and other miscellaneous fees, such as application fees. It is the responsibility of the student to know the correct amount of all fees, including the non-Ohio resident surcharge.

In any question concerning fees, surcharges or residence, it is the responsibility of the student, parents or court-appointed guardian to furnish such proof as may be required by The University of Akron. A student who is in doubt about residency status should consult with the University registrar.

It is the responsibility of the registrar to assess fees and surcharges at the time of registration; information given by the student at that time is used in the assessment. Each registration is later audited by the University auditor, and appropriate additional charges or refunds will be made.

All fees and surcharges are due at the time of registration or on the specified fee payment deadline. The status of the student as of the opening day of the semester or session will determine the final, correct amount of fees and surcharges.

An Installment Payment Plan for tuition and fees is available to all students.

Tuition and Fees

Tuition and fee information for Undergraduate and associate degree programs is available on the Office of Admissions website (https://www.uakron.edu/admissions/undergraduate/tuition_fees.dot).

Admission Application Fees (Nonrefundable)

Fee	Cost
Undergraduate	$50
Entering postbaccalaureate or graduate	$50
Transient students (first enrollment only)	$50
International Students (non-refundable)	$60

Orientation Program Fees

Fee	Cost
New Student Orientation Program: University Commitment Fee (Confirms new student intent to attend orientation and enroll in classes for next academic term. Placement tests taken on UA campuses are included in this fee.)	$145
International Student Orientation	$145
Placement Test Fees: Individual retesting and external users	$25/test

Registration and Other Related Fees

Fee	Cost
Administrative Fees, Assessed each term (all students except high school students taking University courses; transient, unclassified and special students; and undergraduate students who have completed 96 credits or more)	$30/term
Late Payment Fees (charged to students who have not paid for tuition and and mandatory fees by the invoice due date)	$100
Co-op Course Fee	$55
Alternative Credit Fees	
Bypassed Credit, per credit	$5
CLEP, per test	$25 (plus ETS fee paid to ETS)
Credit by Examination (undergraduate and postbaccalaureate) per credit	$30
TestPrep Tutorial	$100 per course

Facility Fee

Fee	Cost
Student Facility Fee	$18.55/credit hour up to a maximum of 12 credit hours

General Service Fee

Fee	Cost
Akron Campus & College of Applied Science and Technology pursuing a bachelor's degree	$35.70/credit hour up to a maximum of 12 credit hours
Akron Campus pursuing an associate's degree in College of Applied Science and Technology	$27.60/credit hour up to a maximum of 12 credit hours
Medina County University/Center Wayne College	$7.34/credit hour up to a maximum of 12 credit hours

Technology Fee

Fee	Cost
Academic Level: 0-95.5 Credits	$13.20/credit hour
Academic Level: 96 Credits or More	Exempt

Audit and Non-Credit (Developmental) Courses

The cost is the same whether a course is taken for credit non-credit (developmental) or audit.

Miscellaneous Fees

Career Advantage Services Fees

Fee	Cost
All undergraduate students except students with 96 credits or more	$3/credit hour

Career Services

Fee	Cost
Registration Fee for alumni and reciprocity (covers 12-month cost of employer referrals)	$45

Center for Child Development (Child care facility)

Fee Description	Period	Amount
Registration (Fall through Summer) (Non Refundable)		$75 per child
Insurance (Fall through Summer)		$35 per child
Enrollment (Preschool and School Age --Full Day)		
	University Full-Time, per week	$200
	Community Full-Time, per week	$210
	Part Time - 3 days/ week (M,W,F)	$150
	Part Time - 2 days/ week (T,R)	$115
Toddler Program		
	University Full-Time, per week	$220
	Community Full-Time, per week	$230
	Part Time - 3 days/ week (M,W,F)	$165
	Part Time - 2 days/ week (T,R)	$123
Activity Fee (Fall through Summer)		$75 per child
Field Trip T-Shirt		$15
Late Pick-up Fees (for children who are not picked up by the Center's stated closing time)		
	1 - 15 minutes after closing	$25
	16 - 30 minutes after closing	$50
Late Fee Payment (assessed if weekly tuition is not paid by the second school day your child is in attendance during the week)		$10/week
Family Discount (given to the older child when more than one child from the same family is registered full-time)		10%

* **Vacation Credit:** After a 3 month attendance, regular full-time families with full year (12 month) attendance qualify for 2 weeks vacation credit. other full-time attendance less than 12 months qualifies for 1 week credit. Only 1 week may be used during the fall and spring semesters combined, the 2nd week may be used during the summer session.

LeBron James Family Foundation College of Education

Fee	Cost
Tk20 Portfolio	$100

Counseling, Testing and Career Center

Fee	Cost
Cognitive Functioning and Academic Achievement Tests	$55
Learning Disability Battery	$100
ACT Residual Test	$60
ACT Residual Test Standby ($20 plus $60 ACT fee)	$80
College Level Examination Program (CLEP)	$25 (plus ETS fee paid to ETS)
Educational Testing Services Fee	(Currently $80; subject to change throughout the year. Fee is paid directly to ETS.)
Correspondence Testing	$20/hr
Miller Analogies Test	$90
Professional Consultation Fee per hour	$120
Individual Administration of ACT Residual Test	$155
Psychological and Career Tests	$10
Psychological Assessment (not part of Counseling - an independent test)	$50
Attention Deficit Disorder (ADD/ ADSD) Assessment	$150
CDs (For relaxation, stress management, etc.)	$1

Dance Institute Fees

Fee Description	Period	Amount
Placement Fee with Pre-Registration		$20.00
Placement Fee without Pre-Registration		$30.00
New Student Registration Fee		$10.00
Summer Curriculum (1-4 weeks)		
Advanced	4 weeks	$1,020.00
	3 weeks	$800.00
	2 weeks	$538.00
	1 week	$318.00
Intermediate II	4 weeks	$900.00
	3 weeks	$710.00
	2 weeks	$510.00
Intermediate I	4 weeks	$848.00
	3 weeks	$662.00

	2 weeks	$476.00
Beginner/Advanced-Beginner	2 weeks	$311.00
Afternoon Beginner/ Advanced-Beginner Arts Camp w/ dance (2 weeks)		$140.00
Afternoon Arts Camp only (2 weeks)		$204.00
Pre-Ballet/Storybook Dance (one 45-minute classes/week)	4 weeks	$55.00
Tap (2 classes/week)		$110.00
Adults:(one class/ week)	5 weeks	
Ballet/Jazz/Modern - 1.5 hours		$70.00
Pilates -based Mat Exercise/Hip-Hop/ Ballet - 1 hour		$57.00
Summer Single Classes		$15.00
Program Discounts (only one type of discount may be applied)		
UA Faculty & Staff Family		20% off per person
Multiple Child/Family Member Attending		25% off 2nd, 30% off 3rd
UA Dance Majors/ Minors		20% off full summer program and/or single class
Academic Year Curriculum (two 16-week semesters total)		
Advanced	9 classes/week	$3,100.00
Intermediate II	7 classes/week	$2,624.00
Intermediate I	6 classes/week	$2,318.00
Advancd-Beginner	4 classes/week	$1,722.00
Beginner B	3 classes/week	$1,304.00
Beginner A	2 classes/week	$872.00
Pre-Ballet	1 class/week	$438.00
Storybook Dance	1 class/week	$438.00
Tap	1 class/week	$438.00
Adults:		
Ballet/Jazz/Modern - 1.5 hours	1 class/week	$448.00
Pilates-based Mat Exercise/Hip-Hop/ Ballet - 1 hour	1 class/week	$360.00
Academic Year Single Classes		$15.00
Singles Classes for UA Dance students		$7.50
Program Discounts		
UA Faculty & Staff Family		20% off per person
Multiple Child/Family Member Attending Dance Institute		25% off 2nd, 30% off 3rd
Refund Service Charge (per refund)		$25.00
This fee would be charged to any student or student's parent who has paid tuition and requests a refund due to an injury or an extenuating circumstance. (No charge would be incurred for crediting the tuition to the time period when the student returns.)		
*Late Pick-up Fees (beginning 10 minutes after the end of the last class)		$15 per hour

* for students who are not picked up following the last class of the day--must be paid at the time of pickup or before the beginning of the next scheduled class

Developmental Support Fees

Fee	Cost
Charged to all students enrolled in Developmental courses	$12.50/credit hour

Engineering Infrastructure Fee – All Engineering Courses

Fee	Cost
Infrastructure Fee – all engineering courses	$26/credit hour

English Language Institute

Fee	Cost
Late Registration	$50
Application fee	$50
Materials fee, per level, per semester/8-week session	$50/40

Health Services

Fee	Cost
Allergy injections	$6
Immunizations	$24-$61
Laboratory Tests (avg. costs for most common tests)	$6-$196
Prescribed Medications/Treatments	$3.60-$43.20
Visit fee	$15

ID Fees

Fee	Cost
ZipCard Replacement	$20

Insufficient Funds Fees

Fee	Cost
"Insufficient Funds" or returned check charge and VISA/Mastercard returns for Insufficient Funds	$25

International Programs

Fee	Cost
Guest Travel Abroad Participant Fee	$300

Liability Fees

Fee	Cost
Liability Insurance Fee, Student Nursing	$15
Liability Insurance Fee, Allied Health Technology/Surgeon's Assistant	$61.50
Liability Insurance Fee, Allied Health Technology/Other than Surgeon's Assistant	$15

Library Fees (Bierce, Auburn Science and Wayne)

Fee	Cost
Library Fee (excluding seniors, Law School and Wayne College students); College of Applied Science and Technology associate students 0-95.5 credit hours	$4/credit hour; $3/credit hour
Photocopies and printing charges	$.07/page
Overdue Materials	
UA students, undergraduate ($20 maximum)	.10/day
Non-University borrowers ($20 maximum)	.25/day
Replacement	Cost plus $20 surcharge
Fines for recalled materials	$1/day
Fines for hourly reserve materials	$2/hour ($50 max.)
Fines for daily reserve materials	$2/hour ($50 max.)
Fines for OhioLINK loans	$.50/day ($50 max.)
Fines for laptop computer late fee	$10/hour ($100 max.)
Archival Services	
Photograph for personal use	$5 + costs
Photograph for commercial use	$75 + costs
Research time by assistant (min. 2 hrs)	$20/hour
Photocopying time by assistant (min. 2 hrs)	$15/hour + copies
Photocopies	$.25/copy + postage
Film footage for commercial use (price varies)	$45/second
Research Service (1-hour minimum charged)	
UA students, faculty and staff	At cost
Research fee (charged in 15 min. increments)	$90/hour

Nutrition Center

Fee	Cost
Minimum Fee	$5
Initial Comprehensive Nutrition Assessment	$80
Individual 50-minute session	$50
Additional quarter session	$12.50
Additional half session	$25
Follow-up Nutrition Session	$25
Nutrition Screening	$15
Computerized Nutrient Analysis	$30/day
Group Sessions (per session, per member)	$15
Special Services	
Indirect Calorimetry	$75
Body Composition Testing (BIA, skinfold measurement)	$15
Nutrition Education Presentation	$120
Menu Planning Consultation	$75
Computerized Menu Analysis (per hour)	$75
Food Systems Management Consultation (per hour)	$75
Sports Nutrition Testing & Consultation (per-hour)	$80
Athletic Team Performance & Recovery Service (Includes three 50-minute group sessions, three screening sessions and two on- or off-season education presentations)	
Up to 20 athletes	$2,000
21 or more athletes	$100 each additional athlete
Nutrition Education/Instruction Materials	Acquisition cost x 1.5
(A sliding scale or the Health & Human Services guideline on poverty will be used if the client has no insurance and if the family income and the number of dependents indicate there is a need.)	

Off-Campus Student Services

Fee	Cost
Locker Rental Fee per semester	$25
Damaged or Lost Equipment Fee	Cost + 10%

Student Conduct and Community Standards

Fee	Cost
Administrative Fees	
Finding of Responsibility:	
Agreement reached during Fact Finding	$50
Agreement reached through Hearing Board Process	$75

Disciplinary Fines	
Restitution for lost/stolen/damaged while in possession (max)	Cost plus 20%
Substance Abuse Violations:	
Alcohol use/possession/ distribution 1st, 2nd, 3rd offense	$50, $100, $150
Drug/controlled substance use/ possession 1st, 2nd, 3rd offense	$100, $150, $250
Serious Violations of the Code of Conduct	
Violent/threatening behavior	$150
Theft	$150
Weapons	$150
Drug sales/distribution, 1st offense	$150
Other Fines: Impose a fine on the student which corresponds to the nature of the violation, not to exceed the maximum value of $250. For example, fines may be imposed for issues such as students who host or promote large parties or events that are no in compliance with Akron city regulation and/or result in negative consequence for the university community.	$0-$250

Student Recreation and Wellness Services

Full details including the full list of membership and guest fees can be found at the Student Recreation and Wellness Services (https://www.uakron.edu/rec) website

University Police Department

Fee	Cost
Police Service Calls (for vehicle assistance)	$10
Special Events Detail (3 hour minimum)	$44/hour
Police Report – 1-5 pages	No Charge
6 or more pages	.05/page
Fingerprinting – Students, faculty and staff	$5/card
All others	$15/card
Photo	$5
Web-based records check: BCI only/ FBI only/BCI and FBI	$29/$31/$56

Parking and Transportation Fees (https://www.uakron.edu/parking)

Complete student transportation information and instructions and costs of obtaining a parking permit can be found on the Parking Services website.

Students and employees who desire a twenty-four hours per day, seven days per week parking privilege may apply for a permit and be assessed an optional parking permit fee for such privilege. The University may limit the locations that such permit shall be valid, and may limit the number of such permits that will be issued per year, per academic term, or other period. Qualified residence hall students will receive this parking privilege pursuant to the terms of their residence hall contract, without the necessity of paying an additional optional parking permit fee.

Enrollment Cancellation (https://www.uakron.edu/student-accounts/refunds)

An undergraduate student whose financial account shows an amount due after their assigned due dates risks having all or part of their registration for current and/or future terms cancelled; however, non-payment of fees does not guarantee enrollment cancellation. If a student enrolls in classes and then decides not to attend, it is still the student's responsibility to drop their classes to ensure the proper credit toward fees for the term, as defined by the current refund policy.

How to drop a class (https://www.uakron.edu/zipassist/academics.dot?opane=9)

Payment Plans and Options (https://www.uakron.edu/student-accounts/payments_and_billing/payment-options.dot)

Payment plans are available to help those students who cannot pay the full charges for tuition, on-campus housing and/or the meal plan at the start of the semester. To read more and sign up, visit the Payment Options portion of the Office of Student Accounts website.

Student Health and Accident Insurance (https://www.uakron.edu/healthservices/insurance)

All registered students taking six or more credit hours, doctoral students, ELI students and other special academic program students are eligible to enroll in a student health insurance plan offered by the Leonard Insurance Company on behalf of the University. All registered international students taking credit hours are required to purchase this insurance plan unless proof of comparable coverage is furnished. Visit the Student Health Insurance page located within the Student Health Services website.

Veterans Information (https://www.uakron.edu/veterans)

Full veteran information can be found at the Military Services Center website. The mission of the Center is to provide comprehensive enrollment and referral services to veterans and their families, making the transition to The University of Akron as smooth as possible.

Regulations Regarding Refunds (https://www.uakron.edu/student-accounts/refunds)

The Office of Student Accounts helps students and parents by addressing questions and concerns about refunds if needed. Complete details are located on that website.

Residence Hall Refunds

Refund/Release and Forfeiture Policy

A contract for housing accommodations at The University of Akron upon being breached by the student or otherwise terminated by The University of Akron is subject to the following refund provisions:

A **full refund** of room fees and the Prepayment under the following circumstances:

- Graduation of the student from The University of Akron;
- Academic dismissal of the student from The University of Akron;
- Non-attendance or complete withdrawal by the student from The University of Akron prior to the start of the Contract term (except the advance rental payment of one hundred fifty dollars which shall be forfeited). The one hundred fifty dollar deposit be refunded for new

entering students and new transfer students when notification of intent to break Contract is received prior to the fifteenth of May for the following fall semester; or

- In the event mandatory or recommended participation in academic programs of The University of Akron requires the student to commute regularly beyond the Akron metropolitan area (i.e., student teaching or co-op assignments)

A **partial refund** of paid room and board fees, except the Prepayment fee, once occupancy has been established (e.g., acceptance of room keys and/or signing occupancy document) will be prorated beginning on the date the student officially surrenders use of University housing and returns all appropriate keys (room and apartment keys) to University staff and satisfies University-mandated housing separation requirements and procedures under the following circumstances:

- Cancellation of the entire Contract term after the start of the fall semester and subsequent spring semester; or
- Cancellation of a single semester Contract after the start of that semester

A **partial refund** of paid room and board fees when the student has fulfilled fall semester obligations and breaches the Contract for spring semester, except when under any dismissal or suspension. The student shall pay, as administrative fee for breach of the terms of the Contract, an amount of $200.00.

A student shall remain responsible for the full cost of the then-current residence hall Contract term if the University, it its sole discretion, terminates the contract:

- For reasons related to the orderly operation of the residence halls, or for reasons relating to the health, physical or emotional safety and well-being of the persons or property of students, faculty, staff or University property; or
- In the event that the student is dismissed or suspended from The University of Akron for disciplinary reasons in accordance with law or the rules and regulations of the Board of Trustees, or, if the student is suspended or placed on terms of disciplinary probation in accordance with law or the rules and regulations of the Board of Trustees, whereby such terms of probation prohibit the student from residing in University housing accommodations

Contract cancellations for a current semester received after the 12th week of that semester will be assessed the full semester fees.

The student is financially responsible for fees incurred through the date of such termination, dismissal, suspension or probation or until the student has completed the check-out process with the appropriate University employee, whichever date is later.

Notice requirements. All notices of intent to break this contract must be submitted in writing to the Department of Residence Life and Housing. If the student is under the age of eighteen years, the written notification of termination must be co-signed by the student's parent or legal guardian.

No-Show Policy. The University will hold a student's assignment until close of business on Wednesday of the first week of each semester. At that time the room will be reassigned, student's Contract will be cancelled and Prepayment will be forfeited, or cancellation fee incurred, whichever is applicable.

FINANCIAL AID

Financial aid programs were developed by federal and state governments, as well as by institutions of postsecondary learning to assist students from families with limited resources in meeting their educational expenses. The primary purpose of financial aid is to ensure that no person is denied the opportunity of attending college because of financial need.

Generally, financial aid is provided in four forms: scholarships, grants, loans and work. To apply for all types of state and federal aid and programs, complete the Free Application for Federal Student Aid (FAFSA). You will be required to complete a separate application for University and non-university scholarships.

Mission Statement

The Mission of The University of Akron's Office of Student Financial Aid is to help students achieve their educational potential. This office accomplishes this by:

- Adhering to state and federal regulations as well as University policies regarding the awarding of aid funds
- Being committed to removing financial barriers for those who wish to pursue postsecondary learning
- Making every effort to assist students with financial need
- Having an awareness of the issues affecting our students and advocating for our students' interests at the institutional, state and federal levels
- Educating our students and their families by providing quality consumer information
- Respecting the dignity and diversity of each one of our students by providing services that do not discriminate on the basis of race, gender, ethnicity, sexual orientation, religion, disability, age or economic status
- Ensuring the confidentiality of our students' information
- Assuring the uniform application of all needs analysis formulas consistently across The University of Akron's full population of financial aid applicants
- Committing to the highest level of ethical behavior by avoiding conflict of interest or the appearance of such a conflict

Maintaining the highest level of professionalism reflects the Student Financial Aid office's commitment to the goals and mission of The University of Akron.

The Financial Aid website (https://www.uakron.edu/finaid) will serve as your guide. It has all the information needed to get started with financial aid applications and learn about the process of using aid to pay for college.

GENERAL EDUCATION

About General Education in the College of Applied Science and Technology

All applied associate degree programs* offered within the College of Applied Science and Technology shall align with the General Education Guidelines established by the Ohio Department of Higher Education (ODHE), with the minimum 15 credit hours distributed as follows:

- At least 1 course (3 credit hours) in Writing.
- At least 1 course (3 credit hours) in Speaking.
- At least 1 course (3 credit hours) in Mathematics
- At least 6 credit hours in the following categories:
  - 3 credit hours in Social Sciences
  - 3 credit hours in the Natural Sciences
- More than the minimum 15 credit hours is recommended.
- Programs are expected to use approved Ohio Transfer Module (OTM) courses.

Each program area (a) should choose the General Education requirements that are most appropriate for its degree(s), (b) should refer to The University of Akron's General Education requirements for bachelor degrees when considering general education courses for applied associate degrees, and (c) is encouraged to select General Education coursework from the College of Applied Science and Technology, as listed below.

Writing
2020:121 English 3

Speaking
2420:263 Professional Communications and Presentations 3

Mathematics
2030:152 Technical Mathematics II 2

2030:153 Technical Mathematics III 2

2030:161 Mathematics for Modern Technology 4

Social Science
2040:240 Human Relations 3

2040:242 American Urban Society 3

2040:247 Survey of Basic Economics 3

2040:243 Contemporary Global Issues 3

2040:244 Death & Dying/2040:344 Death & Dying 3

2040:241 Technology & Human Values 2

Natural Science
2820:105 Basic Chemistry 3

2820:111 Introductory Chemistry 3

2820:112 Introductory & Analytical Chemistry 3

2820:160 Technical Physics: Mechanics 4

2820:163 Technical Physics: Electricity & Magnetism 2

2820:164 Technical Physics: Heat & Light 2

* Associate of Applied Business, Associate of Applied Science, and Associate of Technical Studies

General Education at Akron Campus

General Education provides a common intellectual experience for all university students. The program was designed to help students develop strong communication and critical thinking skills, a broad understanding of disciplinary areas, and the knowledge and skills necessary for responsible citizenship in an interconnected world. General Education is the foundation of all undergraduate degree programs at The University of Akron.

For the most up-to-date curriculum, see the General Education website (https://www.uakron.edu/general-education).

Learning Outcomes

Students who complete the General Education Program will demonstrate foundational competency in

- Written communication, oral communication and information literacy.
- Creating and evaluating reasoned arguments, and employing quantitative, qualitative, and normative information in such arguments.
- Knowledge of representative content and methods of inquiry of the arts, humanities, natural sciences, and social sciences.
- Knowledge and skills that promote personal, social and environmental responsibility, including knowledge of diversity, systemic relationships, and collateral effects and consequences within and across systems.

Requirements

Students pursuing a bachelor's degree must complete three tiers of General Education coursework. Tiers I and II provide students with foundational skills and breadth of disciplinary knowledge. Tier III courses require students to integrate knowledge, understand diverse perspectives, and think critically about complex issues. Courses tagged for Tier III may also fulfill major or Disciplinary Area requirements.

Tier 1: Academic Foundations—12 credits

- Quantitative Reasoning (3)
- Speaking (3)
- Writing (6)

Tier 2: Disciplinary Areas—22 credits

- Arts and Humanities (9)
- Natural Science (7)
- Social Science (6)

Tier 3: Tags—4 courses

- Complex Systems Affecting Individuals in Society
- Critical Thinking
- Domestic Diversity
- Global Diversity

Curriculum

Tier I: Academic Foundations

Quantitative Reasoning—3 credit hours

- 2030:152 Technical Mathematics II & 2030:153 Technical Mathematics III (2/2, must take both)
- 2030:161 Mathematics for Modern Technology (3)
- 3450:135 Mathematics for Everyday Life (3)
- 3450:145 Algebra for Calculus (4)
- 3450:149 Precalculus Mathematics (4)
- 3470:250 Statistics for Everyday Life (4)
- 3470:260 Basic Statistics (3)
- 3470:261 Introductory Statistics I & 3470:262 Introductory Statistics II (2/2, must take both)

Students who successfully complete a mathematics or statistics course with a prerequisite on the above list satisfy the Quantitative Reasoning requirement.

Speaking - 3 credit hours

- 2420:263 Professional Communications and Presentations (3)
- 7600:105 Introduction to Public Speaking (3)
- 7600:106 Effective Oral Communication (3)

Writing—6 credit hours

First course

- 2020:121 English (3)
- 3300:110 English Composition I + Workshop (4)
- 3300:111 English Composition I (3)

Second course

- 2020:222 Technical Report Writing (3)
- 3300:112 English Composition II (3)

Students who are placed in the second writing course and successfully complete it satisfy the Writing requirement.

Tier II: Disciplinary Area Courses

Fine Arts and Humanities—9 credit hours

Fine Arts - at least one course

- 3300:283 Film Appreciation (3)
- 7100:100 Survey of History of Art I(3) CT
- 7100:101 Survey of History of Art II (3) GD
- 7100:210 Visual Arts Awareness (3)
- 7500:201 Exploring Music: Bach to Rock (3)
- 7800:100 Experiencing Theatre (3)
- 7800:264 Playscript & Performance Analysis (3)
- 7900:200 Viewing Dance (3)

Humanities - at least one course

- 3200:230 Sports & Society in Ancient Greece and Rome (3)
- 3200:289 Mythology of Ancient Greece (3)
- 3300:252 Shakespeare & His World (3)
- 3300:281 Fiction Appreciation (3)
- 3400:200 Empires of the Ancient World (3) GD
- 3400:210 Humanities in the Western Tradition I (4) CT
- 3400:221 Humanities in the World since 1300 (4) CT
- 3501:210 Arabic Culture through Film (3)
- 3502:210 Chinese Culture Through Film (3)
- 3560:210 Japanese Culture through Film (3) GD
- 3580:250 Hispanic Literature in Translation (3)
- 3600:101 Introduction to Philosophy (3) CT
- 3600:120 Introduction to Ethics (3) CT
- 3600:125 Theory & Evidence (3) CT
- 3600:150 Critical Thinking (3) CT
- 3600:170 Introduction to Logic (3) CT
- 3600:211 History of Ancient Philosophy (3) CT

Students must take at least one Arts course and at least one Humanities course. The second Arts or Humanities course may be in the same department or in a different one.

Courses marked GD or CT also fulfill a Tag requirement

Natural Science—7 credit hours, including one lab

- 2780:106 Anatomy & Physiology for Allied Health I (3)
- 2780:107 Anatomy & Physiology for Allied Health II (3)
- 2820:105 Basic Chemistry (3, lab)
- 2820:111 Introductory Chemistry (3, lab)
- 2820:112 Introductory & Analytical Chemistry (3, lab)
- 2820:160 Technical Physics: Mechanics (4, lab)
- 2820:163 Technical Physics: Electricity & Magnetism (2)
- 2820:164 Technical Physics: Heat & Light (2)
- 3100:103 Natural Science: Biology (4, lab)
- 3100:106 Exploring Biology (3)
- 3150:101 Chemistry for Everyone (4)
- 3230:151 Human Evolution (4, lab)
- 3370:100 Earth Science (3)
- 3370:101 Introductory Physical Geology (4, lab)
- 3370:121 Dinosaurs (1)
- 3370:122 Mass Extinctions & Geology (1)
- 3370:133 Caves (1)
- 3370:135 Geology of Energy Resources (1)
- 3370:171 Introduction to the Oceans (3)
- 3370:200 Environmental Geology (3)
- 3370:201 Exercises in Environmental Geology I (1, lab)
- 3370:203 Exercises in Environmental Geology II (1, lab)
- 3370:211 Introduction to Environmental Science (3)
- 3650:130 Descriptive Astronomy (4, lab)
- 3650:133 Music, Sound & Physics (4, lab)
- 3650:137 Light (4, lab)
- 7760:133 Nutrition Fundamentals (3)

A majors-track course in the natural sciences can substitute for a general education natural science course.

Students may fulfill the Natural Sciences requirement with any coursework that adds up to seven credit hours and includes a lab, using courses from the same department or different ones.

Social Science—6 credit hours

- 2040:240 Human Relations (3)
- 2040:242 American Urban Society (3)
- 2040:243 Contemporary Global Issues (3) GD
- 2040:244 Death & Dying /2040:344 Death & Dying (3) DD
- 2040:247 Survey of Basic Economics (3) CT
- 2040:254 The Black Experience from 1619-1877 (2) DD
- 2040:256 Diversity in American Society (2) DD
- 2040:257 The Black Experience 1877 - 1954 (2) DD
- 2040:258 The Black Experience 1954 - Present (2) DD
- 3230:150 Human Cultures (3)
- 3230:251 Human Diversity (3) GD
- 3240:100 Introduction to Archaeology (3)
- 3250:100 Introduction to Economics (3)
- 3250:200 Principles of Microeconomics (3)
- 3250:244 Introduction to Economic Analysis (3)
- 3350:100 Introduction to Geography (3)
- 3400:250 U.S. History to 1877 (4) DD
- 3400:251 U.S. History since 1877 (4) DD
- 3700:100 Government & Politics in the United States (3)
- 3700:150 World Politics & Government (3)
- 3750:100 Introduction to Psychology (3)
- 3850:100 Introduction to Sociology (3) DD

Students may fulfill the Social Science area requirement using courses from the same department or different ones.

Courses marked CT, DD, or GD also fulfill tag requirement

Tier III: Tagged Courses

Complex Systems Affecting Individuals in Society - one course

- 2040:241 Technology & Human Values (3)
- 3230:370 Globalization and Culture (3)
- 3230:420 The Anthropology of Food (3)
- 3230:457 Medical Anthropology (3)
- 3230:460 Field Methods in Cultural Anthropology (4)
- 3250:385 Economics of Natural Resources & the Environment (3)
- 3250:430 Labor Market and Social Policy (3)
- 3370:421 Coastal Geology (3)
- 3370:452 Geology and Environmental Science Service Learning (3)
- 3370:498 Special Topics in Geology (3)
- 3580:308 Spanish Composition: Health Professions & First Responders (3)
- 3600:361 Biomedical Ethics (3)
- 3600:365 Environmental Ethics (3)
- 3750:425 Psychology of Hate (4)
- 3760:401 American Families in Poverty (3)
- 3850:320 Social Inequalities (3)
- 3850:330 Criminology (3)
- 3850:342 Sociology of Health & Illness (3)
- 3850:433 Sociology of Deviant Behavior (3)
- 4400:402 Senior Design Project II - Electrical Engineering (3)
- 4450:402 Senior Design Project II - Computer Engineering (3)
- 4600:461 ME Senior Design Project I (2)
- 4600:497 Honors Project in Mechanical Engineering (2)
- 4800:491 Biomedical Engineering Design I (2)
- 4900:490 Aerospace Design Project (2)
- 4900:497 Aerospace Honors Project (2)
- 5500:223 Urban Youth Mentoring (3)
- 8200:440 Nursing of Communities (5)

Critical Thinking - one course

- 2030:255 Technical Calculus I (3)
- 2040:240 Human Relations (3)
- 2040:247 Survey of Basic Economics (3)
- 2040:349 Integrated Human Behavior and Health (3)
- 3100:423 Population Biology (3)
- 3100:486 Cell Physiology Laboratory (2)
- 3230:359 Anthropological Theory (3)
- 3240:400 Archaeological Theory (4)
- 3250:226 Computer Skills for Economic Analysis (3)
- 3250:380 Money & Banking(3)
- 3250:400 Intermediate Macroeconomics(3)
- 3250:410 Intermediate Microeconomics (3)
- 3250:426 Applied Econometrics (4)
- 3300:300 Critical Reading & Writing (3)
- 3370:231 Silicate Mineralogy and Petrology (3)
- 3370:350 Structural Geology (4)
- 3370:444 Environmental Magnetism (3)
- 3400:210 Humanities in the Western Tradition I (4) HUM
- 3400:221 Humanities in the World since 1300 (4) HUM
- 3400:323 Europe from Revolution to World War, 1789-1914 (3)
- 3600:101 Introduction to Philosophy (3) HUM
- 3600:120 Introduction to Ethics (3) HUM
- 3600:125 Theory & Evidence (3) HUM
- 3600:170 Introduction to Logic (3) HUM
- 3600:211 History of Ancient Philosophy (3) HUM
- 3600:312 History of Medieval Philosophy (3)
- 3600:313 History of Modern Philosophy (3)
- 3750:110 Quantitative Methods in Psychology (4)
- 3750:220 Introduction to Experimental Psychology (4)
- 3750:441 Clinical & Counseling Psychology I (4)
- 3850:301 Methods of Social Research I (3)
- 4400:401 Senior Design Project I - Electrical Engineering (2)
- 4450:401 Senior Design Project I - Computer Engineering (2)
- 6400:200 Foundations of Personal Finance (3)
- 6600:335 Marketing Research (3)
- 7100:100 Survey of History of Art I (3) ART
- 7500:371 Analytical Techniques (2)
- 7600:245 Argumentation (3)

Courses marked ART or HUM also fulfill a Tier II Disciplinary Area requirement

Domestic Diversity - one course

- 2040:244 Death & Dying/2040:344 Death & Dying(3) SS
- 2040:254 The Black Experience from 1619-1877 (2) SS
- 2040:256 Diversity in American Society (3) SS
- 2040:257 The Black Experience 1877 - 1954 (2) SS
- 2040:258 The Black Experience 1954 - Present (2) SS
- 3001:200 Introduction to Womens Studies (3)
- 3002:201 Introduction to Pan-African Studies (3)
- 3230:358 Indians of North America (3)
- 3250:487 Urban Economics:Theory & Policy (3)
- 3350:350 Geography of the United States & Canada (3)
- 3350:443 Urban Applications in GIS (3)
- 3400:250 U.S. History to 1877 (4) SS
- 3400:251 U.S. History since 1877 (4) SS
- 3400:350 U.S. Women's History (3)
- 3580:307 Spanish Conversation: Health Professions & First Responders (3)
- 3600:455 Philosophy of Feminism (3)
- 3750:435 Cross-Cultural Psychology (4)
- 3750:474 Psychology of Women (4)
- 3850:100 Introduction to Sociology (3) SS
- 7600:325 Intercultural Communication (3)
- 7750:270 Diversity and Social Work (3)
- 7800:467 Multi-Cultural Theatre (3)

Courses marked SS also fulfill a Tier II Disciplinary Area requirement

Global Diversity - one course

- 2040:243 Contemporary Global Issues (3) SS
- 3230:150 Human Cultures (3)
- 3230:251 Human Diversity (3) SS
- 3230:416 Anthropology of Sex and Gender (3)
- 3230:460 Field Methods in Cultural Anthropology (3)
- 3350:275 Geography of Cultural Diversity (3)
- 3400:200 Empires of the Ancient World (3) HUM
- 3400:292 Global Societies: Africa (3)
- 3400:294 Global Societies: India (3)
- 3400:295 Global Societies: Japan (3)
- 3400:296 Global Societies: Latin America (3)
- 3400:297 Global Societies: Middle East (3)
- 3400:337 France from Napoleon to Degaulle (3)
- 3400:395 Modern Iran (3)
- 3400:489 Ottoman State and Society (3)
- 3400:499 Women and Gender in Middle Eastern Societies (3)
- 3560:210 Japanese Culture through Film (3)
- 3580:360 Hispanic Culture through Film (3)
- 3600:340 Eastern Philosophy (3)
- 3700:300 Comparative Politics (4)
- 3850:321 Population (3)
- 7800:335 History of Theatre and Dramatic Literature: Origins through 18th Century (3)
- 7800:435 History of Theatre and Dramatic Literature: 1800 to Present (3)

Courses marked SS or HUM also fulfill a Tier II Disciplinary Area requirement

General Education/Transfer Program at Wayne College

Wayne College offers the first two years of general baccalaureate education for transfer to the Akron campus of The University of Akron or to any other college or university. General courses in communications, the humanities, cultural diversity, social sciences, mathematics and natural sciences are required, along with basic courses in the student's chosen field.

The Wayne College Academic Catalog outlines the first two years of study for various bachelor's degree programs of The University of Akron. Some courses not currently available at Wayne College may also need to be completed in the first two years of selected University programs to assure proper course sequencing and timely completion of degree requirements. These programs are marked with an asterisk (*). Please see a Wayne College advisor for further details.

Finally, completion of the courses listed may also qualify a student to receive either the Associate of Arts or the Associate of Science degree. Please consult a Wayne College advisor for further details.

Wayne College Academic Catalog (https://wayne.uakron.edu/files/academiccatalog.pdf)

- General Education/Transfer Program (https://wayne.uakron.edu/files/academiccatalog.pdf#page=20)

RESEARCH CENTERS AND INSTITUTES

Akron Global Polymer Academy

The Akron Global Polymer Academy provides opportunities for teachers and students of all ages to experience the exciting world of polymers through a variety of offerings, including: in-school visits featuring engaging hands-on demonstrations, polymer family science nights, field trips to our exciting research college, and many polymer-related classroom resources available through this educational website.

AGPA also connects with K-12 students through an assortment of STE(A)M (Science, Technology, Engineering, Art, and Mathematics) initiatives, like: the Akron Regional Science Olympiad (https://uakron.edu/cpspe/agpa-k12outreach/science-olympiad), the Western Reserve District 5 Science Day (https://uakron.edu/wrsd), our annual Rubber Band Contest for 5th-8th graders (http://rubberbandcontest.org), as well as an ongoing STEM research experience for high school students.

Our K-12 outreach group also provides professional development for teachers. One example is through our Research Experience for Teachers (https://uakron.edu/cpspe/agpa-k12outreach/research-experience-for-teachers) (RET) program, which is an NSF funded program that brings teachers into the College of Polymer Science and Polymer Engineering (https://www.uakron.edu/cpspe)'s cutting-edge research laboratories, where they work alongside an actual research group. RET teachers work on developing their own research inspired lesson plans, designed to bring their cool research experiences back into their classrooms!

Website: Akron Global Polymer Academy (https://www.uakron.edu/cpspe/agpa-k12outreach)

Akron Polymer Technology Services

At Akron Polymer Technology Services (formerly the Akron Polymer Training Center and Applied Polymer Research Center), our mission is to advance all sectors of the polymer industry through the delivery of training (https://www.uakron.edu/apts/training), testing (https://www.uakron.edu/apts/testing), and processing services (https://www.uakron.edu/apts/processing) that enrich learning and optimize industrial performance. Services are enhanced by the capabilities within The University of Akron and by developing domestic and international partnerships with business, industry, community, and other institutions of higher education.

If you have questions, please contact Dr. Crittenden (Critt) Ohlemacher at 330-972-7265 or cjohlem@uakron.edu.

Website: Akron Polymer Technology Services (https://www.uakron.edu/apts)

Center for Advanced Vehicles and Energy Systems

The Center for Advanced Vehicles and Energy Systems (CAVES), established in 2005, focuses on the research, development and dissemination of advanced automotive technology and alternative energy systems and their enabling technologies. The Center's efforts are geared toward product-oriented research, development and commercialization of efficient cost-effective solutions to alternative transportation systems, advanced energy sources and storage and their real-time control platforms. In addition to providing research services to industry, private and government agencies, CAVES also provides knowledge dissemination through symposia, lectures, seminars and project-oriented graduate and undergraduate design experiences.

The Electrical and Computer Engineering (https://www.uakron.edu/engineering/ECE) and Mechanical Engineering (https://www.uakron.edu/engineering/ME) departments have graduate and undergraduate students and faculty currently involved in hybrid vehicle technology, energy systems and related areas. CAVES' activities are housed within a number of facilities, including the Power Electronics Laboratory, the Controls Research Laboratory, the Battery Research Facility, the Hybrid Electric Facility and the Pervasive Automation Laboratory, among others.

Website: Center for Advanced Vehicles and Energy Systems (https://www.uakron.edu/engineering/research/caves.dot)

Center for Conflict Management

The University of Akron has a long and proud history of the interdisciplinary study of conflict because understanding the nature

of conflict is the first step toward reducing conflict and violence at home, in our communities, workplaces and schools. The Center for Conflict Management, jointly administered by the departments of Political Science (https://www.uakron.edu/polisci) and Sociology (https://www.uakron.edu/sociology), seeks to build on that tradition by combining courses in several departments to enhance the capacity of students to effectively work toward reducing the harms associated with conflict and violence—from interpersonal to international.

For more information, contact the office, 202 Olin Hall, 330-972-5855, wtlyons@uakron.edu or https://www.uakron.edu/conflict/.

Website: Center for Conflict Management (https://www.uakron.edu/conflict)

Center for Emergency Management and Homeland Security Policy Research

The Center for the Emergency Management and Homeland Security Policy Research is dedicated to create a supportive environment for research, academics and outreach in emergency management and homeland security. It supports and encourages multidisciplinary endeavors in these fields that make a positive contribution to society. The Center is a collaborative partnership between The University of Akron and The Ohio Emergency Management Agency.

The Center focuses on policy and its interaction with the function of emergency management. This policy analysis and research relates to contemporary emergency management questions and issues on both state and national levels. Project areas include terrorism preparedness, business and industry continuity, disaster response and recovery assessment, as well as management practices relating to crises and disasters.

Website: Center for Emergency Management and Homeland Security Policy Research (https://www.uakron.edu/cem)

Center for Environmental Studies

The University of Akron's Center for Environmental Studies, located in Crouse Hall 215, was founded in 1970 to encourage multidisciplinary approaches to address environmental issues and resolve environmental problems.

The Center is a cooperative effort of several departments including Biology (https://www.uakron.edu/biology), Chemistry (https://www.uakron.edu/chemistry), Chemical Engineering (https://www.uakron.edu/engineering/CBE), Civil Engineering (https://www.uakron.edu/engineering/CE), Economics (https://www.uakron.edu/economics), Education (https://www.uakron.edu/education), Geosciences (https://www.uakron.edu/geology), History (https://www.uakron.edu/history), library, Political Science (https://www.uakron.edu/polisci), and Sociology (https://www.uakron.edu/sociology). There are about ninety affiliated faculty.

The Center provides opportunities for scientists, educators, students and special interest groups to work together on issues of environmental concern.

In recent years the Center has: directed an undergraduate and graduate certificate program of study; fielded responses to local inquiries regarding environmental problems; and sponsored workshops and seminars on environmental issues

Website: Center for Environmental Studies (https://www.uakron.edu/envstudies)

Center for Family Studies

The Center for Family Studies, established in 1979, was designed to stimulate and encourage the interdisciplinary study of the family. It serves both the University and the community by fostering collaboration between faculty, students, practitioners and community leaders on curriculum development, educational conferences and seminars (https://www.uakron.edu/cfs/events/Seminars), research (https://www.uakron.edu/cfs/events/research) and training (https://www.uakron.edu/cfs/events/Trainings) and public policy relevant to important family issues. The Center is a member of the Sloan (Foundation) Work and Family Research Network and can supply current and credible information on work-family issues to its constituencies.

The Center is represented by faculty from a variety of disciplines. It also includes leaders from various community systems,such as schools, hospitals, courts, churches, mental health, social and health care agencies. In addition, the Center has a fellows program in which outstanding faculty and community leaders are named as fellows,adjunct fellows or senior fellows.

The Center offers certificates in the following specialty areas: Parent Education (https://www.uakron.edu/cfs/Certificate-Programs/parent-education), Divorce Mediation (https://www.uakron.edu/cfs/Certificate-Programs/divorce-mediation) and Home-Based Intervention (https://www.uakron.edu/cfs/Certificate-Programs/home-based-intervention).

Any student, faculty member or community person interested in family issues is invited to contact the director (https://www.uakron.edu/cfs/contact-us) to learn how they can participate or learn more about the Center's activities.

Website: Center for Family Studies (http://www.uakron.edu/cfs)

Center for Information Technologies and eBusiness

The Center for Information Technologies and eBusiness (CITe) is a multi-disciplinary center within the College of Business Administration (https://www.uakron.edu/cba). CITe provides an important resource connecting IT executives with IS faculty and students that will provide educational research and networking opportunities. CITe was created in 2000 with the mission to teach students and develop faculty in the principles and practices of the related disciplines of Information Technology and electronic business. CITe is made up of an advisory board of Information Technology leaders from the Northeast Ohio region and the College of Business Administration faculty, staff and students. The objectives of CITe are to advance information technology (IT), information systems (IS) and eBusiness (EB) programs, research, best practices and related activities at The University of Akron. Visit the CITe website for more information.

Website: Center for Information Technologies and eBusiness (https://www.uakron.edu/cite)

Center for Literacy

The Center for Literacy furthers the mission of both The University of Akron and its College of Education (https://www.uakron.edu/education) through a variety of programs that support development of expertise and dissemination of knowledge about language learning. The Center brings preservice, inservice and university teachers together with children and families in the greater Akron area through a wide range of literacy related projects.

Website: Center for Literacy (http://www.uakron.edu/education/community-engagement/literacy)

Center for Organizational Research

The Center for Organizational Research (COR) is a consulting center operating within the Psychology Department (https://www.uakron.edu/psychology) at The University of Akron. The purpose of COR is to provide organizations with evidence-based solutions to the issues that confront people in work environments, with areas of specialization including human resource management, organizational development, and survey work. COR is able to offer a tailored approach to the client's needs because of its smaller client base and research orientation. Our consulting services are delivered by teams of graduate students and I/O faculty members. Collaboration with faculty gives COR a unique strength, as the I/O Psychology Department at The University of Akron consistently ranks as one of the top ten programs in the nation. As such, COR is in an excellent position to provide top quality consultation and research-based interventions to the business community. Some of our services offered (https://www.uakron.edu/cor/services-offered.dot) include: adverse impact analysis, leadership training and development, performance management, customized research studies, employee attitude surveys, training development and evaluation, job analysis, and item and test writing and development.

Website: Center for Organizational Research (https://www.uakron.edu/cor)

Center for Silver Therapeutics Research

The Center for Silver Therapeutics Research is a research consortium composed of UA faculty researchers from many different departments and colleges. The center seeks to advance the use of silver ion-containing compounds for the treatment of a wide range of infections and in the antineoplastic area.

Website: Center for Silver Therapeutics Research (https://www.uakron.edu/cstr)

Center for Statistical Consulting

The mission of the Center for Statistical Consulting in the Department of Statistics is to provide the University community and the community at large with professional assistance in the design and analysis of statistical problems for theses, dissertations and research. The office is located in the Buchtel College of Arts & Sciences Building, Room 118B. When requesting statistical consulting, refer to the Center's website, fill out the Request for Statistical Consulting form and email it to the department on the available link. The department will contact you for an appointment.

Website: Center for Statistical Consulting (https://www.uakron.edu/statistics/about-us/center-for-statistical-consulting.dot)

The Drs. Nicholas and Dorothy Cummings Center for the History of Psychology

The Drs. Nicholas and Dorothy Cummings Center for the History of Psychology (CCHP) is an internationally recognized research and humanities center that cares for, provides access to, and interprets the historical record of psychology and related human sciences. Founded at The University of Akron in 1965, it has grown to become the largest collection of its kind in the world. A Smithsonian Affiliate, the CCHP includes the National Museum of Psychology (https://www.uakron.edu/chp/museum), the Archives of the History of American Psychology (https://www.uakron.edu/chp/archives), and the Institute for Human Science and Culture (https://www.uakron.edu/chp/institute).

The CCHP reflects the interdisciplinary nature of the examination of what it means to be human and includes specialists in both psychology and library science. Scholars, students of all ages, and the public are welcome to participate in coursework, programs, research, and exhibitions, that utilize the CCHP's one-of-a-kind collections.

Website: Cummings Center for the History of Psychology (https://www.uakron.edu/chp)

English Language Institute

Established in 1979, the English Language Institute (ELI), part of the Buchtel College of Arts & Sciences, offers a program in English as a Second Language (ESL) instruction. The English for Academic Purposes Program (https://www.uakron.edu/eli/eap) provides non-credit ESL courses to international students and nonnative residents who plan to pursue an undergraduate or graduate degree at The University of Akron or another U.S. university. The intensive, 20-hours per week program also serves individuals who wish to improve their English to meet their own professional and/or personal goals.

ELI courses at four levels of English proficiency target language and academic skills needed for successful study at a U.S. university: reading efficiently, writing clearly, taking lecture notes and communicating effectively in English. Students also study grammar and vocabulary and prepare for language proficiency tests to meet the University's English requirement. In addition to its instructional program, the ELI administers The University of Akron Developed English Proficiency Test (https://www.uakron.edu/eli/uadept) (the U-ADEPT), which assesses the speaking ability of prospective international teaching assistants at UA and determines their readiness to provide classroom-related services in their graduate departments.

The ELI serves as a resource on issues relating to language proficiency for University faculty, staff and students as well as for members of the local community. For more information, visit the ELI website, email ua-eli@uakron.edu or call 330-972-7544.

Website: English Language Institute (https://www.uakron.edu/eli)

The EX[L] Center for Experiential Learning

Experiential learning is a process through which students gain knowledge and skills while advancing their understanding of themselves as effective members of our evolving society. Fundamentally interdisciplinary in nature, experiential learning opportunities challenge students to integrate information from a range of fields or perspectives and to work with team members or others and in the process to explore new ways of doing and thinking about a specific topic or concern.

Experiential learning at UA is distinguished by the following elements. First, experiential learning opportunities engage students actively in a combination of intellectual, physical, creative, social, and/or emotional ways. Second, these opportunities require students to take initiative, participate in decision-making, and stand accountable for outcomes of their activity. Third, experiential learning is structured so that reflection on individual and/or group activity occurs across the semester. Finally, this reflection leads to critical thinking, relevant analysis and synthesis, and a consideration of how the experience has shifted the students' understanding of themselves as scholars and global citizens.

Experiential learning at UA includes a wide variety of activities: internships, co-ops, practicum and clinical activities, service learning, student teaching, fieldwork, participatory research, community-based research, lab-based research, study abroad, unclasses, juried exhibitions, and performances.

Website: The EX[L] Center for Experiential Learning (https://www.uakron.edu/exl)

Fisher Institute for Professional Selling

Established through a gift from Ronald and Diane Fisher in 1992, the Ronald R. and Diane C. Fisher Institute for Professional Selling has enabled The University of Akron to establish one of only 13 certified, professional sales programs in the world. It is currently number three in the United States and Canada.

The mission of the Fisher Institute of Professional Selling is: to enhance the image of the sales profession and to promote professional selling and sales management as rewarding lifelong careers; to provide world-class, high-quality excellence in sales education through sales major, minor and certificate programs; to forge strong partnerships with the business community by providing them with top talent and outstanding training and consulting to their sales executives and their business needs; and to conduct research that advances the field of sales.

The sales function generates the revenue that enables the rest of the corporation to operate. Jobs are abundant in the field of sales. Current placement is 100% (compared to 37% in other majors). Visit the website for more information.

Website: Fisher Institute for Professional Selling (https://www.uakron.edu/fisher)

Gary L. and Karen S. Taylor Institute for Direct Marketing

The Gary L. and Karen S. Taylor Institute for Direct Marketing is the future of direct interactive marketing. With dedicated faculty and staff and a state-of-the-art facility featuring laboratories in telecommunications, TV infomercials, direct response, eMarketing and marketing analytics, the Taylor Institute is able to provide students with leading-edge skills and practical experience.

For more information, call 330-972-7110 or visit the website.

Website: Gary L. and Karen S. Taylor Institute for Direct Marketing (https://www.uakron.edu/cba/centers-and-institutes/taylor)

H. Kenneth Barker Center for Economic Education

This center exists to improve the economic literacy of individuals to help them function competently as citizens, producers and consumers. It conducts workshops, seminars and economic programs for teachers, students and interested groups. It provides consulting services in the area of economic education and acts as a clearinghouse for the gathering and dissemination of economic education materials and programs. It also fosters an understanding and appreciation of the American economic system.

Website: H. Kenneth Barker Center for Economic Education (https://www.uakron.edu/barkercenter)

Institute for Biomedical Engineering Research

This institute was established in 1979 to promote interdisciplinary studies in the rapidly growing areas of knowledge, which overlap the fields of biology and medicine, on the one hand, and engineering and the physical sciences, on the other. It conducts seminars, courses and degree programs in biomedical engineering in association with the College of Engineering (https://www.uakron.edu/engineering) and individual departments.

In addition to its research and educational functions, the institute provides a research service to local hospitals and industry, as well as to private and government agencies. The premise for this program is that the combined resources of the University, Northeastern Ohio Universities College of Medicine and affiliated organizations will often permit more cost-effective solutions than would be possible by an individual or group doing the research independently.

The work of the institute is carried out by faculty of the Department of Biomedical Engineering (https://www.uakron.edu/engineering/CBE) in association with "members" selected from the faculties of The University of Akron and Northeastern Ohio Universities College of Medicine, as well as from the ranks of area physicians, engineers and scientists. The institute and the department occupy the third floor of the Olson Research Center on the north edge of the campus.

Website: Institute for Biomedical Engineering Research (https://www.uakron.edu/engineering/research/centers.dot)

Institute for Global Business

The Institute for Global Business at The College of Business Administration (https://www.uakron.edu/cba), The University of Akron coordinates both credit and noncredit programs in International Business at the undergraduate and graduate levels. The Institute also facilitates the study abroad programs (https://www.uakron.edu/cba/centers-and-institutes/igb/study-abroad-programs) within The College of Business Administration (https://www.uakron.edu/cba) and provides scholarships for students to attend these programs. The Institute also facilitates the offering of short courses, workshops and seminars designed to help improve the international competitiveness of business organizations.

For more information, please contact Director: Dr. Mahesh Srinivasan – 330-972-5440, maheshs@uakron.edu or Associate Director: Dr. Il-Woon Kim – 330-972-7461, ikim@uakron.edu.

Website: Institute for Global Business (https://www.uakron.edu/cba/centers-and-institutes/igb)

Institute for Life-Span Development and Gerontology

The Institute for Life-Span Development and Gerontology, founded in 1976, coordinates multidisciplinary credit certificate programs (https://www.uakron.edu/ilsdg/academics) in gerontology at the undergraduate and graduate levels.

The Institute of Life-Span Development and Gerontology has grown into a campus-wide program involving more than 63 faculty in more than 20 different departments, representing six colleges. Students in the certificate programs (https://www.uakron.edu/ilsdg/academics) carry out field placements at numerous community service settings. There are more than 40 courses at the undergraduate and graduate levels. Research, education, training and service support has been received from the U.S. Administration on Aging, National Institute on Aging, U.S. Department of Education, Office of Special Education and Rehabilitation Services, National Institute on Disability and Rehabilitation Research, AARP Andrus Foundation, Ohio Department of Aging and Area Agency on Aging 10B. The Institute also served as a major site for the Rehabilitation Research and Training Center Consortium on Aging and Development Disabilities involving seven universities in six states.

The Institute houses the Tri-County Senior Olympics.

Website: Institute for Life-Span Development and Gerontology (https://www.uakron.edu/ilsdg)

National Center for Education and Research on Corrosion and Materials Performance

Housed at The University of Akron, the National Center for Education and Research on Corrosion and Materials Performance (NCERCAMP) provides a multi-disciplinary approach to help government and industry develop solutions for corrosion and materials performance challenges, whether they are unique or day-to-day problems.

The Center has a comprehensive set of programs and services in education, workforce training, research, technology development, outreach, and public policy activities.

Website: National Center for Education and Research on Corrosion and Materials Performance (https://www.uakron.edu/ncercamp)

Nutrition Center

The University of Akron Nutrition Center is a comprehensive regional center for the study and delivery of effective nutrition interventions. It provides the needed link between UA nutrition expertise and the extensive preventative health care needs of the campus and our surrounding community. The Center serves as an educational resource for students and the community, provides nutrition services and conducts research in sports nutrition, chronic disease treatment, wellness and disease prevention, nutrition information technology, food safety and sanitation and community nutrition.

Website: Nutrition Center (https://www.uakron.edu/nutritiondietetics/nutrition_center.dot)

Ray C. Bliss Institute of Applied Politics

The Ray C. Bliss Institute of Applied Politics is a public education and research adjunct of Buchtel College of Arts and Sciences (https://www.uakron.edu/bcas). The broad purposes of the institute, in keeping with the career of its namesake, Ray C. Bliss, are: to give all citizens, and particularly students, an opportunity to learn how to become active and competent in political life; to help maintain a tradition of ethical public service in politics; to foster useful relationships between applied politics and political science; to promote public comprehension of political organizations and the requirements for their effectiveness; and to improve understanding of continuity and change in American political institutions.

Website: Ray C. Bliss Institute of Applied Politics (https://www.uakron.edu/bliss)

The University of Akron Archival Services

The University of Akron Archival Services of University Libraries (https://www.uakron.edu/libraries) collects, preserves, and provides access to materials which have lasting historical or other research interest and which relate primarily to the University of Akron or to northeastern Ohio. The archives include two major divisions. University Archives contains historical materials by and about the University of Akron and its predecessor, Buchtel College, dating back to its founding in 1870 including issues of the yearbook, the student newspaper, bulletins, graduation programs, and office records. Regional history materials include historical records such as personal papers and records of local governments, businesses, labor unions, and civic organizations relating to northeastern Ohio with a focus on Akron and Summit County. Among the regional history collections are those pertaining to the rubber industry, canals, and lighter-than-air-flight. The Archives also houses other special collections including rare books and the B-26 Marauder Archives.

Website: The University of Akron Archival Services (https://www.uakron.edu/libraries/archives)

Training Center for Fire and Hazardous Materials

The Training Center for Fire and Hazardous Materials brings the University, government and industry together into one comprehensive regional center to integrate educational programs, fire and hazardous materials training and other applications of fire and safety technology. The Center is chartered from the Division of EMS and offers all State Certified Classes for firefighter certification. The Center employs 190 certified Emergency Services Instructors to fill any training requirement for municipal and business and industry. The center coordinates seminars and workshops presented by the Federal Emergency Management Agency (FEMA), the National Fire Academy, the Division of State Fire Marshal and other related organizations. Training in all phases of hazardous materials containment and fire prevention and control is provided under contract to various municipalities, industries and agencies. The programs are supported by the faculty of the Fire Protection Technology degree program and the Emergency Management degree program in association with other state and nationally recognized professionals. The Training Center services a multi-county area, having partnerships with Portage Lakes Career Center, Macedonia Fire Department, and Lakemore Fire Department. We also run 3 University of Akron Fire Academies and 3 high school Fire Academies that include Portage Lakes Career Center, Four Cities Compact, and Cuyahoga Valley Career Center.

Website: Training Center for Fire and Hazardous Materials (https://www.uakron.edu/fire)

University of Akron Magnetic Resonance Center (UA/MRC)

The MRC provides UA students and faculty, and the industrial and external academic scientific community, with access to routine and state-of-the-art magnetic resonance facilities and technical expertise. These capabilities include instruments for solution and solid state NMR, electron paramagnetic resonance, and the expertise of technical staff with experience in using these instruments for problem solving in chemistry, biological sciences, polymer science and engineering. Students and faculty are trained in the use of the instruments and NMR techniques in general through an ongoing educational process. The Center has instruments in The Knight Chemical and Goodyear Polymer buildings.

Website: University of Akron Magnetic Resonance Center (UA/MRC) (http://www.uakron.edu/chemistry/magnet)

William and Rita Fitzgerald Institute for Entrepreneurial Studies

In 1995, a generous gift from William and Rita Fitzgerald created the Fitzgerald Institute for Entrepreneurial Studies in the College of Business Administration (https://www.uakron.edu/cba). The Institute was established to promote the principles of free enterprise and encourage entrepreneurial spirit and practices both within the University's curriculum and throughout the business community.

The Fitzgerald Institute focuses on the development of curriculum appropriate for both new ventures and the entrepreneurial development and growth of existing businesses. The Institute provides the needed link between the University and the community of entrepreneurs critical to business development in the future.

For information, call 330-972-8479.

Website: William and Rita Fitzgerald Institute for Entrepreneurial Studies (https://www.uakron.edu/cba/centers-and-institutes/fitzgerald)

UA Solutions

The mission of UA Solutions is to serve the people of Northeast Ohio by offering courses and programs that increase access to The University of Akron, linking it with community, business and industrial workforce needs.

UA Solutions at The University of Akron provides a wide range of educational, technical and research services that enhance the effectiveness and quality of workforce learning. In addition, UA Solutions provides services that require the special expertise of the faculty and staff to better serve the economic and social development of Northeast Ohio.

Website: U (https://www.uakron.edu/uabs)A Solutions (https://www.uakron.edu/uabs)

COURSES OF INSTRUCTION

Course Numbering System

Each course at the University has two numbers. One designates the college and department of which it is part; one specifies the subject matter of the particular course. For instance:

3300:220 English Literature

In the above example, the first four digits of the number (3300) indicate the department. In this case, 3300 represents the Department of English. The second set of digits (220) following the colon, indicates exactly which course in the Department of English is being specified. The course number also indicates the level at which the course is being taught and the point at which the student is ready to take the course.

An explanation of the course numbering system follows:

Course Number	Description
100-199	First-year-level courses
200-299	Second-year-level courses
300-399	Third-year-level courses
400-499	Fourth-year-level courses
500-699	Master's-level courses
600-799	J.D.-level courses
700-899	Doctoral-level courses

When approved 400-level undergraduate courses are taken for graduate credit, they are designated as 500-level courses. A student must apply for and be admitted to the Graduate School to receive graduate credit.

NOTE: Courses listed each term contain an additional three-digit number indicating the specific section(s) offered.

A

B

C

D

R

- Radiologic Technology (2760) (p. 223)
- Respiratory Care (2790) (p. 224)
- Russian (3570) (p. 224)

S

- School Psychology (5620) (p. 225)
- Secondary Education (5300) (p. 225)
- Social Sciences - Associate Studies (2040) (p. 226)
- Social Work - School of (7750) (p. 226)
- Sociology (3850) (p. 228)
- Somatics and World Dance (7915) (p. 230)
- Spanish (3580) (p. 230)
- Special Education (5610) (p. 232)
- Special Educational Programs (5800) (p. 234)
- Speech-Language Pathology and Audiology (7700) (p. 234)
- Statistics (3470) (p. 235)
- Surgical Assisting (2770) (p. 237)
- Surveying & Mapping (2980) (p. 237)

T

- Technical Education (5400) (p. 238)
- Theatre (7800) (p. 239)
- Theatre Organizations (7810) (p. 240)

U

- Univ Orientation/Gen Ed Spec Topics (1100) (p. 240)

W

- Williams Honors College (1870) (p. 241)
- Women's Studies (3001) (p. 241)

A&S: Cooperative Education (3000)

3000:200. Job Search Strategies for Liberal Arts &Science Majors. (2 Credits)
Students engage in comprehensive career planning and develop job search strategies. Course topics include navigating a search, creating resumes/cover letters, interviewing, and portfolio development.

3000:301. Cooperative Education. (0 Credits)
(May be repeated) For cooperative education students only. Work experience in business, industry, or governmental agency. Comprehensive performance evaluation and written report required.

Aerospace Studies (1500)

1500:113. The Foundation of the United States Air Force I. (1 Credit)
Survey course introducing the U.S. Air Force and ROTC. Officership and military customs and courtesies are discussed. Foundations of Air Force communication are covered.

1500:114. The Foundation of the United States Air Force II. (1 Credit)
Survey course covering the origin and organization of the Air Force. Selected topics contributing to an understanding of the Air Force are covered.

1500:115. Leadership Laboratory. (1 Credit)
Prepares an individual to undertake a broad range of technical tasks. Optional for academic credit; Mandatory for Air Force ROTC credit for scholarship/commissioning.

1500:253. Evolution of United States Air Force Air and Space Power I. (1 Credit)
Survey course examining air and space power from an historical perspective. Course covers early flight and World War I to the Korean War and ICBMS.

1500:254. Evolution of the United States Air Force Air and Space Power II. (1 Credit)
Survey course examining air and space power from the Vietnam War to the Gulf War plus a look at the Air Force of the future.

1500:255. Leadership Laboratory. (1 Credit)
Prepares an individual to undertake a broad range of technical tasks. Optional for academic credit; Mandatory for Air Force ROTC credit for scholarship/commissioning.

1500:303. Leadership Studies I. (3 Credits)
Prerequisite: Permission of instructor. Study of leadership, professional knowledge and communication skills required for an Air Force officer. The roles of a leader as supervisor and counselor are discussed.

1500:304. Leadership Studies II. (3 Credits)
Prerequisite: Permission of instructor. Study of quality management fundamentals and communication skills for the Air Force officer. The Air Force personnel evaluation system and military ethics are discussed.

1500:305. Leadership Laboratory. (1 Credit)
Prepares an individual to undertake a broad range of technical tasks. Optional for academic credit; Mandatory for Air Force ROTC credit for scholarship/commissioning.

1500:453. Defense Studies I. (3 Credits)
Prerequisite: Permission of instructor. Examines political, economic and social constraints on national security and defense structure. The role of the military, including joint operations and regional defense, are discussed.

1500:454. Defense Studies II. (3 Credits)
Prerequisite: Permission of instructor. Roles of the military, regional defense, current Air Force issues, and other topics relevant to preparing an Air Force officer for active duty are covered.

1500:455. Leadership Laboratory. (1 Credit)
Prepares an individual to undertake a broad range of technical tasks. Optional for academic credit; Mandatory for Air Force ROTC credit for scholarship/commissioning.

Aerospace Systems Engineering (4900)

4900:165. Tools for Aerospace Systems Engineering. (2 Credits)
Prerequisite: Permission. Corequisite: 3450:149. Computer applications, spreadsheets, CAD software, MATLAB, and introduction to aerospace engineering program and curriculum; outside speakers; project involving design and construction of small RC aircraft.

4900:166. Aerospace Systems Project Management. (1 Credit)
Prerequisite: 4900:165. Teamwork and project planning; semester project involving continuation of design and construction of small RC aircraft in conjunction with SAE Aero Design.

4900:240. Aerospace Systems Engineering I. (3 Credits)
Prerequisite: 3450:223. An introductory systems course focusing on systems thinking, systems engineering tools, reliability, life-cycle analysis and statistics.

4900:320. Aerospace Systems Engineering II. (3 Credits)
Prerequisites: 4600:340, 4900:240 and admission to the College of Engineering. An extended study of systems topics including linear programming, optimization, decision making, critical path scheduling, and verification.

4900:336. Aerospace Structures. (3 Credits)
Prerequisites: 4300:202, 3450:335. Basic theory and methods for analysis and design of aerostructures are covered. Topics include torsion, shear flow, buckling, fracture, and fatigue of beams and plates.

4900:340. Avionics I. (3 Credits)
Prerequisites: 4400:307 and admission to the College of Engineering. Electronics for aircraft applications. Amplifiers, filters, regulators, current sources, buffers, sensor and actuator circuits, transmitters, and receivers.

4900:380. Aerospace Materials. (3 Credits)
Prerequisites: 3150:151, 3150:152, 4300:202 and admission to the College of Engineering or permission. Theory in science and application of materials for aerospace structures, macroscopic behavior of materials, order and disorder in mechanical behavior, evaluating and quantifying mechanical response.

4900:420. Object Oriented Design & Management. (3 Credits)
Prerequisites: 4900:320 and admission to the College of Engineering. An introduction to the area of object-oriented design and management of systems, including abstraction, inheritance, polymorphism, dynamic interactions, hierarchies, patterns, reflection, and distributed objects.

4900:440. Avionics II. (3 Credits)
Prerequisites: 4600:412, 4900:340 and admission to the College of Engineering. Communication and control for aircraft applications. Fourier analysis, AM and FM principles, modulators demodulators, communication systems. aircraft system dynamics, classical control system principles and applications.

4900:450. Aerospace Computations. (3 Credits)
Prerequisites: 4300:202, 4600:315, 4600:360, 4600:411 and admission to the College of Engineering or permission of instructor. Introduction to finite element and finite volume methods in aerospace engineering; fundamental principles of FEM and FVM discussed and illustrated through structural, and aerodynamic applications.

4900:460. Aerospace Systems Manufacturing. (3 Credits)
Prerequisites: 4600:360 or equivalent and admission to the College of Engineering or permission of instructor. Using computer systems to assist in creation, modification, analysis, or optimization of engineering designs, planning, management and control of manufacturing, CAD software with manufacturing applications.

4900:490. Aerospace Design Project. (2 Credits)
Prerequisites: Senior standing and admission to the College of Engineering or permission. Detailed senior design project. Design, feasibility and cost analysis, final design and implementation; engine, airframe and aerodynamic testing.

4900:497. Aerospace Honors Project. (2 Credits)
Prerequisite: Senior standing in Honors College or permission. Individual creative project in Aerospace Systems, supervised by faculty member of the department. Includes design, feasibility and cost analysis, final design and implementation.

Allied Health (2780)

2780:102. Overview of Simulation Healthcare. (4 Credits)
An overview of the use of simulation technology in healthcare education: simulation design, development, implementation and evaluation. Department consent is needed.

2780:106. Anatomy & Physiology for Allied Health I. (3 Credits)
Introduction to the study of human structure and function. No laboratory.

2780:107. Anatomy & Physiology for Allied Health II. (3 Credits)
Prerequisite: 2780:106. Introduction to the study of human structure and function. No laboratory.

2780:201. Simulation Technology Basic Repair. (4 Credits)
Prerequisites: 2440:247, 2740:121, and 2780:102. Use of simulation technology from manufacturing to use in healthcare education, clinical practice, maintenance and repair.

2780:290. Special Topics: Allied Health. (1-2 Credits)
(May be repeated for a total of four credits) Prerequisite: Permission. Selected topics or subject areas of interest in allied health.

Anthropology (3230)

3230:150. Human Cultures. (3 Credits)
This course examines what culture is, how human cultures vary and how they change. We then explore opportunities/conflicts presented by contemporary human cultural issues.

3230:151. Human Evolution. (4 Credits)
Study of biological evolution of Homo Sapiens, including primate comparisons and cultural development. One-hour laboratory using interactive computer programs, casts and Anthropology's cultural collection.

3230:251. Human Diversity. (3 Credits)
This course examines human diversity in global perspective by considering how and why human beings vary physically and ways categories of difference are culturally constructed.

3230:304. Primates: Behavior, Morphology and Evolution. (3 Credits)
Prerequisite: 3230:151. Extant primate diversity, behavior, morphology and primate paleontology.

3230:309. Medicine & the Humanities. (3 Credits)
Medical history, literature, and ethics from the perspective of the Humanities, with readings from original sources and literary works on medical subjects.

3230:310. Human Paleontology: The Australopithecines. (3 Credits)
Prerequisite: 3230:151. A study of the fossil record of the earliest hominids of the Miocene and Pliocene epochs.

3230:311. Human Paleontology: Genus Homo. (3 Credits)
Prerequisite: 3230:151. The origins of the Genus Homo and the evolution of anatomically modern Homo sapiens.

3230:340. Human Osteology. (3 Credits)
Prerequisites: 3230:151 and 3240:100 or permission. An intensive study of bone, bone growth, and the human skeleton; ageing and sexing techniques; application of demographic techniques to paleoanthropological populations.

3230:357. Magic, Myth, & Religion. (3 Credits)
Analysis of the origins, roles, and functions of myth, magic and religion in a broad range of societies, with emphasis on the non-Western, pre-industrial societies.

3230:358. Indians of North America. (3 Credits)
Ethnographic survey of native cultures of North America, with emphasis on variations in ecological adaptations, social organization and modern American Indians in anthropological perspective. Lecture.

3230:359. Anthropological Theory. (3 Credits)
Prerequisites: 3230:150 and 3230:151. Advanced seminar addressing the history of anthropological theory and current theoretical debates within the discipline.

3230:370. Globalization and Culture. (3 Credits)
Prerequisite: [3230:150 or 3850:100]. A critical examination of socio-cultural processes of globalization that serve to complicate conventional notions of culture. Emphasizes how globalization affects a range of local places.

3230:397. Anthropological Research. (1-3 Credits)
(May be repeated) Individual study of problem areas of specific interest to an individual student under guidance of a faculty member.

3230:398. Introduction to Anthropological Data. (3 Credits)
Prerequisite: 3230:150, 3230:151 and 3240:100. This course focuses on the characteristics of anthropological evidence through hands-on activities and examination of the uses of data in published works.

3230:400. Seminar: Human Origins. (3 Credits)
Prerequisites: 3230:151 and 6 credit hours of 300-400 courses in biological anthropology. Advanced seminar addressing current discoveries and theoretical issues in human paleontology. Content varies by semester.

3230:401. History of Physical Anthropology. (3 Credits)
Prerequisites: 3230:151 and [3230:310 or 3230:311] or instructor's permission. History of evolutionary theory pertaining to the biological origins of humans covering pre-Darwinian thought to the most recent fossil discoveries.

3230:410. Evolution and Human Behavior. (3 Credits)
Prerequisite: 3230:151. Critical examination of the theory of natural selection and its usefulness for understanding the origins and evolution of early hominid and modern human social behavior.

3230:416. Anthropology of Sex and Gender. (3 Credits)
Prerequisites: 3230:150 or 3850:100. This course explores cross-cultural variation regarding sex, gender and sexuality. It examines the ways that cultures create, maintain and reproduce gender concepts and gender relations.

3230:420. The Anthropology of Food. (3 Credits)
Utilizing anthropological approaches and theories, this course explores the social relations and cultural beliefs associated with food cross-culturally.

3230:457. Medical Anthropology. (3 Credits)
Prerequisite: 3230:150 or permission of instructor. Analyzes various aspects of Western and non-Western medical systems from an anthropological perspective. Compares traditional medical systems around the world.

3230:460. Field Methods in Cultural Anthropology. (4 Credits)
Prerequisite: 3230:150 or permission of instructor. Community-based research and service-learning course in which students design and undertake a project. Addresses ethics, data collection, management and analysis in collaboration with community partners.

3230:472. Special Topics: Anthropology. (3 Credits)
(May be repeated) Prerequisites: 3230:150 and permission. Designed to meet needs of student with interests in selected topics in anthropology. Offered irregularly when resources and opportunities permit. May include archaeological field school, laboratory research or advanced course work not presently offered by department on regular basis.

3230:474. Special Topics in Biological Anthropology. (3 Credits)
Prerequisite: 3230:151. Advanced topics in biological anthropology, human paleontology and primate behavioral ecology. May be repeated, but no more than six credits can be applied towards the major in Interdisciplinary Anthropology.

3230:497. Senior Honors Project in Anthropology. (3 Credits)
The topic and scope of this individually chosen project is directed by an Anthropology faculty member in conjunction with Honors College preceptors under the guidelines of the Honors College.

Applied Music (7520)

7520:21. Percussion. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:22. Classical Guitar. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:23. Harp. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:24. Voice. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:25. Piano. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:26. Organ. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:27. Violin. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:28. Viola. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:29. Cello. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:30. String Bass. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:31. Trumpet or Cornet. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:32. French Horn. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:33. Trombone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:34. Baritone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:35. Tuba. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:36. Flute or Piccolo. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:37. Oboe or English Horn. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:38. Clarinet or Bass Clarinet. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:39. Bassoon or Contrabassoon. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:40. Saxophone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:41. Harpsichord. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:42. Composition. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:61. Jazz Percussion. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:62. Jazz Guitar. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:63. Jazz Electric Bass. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:64. Jazz Piano. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:65. Jazz Trumpet. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:66. Jazz Trombone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:67. Jazz Saxophone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:68. Jazz Composition. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:69. Jazz Vocal Styles. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.

7520:121. Percussion. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:122. Classical Guitar. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:123. Harp. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:124. Voice. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:125. Piano. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:126. Organ. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:127. Violin. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:128. Viola. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:129. Cello. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:130. String Bass. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:131. Trumpet or Cornet. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:132. French Horn. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:133. Trombone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:134. Baritone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:135. Tuba. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:136. Flute or Piccolo. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:137. Oboe or English Horn. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:138. Clarinet or Bass Clarinet. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:139. Bassoon or Contrabassoon. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:140. Saxophone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:141. Harpsichord. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:142. Composition. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level. (May be repeated) Prerequisites: 7500:252 and permission of instructor; 7500:452 recommended. Private instruction in composition. Primarily for student whose major is theory-composition.

7520:161. Jazz Percussion. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:162. Jazz Guitar. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:163. Jazz Electric Bass. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:164. Jazz Piano. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:165. Jazz Trumpet. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:166. Jazz Trombone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:167. Jazz Saxophone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:168. Jazz Composition. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:169. Jazz Vocal Styles. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:221. Percussion. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:222. Classical Guitar. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:223. Harp. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:224. Voice. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:225. Piano. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:226. Organ. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:227. Violin. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:228. Viola. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:229. Cello. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:230. String Bass. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:231. Trumpet or Cornet. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:232. French Horn. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:233. Trombone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:234. Baritone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:235. Tuba. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:236. Flute or Piccolo. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:237. Oboe or English Horn. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:238. Clarinet or Bass Clarinet. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:239. Bassoon or Contrabassoon. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:240. Saxophone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:241. Harpsichord. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:242. Composition. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level. (May be repeated) Prerequisites: 7500:252 and permission of instructor; 7500:452 recommended. Private instruction in composition. Primarily for student whose major is theory-composition.

7520:261. Jazz Percussion. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:262. Jazz Guitar. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:263. Jazz Electric Bass. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:264. Jazz Piano. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:265. Jazz Trumpet. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:266. Jazz Trombone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:267. Jazz Saxophone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:268. Jazz Composition. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:269. Jazz Vocal Styles. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:321. Percussion. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:322. Classical Guitar. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:323. Harp. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:324. Voice. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:325. Piano. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:326. Organ. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:327. Violin. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:328. Viola. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:329. Cello. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:330. String Bass. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:331. Trumpet or Cornet. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:332. French Horn. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:333. Trombone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:334. Baritone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:335. Tuba. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:336. Flute or Piccolo. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:337. Oboe or English Horn. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:338. Clarinet or Bass Clarinet. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:339. Bassoon or Contrabassoon. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:340. Saxophone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:341. Harpsichord. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:342. Composition. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level. (May be repeated) Prerequisites: 7500:252 and permission of instructor; 7500:452 recommended. Private instruction in composition. Primarily for student whose major is theory-composition.

7520:361. Jazz Percussion. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:362. Jazz Guitar. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:363. Jazz Electric Bass. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:364. Jazz Piano. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:365. Jazz Trumpet. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:366. Jazz Trombone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:367. Jazz Saxophone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:368. Jazz Composition. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:369. Jazz Vocal Styles. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:421. Percussion. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:422. Classical Guitar. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:423. Harp. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:424. Voice. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:425. Piano. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:426. Organ. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:427. Violin. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:428. Viola. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:429. Cello. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:430. String Bass. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:431. Trumpet or Cornet. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:432. French Horn. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:433. Trombone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:434. Baritone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:435. Tuba. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:436. Flute or Piccolo. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:437. Oboe or English Horn. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:438. Clarinet or Bass Clarinet. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:439. Bassoon or Contrabassoon. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:440. Saxophone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:441. Harpsichord. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:442. Composition. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level. (May be repeated) Prerequisites: 7500:252 and permission of instructor; 7500:452 recommended. Private instruction in composition. Primarily for student whose major is theory-composition.

7520:461. Jazz Percussion. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:462. Jazz Guitar. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:463. Jazz Electric Bass. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:464. Jazz Piano. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:465. Jazz Trumpet. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:466. Jazz Trombone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:467. Jazz Saxophone. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:468. Jazz Composition. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

7520:469. Jazz Vocal Styles. (2-4 Credits)
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

Arabic (3501)

3501:101. Beginning Arabic I. (4 Credits)
Sequential. Acquisition of basic speaking, listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.

3501:102. Beginning Arabic II. (4 Credits)
Sequential. Prerequisite: 3501:101 or equivalent. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.

3501:201. Intermediate Arabic I. (4 Credits)
Sequential. Prerequisite: 3501:102 or equivalent. Continuing acquisition of competence in speaking, listening comprehension, reading and writing through use of culturally authentic materials, with emphasis on developing accuracy and self-expression. (Conducted in Arabic).

3501:202. Intermediate Arabic II. (4 Credits)
Sequential. Prerequisite: 3501:201 or equivalent. Continuing acquisition of competence in speaking, listening comprehension, reading and writing through use of culturally authentic materials, with emphasis on developing accuracy and self-expression. (Conducted in Arabic).

3501:210. Arabic Culture through Film. (3 Credits)
Prerequisites: 32 credit hours including English Composition I and II [3300:111 and 3300:112] or equivalent. Exploration of Arabic culture through viewing of films subtitled in English. Readings and discussions in English. Does not count toward minor in Arabic.

3501:301. Composition and Conversation. (4 Credits)
Prerequisite: 3501:202 or equivalent. Further development of language skills acquired at the intermediate level: Writing, Speaking, Listening Comprehension and Reading. (Conducted in Arabic).

3501:302. Arabic Media. (4 Credits)
Prerequisite: 3501:202 or equivalent. Further development of practical language skills with a focus on Arabic media. The course also will enrich students¿ understanding of Arabic culture. (Conducted in Arabic).

3501:303. Introduction to Modern Arabic Literature. (4 Credits)
Prerequisite: 3501:202 or equivalent. Enhancement of students' communicative skills with emphasis on development of the ability to read, appreciate and discuss Modern Arabic Literature. (Conducted in Arabic).

3501:304. Cultural Readings in Arabic. (4 Credits)
Prerequisite: 3501:202 or equivalent. Enhancement of communicative skills in Arabic with a focus on development of the ability to read, appreciate and discuss Arabic writing. (Conducted in Arabic).

3501:311. Arabic Cultural Experience Abroad. (1-8 Credits)
Prerequisite: Permission of Department Chair. Residence and study abroad in an Arabic-speaking country. May be repeated once with different content. Only 8 credits allowable for minor in Arabic.

3501:422. Special Topics in Arabic. (1-4 Credits)
Prerequisite: Two of the group of [3501:301, 3501:302, 3501:303, 3501:304] or permission of instructor. Development of specialized language skills or reading of significant works of literature or culture not studied in other courses. (Conducted in Arabic.) (May be repeated once with different topic for a maximum total of 8 credits.)

3501:497. Individual Reading in Arabic. (1-4 Credits)
Prerequisite: 3501:202 and permission of the instructor and department chair. Individual study under the guidance of professor. May be repeated once with departmental permission for a total of 8 credits.

Archaeology (3240)

3240:100. Introduction to Archaeology. (3 Credits)
Introduction to the study of ancient cultures based on material remains. Course covers basic archaeological concepts and tools, types of data and interpretation.

3240:101. Case Study. (1 Credit)
A series of one-credit modules designed to introduce specific topics of archeological interest to the non-specialist.

3240:105. The Incas. (1 Credit)
Rise and fall of the Inca empire of South America. Topics include: politics, ideology, daily life and methods of recovering and interpreting archaeological data.

3240:106. The Maya. (1 Credit)
Rise and fall of the Maya civilization of Mesoamerica. Topics include: politics, ideology, daily life and methods of recovering and interpreting archaeological data.

3240:107. Archaeology of Pets. (1 Credit)
A look at pets from earliest times to the present and how the keeping of pets leads to the domestication of animals.

3240:108. World of Homer. (1 Credit)
Examination of Greek Bronze and Iron Age material culture and its possible relationship to the works of the poet Homer.

3240:109. The Assyrians. (1 Credit)
Examines archaeological and textual evidence for the emergence of the Assyrian Empire, its expansion and collapse. Topics include: Assyrian art and architecture, warfare, and literature.

3240:110. The Sumerians. (1 Credit)
Examines archaeological and textual evidence for the emergence and flourishing of Sumerian civilization. Topics include: Sumerian religion, art, architecture and literature.

3240:111. Archaeology of Slavery. (1 Credit)
An examination of slavery as an institution on a worldwide basis from earliest times to the 19th century through archaeology.

3240:112. The Aztecs. (1 Credit)
A discussion of the Aztec civilization, politics, ideology, and daily life will illustrate how archaeologists recover and interpret data on Aztec culture.

3240:113. Religion Before the Bible. (1 Credit)
Examination of archaeological evidence for the emergence of humanity's first religious practices from Paleolithic shamanism to early monotheistic traditions in the Near East and Europe.

3240:150. Time Before History. (3 Credits)
Survey of world prehistory from the first appearance of anatomically modern humans to the rise of state-level societies from an archaeological perspective. Web Components.

3240:300. Historical Archaeology. (3 Credits)
This course explores recent developments in historical archaeology and how material culture can be used to study race, class, gender, and ethnic identities.

3240:313. Archaeology of Greece. (3 Credits)
The ruins and monuments of Greece; history reconstructed by examination of the material remains. No foreign language necessary.

3240:314. Archaeology of Rome. (3 Credits)
The ruins and monuments of Rome; history reconstructed by examination of the material remains. No foreign language necessary.

3240:345. Egyptology. (3 Credits)
Introduction to ancient Egyptian civilization, with emphasis on sites and artifacts representative of socio-political and ideological transformations from the Prehistoric through Ptolemaic Periods.

3240:360. Ancient Near Eastern Archaeology. (3 Credits)
General survey of the archaeological material culture and written history of the ancient Near East. Covers principal human achievements from the Paleolithic to Alexander's conquest.

3240:400. Archaeological Theory. (3 Credits)
Prerequisite: 3240:100. Advanced seminar covering history of scientific archaeological exploration, major theoretical paradigms and current trends in archaeology. Required for Certificate in Field Archaeology.

3240:410. Archaeogeophysical Survey. (3 Credits)
Prerequisite: [3240:100 or 3370:101 or 3350:310]. Advanced instruction in principles of subsurface geophysical survey techniques in archaeology. Emphasizes magnetic gradiometry and electrical resistivity techniques. Includes both laboratory and fieldwork.

3240:420. Archaeology of Ohio. (3 Credits)
Provides a detailed overview of Ohio's prehistoric cultures and the early historic period focusing on cultural evolution and environmental relationships.

3240:440. Archaeological Laboratory Methods. (3 Credits)
Prerequisite: 3240:100. Laboratory processing and study of lithic, ceramic, paleofaunal, paleobotanical, metallic, archaeological materials. Emphasis varies with instructor expertise. Involves instrumental or statistical analysis.

3240:450. Archaeological Field School. (1-6 Credits)
Prerequisite: 3240:100 or permission. A field-based course teaching based archaeological techniques, mapping, excavation of prehistoric and historic sites, survey and documentation. (May be repeated for a maximum of 6 credits.)

3240:460. Seminar in Ancient Near East. (3 Credits)
Prerequisite: 3240:360 or 3400:307. Advanced undergraduate seminar on selected topics covering the archaeological remains and historical texts in translation of the ancient Near East.

3240:472. Special Topics: Archaeology. (3 Credits)
Prerequisite: 3230:150 or permission. Selected topics in archaeology. May include field school, independent or faculty-led research, laboratory training or advanced course work not regularly offered by department.

3240:499. Senior Honors Project in Archaeology. (1-6 Credits)
Prerequisite: Permission of instructor. Student-designed archaeology project directed by an Archaeology faculty member in conjunction with Honors College preceptors under the guidelines of the Honors College. (May be repeated for a maximum of six credits.)

Art - Myers School of (7100)

7100:100. Survey of History of Art I. (3 Credits)
Prerequisite: 2020:121 or 3300:110 or 3300:111. Introductory survey of world art from prehistory to c.1250 C.E.

7100:101. Survey of History of Art II. (3 Credits)
Prerequisite: 7100:100. Introductory survey of world art from 1250 to 1850 C.E.

7100:102. Survey of History of Art III. (3 Credits)
The third component in a 3-part series of introductory art history courses, this class covers the modern era, from Realism, Impressionism, and the Pre-Raphaelites through the present moment.

7100:103. Arts Orientation. (0 Credits)
Corequisite: with first 7100 art course. Orientation to the information and strategies necessary to aid new art students in their understanding of the field of art.

7100:104. Visual Arts Application in the Elementary Classroom. (3 Credits)
Exploration of methods, materials, processes and visual techniques relating two- and three-dimensional art experiences for the teacher of elementary children. No credit as an elective course for art majors.

7100:105. Introduction to Art Education. (2 Credits)
An introduction to the art teaching profession, this course covers historical and contemporary issues and practices in art education and in public schooling in the United States.

7100:110. Introduction to New Media. (3 Credits)
Students learn state of the art knowledge and activities of New Media. This course will be in addition or cross-listed with the 7000:100 course.

7100:131. Foundation Drawing I. (3 Credits)
Corequisite: 7100:103. Introduction to drawing materials and techniques with an emphasis on observation, representation, and formal principles of composition and design.

7100:132. Introduction to Design. (3 Credits)
Introductory course in design theory increases the graphic designer's ability to solve visual problems using both practical and theoretical approaches.

7100:144. Foundation 2D Design. (3 Credits)
Fundamental information about the theory and practice of visual design as applied to surfaces, including composition, color and pictorial illusions with lecture and studio experience.

7100:145. Foundation 3D Design. (3 Credits)
Introduction to meaning of "design" and act of designing in real space. Study of naturally occurring form, structure and process.

7100:184. Typography 1. (3 Credits)
Prerequisite: 7100:132. Studio experience in concept development and processes, tools and materials of graphic designers. Elementary design problems in graphic design.

7100:185. Introduction to Computer Graphics. (3 Credits)
(May be repeated for a total of six credits) Prerequisites: 7100:131 and 7100:144. Introduction to the use of microcomputers as a creative tool for visual artists and designers.

7100:210. Visual Arts Awareness. (3 Credits)
Prerequisite: 2020:121 or 3300:110 or 3300:111. Lecture course providing appreciation and understanding of arts of various types/periods with emphasis on topics and influences on societies, rather than historical sequence.

7100:213. Introduction to Printmaking. (3 Credits)
Prerequisites: 7100:131 or 7100:144. A fast-paced introduction to traditional and contemporary high-tech/low-tech printmaking processes including relief, intaglio, lithography, and screenprint as well as digital printmaking.

7100:214. Relief/Screenprint. (3 Credits)
Prerequisite: 7100:213. An introduction to the history, process, and contemporary practice of relief printing and screenprinting.

7100:216. Intaglio/Lithography. (3 Credits)
Prerequisite: 7100:213. An introduction to the history, process, and contemporary practice of intaglio and lithographic printing.

7100:222. Introduction to Sculpture. (3 Credits)
Prerequisite: 7100:145. Exploration of aesthetic factors influencing sculptural statements. Development of proficiency in the use of tools, materials and techniques.

7100:223. Sculpture: Stone. (3 Credits)
Prerequisite: 7100:222. Beginning level lecture and studio course using both traditional hand tools for the creation of stone sculpture. History of the use of stone, evolution of stone working technology and contemporary artists working with stone.

7100:224. Installation Art. (3 Credits)
Prerequisite: 7100:222. Lecture and studio course introducing the student to the medium of installation art, a major emphasis in the contemporary art scene. The history and evolution of installation art and its use by contemporary artists.

7100:231. Intermediate Drawing. (3 Credits)
Prerequisite: 7100:131. Continued investigation of basic drawing concepts. Introduction to drawing in color with further development of observation, design, technique and conceptual skills.

7100:233. Foundation Life Drawing. (3 Credits)
Prerequisite: 7100:131. Perceptual problems in drawing from the life model. Study of skeletal, muscular, mechanical nature of human figure and application of this knowledge to the resolution of aesthetic problems. (May be repeated for a total of six credits.)

7100:234. Anatomy for Artists. (3 Credits)
Prerequisite: 7100:233. Studio/lecture experience in drawing and sculpture with an emphasis on human skeletal, muscular, and surface structure.

7100:243. Introduction to Painting. (3 Credits)
Prerequisites: 7100:131 and 7100:144. Study of aesthetic and technical problems involved in painting. Emphasis on painting from observation, and understanding of color in painting.

7100:244. Color Concepts. (3 Credits)
Prerequisites: 7100:131 and 7100:144. Lecture and studio experience giving information concerning perception of color, additive color phenomena of light, subtractive color phenomena of pigments and dyes, color notation systems and psychological effects of color.

7100:246. Introduction to Water-based Media. (3 Credits)
(May be repeated for a total of six credits.) Prerequisites: 7100:131 and 7100:144. Experimentation with water-based media such as tempera, acrylic, and gouache.

7100:250. Foundation Review. (0 Credits)
Prerequisites: 7100:131, 7100:144, 7100:145 and 7100:233. Credit/noncredit course. Faculty review of art foundation studio work from prerequisite/corequisite courses.

7100:251. Watercolor. (3 Credits)
Prerequisites: 7100:131 and 7100:144. Students will investigate traditional and contemporary watercolor techniques and mixed media while addressing issues of composition and conceptual concerns.

7100:253. Ceramics for Non-Art Majors. (3 Credits)
Hand-building, glazing and kiln loading. Link skills to personal experience, ceramic history and contemporary art and craft issues. No credit toward a major in art.

7100:254. Introduction to Ceramics. (3 Credits)
Prerequisites: 7100:131 and 7100:144. Studio/lecture course exploring potentials of hand-building techniques in both sculptural and functional forms. Clay processing, glaze application and practical kiln firing.

7100:266. Introduction to Metalsmithing. (3 Credits)
Prerequisite: 7100:144 and 7100:145. Studio experience in which student is introduced to properties of metals, processes of silversmithing and design and production of jewelry.

7100:267. Intermediate Jewelry. (3 Credits)
Prerequisite: 7100:266. This class builds on acquired in Introduction to Metalsmithing. Emphasis will be placed on fine jewelry techniques including working with silver.

7100:268. Color in Metals. (3 Credits)
Prerequisite: 7100:266. Introduction to a variety of techniques to achieve and/or combine color in metals. Techniques such as anodizing aluminum, enameling and the application of color resins and plastics will be explored.

7100:273. Introduction to Digital Photography. (3 Credits)
Prerequisites: 7100:131 and 7100:144; or permission. An introductory digital photography course covering technical, aesthetic and conceptual issues. Digital camera with manual exposure controls required. No credit for photography majors.

7100:274. Photography I for Non-Art Majors. (3 Credits)
Film-based black and white photography including camera control, film processing, and darkroom printing. 35mm camera with full manual control required. No credit toward art major.

7100:275. Introduction to Photography. (3 Credits)
Prerequisites: 7100:131 and 7100:144. Film-based black and white photography including camera control, film processing and darkroom printing. 35mm film camera with full manual control required.

7100:276. Introduction to Commercial Photography. (3 Credits)
Prerequisite: [7100:274 or 7100:275] and 7100:280 (Corequisite). Students are introduced to the numerous commercial applications of studio and location photography while working through a series of advertising related photographic projects.

7100:280. Digital Imaging. (3 Credits)
Prerequisites: 7100:276 or 7100:289. An exploration of contemporary digital image capture, manipulation, output and distribution, emphasizing digital image concepts, aesthetics and production.

7100:281. Designing for the Web and Devices I. (3 Credits)
Prerequisite: 7100:280. This course introduces the process of panning designing and producing XHTML and CSS standard sites with an emphasis on the creative aspects of web development.

7100:282. Designing for the Web and Devices II. (3 Credits)
Prerequisite: 7100:281. Building on knowledge from 7100:281 Designing for the Web and Devices I students will review IA, JavaScript, XML and advanced Dreamweaver for web distribution on computer screens and handheld devices.

7100:283. Drawing Techniques. (3 Credits)
Prerequisites: 7100:131 and 7100:132. Includes advanced drawing and presentation techniques commonly used in graphic design. Various presentation and design problems will be encountered stressing use of selected drawing methods and processes.

7100:288. Typography II. (3 Credits)
Prerequisite: 7100:184. Introduction to typographic design to communicate. Study of letterforms, history, comping skills, layout design and digital technology.

7100:289. Production I. (3 Credits)
Prerequisite: 7100:132. A computer-based course. Using industry-standard software, students focus on incorporating type and image to produce comprehensive design solutions.

7100:300. Art Since 1945. (3 Credits)
Prerequisite: [7100:101 and 7100:102] or permission of instructor. Consideration of significant developments in visual art forms since World War II in architecture, sculpture, printing, photography, metal, textile, ceramics, printmaking and graphic design.

7100:301. Medieval Art. (3 Credits)
Prerequisite: 7100:101 or permission of instructor. Painting, mosaics, architecture, sculpture, and luxury arts of medieval Europe from 4th through 14th centuries.

7100:302. Art in Europe During the 17th-18th Centuries. (3 Credits)
Prerequisite: 7100:101 or permission of instructor. Analysis of major European examples of architecture, landscape design, painting, prints and sculpture from beginning of the 17th century until approximately 1850.

7100:303. Italian Renaissance Art. (3 Credits)
Prerequisite: 7100:101 or permission of instructor. Study of architecture, painting and sculpture of Italy during 13th through 16th centuries.

7100:306. Renaissance Art in Northern Europe. (3 Credits)
Prerequisite: 7100:101 or permission of instructor. Painting, architecture, and sculpture of northern Europe from 14th through 16th centuries.

7100:307. History of Graphic Design. (3 Credits)
Prerequisite: 7100:101 or permission of instructor. A lecture course analyzing the development of graphic design as an art form from Neolithic sources to the present.

7100:309. Greek Art. (3 Credits)
The course presents art and architecture of ancient Greeks, and focuses on major monuments, myths, rituals, socio-political constructs, and methodological issues associated with Greek art.

7100:310. 4D Design: Motion. (3 Credits)
Prerequisites: 7100:280, 7100:289, 7100:387 or by permission. Study the history of animation and the principles of animation. Design motion graphics in a non-linear environment. Emphasis on audio, video, type and image.

7100:311. 4D Design: Interactivity. (3 Credits)
Prerequisites: 7100:280, 7100:289, 7100:387 or by permission. Students are introduced to interactivity, user interaction, time-based and on-screen design with a focus on design principles and concerns of type, image, audio, video and animation.

7100:312. Roman Art & Architecture. (3 Credits)
Study of Roman art and architecture from the sixth century B.C.E. through the fourth century C.E.

7100:313. Survey of Asian Art. (3 Credits)
This course introduces the student to the historical, cultural, political, and religious aspects of civilization that influenced the aesthetics of Asian art.

7100:317. Print Matrix. (3 Credits)
Prerequisites: 7100:214 and 7100:216. Intermediate printmaking class requiring the application of printmaking to the production of imagery for specific printmaking applications - Book Arts, Hybrid Prints, Serial Imagery, etc.

7100:318. Portrait Lighting. (3 Credits)
Prerequisite: 7100:276. Studio and location lighting techniques for commercial and fine art portraiture.

7100:319. Printmaking Review. (0 Credits)
Prerequisite: 7100:317. A committee of full-time faculty review portfolio of studio work completed in all printmaking courses.

7100:320. Product Photography. (3 Credits)
Prerequisite: 7100:276. Professional skills are further developed via studio and tabletop photography assignments based on current trends in illustration and advertising photography.

7100:322. Sculpture II. (3 Credits)
(May be repeated for a total of nine credits) Prerequisite: 7100:222 or permission from instructor. Continuation of 222. Addresses more advanced techniques. May include fabrication, casting, carving, or assemblage.

7100:323. Lost Wax Casting. (3 Credits)
(May be repeated for a total of six credits.) Prerequisites: 7100:222 or 7100:266. Bronze and aluminum casting using the lost wax process. Students learn foundry techniques and apply them to individual artistic statements.

7100:330. New Media II. (3 Credits)
Prerequisite or Corequisite: 7100:110 or 7100:100. Students practice various New Media technologies. No prior art experience is required. This course will be in addition or cross-listed with the 7000:300 course.

7100:335. Intermediate Life Drawing. (3 Credits)
Prerequisites: 7100:233. Continued development of the content established in Life Drawing with additional emphasis on draped models, drawing materials and aesthetics. (May be repeated for a total of nine credits.)

7100:348. Intermediate Painting. (3 Credits)
(May be repeated for a total of six credits, but limited to a maximum of three credits in a given medium) Prerequisite: 7100:243. Development of personal concepts and imagery through investigation of historical and contemporary styles and issues.

7100:350. Painting/Drawing Portfolio Review. (0 Credits)
Prerequisite: Two courses in 7100:348 Intermediate Painting. A committee of full-time faculty review portfolio of student work completed in prerequisite courses.

7100:353. Throwing. (3 Credits)
Prerequisite: 7100:254. Emphasis on making pottery using the potter's wheel as well as organization and planning skills needed to make glazes and fire kilns.

7100:356. History of Craft. (3 Credits)
This course is designed to illuminate selected aspects of the history of the making of things as these apply to current practice in the crafts.

7100:366. Metalsmithing II. (3 Credits)
(May be repeated for a total of six credits) Prerequisite: 7100:266. Continuation of experiences presented in 266 with further development of skills and expansion of technical knowledge.

7100:368. Color in Metals II. (3 Credits)
(May be repeated for a total of 12 credits.) Prerequisite: 7100:268. Continuation of 268. Advanced projects designed to develop the student's aesthetic values in color in metals. Emphasis on individual approach and experimentation.

7100:369. Production for Jewelry. (3 Credits)
Prerequisite: 7100:266. This class will investigate ways of producing artwork and jewelry in multiples and limited production runs. Attention will also be given to packaging, display, and marketing the work.

7100:370. History of Photography. (3 Credits)
Prerequisite: 7100:102. A lecture course studying the history of photography from its invention to contemporary issues.

7100:374. Photography II for Non-Art Majors. (3 Credits)
Prerequisite: 7100:274. Projects designed to expand the student's awareness of technical conceptual and aesthetic issues in photographic images. 35mm film camera with full manual control required.

7100:375. Photography II. (3 Credits)
Prerequisite: 7100:275. Projects designed to expand student's awareness of technical, conceptual and aesthetic issues in photographic images. 35mm film camera with full manual control required.

7100:377. Medium and Large Format Photography. (3 Credits)
Prerequisite: 7100:374 or 7100:375. A technical course using medium and large format film cameras, which are furnished for the course's duration. Topics include camera movements, advanced exposure and development techniques.

7100:378. Alternative Photographic Processes. (3 Credits)
Prerequisites: 7100:374 or 7100:375. Exploration in alternative photographic processes using hand-coated Cyanotype, Van Dyke Brown and Platinum emulsions, with digitally created large-format negatives.

7100:381. Digital Imaging II. (3 Credits)
Prerequisite: 7100:280. Advanced digital imaging development and manipulation with an emphasis on preparation and use of digital images in print, multimedia and web applications.

7100:382. Graphic Design Junior Review. (1 Credit)
Prerequisites: 7100:250 and 7100:288. Corequisites: 7100:384 and 7100:387. Junior level review by graphic design faculty. Students present a portfolio of work from specified courses that exemplify creative and technical competencies.

7100:383. Multimedia Production. (3 Credits)
(May be repeated for a total of six credits.) Prerequisite: 7100:280. Introduction to the theory and methods of contemporary multimedia production. Exploration of the hardware/software employed in the organization, development and production of multimedia presentations.

7100:384. Professional Design Practices. (2 Credits)
Prerequisite: 7100:288;. Corequisite: 7100:382 and 7100:387. Comprehensive overview of standard business practices specific to the design field. Prepares students to work as interns in professional creative environments.

7100:385. Computer 3-D Modeling/Animation. (3 Credits)
Prerequisites: 7100:145 and 7100:185. Advanced computer imaging course with an emphasis in three-dimensional modeling and animation. Can be repeated for a total of 9 credits.

7100:387. Typography III. (3 Credits)
Prerequisite: 7100:288. Corequisite: 7100:384. Integration of typography, photography, copywriting and other visual elements into advertising and design. Students also build a junior level portfolio.

7100:388. Production II. (3 Credits)
Prerequisites: 7100:276 and 7100:387. More complex projects with emphasis given to mechanical preparation of finished art for various printing processes.

7100:401. Special Topics: History of Art. (1-3 Credits)
(May be repeated for credit when a different subject or level of investigation is indicated) Prerequisites: 7100:101 or permission of instructor. Lecture course in which subject is specified each time course is offered. Focuses upon an art movement, time period, the production of a single artist or a specific art medium.

7100:402. Museology. (3 Credits)
Lecture course dealing with museum science, including museum history, staff structures, art handling, storage, and presentation and exhibit preparation.

7100:403. Art and Critical Theory. (3 Credits)
Prerequisites: 7100:100, 7100:101 or permission of the instructor. This course, designed for both studio and art history majors, surveys the major theoretical currents in contemporary criticism and art history.

7100:405. History of Art Symposium. (1-3 Credits)
(May be repeated for credit when a different subject is indicated) Prerequisite: One Art History course beyond 7100:101 or permission of instructor. Lecture, individual research and evaluation, group discussion related to a specific time period or to an artistic problem.

7100:407. Methods of Art History. (3 Credits)
Prerequisite: 7100:101 or permission of the instructor. This course explores the history of the discipline and the permutations it has undergone since its establishment in the early years of the nineteenth century.

7100:409. Time-Based Media. (3 Credits)
(May be repeated for a total of six credits.) Prerequisite: 7100:285. Through the development of increasingly complex projects, students explore the conceptual and aesthetic considerations of creating motion media based presentations.

7100:410. Methods of Teaching Elementary Art. (3 Credits)
Prerequisite: 7100:105. Corequisite: 7100:428. A field based course presenting the necessary skills and knowledge to successfully implement, plan, instruct, and assess a diverse art-based curriculum for the elementary classroom.

7100:411. Methods of Teaching Secondary Art. (3 Credits)
Prerequisite: 7100:105. Corequisite: 7100:429. A field based course presenting the necessary skills and knowledge to successfully implement, plan, instruct, and assess a diverse art-based curriculum for the secondary classroom.

7100:412. Student Teaching Colloquium. (1 Credit)
Prerequisite: Senior status, successful completion of field experience, and permission of instructor. Corequisite: 5300:495. Lecture course providing the skills and knowledge necessary for art education licensure. Student will gain knowledge in resume building, licensure requirements, and practical pedagogical techniques.

7100:418. Multiples and Multiplicity. (3 Credits)
Prerequisites: Student must have Junior standing and have completed at least one 7100:300 level course in their major. Advanced printmaking class recommended for studio majors working with multiples, variability, and production requiring students to define and complete their own projects.

7100:419. Special Topics in Print. (3 Credits)
Prerequisites: 7100:131 or 7100:144 or 7100:145. Investigation in specialized printmaking media like Photogravure, Digital Printing, and Book Arts among others. May be offered in conjunction with university sponsored residency or travel.

7100:420. Sculpture Portfolio Review. (0 Credits)
Perquisites: 7100:422. Corequisite: 7100:422. A committee of full-time faculty reviews portfolio of studio work completed in prerequisite/corequisite courses.

7100:422. Advanced Sculpture. (3 Credits)
(May be repeated for a total of 15 credits.) Prerequisite: 7100:250 and 7100:322. Development of individual points of view and sculptural statements.

7100:423. Community Based Art Education. (3 Credits)
A service learning course for art educators that combines traditional lecture, demonstration, and hands-on workshop to introduce students to contemporary practices in community-based arts.

7100:424. Middle School Materials & Techniques. (3 Credits)
A lecture course in which students will gain hands-on approach to developing instructional art materials and lessons for the middle school.

7100:425. Ceramics: Methods, Materials, & Concepts. (3 Credits)
Prerequisites: 7100:131 and 7100:145. (Lab) Ceramics for teachers. Introduces the potter's wheel, hand-building, firing kilns, history of ceramics and ceramic forms, safety in the studio and strategies for teaching ceramics.

7100:426. Early Childhood Art Education. (3 Credits)
A lecture course for art educators exploring visual arts as a vehicle for whole child development and learning across the curriculum in P,K-5 school settings.

7100:427. Art in the Inclusive Classroom. (3 Credits)
Prerequisite: 5100:220. Art education course exploring the use of art with diverse populations through lecture, hands on art making and site visitations.

7100:428. Elementary Field Exp: Art Licensure. (1 Credit)
Corequisite: 7100:410. Instructional experience in the P,K-6 art classroom to apply theory and research into practice.

7100:429. Secondary Field Exp: Art Licensure. (1 Credit)
Corequisite: 7100:411. Instructional experience in the 7-12 art classroom to apply theory and research into practice.

7100:430. Professional Practices for Art Educators. (1 Credit)
Prerequisites: 7100:410 and 7100:411. A lecture course providing support and guidance to develop the pre-professional skills and knowledge necessary for employment in the field of Art Education.

7100:435. Contemporary Art Issues. (3 Credits)
Prerequisite: 7100:102. Discussion course for advanced students in any visual arts discipline, dealing with concepts and critical theories related to current practice of the visual arts.

7100:440. New Media III. (3 Credits)
Prerequisite or corequisite: [7100:110 and 7100:330] or [7000:100 and 7000:330]. Students create their original New Media projects through proposals, productions, and a show. This course will be in addition or crosslisted with the 7000:400 course.

7100:450. Advanced Life Drawing. (3 Credits)
Prerequisite: 7100:335. Drawing from the live model, with an experimentation leading to an individual style. (May be repeated for a total of 9 credits).

7100:452. Service Learning in Art. (3 Credits)
Prerequisite: senior standing. An interdisciplinary, lecture/studio course that integrates fine art and design to promote understanding of the importance of sustained community outreach and serving as arts advocates.

7100:453. Advanced Throwing. (3 Credits)
(May be repeated for a total of 6 credits.) Prerequisite: [7100:250 and 7100:353] or permission of instructor. Emphasis on making pottery using the potters wheel beyond the beginning level including organization and planning skills needed to make and exhibit or sell items.

7100:454. Advanced Ceramics. (3 Credits)
(May be repeated for a total of 18 credits.) Prerequisite: 7100:250 and [7100:353 or 7100:354]. Emphasis on refinement of technique toward personal aesthetic statement in preparation for professional or private studio production. Student may choose a general survey of subject matter or a more concentrated area of study.

7100:455. Advanced Painting. (3 Credits)
Prerequisites: 7100:231 and 7100:348. Exploration of aesthetic and conceptual issues involved in developing an individual stylistic approach to image making, leading to senior portfolio and BFA exhibition. (May be repeated for a total of 15 credits)

7100:456. Ceramic Portfolio Review. (0 Credits)
Prerequisite: 7100:454. A committee of full-time faculty reviews portfolio of studio work completed in prerequisite courses.

7100:457. Professional Practices. (3 Credits)
Prerequisite: Junior or Senior status. This course covers business, marketing and professional development practices, while also introducing students to issues and strategies in contemporary art.

7100:460. The Myers Forum: Studio. (1-3 Credits)
Prerequisites: 7100:102 and 7100:250, & successful completion of at least one 300 level course in the Myers School of Art, or permission of the instructor. Cross-disciplinary studio addressing current issues related to theory and practice of visual communication.

7100:461. The Myers Forum: Seminar. (1-3 Credits)
Prerequisites: 7100:102 and 7100:250, & successful completion of at one 300 level course in the Myers School of Art, or permission of the instructor. Cross-disciplinary seminar addressing current issues related to the theory and practice of visual communication.

7100:465. Painting/Drawing Senior Exhibition Preparation. (0 Credits)
Prerequisites: senior status, the second 7100:455 Advanced Painting/Drawing. Preparation of the portfolio to be exhibited in the Senior Exhibition.

7100:466. Advanced Metalsmithing. (3 Credits)
(May be repeated for a total of 18 credits.) Prerequisites: 7100:250 and 7100:366. Investigation in depth of aesthetic and technical problems of metalsmithing. Student works on individual projects under guidance from instructor.

7100:467. Metalsmithing Portfolio Review. (0 Credits)
Prerequisite: 7100:466. Corequisite: 7100:466. A committee of full-time faculty review portfolio of studio work completed in prerequisite courses.

7100:472. Photography III: Color for Non-Art Majors. (3 Credits)
Prerequisite: 7100:374. Advanced level lecture, studio and lab experience in color photography introducing students to technical, aesthetic and conceptual issues of the medium.

7100:473. Photography III: Color. (3 Credits)
Prerequisite: 7100:375. Advanced level lecture, studio and lab experience in color photography introducing students to technical, aesthetic and conceptual issues of the medium.

7100:474. Advanced Photography for Non-Art Majors. (3 Credits)
Prerequisite: 7100:374. Studio course with emphasis on advanced individual projects.

7100:475. Advanced Photography. (3 Credits)
(May be repeated for a total of 21 credits.) Prerequisites: 7100:250, 7100:375, and 7100:473. Photographic media, light and photographic equipment manipulated experimentally to produce creative graphic images. Student works under guidance of instructor on advanced individual projects.

7100:476. Photography Portfolio Review. (0 Credits)
Prerequisite: 7100:475. A committee of full-time faculty reviews portfolio of studio work completed in prerequisite/corequisite courses.

7100:479. Professional Photographic Practices. (3 Credits)
Prerequisites: 7100:475 and Senior Status. Introduction to business and marketing practices in the fine art and commercial photography industry. Financial, legal, organizational, promotional, interpersonal, and ethical practices will be covered.

7100:480. Advanced Graphic Design. (3 Credits)
(May be repeated for a total of nine credits) Prerequisite: 7100:388 or permission of instructor. Student works on advanced-level individual projects under supervision of instructor.

7100:481. Design X Nine. (3 Credits)
(May be repeated for a total of nine credits.) Prerequisite: 7100:388. Course focusing on professional business practices. Students chosen by portfolio review in junior year. Practical experience gained through working with clients and outside sources.

7100:482. Corporate Identity & Graphic Systems. (3 Credits)
Prerequisite: 7100:384 and 7100:388. Advanced projects in corporate identity, graphic systems analysis, design. Problem solving for these specific areas of graphic design within mechanical limitations of art reproduction.

7100:483. Graphic Design Presentation. (3 Credits)
Prerequisite: 7100:482. Students prepare a professional portfolio and resume. The course includes project development, portfolio review and exhibition.

7100:484. Illustration. (3 Credits)
(May be repeated for a total of nine credits.) Prerequisite: 7100:283 or permission of instructor. Application of painting and drawing skills and aesthetic sensitivity to specific commercial illustration and editorial art assignments.

7100:485. Advanced Illustration. (3 Credits)
(May be repeated for a total of nine credits) Prerequisite: 7100:484 or permission of instructor. Advanced projects designed to tune student's personal aesthetic to communicative imagery. A more individual approach to design. Drawing and painting emphasized as is experimentation with multimedia.

7100:486. Interactive Multimedia Development. (3 Credits)
(May be repeated for a total of six credits.) Prerequisite: 7100:383. Utilizing two and three dimensional computer imagery, animation, video, and audio, students will plan, develop, and evaluate multimedia presentations, emphasizing scripting, sequencing, and interactivity.

7100:487. Packaging Design. (3 Credits)
Prerequisite: 7100:482. Synthesis of two- and three-dimensional visual thinking. Research in materials applicable to packaging of various products. Assignment of projects stressing development of conventional and experimental package design.

7100:488. Typography IV. (3 Credits)
Prerequisites: 7100:387. Senior level investigation of publication design, promotional brochures, and annual reports from concept to presentation. Focus on good concepts and problem-solving design.

7100:489. Special Topics in Studio Art. (3 Credits)
(May be repeated for credit when a different subject or level of investigation is indicated) Group Investigation of Topics not offered elsewhere in curriculum.

7100:490. Workshop in Art. (1-4 Credits)
(May be repeated for credit when a different subject or level of investigation is indicated - 7100:490 to maximum of eight credits; 7100:590 to maximum of 12 credits.) Prerequisite: advanced standing in art or permission of instructor. Group investigation of a particular phase of art not offered by other courses in curriculum.

7100:491. Architectural Present I. (3 Credits)
Prerequisite: 7100:144. Studio practice in architectural design and presentation methods in residential and commercial interiors.

7100:492. Architectural Present II. (3 Credits)
Prerequisites: 7100:491 or 7100:591. Continuation of concepts covered in Architectural Presentations I with additional work in color rendering techniques. Emphasis on a variety of rendering mediums.

7100:493. Advanced Photography: Digital Printing. (3 Credits)
Prerequisites: 7100:280 and 7100:475. Digital technologies for fine-art photographers including scanning negatives; workflow; color management; image adjustment, correction and optimization; inkjet printing; and digital asset management.

7100:494. Special Topics: Art Education. (1-3 Credits)
May be repeated for credit when a different subject or level of investigation of topics of interest to the art education student is not covered elsewhere in the curriculum.

7100:495. Senior Exhibition. (0 Credits)
Prerequisite: senior standing and permission. Exit review of work from B.F.A. candidate's major courses.

7100:496. Art Internship/Professional Experience. (1-6 Credits)
(Repeatable for credit. No more than 6 credits of internship may apply toward the elective requirement for completion of any art department major.) Prerequisites: junior level in major program and permission of Internship Director. In-depth professional training affording the intern on-the-job experience in selected areas of specialization.

7100:497. Independent Study: Art. (1-7 Credits)
(May be repeatable for 7 credits). Prerequisites for art majors: completion of at least one advanced course in the major with a grade of A or A- and permission of instructor. Investigation in depth of aesthetic and technical problems within a studio-selected area of specialization. Student must present in writing a proposed study plan and time schedule for instructor approval. Prerequisites for non-art majors: permission of instructor.

7100:498. Senior Thesis in the History of Art. (1-3 Credits)
(May be repeated for credit when a different subject or level of investigation is indicated) Prerequisites: 14 credits in art history and permission of instructor. Individual research in art history centered around limited topic, such as specific time period, history of specific techniques, a single artist or movement in art history. No more than 10 credits will be counted toward major.

7100:499. Honors in Art. (3 Credits)
(May be repeated for a total of six credits) Prerequisites: senior standing in the Honors Program and approval of honors project by faculty advisor. To be used for research in the Honors Program established by student and his/her adviser(s).

Automated Mfg Eng Tech (2870)

2870:301. Computer Control of Automated Systems. (3 Credits)
The development of computer based systems and computer programs using robotics and machine controllers as the solutions for automated manufacturing problems.

2870:311. Facilities Planning. (3 Credits)
Prerequisite: 2940:180 or 2940:210 or permission. An application based study of facilities analysis, design and layout utilizing software based solutions.

2870:332. Management of Technology Based Operations. (3 Credits)
A study of the techniques and knowledge necessary to effectively manage technical personnel.

2870:348. CNC Programming I. (3 Credits)
Prerequisites: 2030:154 and [2880:248 or 2920:121]. Introduction to CAM (Computer Aided Manufacturing) based CNC (Computer Numerical Control) programming; development of milling, drilling, and turning programs.

2870:441. Advanced Quality Practices. (3 Credits)
Prerequisites: 2880:241 or permission. Specific quality assurance procedures will be developed conceptually, proven mathematically, and then tested in lab exercises. Industry accepted SQC software will be used.

2870:448. CNC Programming II. (3 Credits)
Prerequisite: 2870:348. The study of advanced CNC programming techniques utilizing an industry standard CAM programming software package and CNC program verification software.

2870:470. Simulation of Manufacturing Systems. (3 Credits)
Prerequisite: 2880:211. Computer simulation solutions applied to the traditional manufacturing problems of equipment justification, production line balancing, and capacity planning.

2870:480. Automated Production. (3 Credits)
Prerequisites: 2880:211 or senior status. A study of the automated production system. The various systems studied thus far, CNC, robotics, automated machines via PLCs, and facilities design, are integrated and analyzed from a production standpoint. The issues of line balance, reliability, queue sizing, and personnel matters are included.

2870:490. Manufacturing Project. (2 Credits)
Prerequisite: Senior status. Advanced CADCAM topics are presented. A comprehensive project is undertaken.

2870:495. Individual Investigation in Manufacturing Engineering Technology. (2 Credits)
Selected topic(s) that provide for specific individual study in the area of manufacturing engineering technology under the direct supervision of a faculty member.

2870:496. Special Topics in Manufacturing Engineering Technology. (1-3 Credits)
Prerequisite: Permission. Selected topic(s) that provide for specific course work in the area of manufacturing engineering technology offered once or only occasionally in areas where no formal course exists.

2870:499. Workshop in Manufacturing Engineering Technology. (1-3 Credits)
Prerequisite: Permission. Group studies of special topics in manufacturing engineering technology.

Biology (3100)

3100:100. Introduction to Botany. (4 Credits)
Identification and biology of common plants of this region. Recommended for teachers of nature study. Not available for credit toward a degree in biology. Laboratory.

3100:101. Introduction to Zoology. (4 Credits)
Identification and biology of common animals of this region. Recommended for teachers of nature study. Not available for credit toward a degree in biology. Laboratory.

3100:103. Natural Science: Biology. (4 Credits)
Designed for non-science majors. Laboratory and class instruction illustrate concepts of living organisms with emphasis on mankind's position in, and influence on, the environment.

3100:106. Exploring Biology. (3 Credits)
Exploration of how science works and the cellular organization, genetic inheritance and diversity of living things. Not available for credit toward a degree in biology.

3100:108. Introduction to Biological Aging. (3 Credits)
Prerequisite: 3100:103. Survey of normal anatomical and physical changes in aging and associate diseases. (For students in gerontological programs at Wayne College. Not for B.S. biology credit.)

3100:111. Principles of Biology I. (4 Credits)
Prerequisite or Corequisite: 3150:151 Molecular, cellular basis of life; energy transformations, metabolism; cell reproduction, genetics, development, immunology, evolution, and origin and diversity of life (through plants). Laboratory.

3100:112. Principles of Biology II. (4 Credits)
Prerequisite: 3100:111 with a grade of C- or better. Animal diversity; nutrients, gas exchange, transport, homeostasis, control in plants and animals; behavior; ecology. (3100:111 and 3100:112 are an integrated course for biology majors.) Laboratory.

3100:113. Professional Development for Biology Majors. (1 Credit)
Prerequisite/Corequisite: 3100:111. This course is for Biology majors in their first year of study to provide useful tools as they pursue a Biology career. Recommended, not required.

3100:130. Principles of Microbiology. (3 Credits)
Basic principles and terminology of microbiology; cultivation and control of microorganisms; relationships of microorganisms; medical microbiology. Laboratory. Not available for credit toward a degree in biology.

3100:180. BS/MD Orientation. (1 Credit)
Orientation to the BS/MD Program. Restricted to students in the BS/MD Program. Graded credit/no credit. Not available for credit toward a biology degree.

3100:190. Health-Care Delivery Systems. (1 Credit)
Health-care principles and practices. Restricted to the student in NEOUCOM, six-year BS/MD program. Graded credit/noncredit. Not available toward credit as major in biological sciences.

3100:191. Health-Care Delivery Systems. (1 Credit)
Health-care principles and practices. Restricted to the student in NEOUCOM, six-year BS/MD program. Graded credit/noncredit. Not available toward credit as major in biological sciences.

3100:200. Human Anatomy & Physiology I. (3 Credits)
Study of structure and function of the human body. Molecular, cellular function, histology, integumentary system, skeletal system, muscular system, nervous system, and the sense organs. Not available for credit toward a degree in biology.

3100:201. Human Anatomy & Physiology Laboratory I. (1 Credit)
Laboratory devised to allow hands on experience using models, dissections of various animals, virtual dissection, and physiological exercises. Not available for credit toward a degree in biology.

3100:202. Human Anatomy & Physiology II. (3 Credits)
Prerequisite: 3100:200. Study of structure and function of the human body. Endocrine system, cardiovascular system, lymphatics, respiratory system, urinary system, digestive system, and reproductive systems. Not available for credit toward a degree in biology.

3100:203. Human Anatomy & Physiology Laboratory II. (1 Credit)
Laboratory devised to allow hands on experience using models, dissections of various animals, virtual dissection, and physiological exercises. Not available for credit toward a degree in biology.

3100:211. General Genetics. (3 Credits)
Prerequisite: Completion of 3100:112 with a grade of "C-" or better. Principles of heredity, principles of genetics.

3100:212. Genetics Laboratory. (1 Credit)
Prerequisite: 3100:112 with a grade C- or better, and prerequisite or corequisite: 3100:211. Laboratory experiments in genetics with emphasis on scientific method; techniques in molecular biology.

3100:217. General Ecology. (3 Credits)
Prerequisite: Completion of 3100:112 with a grade of "C-" or better. Study of interrelationships between organisms and environment.

3100:225. Biology of AIDS. (1 Credit)
Prerequisite: Permission. Course examines the Human Immunodeficiency Virus and the disease of AIDS. Virus structure, replication, therapy, transmission, epidemiology, disease process and social consequences are studied. Not available for credit toward a degree in biology.

3100:265. Introductory Human Physiology. (4 Credits)
Study of physiological processes in human body, particularly at organ-systems level. Not open to preprofessional majors. Laboratory. Not available for credit toward a degree in biology.

3100:290. Health-Care Delivery Systems. (1 Credit)
Health-care principles and practices. A continuation of 190/191 for a second year student in NEOUCOM six-year BS/MD program. Graded credit/noncredit. Not available toward credit as major in biological sciences.

3100:291. Health-Care Delivery Systems. (1 Credit)
Health-care principles and practices. A continuation of 190/191 for a second year student in NEOUCOM six-year BS/MD program. Graded credit/noncredit. Not available toward credit as major in biological sciences.

3100:295. Special Topics in Biology. (1-3 Credits)
Prerequisite: Permission. Special courses offered occasionally in areas where no formal course exists. Not available for credit toward a degree in biology.

3100:311. Cell & Molecular Biology. (4 Credits)
Prerequisites: 3150:151, 3150:152, 3150:153, 3150:154, and 3100:211. Study of structure and function of cells, with emphasis on both classical and modern approaches to understanding organelles, energy balance, protein synthesis, and replication.

3100:312. Neuroscience in Health and Disease. (3 Credits)
Prerequisite: 3100:112 with a C or better or 3100:202 with a C or better or 3750:320 with a C or better. Discover how neurons communicate and explore how the brain functions under conditions of normal health, as well as conditions of disease.

3100:315. Evolutionary Biology Discussion. (1 Credit)
Prerequisite: 3100:211 with a grade of C- or better. Informal discussions of various aspects of organic evolution of general or special interest.

3100:316. Evolutionary Biology. (3 Credits)
Prerequisite: 3100:112 with a grade of C- or better. Description of core evolutionary concepts and the history of evolutionary thought including natural selection, sexual selection, genetic drift, higher level selection and speciation.

3100:331. Microbiology. (4 Credits)
Prerequisites: 3100:112, 3100:211, and 3150:263 (or corequisite). Survey of monera with emphasis on the bacteria: their morphology, cultivation and chemical characteristics. Relationships of microorganisms to humans and their environment. Laboratory.

3100:342. Flora & Taxonomy. (3 Credits)
Prerequisite: 3100:112 with a C- or better. Origins of Ohio flora, ecological and evolutionary relationships. Survey of local flowering plant families, collection and identification of flora. Laboratory and field trips.

3100:343. Diversity of Plants. (3 Credits)
Prerequisites: 3100:112 with a grade of C- or better, and 3100:217. A broad survey of the traditional plant "branches" of the tree of life. Diversity, structure, and function of fungi, algae, and land plants.

3100:344. Diversity of Plant Laboratory. (2 Credits)
Prerequisites: 3100:112 with a grade of C- or better, and 3100:217: Corequisite: 3100:343. A broad laboratory survey of the traditional plant "branches" of the tree of life. Students will have hands-on experience with fungi, algae, and land plants.

3100:345. Biology of Vascular Plants. (4 Credits)
Prerequisite: 3100:112 with a grade of C- or better. A lecture and laboratory course which presents an overview of the anatomy, morphology, development and evolution of vascular plants.

3100:363. Foundations of Physiology I. (3 Credits)
Prerequisite: 3100:112 with a grade of C- or better. Fundamentals of physiology including integrating systems (neurophysiology, sensory processes, and endocrinology), movement, and muscle. For all pre-professional students and Biology majors.

3100:364. Foundations of Physiology Laboratory I. (2 Credits)
Prerequisite: 3100:112 with a grade of C- or better. Corequisite: 3100:363. Laboratory experiments in animal physiology. (Transport processes, neurophysiology, endocrinology, muscle physiology.) Presentation of results in written scientific format.

3100:365. Histology. (4 Credits)
Prerequisite: 3100:112 with a grade of C- or better. Cellular structure of organs in relation to their functional activity, life history, comparative development. Laboratory.

3100:401. Human Anatomy for Biology Majors. (4 Credits)
Prerequisite: 3100:112 with a C- or better. Organizing principles and patterns found in human organs and systems. Laboratory integrates creative, analytical and virtual approaches to translate concept into practical application of anatomy.

3100:406. Principles of Systematics. (3 Credits)
Prerequisites: 3100:112 with a grade of C- or better, and 3100:211, and 3100:316. The science of identifying, naming, and classifying the diversity of life. Topics include: nomenclature, types, techniques of data collection, and methods of phylogenetic reconstruction.

3100:418. Field Ecology. (4 Credits)
Prerequisite: 3100:217 (statistics strongly recommended). Introduction to sampling methods, design of experiments and observations, and computer analysis; some local natural history. Laboratory.

3100:421. Tropical Field Biology. (4 Credits)
Prerequisites: Completion of courses 3100:111 and 3100:112 with a grade of C- or better, or equivalent. Ecology of coral reefs, tide pools, mangroves, intertidal zones, terrestrial flora and fauna, island biogeography. Taught at a field station in the tropics. Field trips involved; transportation costs.

3100:422. Conservation Biology. (3 Credits)
Prerequisite: 3100:217. Explores the factors affecting survival of biodiversity, and how to develop practical approaches to resolve complicated conservation issues.

3100:423. Population Biology. (3 Credits)
Prerequisites: 3100:211 and 3100:217. Discussions of animal and plant ecology and evolutionary biology from a species and population level perspective. Includes topics in population ecology and population genetics.

3100:426. Wetland Ecology. (4 Credits)
Prerequisite: 3100:217. Wetland ecology; principles and conservation. Field studies will be conducted at Bath Nature Preserve. Laboratory.

3100:427. Freshwater Ecology. (4 Credits)
Prerequisite: 3100:112 with a grade of C- or better, or by permission. The course explores the diversity of aquatic life and key characteristics of freshwater ecosystems with emphasis on the Laurentian Great Lakes. Includes field trips, laboratory.

3100:428. Biology of Behavior. (3 Credits)
Prerequisites: 3100:211, 3100:217, and 3100:316. Biological basis of behavior, ethology, and behavioral ecology. An evolutionary perspective is emphasized.

3100:429. Biology of Behavior Laboratory. (1 Credit)
Prerequisite or corequisite: 3100:428 and permission of instructor. Individualized, directed study to provide the student with first-hand experience in observing, describing and interpreting animal behavior.

3100:430. Community/Ecosystem Ecology. (3 Credits)
Prerequisite: 3100:217. An examination of the components, processes, and dynamics in communities and ecosystems. Includes reading and discussion of primary literature.

3100:433. Medical Microbiology. (4 Credits)
Prerequisite: 3100:331. Pathogenic microorganisms, including bacteria, viruses, fungi, helminthes, and how they cause disease; host-pathogen interactions and the function of the immune response in controlling disease. Laboratory.

3100:437. Immunology. (4 Credits)
Prerequisite: 3100:211 and 3100:311. Nature of antigens, antibody response, and antigen-antibody reactions. Site and mechanism of antibody formations, hypersensitivity, immunologic tolerance and immune diseases considered. Laboratory.

3100:439. Advanced Immunology. (3 Credits)
Prerequisite: 3100:437. Immunology is studied from a historical and current perspective. Topics include T cells, B cells, antigen presentation, HIV, and transplantation.

3100:440. Mycology. (4 Credits)
Prerequisite: 3100:112 with a grade of C- or better. Structure, life history, classification of representative fungi with emphasis on the importance of fungi to humans. Laboratory.

3100:443. Phycology. (4 Credits)
Prerequisite: 3100:112 with a grade of C- or better. Examination of the major groups of algae with emphasis on life histories and their relationship to algal form and structure. Laboratory.

3100:444. Field Marine Phycology. (3 Credits)
Prerequisite: 3100:112 with a grade of C- or better. Collection and identification of tropical marine algae on San Salvador Island, The Bahamas. Discussion of characteristics and ecology of major groups of Caribbean algae. Laboratory.

3100:451. General Entomology. (4 Credits)
Prerequisites: 3100:112 with a grade of C- or better, and 3100:217. Structure, physiology, life cycles, economic importance and characteristics of orders and major families of insects. Laboratories parallel lectures.

3100:453. Invertebrate Zoology. (4 Credits)
Prerequisites: 3100:112 with a grade of C- or better, and 3100:217. Invertebrate groups, their classification, functional morphology, adaptive radiation and life history. A phylogenetic approach is used. Laboratories parallel lectures.

3100:454. Parasitology. (4 Credits)
Prerequisites: 3100:112 with a grade of C- or better. Principles of parasitism; host parasite interactions; important human and veterinary parasitic diseases; and control measures. Laboratories parallel lectures.

3100:455. Ichthyology. (4 Credits)
Prerequisites: 3100:217. Study of fishes; incorporates aspects of evolution, anatomy, physiology, natural history, and commercial exploitation of fishes. Laboratory incorporates field-based exercises and fish taxonomy.

3100:456. Ornithology. (4 Credits)
Prerequisite: 3100:112 with a grade of C- or better. Introduction to biology of birds: classification, anatomy, physiology, behavior, ecology, evolution, natural history and field identification. Laboratory and field trips.

3100:457. Herpetology. (4 Credits)
Prerequisite: 3100:112 with a grade of C- or better. Survey of the diversity, ecology and evolution of amphibians and reptiles. Special emphasis is given to Ohio species. Laboratory.

3100:458. Vertebrate Zoology. (4 Credits)
Prerequisite: 3100:316 or permission. Biology of vertebrates, except birds evolution, ecology, behavior, systematics and anatomy. Laboratory with field trips.

3100:460. Medical Histology. (4 Credits)
Prerequisite: 3100:311. 100% online course. Structure of human cells and tissues and their identification. Functional organization of the human cell and tissues.

3100:463. Exercise Physiology. (3 Credits)
Prerequisite: 3100:363 or instructor permission. Through lecture, reading and critical analysis of current literature, physiologic mechanisms of exercise in animals will be explored.

3100:465. Advanced Cardiovascular Physiology. (3 Credits)
Prerequisite: 3100:202, or 3100:363, or 3100:473. Study of biological mechanisms involved in heart attack, strokes, fluid balance, hypertension and heart disease. Controversial issues in each area will be examined and current research presented.

3100:466. Vertebrate Embryology. (3 Credits)
Prerequisite: 3100:112 with a grade of C- or better. Lectures focus on development of model vertebrate organisms, and cellular and molecular mechanisms underlying animal development.

3100:467. Comparative Vertebrate Morphology. (4 Credits)
Prerequisite: 3100:112 with a grade of C- or better. An introduction to the comparative morphology of major vertebrates. The laboratories consist of dissections of representative vertebrates.

3100:468. The Physiology of Reproduction. (3 Credits)
Prerequisites: 3100:112 with a grade of C- or better, or 3100:202. Study of the physiological mechanisms of reproduction throughout the animal kingdom with emphasis upon mammalian endocrinological control. Controversial issues and current research will be examined.

3100:469. Respiratory Physiology. (3 Credits)
Prerequisite: 3100:202, or 3100:363, or 3100:473. Study of mechanisms determining gas exchange including mechanics, ventilation, blood flow, diffusion, and control systems. Emphasis is given to normal human lung function. (Clinical aspects are not considered in detail.)

3100:470. Lab Animal Regulations. (1 Credit)
Required of anyone working with animals, and covers government regulations, care of animals and a lab to teach basic animal handling and measurement techniques.

3100:471. Physiological Genetics. (4 Credits)
Prerequisite: 3100:211 or equivalent and [3100:202, or 3100:363, or 3100:473]. The integrative study of how genetics and physiology influence complex systems from molecular to behavioral in plants and animals. Laboratory.

3100:472. Biological Mechanisms of Stress. (3 Credits)
Prerequisite: 3100:202, or 3100:363, or 3100:473. Study of mechanisms from molecular to behavioral of how stress influences body systems and signals. The latest research and experimental issues are discussed.

3100:473. Foundations of Physiology II. (3 Credits)
Prerequisite: 3100:363. Continuing fundamentals of physiology including metabolism and temperature, respiration and circulation, and osmoregulation. Adaption to extreme environments is emphasized.

3100:474. Foundations of Physiology Laboratory II. (1 Credit)
Prerequisite: 3100:364; corequisite 3100:473. Laboratory experiments in animal physiology (respiration, circulation, metabolism, osmoregulation). Presentation of results in scientific format and as oral reports.

3100:475. Comparative Biomechanics. (3 Credits)
Prerequisite: 3100:112 with a grade of C- or better, or equivalent. Investigation of how physical constraints on biological materials, structural mechanics and locomotion relate to the survival and evolution of living organisms.

3100:478. Renal Physiology. (3 Credits)
Prerequisite: 3100:112 with a grade of C- or better. The study of how the kidneys affect other body systems and how, in turn, they are affected by these systems.

3100:480. Molecular Biology. (3 Credits)
Prerequisite: 3100:211 and 3100:311. Fundamentals of molecular biology, including recombinant DNA technology, applications in biotechnology, medicine, and genetic engineering. Mechanisms of gene regulation.

3100:481. Advanced Genetics. (3 Credits)
Prerequisite: 3100:211. Nature of the gene; genetic codes; hereditary determinants; mutagenesis and genes in population. Lecture and seminar.

3100:482. Neurobiology. (3 Credits)
Prerequisites: Completion of 3100:111 and 3100:112 with a grade of "C-" or better. History of Neuroscience; organization, function and development of the central nervous system; electrophysiological properties of nerve cells; learning and memory; molecular basis for mental diseases.

3100:483. Research Techniques in Neuroscience. (3 Credits)
Prerequisite: [3100:112, or 3100:202, or 3750:320] with a C or better. Discover how the most cutting edge neuroscience research techniques are designed and implemented to further our understanding of the brain and visual system.

3100:485. Cell Physiology. (3 Credits)
Prerequisite: 3100:112 with a grade of C- or better and 3150:401. Explores molecular and biochemical aspects of energy metabolism, inter and intracellular signaling, growth and death of cells. Emphasizes up-to-date scientific literature.

3100:486. Cell Physiology Laboratory. (2 Credits)
Prerequisite: 3100:112 with a grade of C- or better and 3150:401. Corequisite: 3100:485. Practice of modern cell physiology laboratory techniques. Emphasis on student directed original research.

3100:494. Workshop in Biology. (1-3 Credits)
(May be repeated) Prerequisite: Permission of instructor. Group studies of special topics in biology. May not be used to meet undergraduate or graduate major requirements in biology. May be used for elective credit only.

3100:495. Special Topics in Biology. (1-3 Credits)
Prerequisite: Permission. Special courses offered occasionally in areas where no formal course exists.

3100:496. Internship in Biology. (1-3 Credits)
(May be repeated for maximum of 6 credits) Prerequisites: Permission of department and a minimum 3.0 GPA in Biology courses (20 credits minimum). Work experience to focus on career applications in Biology. Maximum 3 credits will count towards Biology electives.

3100:497. Biological Problems. (1-3 Credits)
(May be repeated for a total of 6 credits) Prerequisites: Permission of department, 2.0 GPA or better in Biology coursework, and currently in the College of Arts & Sciences. Advanced level work, usually consisting of laboratory investigations. A maximum of 4 credits may apply toward the major degree requirements.

3100:499. Senior Honors Program in Biology. (1-3 Credits)
(May be repeated for a total of five credits) Prerequisites: senior standing in Honors College and approval of honors preceptor. Open only to biology and natural sciences divisional majors in Honors College. Independent study leading to completion of approved senior honors.

Biomedical Engineering (4800)

4800:101. Tools for Biomedical Engineering. (3 Credits)
Corequisite: 3450:149. Introduction to Biomedical Engineering. Personal computers, word processing, spreadsheets, mathematical computational software and computer aided drafting.

4800:111. Introduction to Biomedical Engineering Design. (3 Credits)
Prerequisites: 4800:101 or permission. Students will be introduced to the interdisciplinary nature of Biomedical Engineering research and design through the use of lectures, discussions, homework and design projects.

4800:201. Biomedical Engineering Sophmore Seminar. (1 Credit)
Prerequisites: 4800:101, sophomore standing or above. A seminar format to allow students to learn about current research and careers in Biomedical Engineering. Topics in technical communications will also be covered.

4800:220. Biomedical Computing. (3 Credits)
Prerequisites: 3450:223, and 4800:101 and admission to the College of Engineering. Programming in BASIC and Visual Basic for data acquisition, analysis and display. Object-oriented programming using biomedical engineering examples. High-level processing and display techniques using MATLAB.

4800:305. Introduction to Biophysical Measurements. (4 Credits)
Prerequisites: 4800:101 and [4400:231 or 4400:307] and admission to the College of Engineering. Corequisite: 3100:202. Biomedical Engineering involves measurement of Physiological processes in living organisms. An understanding of the variety of instruments used and the limitations are introduced.

4800:310. Modeling & Simulation of Biomedical Systems. (3 Credits)
Prerequisites: 3450:335 and admission to the College of Engineering. Modeling and simulation of physiological systems and their interactions with therapeutic devices, such as the artificial kidney.

4800:325. Design of Medical Devices. (3 Credits)
Prerequisites: Junior/senior standing in the College of Engineering, the College of Polymer Science and Engineering or the College of Arts and Sciences. Design of Medical Devices, design criteria, human factors, patient care and monitoring devices, surgical devices, bench testing and legal liability.

4800:360. Biofluid Mechanics. (3 Credits)
Prerequisites: 3450:335, 3150:133, 3650:292, and 4600:203. Introduction to the fundamentals of fluid mechanics and their application to biological, cardiovascular, respiratory and other biofluid systems.

4800:362. Transport Fundamentals for Biomedical Engineering. (3 Credits)
Prerequisite: 3450:335, 4600:203 and admission to the College of Engineering. Introductory topics in fluid, heat, and mass transfer including both integral and differential analysis as it applies to biological and biomedical systems.

4800:365. Mechanics of Biological Tissues. (3 Credits)
Prerequisites: 3450:335, 4300:202 and admission to the College of Engineering. The mechanical properties of musculoskeletal tissues are presented along with modeling techniques and testing procedures. Tendons, ligaments, muscles, cartilage and bone will be addressed.

4800:370. Biomechanics of Human Movement. (3 Credits)
Prerequisites: 3100:202 and 4600:203. The application of engineering mechanics and anatomy to study and analyze human movement. Lectures and in-class labs will introduce students to experimental and theoretical techniques.

4800:400. Biomaterials. (3 Credits)
Prerequisite: Admission to the College of Engineering. Properties of Materials used in medicine and their interaction with biological materials will be discussed. Biocompatibility issues, material degradation, biomaterials testing will also be discussed.

4800:401. Introduction to Biomaterials Laboratory. (2 Credits)
Prerequisites: Admittance into the Biomedical Engineering - Biomaterials and Tissue Engineering or the Biomedical Engineering - Biomaterials and Tissue Engineering / Cooperative Education program and 4800:101. Prerequisite or Corequisite: 4800:400. Laboratory to explore techniques in biomaterials and tissue engineering and evaluate experimental outcomes. Biomaterials and Tissue Engineering Track students only.

4800:409. Introduction to Biomedical Engineering Research. (3 Credits)
Application of engineering principles to local area medical research. Includes biomaterials, orthopedics, artificial organs, biostereometrics, biometrics, biological signal and image analysis, biomechanics and computers in medicine.

4800:420. Biomedical Signal & Image Processing. (3 Credits)
Prerequisites: 4400:340, 4450:220, and admission to the College of Engineering. Introduction to the basic problems associated with biological signal and image processing applications, and appropriate approaches to dealing with them.

4800:422. Physiological Control Systems. (3 Credits)
Prerequisites: 3100:202, 3450:335. The basic techniques employed in control theory, systems analysis and model identification as they apply to physiological systems.

4800:430. Design of Medical Imaging Systems. (3 Credits)
Prerequisites: 3100:200, 3650:292, 4400:340, 4400:353, 4800:305 and admission to the College of Engineering or permission of instructor. Physical principles and engineering design of medical imaging systems, with emphasis on digital radiography, computed tomography, nuclear medicine, ultrasound and magnetic resonance.

4800:435. Image Science. (3 Credits)
Prerequisites: 3100:200, 3650:292, 4400:343 or by permission of instructor. Principles of image science, image performance parameters and image assessment techniques of medical imaging systems, with emphasis on digital radiography, tomographic imaging, ultrasound and magnetic resonance.

4800:437. Physics of Medical Imaging. (3 Credits)
Prerequisites: 3100:200, 3650:292, 4400:353, 4800:305. Physical principles of medical imaging modalities with emphasis on the properties, generation mechanisms and interaction of radiation with matter, physics of the image formation and optimization.

4800:440. Advanced Biomaterials. (3 Credits)
Prerequisites: 4800:400 and admission to the College of Engineering. The interactions between biomaterials and medical devices will be analyzed with respect to their potential fractionation of biological mechanisms.

4800:445. Experimental Techniques in Biomaterials Tissue Engineering. (3 Credits)
Prerequisite: 4800:440. Laboratory experience that applies engineering concepts and practices to the analysis of biomaterials and tissue engineering.

4800:450. Tissue Engineering. (3 Credits)
Prerequisites: 4800:400, 4800:365, 4800:362, and [4800:360 or 4200:321]. This course will explore topics to successfully design tissue engineered devices. For advanced engineering students with a back ground in materials, mechanics, and transport phenomena.

4800:455. Biotransport. (3 Credits)
Prerequisites: 3100:202, 4800:220, and [4800:362 or 4200:321]. With the foundations of fluid, heat and mass transfer established, this course focuses on specific biological examples of transport phenomena.

4800:460. Experimental Techniques in Biomechanics. (3 Credits)
Prerequisites: 3150:153, 3450:335, 3650:292, 4600:203 and admission to the College of Engineering or by permission of instructor. Principles of testing and measuring devices commonly used for biofluid and biosolid mechanics studies. Laboratories for demonstration and hands-on experience.

4800:464. Microfluidics for Biomedical Engineering. (3 Credits)
Prerequisites: 4800:362 or 4200:321 or 4800:360. This course will discuss fundamental principles of single and two phase flow of biofluids in microfludic devices, and present the applications of lab-on-a-chip systems in BME.

4800:470. Human Factors Engineering. (3 Credits)
Prerequisite: Admission to the College of Engineering. Reliability and human error, human capabilities and limitations, crew protection, display systems, controls and controlling actions, interface design principles, risk management, Safety and accident prevention.

4800:485. Special Topics in Biomedical Engineering. (1-3 Credits)
Prerequisite: Permission of advisor. Directed individual or group research or study in the student's field of interest. Topic subject to approval of advisor.

4800:491. Biomedical Engineering Design I. (2 Credits)
Prerequisite: 4800:111 and admission to the College of Engineering. Corequisite: 4800:305. The design process will be further discussed utilizing case studies and detailed biomedical engineering design projects.

4800:492. Biomedical Engineering Design II. (2 Credits)
Prerequisites: 4800:491 and admission to the College of Engineering. The design process will be further discussed utilizing detailed biomedical engineering design projects. Projects will be required to be interdisciplinary in nature.

4800:498. Introduction to BME Research. (2 Credits)
Prerequisites: Permission of instructor. Directed individual or group study in research in biomedical engineering. Course is credit/no credit. May not be repeated.

4800:499. BME Research Project. (1-3 Credits)
Prerequisites: 4800:498, permission of instructor. Directed individual or group study in research in biomedical engineering. May be repeated.

Business Management Technology (2420)

2420:103. Essentials of Management Technology. (3 Credits)
Survey of management principles for business and other organizations. Emphasizes the basic management functions including planning, organizing, staffing, influencing, and control.

2420:104. Introduction to Business in the Global Environment. (3 Credits)
Survey of business emphasizing the global nature of business and including entrepreneurship concepts, form, marketing, management, human resources, financial resources and production.

2420:117. Small Business Development. (3 Credits)
Prerequisite: 2420:211 or permission. Introduction to small business and entrepreneurship: opportunities and qualifications for establishing, financing, operating and developing managerial policies and procedures for small business.

2420:125. Essentials of Personal Finance. (3 Credits)
Consumer decision making including credit and budgets, time value of money, major purchases, insurance, investments, tax planning, retirement and estate planning.

2420:140. Keyboarding. (2 Credits)
Fundamentals in the operation of the keyboard; application emphasis on individual student needs such as resumes, application letters and forms, term reports, abstracting, etc.

2420:202. Elements of Human Resource Management. (3 Credits)
Prerequisite: 2420:103 or permission. Provides students with an overview of human resource management functions. Includes planning, EEO/AA, selection, development, legal environment, compensation, labor relations, appraisal systems and career planning.

2420:211. Basic Accounting I. (3 Credits)
Accounting for sole proprietorships operating as service and merchandising concerns. Introduction to financial statements. Includes handling of cash, accounts receivable, inventories, plant/equipment, and payroll.

2420:212. Basic Accounting II. (3 Credits)
Prerequisite: 2420:211. Accounting as it applies to partnerships and corporations. Includes stocks, bonds, cash flows, financial statement analysis, and specialized accounting software.

2420:213. Essentials of Management Accounting. (3 Credits)
Prerequisite: 2420:211. Study of the interpretation and use of accounting data by management in decision making and the planning and controlling of business activities.

2420:214. Essentials of Intermediate Accounting. (3 Credits)
Prerequisite: 2420:212. Study of development of financial accounting theory and its application to problems of financial statement generation, account valuation, analysis of working capital, and determination of net income.

2420:215. Computer Applications for Accounting Cycles. (3 Credits)
Prerequisites: 2420:212, 2420:213 and 2540:270. Develops the skills of computer accounting as used in today's marketplace through hands on experience with general ledger accounting software.

2420:216. Survey of Cost Accounting. (3 Credits)
Prerequisite: 2420:213. Provides student with conceptual understanding of how accounting information is developed and used for product costing, decision making and managerial planning and control.

2420:217. Survey of Taxation. (3 Credits)
Survey course of basic tax concepts, research, planning, and preparation of returns for individuals. Federal, state and local taxes are discussed.

2420:218. Automated Bookkeeping. (2 Credits)
Corequisite: 2420:212. Provides experience with accounting software packages to include the processing of general ledger, accounts receivable, accounts payable, and payroll transactions.

2420:220. Applied Accounting. (3 Credits)
Prerequisites: 2420:212, 2420:213, 2540:270. An applied orientation focusing on all accounting functions through adjusted trial balance and basic payroll skills. Emphasis on skills required for the Certified Bookkeeping designation.

2420:227. Entrepreneurship Projects. (3 Credits)
Prerequisite: 2420:103, 2420:104, 2420:117, 2420:212, 2420:243 and 2540:270. Requires the student to research, design, and complete a comprehensive business plan which will become the blueprint for a new or existing business.

2420:243. Survey in Finance. (3 Credits)
Prerequisites: 2420:170 and 2420:211. Survey of field including instruments, procedures, practices and institutions. Emphasis on basic principles.

2420:245. Business Management Accounting Internship. (3 Credits)
Prerequisites: [2420:212 and 2420:213] or [2420:215 and 2420:216]. An accounting field experience exposing the student to the actual accounting environment and general workplace.

2420:246. Business Managment Internship. (3 Credits)
Prerequisites: 32 credits completed, including: 2420:103, 2420:104, 2420:212, 2420:280, 2040:240, 6300:201. A management field experience exposing the student to the actual management environment and general workplace.

2420:250. Problems in Business Management. (3 Credits)
Prerequisites: 2420:103, 2420:104, 2420:212, 2420:243, 2520:101, 2420:270. Capstone course studies the development of solutions and the formulation of policies to solve business problems, emphasizes case studies, group projects, oral and written presentations.

2420:263. Professional Communications and Presentations. (3 Credits)
Application of the principles of communication in speeches, business presentations, group discussions, and business documents.

2420:270. Business Software Applications. (3 Credits)
Prerequisite: 2440:105; Wayne College students - 2440:125, 2540:241, and 2540:253. Use of business application software and critical thinking skills to solve business problems. Word processing, spreadsheets, database, presentation software, integration of applications, and the Internet.

2420:280. Essentials of Business Law. (3 Credits)
History of the law and the judicial system, torts and criminal law affecting business, contracts with emphasis on sales under the UCC, and commercial paper.

2420:290. Special Topics: Business Management Technology. (1-3 Credits)
(May be repeated for a total of four credits) Prerequisite: Permission. Selected topics or subject areas of interest in business management technology.

2420:300. Supervision in a Technical Environment. (3 Credits)
Competencies required for successful transition from individual contributor to supervisor. Emphasis on working effectively with others and self-development as a leader.

2420:301. Information Design. (3 Credits)
Prerequisites: [2020:121 and 2020:222] or [3300:111 and 3300:112] or equivalent. Principles of visual rhetoric and practice in communicating with text and graphics. Examines the role of design in a variety of workplace communication documents.

2420:302. Ethics and Law in Business. (3 Credits)
Prerequisite: Junior/Senior standing. Workplace ethical principles and legal issues such as liability, safety, quality, honesty, and confidentiality. Case studies and projects explore global, legal, and technological issues affecting employee interaction in the workplace.

2420:310. Leadership Principles & Practices for Technical Organizations. (3 Credits)
Corequisite: 2420:300. Contemporary perspectives and issues in leadership and supervision. Development of effective leadership characteristics.

2420:311. Corporate Social Responsibility and Leadership. (3 Credits)
Prerequisite/Corequisite: 2420:300 with a C or better. Theory and best practices in corporate social responsibility, community service and leadership in local, national and global settings. Identify leadership opportunities for future contributions.

2420:401. Leading Project Teams. (3 Credits)
Prerequisite: 2440:310 with the grade of C or better. Examines and applies the operational and human aspects of project team management from conception to completion.

2420:402. Operational Assessments and Improvements. (3 Credits)
Prerequisites: [3470:250 or 3470:260] and 2420:310 (with a grade of C of better). Methods for conducting business process assessments and evaluating results in organizations.

2420:420. Human Resources Development. (3 Credits)
Prerequisite: 2420:310 with a grade of C or better. Overview of current theories and best practices in human capital development.

2420:421. Senior Seminar in Organizational Supervision. (3 Credits)
Prerequisite: 2420:402 with a grade of C or better. Integration and application of professional knowledge, skills, and technologies to organizational issues.

Business Studies (6100)

6100:100. Career Planning in Business Administration. (1 Credit)
Examines the academic, professional, and personal skills required for a successful business career. Develops student career plan. Provides exposure to the variety of career opportunities available in public and private sector organizations.

6100:101. Business Issues in a Connected World. (3 Credits)
An introductory course that examines the 'forces' that are changing how business will be conducted in the 21st century, the 'factors' that determine the success of firms and the impact of both on individuals as consumers and professionals.

6100:110. College of Business Administration Success Seminar. (1-3 Credits)
This course is designed to help new CBA students transition from high school or work to the college environment and begin the career development process.

6100:200. Personal Leadership Skills. (1 Credit)
Prerequisite: Must have completed 32 credit hours. An introductory course that will expose students to leadership theory and practice in organizations. Students will have an opportunity to self-reflect and investigate leadership styles, ethical issues and influence methods.

6100:201. Introduction to E-Business. (3 Credits)
Prerequisite: 24 credits. Provides a broad overview of e-business strategies, products and technologies. Discusses transformation of marketing, production and other business functions; and related legal, political, ethical and cultural issues.

6100:220. Global Culture and Business Field Experience. (1-3 Credits)
Prerequisite: Sophomore standing. Students travel on faculty led trips and study international business practices. Global business practices are examined and aspects of local culture are explored.

6100:230. Business Communication. (3 Credits)
Prerequisites: 3300:111, 3300:112, and [7600:105 or 7600:106]. Students will obtain the knowledge and ability use writing and oral communication skills in a professional environment to effectively persuade others and to mobilize action among various organizational stakeholders.

6100:350. Special Topics in Business. (1-3 Credits)
Opportunity to study special topics and current issues in business. May be repeated with a change of subject.

6100:495. Internship in Business Administration. (3 Credits)
Prerequisite: Permission of designated faculty member. On-the-job experience with public or private sector organizations in the student's major field of study. Individual assignments are approved and supervised by the designated member of the faculty in the student's major field. Periodic reports and term papers are required.

6100:497. Honors Project in Business Administration. (1-3 Credits)
Prerequisite: senior standing in Honors Program. Individual directed research relevant to the student's major. Group integrated symposium or an individualized study format available.

6100:499. Independent Study in Business Administration. (3 Credits)
Prerequisite: Permission of designated faculty member. Provides a means for individualized study of a problem(s) or issue in the student's major field of study.

C&T: Cooperative Education (2000)

2000:201. Cooperative Education. (0 Credits)
(May be repeated) Prerequisite: cooperative education students only. Work experience in business, industry or governmental agency. Comprehensive performance evaluation and written report required.

2000:301. Cooperative Education. (0 Credits)
(May be repeated) Prerequisite: cooperative education students only. Work experience in business, industry or governmental agency. Comprehensive performance evaluation and written report required.

Chemical Engineering (4200)

4200:101. Tools for Chemical Engineering. (2 Credits)
Corequisites: 4200:110 and 3450:149. Introduction to Chemical Engineering. Basic concepts of engineering practice. Introduction to professional level software including process simulation, control design, spreadsheets, mathematical computation, and process flow graphics.

4200:110. Project Management and Teamwork I. (1 Credit)
Teams freshmen through senior Chemical Engineering and Corrosion Engineering undergraduates on a design team working on a realistic chemical engineering problem. Develops teamwork, communications, presentation, project management and information technology skills.

4200:121. Chemical Engineering Computations. (2 Credits)
Prerequisites: 4200:101 or 4250:101. Computer programming language, flowcharting, introductory simulation and introductory numerical analysis.

4200:194. Chemical Engineering Design I. (1 Credit)
Prerequisites: 4200:101 and permission. Individual or group project under faculty supervision. Introduction to chemical engineering processes and modern design technology. Written report is required.

4200:200. Material & Energy Balances. (4 Credits)
Prerequisites: [4200:121 or 4250:105], 3150:151 and 3450:221. Introduction to material and energy balance calculations applied to solution of chemical engineering problems.

4200:210. Project Management and Teamwork II. (1 Credit)
Prerequisite: 4200:110. Teams freshmen through senior Chemical Engineering and Corrosion Engineering undergraduates on a design team working on a realistic engineering problem. Develops teamwork, communications, presentation, project management and information technology skills.

4200:225. Equilibrium Thermodynamics. (4 Credits)
Prerequisites: 4200:200 or 4250:200 and 3450:223. Second law of thermodynamics, entropy, applications, comprehensive treatment of pure and mixed fluids. Phase and chemical equilibrium, flow processes, power production and refrigeration processes covered.

4200:294. Chemical Engineering Design II. (1-2 Credits)
Prerequisites: 4200:121, 4200:200 and permission. Supervised individual or group design project. Analysis of multi-unit process using simulation and/or experimental techniques. Written report and oral presentation required.

4200:305. Materials Science. (2 Credits)
Prerequisites: 3150:153. Corequisite: 3650:292. Structure, processing and properties of metals, ceramics and polymers. Special topics, such as composites, corrosion and wear.

4200:308. Introduction to Bio-based Polymers. (3 Credits)
Prerequisite: 3150:263 and junior standing. This course introduces basic concepts of polymer science: building blocks, structure, elementary reactions and polymerization mechanisms, through seven natural polymers.

4200:310. Project Management and Teamwork III. (1 Credit)
Prerequisites: 4200:210 and admission to the College of Engineering. Corequisite: 4250:300 or 4200:353. Teams freshmen through senior Chemical Engineering and Corrosion Engineering undergraduates on a design team working on a realistic chemical engineering problem. Develops teamwork, communications, presentation, project management and information technology skills.

4200:321. Transport Phenomena. (3 Credits)
Prerequisites: [4200:200 or 4250:200], 3450:335 and admission to the College of Engineering. Constitutive equations for momentum, energy and mass transfer. Development of microscopic and macroscopic momentum, energy and mass transfer equations for binary systems. Analogy and dimensionless analysis. Problems and applications in unit operations of chemical engineering.

4200:330. Chemical Reaction Engineering. (3 Credits)
Prerequisites: 3450:335, 4200:225 and admission to the College of Engineering. Nonequilibrium processes including chemical reaction mechanisms, rate equations and ideal reactor design applied to homogeneous and heterogeneous systems.

4200:341. Process Economics. (2 Credits)
Prerequisite:[4200:200 or 4250:200] and admission to the College of Engineering. Theory and application of engineering economy to multi-unit processes. Cost estimation, time value of money, profit analysis, decision making and introduction to project management.

4200:351. Fluid & Thermal Operations. (3 Credits)
Prerequisite: 4200:321 and admission to the College of Engineering. Applications of fluid mechanics including piping, pumping, compression, metering, agitation and separations. Applications of heat transfer by conduction, convection and radiation to design of process equipment.

4200:353. Mass Transfer Operations. (3 Credits)
Prerequisites: 4200:225 and [C- or above in 4200:200 or 4250:200] and admission to the College of Engineering. Theory and design of staged operations including distillation, extraction, absorption. Theory and design of continuous mass transfer devices.

4200:360. Chemical Engineering Laboratory. (3 Credits)
Prerequisites: 4200:353; corequisites: 4200:330, 4200:351. Comprehensive experiments in combined heat and mass transfer, thermodynamics, and reaction kinetics. Data collection and analysis. Comprehensive reports in various formats.

4200:394. Chemical Engineering Design III. (1-3 Credits)
Prerequisites: 4200:351 and permission. Supervised individual or group design project. Develop, evaluate and design feasible solutions to an open-ended problem pertinent to chemical engineering. Written report and oral presentation required.

4200:408. Polymer Engineering. (3 Credits)
Prerequisite: permission or senior standing. Commercial polymerization, materials selection and property modification, polymer processing, applied rheology and classification of polymer industry.

4200:410. Project Management and Teamwork IV. (1 Credit)
Prerequisites: 4200:310 and admission to the College of Engineering. Corequisites: 4200:441 or 4250:440. Teams freshmen through senior Chemical Engineering and Corrosion Engineering undergraduates on a design team working on a realistic chemical engineering problem. Develops teamwork, communications, presentation, project management and information technology skills.

4200:421. Fundamentals of Multiphase Transport Phenomena. (3 Credits)
Prerequisite: 4200:321 or equivalent, and instructor permission. Major topics to be covered: Intraphase and interphase transport phenomena, Transport phenomena in multiphase fluids, Transport in Porous Media, Transport in Gas/liquid pipe flows, Computational Fluid Dynamics of multiphase systems, and Case studies.

4200:435. Process Analysis & Control. (3 Credits)
Prerequisites: 4200:330, 4200:353 and admission to the College of Engineering. Response of simple chemical processes and design of appropriate control systems.

4200:438. Energy Integration. (3 Credits)
Prerequisite: 4200:351. This course uses Pinch Design formalism to present the core energy integration tools for energy and area targeting, and tools for integration of reactors, distillation columns, and heat pumps.

4200:441. Process Design I. (3 Credits)
Prerequisites: 4200:330, 4200:341, 4200:351, 4200:353 and admission to the College of Engineering. Application of chemical engineering fundamentals to the design of a multi-unit process. Emphasis on use of process simulators. Advanced equipment design, oral and written communication skills and teamwork.

4200:442. Process Design II. (3 Credits)
Prerequisites: 4200:441 and admission to the College of Engineering. Teaches methods of process conceptualization, preliminary optimization. Specific topics include: chemical process design methodology, design heuristics, energy integration, and process safety review.

4200:450. Chemical Product Design and Development. (3 Credits)
Prerequisite: senior standing or permission. Introduction to the strategies and processes used to design and development new chemical products from the idea stage through manufacturing.

4200:461. Solids Processing. (3 Credits)
Prerequisites: 4200:321 and 4200:353 or permission. Comprehensive problems in sedimentation, fluidization, drying and other operations involving mechanics of particulate solids in liquid and gas continua.

4200:462. Industrial Enzyme Technology. (3 Credits)
Prerequisites: 4200:330 and 4200:351. Application of chemical engineering to biological processes involving enzymes and their industrial applications. Special emphasis given to the kinetics, control, design, and process economics aspects.

4200:463. Pollution Control. (3 Credits)
Prerequisite: 4200:353 or permission. Air and water pollution sources and problems. Engineering aspects and methodology.

4200:466. Digitized Data & Simulation. (3 Credits)
Prerequisite: Permission. Data acquisition and analysis by digital devices, digital control applications and design.

4200:470. Electrochemical Engineering. (3 Credits)
Prerequisites: 4200:321, 4200:330. Chemical engineering principles as applied to the study of electrode processes and to the design of electrochemical reactors. Topics include electrochemical thermodynamics, cell polarizations, Faraday's Laws, electrode kinetics, transport processes in electrochemical systems, current distributions, reactor design, experimental methods, commercial processes, and batteries and fuel cells.

4200:471. Fuel Engineering. (3 Credits)
Prerequisite: 4200:330 or permission of instructor. Topics related to clean liquid and solid fuels technology. Special emphasis given to design, system analysis, environmental impacts, and novel technologies.

4200:472. Separation Processes in Biochemical Engineering. (3 Credits)
Introduction to the separation and purification techniques pertinent to bioprocesses, with emphasis on engineering considerations for large scale operations.

4200:473. Bioreactor Design. (3 Credits)
Prerequisite: 4200:330 or instructor's consent. Design, analysis, and scale-up of bioreactors for various biological processes.

4200:488. Chemical Processes Design. (3 Credits)
Prerequisite: Permission of instructor or senior standing. Process design and analysis of emerging chemical technologies. Case studies, such as in-situ processing, alternative fuels, bioremediation, and engineering materials manufacture.

4200:494. Design Project. (3 Credits)
Prerequisite: Permission or senior standing. Individual design project pertinent to chemical engineering under faculty supervision. Written report and oral presentation required.

4200:496. Topics in Chemical Engineering. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisite: Permission. Topics selected from new and developing areas of chemical engineering, such as electrochemical engineering, coal and synthetic fuels processing, bioengineering, simultaneous heat and mass transfer phenomena and new separation techniques.

4200:497. Honors Project. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisite: Permission. Individual creative project pertinent to chemical engineering culminating in undergraduate thesis, supervised by faculty member of the department.

4200:499. Research Project: Chemical Engineering. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisite: Permission. Individual research project pertinent to chemical engineering under faculty supervision. Report required.

Chemistry (3150)

3150:100. Chemistry & Society. (3 Credits)
Qualitative introduction to chemistry using current world problems and commercial products, such as the ozone layer, nuclear fission, polymers and drugs, to introduce chemical principles.

3150:101. Chemistry for Everyone. (4 Credits)
Integrated, hands-on, laboratory instruction in the fundamental concepts of chemistry for general education and middle-level licensure for pre-service and in-service teachers.

3150:110. Introduction to General, Organic & Biochemistry I (Lecture). (3 Credits)
Sequential. Introduction to principles of chemistry, fundamentals of inorganic, organic and biochemistry. Structure and chemistry of carbohydrates, lipids, proteins; biochemistry of enzymes, metabolism, radiation.

3150:111. Introduction to General, Organic & Biochemistry I (Laboratory). (1 Credit)
Prerequisite/Corequisite: 3150:110. Sequential. Laboratory course applying principles of chemistry and fundamentals of inorganic, organic and biochemistry.

3150:112. Introduction to General, Organic & Biochemistry II (Lecture). (3 Credits)
Prerequisite: 3150:110. Sequential. Introduction to principles of chemistry, fundamentals of inorganic, organic and biochemistry. Structure and chemistry of carbohydrates, lipids, proteins; biochemistry of enzymes, metabolism, radiation.

3150:113. Introduction to General, Organic & Biochemistry II (Laboratory). (1 Credit)
Prerequisite/Corequisite: 3150:112. Sequential. Laboratory course applying principles of chemistry and fundamentals of inorganic, organic and biochemistry.

3150:151. Principles of Chemistry I. (3 Credits)
Prerequisite: 3450:149 or equivalent. Introduction to basic facts and principles of chemistry including atomic and molecular structure, states of matter and thermodynamics. For chemistry majors, pre-medical students and most other science majors. Discussion (day sections).

3150:152. Principles of Chemistry I Laboratory. (1 Credit)
Pre/Corequisite: 3150:151. Laboratory course applying principles of thermodynamics, chemical analysis and laboratory practice.

3150:153. Principles of Chemistry II. (3 Credits)
Prerequisite: Pre/Corequisite: 3150:151. Continuation of 151, 152, including aqueous solution theory, chemical kinetics, equilibrium, electrochemistry and nuclear chemistry. For chemistry majors, premedical students and most other science majors. Discussion (day sections).

3150:154. Qualitative Analysis. (2 Credits)
Prerequisite: 3150:152; pre/corequisite: 3150:153. Laboratory course applying principles of chemical equilibrium to inorganic qualitative analysis.

3150:199. Introductory Seminar in Chemistry. (1 Credit)
Basic concepts in chemistry practice including written and oral communication skills, computer skills, professional ethics, environmental issues, chemical literature, degree options, and career considerations.

3150:263. Organic Chemistry Lecture I. (3 Credits)
Sequential. Prerequisite: 3150:153 or permission. Structure and reactions of organic compounds, mechanism of reactions.

3150:264. Organic Chemistry Lecture II. (3 Credits)
Sequential. Prerequisite: 3150:263 or permission. Structure and reactions of organic compounds, mechanism of reactions.

3150:265. Organic Chemistry Laboratory I. (2 Credits)
Sequential. Prerequisite: 3150:154; pre/corequisite: 3150:263. Laboratory experiments to develop techniques in organic chemistry and illustrate principles. Discussion.

3150:266. Organic Chemistry Laboratory II. (2 Credits)
Sequential. Prerequisite: 3150:265. Laboratory experiments to develop techniques in organic chemistry and illustrate principles. Discussion.

3150:305. Physical Chemistry for the Biological Sciences. (4 Credits)
Prerequisites: [3150:264, or 3450:222, or 3650:262 or 3650:292]. Chemical thermodynamics, kinetics, molecular structure and spectra. Accepted for the BS degree in Biochemistry.

3150:313. Physical Chemistry Lecture I. (3 Credits)
Prerequisites: 3150:264, 3450:223, and 3650:291. Gases, thermodynamics, thermochemistry, solutions, dilute solutions, chemical equilibrium, phase rule, chemical kinetics, electrochemistry, electrolytic equilibria.

3150:314. Physical Chemistry Lecture II. (3 Credits)
Prerequisites: 3150:264, and 3450:335, and 3650:292. Atomic and molecular structure and spectroscopy.

3150:370. Biochemistry Laboratory. (2 Credits)
Prerequisite: 3150:266. An integrated laboratory experience covering the isolation, characterization and analysis of enzymes and DNA, protein synthesis and purification, enzyme kinetics, biochemical databases and statistical treatment of data.

3150:380. Advanced Chemistry Laboratory I. (2 Credits)
Prerequisite: 3150:266. A laboratory experience that focuses on the synthetic and spectroscopic techniques of modern inorganic chemistry, including bio-inorganic and organometallic compounds.

3150:381. Advanced Chemistry Laboratory II. (2 Credits)
Prerequisite 3150:266: corequisite: 3150:314 or 3150:305 or permission. Integrated laboratory experience covering the areas of quantitative analysis, physical chemistry, and instrumental techniques.

3150:399. Internship in Chemistry. (1-3 Credits)
Prerequisites: minimum GPA of 2.5; permission of the Department. Work experience focused on career applications of the discipline of Chemistry. (May repeat for a maximum of six credits.)

3150:401. Biochemistry Lecture I. (3 Credits)
Prerequisite: 3150:264. Biochemistry of amino acids, carbohydrates, lipids, and nucleic acids: structure/function relations. Enzymes as catalysts: kinetics and regulation. Cofactors.

3150:402. Biochemistry Lecture II. (3 Credits)
Prerequisite: 3150:401. Overview of metabolism; thermodynamics; carbohydrate, fatty acid, amino acid, and nucleoside anabolism and catabolism; hormonal control of metabolism. Photosynthesis.

3150:406. Biochemistry of Gene Expression. (3 Credits)
Prerequisites: 3100:311 and 3150:401. DNA, RNA, and protein synthesis, translation and transcription. Gene function and expression, cell cycle and cancer, genetic engineering, gene silencing, gain of function studies.

3150:423. Analytical Chemistry I. (3 Credits)
Prerequisite: 3150:154 and 3150:263. Theoretical principles of quantitative and instrumental analysis.

3150:424. Analytical Chemistry II. (3 Credits)
Prerequisite: 3150:154 and 3150:263. Instrumental analysis with emphasis on newer analytical tools and methods.

3150:463. Advanced Organic Chemistry. (3 Credits)
Prerequisite: 3150:264. Introduction to study of mechanisms of organic reactions.

3150:472. Advanced Inorganic Chemistry. (3 Credits)
Prerequisites: 3150:314 or 3150:305. Concepts of atomic structure integrated in systematic classification of elements. Periodic table. Chemistry of the representative elements. Transition elements including coordination compounds, organometallics and metal carbonyls.

3150:480. Advanced Chemistry Laboratory III. (2 Credits)
Prerequisites: 3150:381 or 3150:305 or permission. Integrated laboratory experience covering the areas of quantitative analysis, physical chemistry, instrumental techniques, and inorganic chemistry.

3150:490. Workshop in Chemistry. (1-3 Credits)
(May be repeated) Group studies of special topics in chemistry. May not be used to meet undergraduate or graduate major requirements in chemistry.

3150:497. Honors Project in Chemistry. (2 Credits)
(May be repeated for a total of eight credits) Prerequisites: Junior or senior standing in Honors College and permission of department honors preceptor. Independent research leading to completion of honors thesis under guidance of honors project adviser.

3150:498. Special Topics in Chemistry. (1-3 Credits)
Special Topics in Chemistry.

3150:499. Research Problems in Chemistry. (1-2 Credits)
(May be repeated for a total of eight credits) Prerequisite: Permission. Assignment of special problems to student, designed as an introduction to research problems.

Child and Family Development (3760)

3760:110. Foundations in Early Childhood Education. (3 Credits)
Provides students with a comprehensive overview of model early childhood programs and places emphasis on interactions between home and school that impact children's development.

3760:147. Orientation to Professional Studies in Family & Consumer Sciences. (1 Credit)
Survey of history and development of family and consumer sciences with emphasis on professional and career opportunities.

3760:201. Courtship, Marriage & Family Relations. (3 Credits)
Love, intimacy, relationship development, sexuality, marriage/child rearing are studied in lifespan perspective. Emphasis placed on individual relation to changing family/social/cultural demands.

3760:245. Infant/Toddler Day Care Programs. (3 Credits)
Survey of infant/toddler development. Principles of infant/toddler caregiving. Design of environment and curriculum based on child's needs. Includes observation of children. (20 field hours required)

3760:246. Multicultural Issues in Child Care. (3 Credits)
The study of cultural differences in child care and preschool settings to improve caregiving practices and enhance communication between caregivers and families.

3760:247. Diversity in Early Childhood Literacy. (3 Credits)
Examination and analysis of children's books and materials on diversity reflecting differences and similarities of groups of people that makea up our society.

3760:250. Observing & Recording Children's Behavior. (3 Credits)
Prerequisite: 3760:265 or permission. Develops observing and recording skills using different types of records to assess children's development and behavior. (10 field hours required)

3760:255. Fatherhood: Parent Role. (3 Credits)
Prerequisites: 3760:201 or 3760:265. Historic evolution of the father role, its changing social definition, and father's potential effects on a child's development--birth through adolescence.

3760:265. Child Development. (3 Credits)
Physical, cognitive, language, social, emotional, and personality development of the child from prenatal through age eight. Observation of children in early childhood educational settings.

3760:270. Theory & Guidance of Play. (3 Credits)
Prerequisite: 3760:265. Theory and guidance of play as primary vehicle and indicator of physical, intellectual, social, emotional development and learning of children from birth to kindergarten.

3760:280. Early Childhood Curriculum Methods. (3 Credits)
Prerequisite: 3760:265. Planning, presenting, evaluating creative activities in art, music, movement, language arts, logico-mathematics and science. Space, time, materials and adult-child interaction are emphasized.

3760:290. Special Topics: Early Childhood Development. (1-3 Credits)
Selected topics/workshops on subject areas of interest in early childhood development. May be repeated up to 4 credits.

3760:295. Early Childhood Practicum. (5 Credits)
Prerequisites: 2200:245, 5200:360, 5200:370, 3760:265, 3760:270, and 3760:280. Supervised practicum in an early childhood/preschool educational setting designed for Early Childhood Development students only.

3760:297. Independent Study. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisite: Permission. Selected topics and special areas of study under supervision and evaluation of selected faculty member with whom specific arrangements have been made.

3760:300. Legal Environment of Families. (3 Credits)
Introduction to legal terminology, reasoning and analysis, court systems and procedures within the context of family and consumer law.

3760:301. Consumer Education. (3 Credits)
Practical application that reviews and analyzes consumer education methods with major emphasis on the evaluation of consumer education programs. Online section available.

3760:303. Children As Consumers. (3 Credits)
Study of the consumer role of children three through eighteen years. Emphasizes research data on children as consumers and consumer education for children.

3760:360. Parent-Child Relations. (3 Credits)
Prerequisite: 3760:265. The study of interactive parent-child relations from infancy through adulthood and the internal and environmental forces which impact upon family dynamics. Online course.

3760:362. Family Life Management. (3 Credits)
Introduction to management theories, processes and principles as applied to utilization of human and material resources in promotion of individual and family well-being.

3760:365. Infant, Family and Society. (3 Credits)
Prerequisite: 3760:265. In depth examination of physical, cognitive, language, social, and emotional development of the infant from prenatal through age two. Observation of infants in daycare settings.

3760:370. Teaching in the Early Childhood Classroom. (2 Credits)
Prerequisites: 3760:265, 3760:270, and 3760:280. Assists students with the integration of knowledge, skills, attitudes, and values needed when working with young children, as learned in the child development program.

3760:375. Teaching in the Early Childhood Classroom Lab. (2 Credits)
Prerequisites: 3760:265, 3760:270, and 3760:280. An integrated practical experience in child development centers under the direction of experienced early childhood professionals.

3760:401. American Families in Poverty. (3 Credits)
Prerequisites: 3760:201 or 3760:265, and senior status. Overview of the issues, trends and social policies affecting American families living in poverty. Online section available.

3760:404. Middle Childhood and Adolescence. (3 Credits)
Prerequisites: 3760:201 and 3760:265 or permission of instructor. The influences of middle childhood and adolescent behavior on the family and the influences of the family environment on middle childhood and adolescent development.

3760:406. Family Financial Management. (3 Credits)
Analysis of the family as a financial unit including financial problems and their resolution, decision-making patterns and financial practices behavior. Cases, exercises, problems and computer analysis.

3760:421. Special Problems in Family & Consumer Sciences. (1-3 Credits)
Additional study or apprentice experience in specialized field or preparation; group and individual experimentation.

3760:440. Family Crisis. (3 Credits)
Study of family stress and crisis including internal and external variables and their influence on degree of disorganization, coping and recovery. Includes theory, research and application dimensions.

3760:441. Family Relationships in Middle and Later Years. (3 Credits)
Exploration of family and individual development of communication and education during the middle and later years of life. Emphasis on issues related to intimacy, economics, social policies, psychological and biological changes.

3760:442. Human Sexuality. (3 Credits)
Prerequisite: 3760:201 or permission of instructor. Introduction to problems and values. Emphasis is on the role of values in intimate relationships, the diverse dimensions of sexual responsibility.

3760:446. Culture, Ethnicity & Family. (3 Credits)
Prerequisites: 3760:201 or 3760:265, and senior status. Study of the role of culture and ethnicity in adaptation of the family system to environment. Online section available.

3760:447. Senior Seminar: Critical Issues in FCS Professional Develop. (1 Credit)
Prerequisites: FCS major & senior standing. Consideration of family and consumer sciences as a profession and its impact on the quality of life of individuals, families and their environments. Analysis of challenges facing the profession and all home economists.

3760:448. Before & After School Child Care. (2 Credits)
Study of the development, implementation and evaluation of school-age child-care programs for before and after school and vacation periods.

3760:450. Families, Individuals & Environments. (3 Credits)
Prerequisite: FCS major, senior standing or completion of 90 credits or permission of instructor. Integrative exploration of issues affecting the well-being of individuals, families, and communities in the multiple environments in which they function.

3760:460. Organization & Supervision of Child Care Centers. (3 Credits)
Theory, principles and procedures involved in establishing and operating centers for infants, toddlers, preschool and school-age children.

3760:461. Case Management for Children & Families I. (3 Credits)
Provides an overview of Case Management basics in a multi-systems collaborative context. Includes roles, values, principles, state and service systems, and service coordination.

3760:462. Case Management for Children & Families II. (3 Credits)
Prerequisite: 3760:461 or 3760:561. Provides in-depth exploration of Case Management principles and practice. Emphasis on process and functions, assessment, cross-system service planning and coordination, advocacy, and cultural diversity.

3760:463. Practicum in Cross-Systems Case Management for Children & Families. (3 Credits)
Prerequisites: [3760:461 or 3760:561] and [3760:462 or 3760:562], and six hours of electives. Provides on-site opportunities to apply skills in cross-systems collaborative Case Management with children and families. Includes review of strategies, ethics, and survival skills, and supervision.

3760:485. Seminar in Family & Consumer Sciences. (1-3 Credits)
Prerequisite: Permission of instructor. Exploration and evaluation of current developments in selected areas.

3760:490. Workshop in Family & Consumer Sciences. (1-3 Credits)
Prerequisite: at least junior standing. Investigation on current issue or topic in selected areas of home economics and family ecology. May be on off-campus study tour or an on-campus full-time group meeting.

3760:494. Internship: Family and Consumer Sciences. (1-6 Credits)
Prerequisite: Permission of the instructor. In depth field experience in business, industry, or community agencies relating to the student's area of specialization.

3760:496. Parent Education. (3 Credits)
Prerequisite: 3760:265, comparable course or permission of instructor. Practical application that reviews and analyzes parent education methods with major emphasis on the evaluation of parent education programs. Online section available.

3760:498. Internship: Family & Consumer Sciences. (2-6 Credits)
Prerequisite: Permission of instructor. In-depth field experience in business, industry or community agencies related to student's area of specialization.

3760:499. Senior Honors Project in Family & Consumer Sciences. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and approval of honors preceptor. Individual study supervised by adviser. Student and preceptor develop goals, objectives and methodology.

Chinese (3502)

3502:101. Beginning Chinese I. (4 Credits)
Sequential. Acquisition of basic reading, speaking, writing, and listening comprehension skills, with emphasis on development of self-expression in everyday situations through culturally authentic media and texts.

3502:102. Beginning Chinese II. (4 Credits)
Sequential. Prerequisite: 3502:101 or equivalent. Acquisition of basic reading, speaking, writing, and listening comprehension skills, with emphasis on development of self-expression in everyday situations through culturally authentic media and texts.

3502:201. Intermediate Chinese I. (4 Credits)
Sequential. Prerequisite: 3502:102 or equivalent. Continuing acquisition of speaking, listening, comprehension, reading, and writing competency through use of culturally authentic materials; emphasis on developing accuracy of self-expression. (Conducted in Chinese.)

3502:202. Intermediate Chinese II. (4 Credits)
Sequential. Prerequisite: 3502:201 or equivalent. Continuing acquisition of speaking, listening, comprehension, reading, and writing competency through use of culturally authentic materials; emphasis on developing accuracy of self-expression. (Conducted in Chinese.)

3502:210. Chinese Culture Through Film. (3 Credits)
Prerequisites: 32 credit hours including 3300:111 and 3300:112 or equivalent. Exploration of Chinese culture through viewing of films subtitled in English. Readings and discussions in English. Does not count toward minor in Chinese.

3502:301. Chinese Conversation. (4 Credits)
Prerequisite: 3502:202 or equivalent. Continuing development of oral expression, listening comprehension and conversational ability, with emphasis on expressing and supporting opinions. (Conducted in Chinese.)

3502:302. Chinese Composition. (4 Credits)
Prerequisite: 3502:202 or equivalent. Development of writing skills through intensive practice and study of written expression in Chinese. Emphasis on composing extensive descriptive narrations and personal letters. (Conducted in Chinese).

3502:303. Chinese Conversation Through Media. (4 Credits)
Sequential. Prerequisite: 3502:202 or equivalent. Development of oral expression and listening comprehension, with emphasis on discussing current topics and expressing and supporting opinions based on media clips. (Conducted in Chinese.)

3502:304. Chinese Reading and Writing. (4 Credits)
Prerequisite: 3502:202 or equivalent. Continuing development of reading ability through study of Chinese publications, and writing summaries of the texts. (Conducted in Chinese.)

3502:311. Chinese Cultural Experience Abroad. (1-8 Credits)
Prerequisite: Residence and study abroad in a Chinese-speaking country. May be repeated once with different content. Only 8 credits allowable for minor in Chinese.

3502:422. Special Topics in Language Skills, or Culture or Literature. (1-4 Credits)
Prerequisite: Two of the group [3502:301, 3502:302, 3502:303, 3502:304]. Development of specialized language skills or reading of significant works of literature or culture not studied in other courses. (May be repeated once under different topic for a total of 8 credits.)

3502:497. Individual Reading in Chinese. (1-4 Credits)
Prerequisite: 3502:202. Individual study under guidance of professor who directs and coordinates student's reading and research. May be repeated once for a total of 8 credits.

Civil Engineering (4300)

4300:101. Tools for Civil Engineering I. (3 Credits)
Corequisites: 3450:149. Introduction to Civil Engineering. Basic concepts of civil engineering practice including communication skills, problem solving skills, professional ethics/goals, and teamwork. Introduction to professional level software including spreadsheets, database, and mathematical computation.

4300:102. Tools for Civil Engineering II. (3 Credits)
Prerequisite: 4300:101. Building on concepts of engineering practices learned in Tools I further developing communication skills, problem solving skills, professional ethics/goals, statistics and model-building, and teamwork. Advanced use of professional level software including CAD, MATLAB and Excel.

4300:201. Statics. (3 Credits)
Corequisites: 3450:222 and 3650:291. Forces, resultants, couples; equilibrium of force systems; distributed forces; centers of gravity, analysis of simple structures; moments of inertia; kinematics.

4300:202. Introduction to Mechanics of Solids. (3 Credits)
Prerequisite: 4300:201. Axial force, bending moment diagrams, axial stress and deformation; stress-strain diagrams; torsion; flexural stress; flexural shearing stress; compound stresses; indeterminate beams; columns.

4300:306. Theory of Structures. (3 Credits)
Prerequisite: 4300:202 and admission to the College of Engineering. Stability and determinacy; statically determinate trusses and frames; approximate frame analysis influence lines; moving loads; virtual work analysis; moment area theorem; theorem of three moments; moment distribution for continuous beams and frames.

4300:313. Soil Mechanics. (3 Credits)
Prerequisite: 4300:202 and admission to the College of Engineering or permission. Physical properties of soils. Soil water and groundwater flow. Stresses, displacements, volume changes, consolidation within a soil mass. Soil strength. Compaction.

4300:314. Geotechnical Engineering. (3 Credits)
Prerequisites: 4300:313 and admission to the College of Engineering. Limiting equilibrium within a soil mass. Design of retaining walls, bulkheads, shallow, deep foundation systems. Slope stability. Laboratory study of soil properties and behavior.

4300:321. Introduction to Environmental Engineering. (3 Credits)
Prerequisites: 3150:153 and 3450:222. Basic principles of ecosystems, microbiology, chemical reactions, and material flow that environmental engineers use to protect our water, air and soil.

4300:323. Water Supply & Pollution Control. (3 Credits)
Prerequisite: 4300:321 and admission to the College of Engineering. Water and wastewater characteristics, criteria, quantities and distribution. Water and wastewater treatment process flowsheets, design and operation. Wastewater and residue disposal.

4300:341. Hydraulic Engineering. (3 Credits)
Prerequisites: 4600:310 and admission to the College of Engineering. This course will focus on presentation and application of fundamental hydraulic principles in both the classroom and laboratory. Examination of flow in pipelines and pipe networks, pumps and pumping stations, hydrology, flow in open channels, groundwater hydraulics, and design of hydraulic structures will be studied. Emphasis will be placed on proper application of principles, data interpretation and analysis, problem solving, and report writing.

4300:361. Transportation Engineering. (3 Credits)
Prerequisites: junior standing and admission to the College of Engineering. Introductory survey of transportation topics including transportation planning requirements and techniques, introduction to design of highways, airports and railroads and introduction to traffic engineering.

4300:380. Engineering Materials Laboratory. (3 Credits)
Prerequisites: 4300:202 and admission to the College of Engineering. Fundamentals and applications of materials science, mechanics of solids and study of laboratory instrumentation and standard techniques in testing of engineering materials.

4300:401. Steel Design. (3 Credits)
Prerequisites: 4300:306 and admission to the College of Engineering. Tension, compression members; open web joists; beams; bearing plates; beam-columns; bolted, welded connections.

4300:403. Reinforced Concrete Design. (3 Credits)
Prerequisites: 4300:306 and admission to the College of Engineering. Ultimate strength analysis and design; compression steel; diagonal tension; stirrups; development length; one-way slab; T-beams; two-way slabs; columns; isolated and combined footings.

4300:404. Advanced Structural Design. (3 Credits)
Prerequisites: 4300:401 and 4300:403. Composite design; plate girders; plastic design; cantilever retaining walls; torsion in R/C members; deflection of R/C members; continuous girder bridge design.

4300:407. Advanced Structural Analysis. (3 Credits)
Prerequisite: 4300:306. Energy methods for beams and frames. Stiffness and flexibility formulations for framed structures using classical and matrix methods. Introduction to stability and plastic analysis. Warping-Torsion behavior of beams. Analysis of axisymmetric circular plates and membrane shells.

4300:414. Design of Earth Structures. (3 Credits)
Prerequisite: 4300:314 or permission. Design of earth structures: dams, highway fills, cofferdams, etc. Embankment construction techniques, quality control, embankment analysis, instrumentation, foundation soil stabilization, seepage analysis and control. Design problem. Graduate students will perform more advanced analysis and design.

4300:418. Soil & Rock Exploration. (3 Credits)
Prerequisite: 4300:314 or permission. Site exploration criteria and planning. Conventional boring, sampling and in situ testing methods. Theory and application of geophysics and geophysical methods including seismic, electrical resistivity, gravity, magnetic and radioactive measurements. Air photo interpretation.

4300:423. Chemistry for Environmental Engineers. (3 Credits)
Prerequisite: One year of college chemistry. General, physical, organic biochemistry, equilibrium, and colloid chemistry concepts applied to Environmental Engineering. Concepts are used in water and wastewater laboratory.

4300:424. Water-Wastewater Laboratory. (1 Credit)
Corequisite: 4300:323 or permission. Analysis of water and wastewater.

4300:426. Environmental Engineering Design. (3 Credits)
Prerequisite: 4300:323. An introduction to the physical, chemical and biological processes utilized in the treatment of water and wastewater, with design parameters emphasized.

4300:427. Water Quality Modeling & Management. (3 Credits)
Prerequisite: 4300:323. Analysis and simulation of the physical, chemical and biochemical processes affecting stream quality. Development of management strategies based upon the application of water quality modeling techniques to environmental systems.

4300:428. Hazardous & Solid Wastes. (3 Credits)
Prerequisite: senior standing or permission of instructor. Hazardous and solid waste quantities, properties and sources are presented. Handling, processing, storage and disposal methods are discussed with non-technical constraints outlined.

4300:441. Hydraulic Design. (3 Credits)
Prerequisite: 4300:341. Collection and critical evaluation of hydraulic data related to actual design problem selected by instructor. Development and analysis of design alternatives. Preparation of reports.

4300:443. Applied Hydraulics. (3 Credits)
Prerequisites: 4300:341 and admission to the College of Engineering. Review of design principles: urban hydraulics, stream channel mechanics, sedimentation, coastal engineering.

4300:445. Hydrology. (3 Credits)
Prerequisite: 4300:341. Surface water hydrology, water cycle, precipitation, evaporation, stream flow. Principles of hydrologic systems and their analysis. Hydrologic simulation, reservoir planning and water supply studies. Analysis of rainfall and floods.

4300:448. Hydraulics Laboratory. (1 Credit)
Prerequisite: 4300:341. Introduction to laboratory and field devices for hydraulic measurements. Reduction and presentation of hydraulic data. Individual assignments of model studies of hydraulic structures.

4300:450. Urban Planning. (2 Credits)
Historical developments in urban planning; urban planning techniques and patterns; comprehensive master planning studies; planning regulations; design problems; class projects; class project presentation.

4300:451. Computer Methods of Structural Analysis. (3 Credits)
Prerequisite: 4300:306. Computer methods of structural analysis. Finite element software and interactive graphics. Stiffness concepts and matrix formulation of beams; modeling of simple and complex structural systems; vibration analysis using microcomputers.

4300:452. Structural Vibrations & Earthquakes. (3 Credits)
Prerequisite: 4300:306. Vibration and dynamic analysis of structural systems with one, two, or more degrees of freedom; beams, frames, buildings and bridges. Numerical methods of analysis. Elastic-plastic systems. Earthquake analysis of design. Earthquake codes.

4300:453. Optimum Structural Design. (3 Credits)
Prerequisite: 4300:306. Basic concepts in structural optimization. Mathematical programming methods including unconstrained minimization, multidimensional minimization and constrained minimization.

4300:454. Advanced Mechanics of Materials. (3 Credits)
Prerequisite: 4300:202 or equivalent. Three-dimensional state of stress and strain analysis. Unsymmetric bending of straight and curved members with shear deformation. Beams on elastic foundations. Saint Venant's torsional problems. Inelastic analysis of bending and torsional members. Introduction to energy method. Instability behavior of prismatic members.

4300:463. Transportation Planning. (3 Credits)
Prerequisite: 4300:361. Theory and techniques for development, analysis and evaluation of transportation system plans. Emphasis on understanding and using tools and professional methods available to solve transportation planning problems, especially in urban areas.

4300:464. Highway Design. (3 Credits)
Prerequisite: 4300:361. Study of modern design of geometrical and pavement features of highways. Design problem and computer use. Graduate students will produce a more complete design.

4300:465. Pavement Engineering. (3 Credits)
Prerequisite: 4300:361. Theories of elasticity, of viscoelasticity and of layered systems as applied to pavements. Pavement materials characterization; pavement design, pavement restoration for rigid and flexible pavements.

4300:466. Traffic Engineering. (3 Credits)
Prerequisite: 4300:361. Vehicle and urban travel characteristics, traffic flow theory, traffic studies, accidents and safety, traffic signs and marking, traffic signal planning, traffic control and transportation administration.

4300:467. Advanced Highway Design. (3 Credits)
Prerequisites: 4300:464, autoCAD capability, or permission. Computer-aided geometrical design of highways including survey data input, digital terrain modeling, cross-section templates, horizontal and vertical roadway design, earthwork computations, and advanced topics.

4300:468. Highway Materials. (3 Credits)
Prerequisites: 4300:361 and 4300:380 or permission. Properties of aggregates, manufacture and properties of portland cement concrete, properties of asphaltic materials, design and testing of hot mix asphalt pavement mixes and of surface treatments. Laboratory preparation of specimens and determination of properties. Graduate student requirement: Graduate students will be required to perform an additional eight-hour asphalt laboratory (Abson recovery of asphalt from solution) and to prepare a paper on a highway materials topic.

4300:471. Construction Administration. (3 Credits)
Prerequisites: senior standing and admission to the College of Engineering or permission. Organization for construction, construction contracts, estimating, bidding, bonds and insurance. Construction financial management and supervision of construction, scheduling using critical path method.

4300:472. Construction Engineering. (3 Credits)
Prerequisite: senior standing or permission. Construction equipment selection and management. Techniques of various engineering construction operations including blasting, tunneling, concrete framework and dewatering.

4300:473. Construction Materials. (2 Credits)
Prerequisites: 4300:380, 4200:305. Composition, structure and mechanical behavior of structural materials such as concrete, wood, masonry, plastics and composite materials. Discussion of applications and principles of evaluating material properties.

4300:474. Underground Construction. (2 Credits)
Prerequisite: 4300:314. Description of practices and techniques of underground construction. Selection of proper method for individual job. Design of underground openings, support systems and linings.

4300:480. Reliability-Based Design. (4 Credits)
Prerequisite: 3470:261 and senior standing. Probability concepts in civil engineering. Risk analysis and reliability based design.

4300:482. Special Projects: Civil Engineering. (1-3 Credits)
Prerequisites: senior standing and permission. Directed individual or group research or study in student's field of interest. Topic subject to approval by adviser.

4300:490. Senior Design in Civil Engineering. (3 Credits)
Prerequisites: senior standing and admission to the College of Engineering. A civil engineering design project that emphasizes interdisciplinary teamwork to solve a substantial, currently relevant problem.

4300:497. Honors Project. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisite: senior standing in Honors Program. Individual creative project or design relevant to civil engineering, supervised by faculty member of the department.

Classics (3200)

3200:220. Introduction to the Ancient World. (3 Credits)
Prerequisite: 3400:210 or 3400:221. Introduction to the civilizations of the Near East, Greece, and Rome, their cultural influences upon each other and their legacy to Europe.

3200:230. Sports & Society in Ancient Greece and Rome. (3 Credits)
A multimedia survey of ancient Greek and Roman sports, from the Olympics to gladiatorial games, and their connection to ancient and modern society.

3200:289. Mythology of Ancient Greece. (3 Credits)
Myth, legend and folktale in ancient Greece, with attention to religion and the transmission of Greek myth to Rome and the West. No foreign language necessary.

3200:361. The Literature of Greece. (3 Credits)
Prerequisite: 3400:210 or 3400:221. Major writers of ancient Greece and their influence on later European literature. No foreign language necessary. Required of majors.

3200:362. The Literature of Rome. (3 Credits)
Major writers of ancient Rome and their influence on later European literature. No foreign language necessary. Required of majors.

3200:363. Women in Ancient Greece and Rome. (3 Credits)
Examine women's lives in ancient Greece and Rome. Read their poetry, see them in ancient theatre, art, and philosophy, and in modern art and film.

3200:480. Reading & Research in Classical Studies. (1-3 Credits)
Directed reading and research for individual and small group study in any recognized area of classical studies.

3200:499. Honors Project in Classics. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisites: Senior standing in Honors Program and permission. Independent study leading to completion of a senior honors thesis under the supervision of a member of the Department of Classics.

Coll of Bus: Cooperative Education (6000)

6000:301. Cooperative Education. (0 Credits)
(May be repeated) For cooperative education students only. Work experience in business, industry, or governmental agency. Comprehensive performance evaluation and written report required.

School of Communication (7600)

7600:101. Introduction to Communication. (3 Credits)
Survey of the field of communication. Topics will focus on the history, as well as the theories, constructs, and career opportunities of all sub disciplines.

7600:105. Introduction to Public Speaking. (3 Credits)
Introduction to principles and practice of speaking by reading examples of speeches, studying techniques and methods employed and applying them in a variety of speaking situations.

7600:106. Effective Oral Communication. (3 Credits)
Principles of communication in speaker-audience, group and informal settings, and application of the principles in speeches, group discussions and other oral and written assignments.

7600:209. Principles of Social Media. (3 Credits)
This course provides students with a thorough understanding of social media as it relates to the tools, history, theories, ethics and practice of communication.

7600:210. Multiplatform Production. (3 Credits)
A basic introduction to theory and practice of single camera, photography, graphic and web production.

7600:219. Introduction to Public Relations. (3 Credits)
Introduction to public relations is a survey course that provides students with foundational information related to the study and practice of public relations.

7600:226. Interviewing. (3 Credits)
Study and practical application of selected interviewing concepts associated with job interviewing, journalistic interviewing, and life review interviewing.

7600:227. Non-Verbal Communication. (3 Credits)
Focused study of the principal aspects of nonverbal communication in public, group and interpersonal settings.

7600:228. ZTV. (1 Credit)
Participation in the operations of the University television station. *Total repeats not to exceed eight credits. (Note: Students being paid salaries from Student Activity Funds are not eligible for credit.)

7600:230. WZIP-FM. (1 Credit)
Participation in the operations of the University radio station. *Total repeats not to exceed eight credits. (Note: Students being paid salaries from Student Activity Funds are not eligible for credit.)

7600:231. Forensics. (1 Credit)
Participation in the operations of the University forensics team. *Total repeats not to exceed eight credits. (Note: Students being paid salaries from Student Activity Funds are not eligible for credit.)

7600:232. Buchtelite. (1 Credit)
Participation in the operations of the University newspaper. *Total repeats not to exceed eight credits. (Note: Students being paid salaries from Student Activity Funds are not eligible for credit.)

7600:233. Tel-Buch. (1 Credit)
Participation in the operations of the University year book. *Total repeats not to exceed eight credits. (Note: Students being paid salaries from Student Activity Funds are not eligible for credit.)

7600:235. Interpersonal Communication. (3 Credits)
Theory and practice in interpersonal communication concepts and principles. Special topics in communication apprehension, assertive communication, communication dyads and triads, and transactional communication.

7600:245. Argumentation. (3 Credits)
Study of process of developing, presenting and defending inferences and arguments in oral communication setting. Includes study and practice of evidence, reasoning, case construction, refutation and rebuttal.

7600:252. Persuasion. (3 Credits)
Emphasis on understanding persuasion theory and practice. Includes information analysis of motivational appeals and introduction to propaganda analysis.

7600:260. Theories of Rhetoric. (3 Credits)
Prerequisite: 7600:101. Theories of Rhetoric exposes students to 2,000 years of thought on rhetoric and meaning. Students explore the relationship between knowledge, truth and rhetoric.

7600:274. Introduction to the Media Industries. (3 Credits)
An introduction to the media industries concentrating on industry structure and business models with a particular emphasis on media convergence and distribution.

7600:284. Legal Issues in Media. (3 Credits)
Concentration on government regulations and legal requirements in production of broadcasting, film, and print media. Particular emphasis on copyright.

7600:300. Newswriting Across the Media. (3 Credits)
Prerequisite: completion of General Education English Composition Requirement with a grade of C or better or permission. Concentration on what constitutes news, legal and ethical aspects of what to print/broadcast and writing news stories for print and broadcast media.

7600:301. Advanced Newswriting. (3 Credits)
Prerequisite: Admitted to a four year degree granting college except CAST and 7600:300. Advanced course in writing and editing news, features and analysis for print media. Behavioral approach to communication of information and ideas.

7600:303. Public Relations Writing. (3 Credits)
Prerequisite or Corequisite: 7600:219. Introduction of writing skills required by public relations practitioners emphasizing different approaches for specific publics and specific media.

7600:304. Information Gathering & Editing. (3 Credits)
Prerequisite: Ability to type. Editing stories and photographs and writing headlines for print and online. Gathering information from primary and secondary sources.

7600:305. Communication Theory. (3 Credits)
Prerequisite: 7600:101. Examination of the theoretical foundations of the communication discipline. Historical roots, major theory building perspectives and a review of contemporary theories and applications in communication contexts.

7600:309. Public Relations Publications. (3 Credits)
Preparation of publications used as communication tools in public relations, advertising and organizations. Emphasis upon design, layout and technology.

7600:317. Topics in Media Production. (3 Credits)
Variable topics in media production including audio, video, digital. Repeatable with a change in topic, maximum 9 credits.

7600:325. Intercultural Communication. (3 Credits)
Study of human communication processes between individuals in culturally diverse contexts, both domestically and internationally, with an emphasis on analysis and application.

7600:344. Small Group Communication. (3 Credits)
Prerequisite: Junior or higher academic standing. This course explores the dynamics of small group communication. Students will learn how to become effective members of groups by practicing course concepts and theories in assignments.

7600:345. Advanced Presentational Communication. (3 Credits)
Prerequisite: [7600:105 or 7600:106] and 7600:245. Continued development of audience analysis, research, style, and delivery to improve oral communication skills for a variety of civic and organizational purposes.

7600:355. Freedom of Speech. (3 Credits)
Prerequisite: Admitted to a four year degree granting college except CAST. Discussion and analysis of the Constitution's free speech guarantee; contemporary issues in freedom of communication; role of the media in free speech issues.

7600:356. Rhetorical Criticism. (3 Credits)
Prerequisite: 7600:260. Identifies principal textual and contextual elements of public discourse and presents various theories and models to be applied in studying rhetorical acts.

7600:368. Basic Audio & Video Editing. (3 Credits)
Prerequisite: Admitted to a four year degree granting college, except for CAST. A basic practical introduction to audio and video editing and the Avid Editing system in the MediaNet environment.

7600:372. Video Production. (3 Credits)
Prerequisite or Co-requisite: 7600:368. Theory and practice of digital video; development of professional skills in lighting, use of lenses, visual composition and sound recording for Single Camera applications.

7600:378. Topics in Media History. (3 Credits)
Prerequisite: Admitted to a four year degree granting college, except for CAST. In-depth study of topics in media history and genre. Repeatable with a change in topic (9 credits maximum).

7600:384. Communication Research. (3 Credits)
Prerequisites: 7600:101. Fundamental concepts of communication research methods, and the analysis, application, and interpretation of data in communication and media operations.

7600:398. Honors Project Preparatory. (1 Credit)
Prerequisite: junior standing, honors students only. This course prepares honors students to begin work on their senior honors project. Students will learn how to do background research, literature reviews, work with human subjects, and School of Communication requirements. At the end of the semester, students will have their proposal ready for submission to the Honors College.

7600:404. Public Relations Cases. (3 Credits)
Prerequisite or corequisite: 7600:219. Application of principles of public relations profession in an actual organizational setting.

7600:405. Media Copywriting. (3 Credits)
Prerequisite: 7600:309. Selected communication theories and research techniques used to plan, write and analyze commercial messages. Emphasis will be placed on selection of audience, medium, appeal, writing style and evaluation of efforts.

7600:406. Advanced Public Relations Theory. (3 Credits)
Prerequisite: 7600:219. Study and practical application of communication concepts, theories and skills relevant to public relations programs in businesses and nonprofit organizations.

7600:408. Women, Minorities & News. (3 Credits)
Prerequisites: 7600:300 and admission to a four year degree granting college except CAST. From a professional journalism perspective, this course provides historical analysis of diversity in the newsroom and the news. Students produce new content that addresses diversity.

7600:409. Public Relations Strategic Campaigns. (3 Credits)
Prerequisite: 7600:219. This course allows students to apply knowledge of public relations practice, history, theories, ethics and strategic planning to create real-world public relations campaigns.

7600:429. Advanced Strategic Social Media. (3 Credits)
Prerequisite: 7600:209 or 7600:219. Students will learn and apply knowledge of professional social media including theories, ethics, policy, and best practices to solve real-world social media problems.

7600:435. Organizational Communication. (3 Credits)
Prerequisite: 7600:101. Overview of theories and approaches for understanding communication flow and practices in organizations, including interdepartmental, networks, superior-subordinate, formal and informal communication.

7600:436. Analyzing Organizational Communication. (3 Credits)
Prerequisites: 7600:384 and 7600:435, or permission. Methodology for in-depth analysis and application of communication in organizations; team building; conflict management, communication flow. Individual and group projects; simulations.

7600:437. Training Methods in Communication. (3 Credits)
Prerequisites: 7600:345 or permission. Principles and concepts in the design and delivery of communication training programs; integration of theory and methodology; presentation skills; matching methods and learner needs.

7600:438. Health Communication. (3 Credits)
Prerequisite: Admitted to a four year degree granting college except CAST. The course presents an overview of health communication theory and research issues in interpersonal, small group, organizational, public relations, and mass media contexts.

7600:439. Independent Study: Communication. (1-12 Credits)
(May be repeated for a total of 12 credits) Prerequisites: Admitted to a four year degree granting college except CAST, permission of faculty. Directed independent readings, research, projects and productions. Written proposal must be submitted before permission is granted. Appropriate documentation of work required.

7600:444. Communication & Conflict. (3 Credits)
Prerequisite: 7600:101. Explores roles of communication & conflict in personal and work relationships. Emphasis placed on application of theories and strategies for conflict resolution from a communication perspective.

7600:450. Special Topics in Communication. (3 Credits)
(May be repeated for a total of nine credits) Special interest topics in mass communication, journalism, or communication, supplementing courses listed in University Bulletin. See department for current listing of offerings.

7600:457. Rhetoric in Contemporary Culture. (3 Credits)
Prerequisite: 7600:260 & 7600:356. Rhetoric in Contemporary Culture serves as an advanced course in rhetorical criticism. Students apply critical methods to contemporary issues surrounding political, popular, and vernacular discourses.

7600:459. Leadership and Communication. (3 Credits)
Prerequisite: Admitted to a four year degree granting college except CAST. Theories of leadership and communication across public, organizational, small group, interpersonal, and political contexts. Assessments tools provided. Guest speakers.

7600:468. Advanced Audio and Video Editing. (3 Credits)
Prerequisite: 7600:368. A study of film and video editing. It provides practical experience and exposure to the various creative approaches and techniques of film / video editing.

7600:474. Media Theory. (3 Credits)
Prerequisites: 7600:101. A review of mass communication theories and their applications in addressing major issues relevant to media content, media audience and media effects.

7600:475. Political Communication. (3 Credits)
Students explore the relationship between politicians, citizens, and media. Topics include media coverage, campaign technologies, advertising, debates, engagement, rhetoric, and attitudes. Theories and methodologies discussed.

7600:480. Communication Internship. (3-6 Credits)
Prerequisites: 24 credits in Communication, 3.0 GPA in Communication and permission. Supervised experience and on-the-job training. Written permission prior to the semester enrolled is necessary. Repeatable up to a maximum 6 credits.

7600:481. Film as Art: An Introduction to the Film Form. (3 Credits)
A study of the role and function of Cinematography, Editing, Sound, and Mise-en-scene as they shape the meaning of the film, within the context of the traditional / non-traditional narratives and the documentary structure.

7600:485. Honors Project in Communication. (3 Credits)
Prerequisites: 7600:398, approval of honors preceptor. Independent study project leading to completion of honors research, creative or service project.

7600:486. Media Management & Leadership. (3 Credits)
Prerequisite: 7600:384 An intensive overview of media management and leadership principles and applications of these principles in addressing issues related to entrepreneurship, ethics, globalization and media convergence.

7600:487. Advanced Topics in Media Writing. (3 Credits)
Prerequisite: 7600:300. Advanced study in media writing. Topics include: script writing, broadcast newswriting, new media writing, etc. Repeatable with a change in topic, maximum 9 credit hours.

7600:490. Communication Workshop. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisite: Admitted to a four year degree granting college except CAST. Group study or group projects investigating a particular phase of media not covered by other courses in curriculum.

7600:499. Capstone in Communication. (3 Credits)
Prerequisites: 7600:101, 7100:384, and Senior Standing. Capstone in communication integrates theories, concepts, and skills: provides interdisciplinary work, and applied focus; and culminates in a project, paper, or production. Topics vary.

Community Services Tech (2260)

2260:131. Introduction to Developmental Disabilities. (2 Credits)
This course provides an overview of developmental disabilities. Content includes definitions, classifications, causes, and characteristics of disabilities; legislation/regulations; service delivery models; and prevention.

2260:150. Introduction to Gerontological Services. (3 Credits)
Basic orientation to gerontology and role of community service technician in service delivery to aged. Topics include social, biological, economical, and psychological aspects of aging; national and state legislation; services and service provider.

2260:231. Habilitation Programming. (2 Credits)
Prerequisite: 2260:131. This course examines components of individualized plans, implementation of such plans, and legal issues. Content includes types of habilitation programming and the role of self-determination.

2260:233. Behavior Support. (2 Credits)
Prerequisite: 2260:131. This course examines the components of behavior support. Course content includes various types of behavior support programs and techniques.

2260:255. Effective Workplace Relationships. (3 Credits)
This course focuses on self-evaluation and development of skills for successful interaction with clients/inmates, peers, supervisors, and colleagues in other public service systems.

2260:262. Basic Helping Skills. (4 Credits)
Teaches micro skills through the use of didactic presentation, role play and videotaping; develops ability to give and receive feedback about effectiveness of helping others.

2260:277. Case Management in Community Services. (3 Credits)
Case by case study of Social Service delivery in six primary areas of Human Services. Emphasis on case management skills, documentation and ethics.

2260:278. Techniques of Community Work. (4 Credits)
Prerequisite: 2020:121 or 3300:111. For those intending to work in community organizations in the United States and for others desiring an understanding of technical community service roles. Covers such topics as ethics, liability issues, communication and problem solving skills, values clarification, stress management systems theory, and assertive behavior.

2260:279. Technical Experience in Community & Social Services. (5 Credits)
Prerequisite: 2260:278 and permission. Individual placement in selected community and social service agencies for educationally supervised experience in community and social services technician position. Does not substitute for 7750:421 or 495.

2260:297. Independent Study: Community Services. (1-3 Credits)
Prerequisite: Permission. Selected topics and special areas of study under the supervision and evaluation of a selected faculty member with whom specific arrangements have been made.

Computer Engineering (4450)

4450:101. Tools for Computer Engineering. (3 Credits)
Corequisite: 3450:221 or 3450:149. Orientation to degree programs and design practice in electrical and computer engineering. Introduction to computer applications and resources for engineering studies.

4450:208. Programming for Engineers. (3 Credits)
Prerequisite: 4400:101 or permission. Introduction to programming. Environment and tools. C programming language. Machine level data forms and organization.

4450:220. Digital Logic Design. (4 Credits)
Corequisites: 4400:101 or 4450:101 or 4800:101. Boolean algebra and simplification of logic functions. Combinational and synchronous sequential circuits. Laboratory projects include design of digital systems with hardware description language and simulation.

4450:301. Undergraduate Research I: Computer Engineering. (1 Credit)
Prerequisites: completion of [4400:101 or 4450:101], 4400:230, 4400:231, 4400:330, 4400:332 and 4450:220 with a combined average grade of 3.0 or higher, admission to the College of Engineering and permission. Research project, supervised by faculty member of the department; requires oral research presentation and written report.

4450:302. Undergraduate Research II: Computer Engineering. (1 Credit)
Prerequisites: [4400:301 or 4450:301], admission to the College of Engineering and permission. Research project, supervised by faculty member of the department; requires oral research presentation and written report.

4450:303. Undergraduate Research III: Computer Engineering. (1 Credit)
Prerequisites: [4400:302 or 4450:302], admission to the College of Engineering and permission. Research project, supervised by faculty member of the department; requires oral research presentation and written report to the department, and presentation of work in a research venue outside the department.

4450:304. Undergraduate Research IV: Computer Engineering. (1 Credit)
(May be repeated. May not be applied to degree requirements.)
Prerequisite: 4450:303 or 4400:303, and permission. Research project, supervised by faculty member of the department; requires oral research presentation and written report.

4450:309. Design Project Seminar - Computer Engineering. (1 Credit)
Prerequisites: Junior standing, admission to the College of Engineering and permission. Project selection and proposal. Project specifications and alternative design. Professional ethics. Intellectual property. Societal impact issues in engineering design. Senior Design Project II presentations.

4450:320. Computer Systems. (3 Credits)
Prerequisite: 3460:209 or 4450:208, 4450:220 or 3450:208. Introduces the design and architecture of modern computer systems. Data and instruction representation. Conventional computer organization. Hardware and software design processes. The hardware/software interface.

4450:325. Operating Systems Concepts. (3 Credits)
Prerequisites: 4450:320, 3460:210. Processes and threads. Process communication and resource sharing. Deadlock resolution. Memory management. File systems. Introduction to network operating systems.

4450:367. VLSI Design. (3 Credits)
Prerequisites: 4400:360 and admission to the College of Engineering. Digital logic circuits. Very large scale integration (VLSI) fabrication processes and layout design. Delay and power of digital circuits. Latches and flip-flops in VLSI. Memory design. System-level design issues. Design project.

4450:401. Senior Design Project I - Computer Engineering. (2 Credits)
Prerequisites: 4450:309, senior standing, admission to the College of Engineering, and completion of 4450:325, 4450:367, 4450:420, 4450:427 and 4450:440 with a combined average grade of 2.0 or higher. Design and preparation phase of an engineering project. Requires project presentation, approval of a written proposal, and ordering of required parts.

4450:402. Senior Design Project II - Computer Engineering. (3 Credits)
Prerequisites: 4450:401 and admission to the College of Engineering. Implementation and evaluation phases of an engineering design project. Requires a project presentation and report.

4450:410. Embedded Scientific Computing. (3 Credits)
Prerequisites: 4450:208 or 3460:209 and 4400:340. Fixed point, floating point representation and coding. Processor/DSP implementations. Assemblers, C language semantics. Adapting scientific library routines for embedded use. Minimizing complexity. Ill-conditioned problems.

4450:415. System Simulation. (3 Credits)
Prerequisite: 4400:371 or 4450:440. Computer simulation of dynamic systems. Discrete system stability, linear multistep and Runge-Kutta methods, nonlinear systems, stiff systems, distributed systems and real-time computing.

4450:420. Computer Systems Design. (3 Credits)
Prerequisite: 4450:320. Design of advanced processors at the microarchitecture level. Pipelining. Superscalar, vector and VLIW architectures. Instruction-level parallelism. Compiler support. Multiprocessor architectures.

4450:422. Embedded Systems Interfacing. (3 Credits)
Prerequisites: [3460:209 or 4450:208] and admission to the College of Engineering. Corequisite: 4400:360. Microcontroller structures and embedded peripherals. Interfaces to physical environments. Software access to peripherals including timers, ADCs and DACs. Synchronous and asynchronous communications. Interrupts. Real-time operating systems.

4450:427. Computer Networks. (3 Credits)
Prerequisite: 4450:320; 4450:325 or 3460:426. Network architecture and protocol layering. Network design principles, communication protocols, and performance measures. Socket programming, routing, error detection and correction, access control, multimedia networking.

4450:440. Digital Signal Processing. (3 Credits)
Prerequisites: 4400:340 and admission to the College of Engineering. Signal sampling and reconstruction; data-converter models. Unilateral and bilateral z transforms. Discrete Fourier Transform (DFT); Fast Fourier Transform (FFT). Digital filter structures and design methods.

4450:462. Analog Integrated Circuit Design. (3 Credits)
Prerequisite: 4400:360. CMOS processes and layout; amplifiers, current mirrors, and comparators; current, voltage, and bandgap references; switched capacitor circuits. Frequency and noise analysis techniques.

4450:465. Programmable Logic. (3 Credits)
Prerequisite: 4450:220, 3460:209 or 4450:208. Digital design with programmable devices. PLD and FPGA architectures. Logic design and technology mapping tools.

4450:467. VLSI Circuits & Systems. (3 Credits)
Prerequisite: 4450:367. High performance adders and multipliers for very large scale integration (VLSI) systems. Architectural synthesis. Design for high performance, low power, and testability.

4450:498. Special Topics: Computer Engineering. (1-3 Credits)
(May be taken more than once) Prerequisite: Permission of department chair. Special topics in computer engineering.

Computer Information Systems (2440)

2440:105. Introduction to Computers and Application Software. (3 Credits)
Overview of basic computer concepts, electronic mail and Internet terminologies. Introductory-level instruction and hands-on experience in word processing, spreadsheet, database and presentation software.

2440:121. Introduction of Logic/Programming. (3 Credits)
Prerequisites: 2440:105 or pass placement test. An introduction to business problem solving using computer-based solutions. Topics include structured design, documentation and modularity. Includes a component of hands-on programming.

2440:125. Spreadsheet Software. (2 Credits)
Prerequisites: 2440:105 or pass placement test. Emphasizes mastery of spreadsheet applications using Excel.

2440:140. Internet Tools. (3 Credits)
Prerequisite: 2440:105 or placement exam. Students will learn to create web pages using HTML and enhance their documents by including hyperlinks, tables, forms, frames and images in their HTML code.

2440:141. Web Server Administration. (3 Credits)
Prerequisites: 2440:105 or pass placement test. Provides Web server administration guidelines such as selecting software/hardware, domain name registration, analyzing security/legal issues, and implementing marketing strategies.

2440:145. Introduction to Unix/Linux. (3 Credits)
Prerequisite: 2440:105 or pass placement exam (CISBR). This course explores the vital functions that an operating system performs. A multi-user operating system is studied from a functional and hands-on approach.

2440:160. JAVA Programming. (3 Credits)
Prerequisite: 2440:121. Course introduces the JAVA programming language. Programming techniques are demonstrated through the coding, testing and debugging of JAVA applications and applets.

2440:170. Visual BASIC. (3 Credits)
Prerequisites: 2440:121. Course includes hands-on experience with Visual BASIC, design of Graphical User Interface (GUI) applications, event-driven programming, linking of windows, and accessing relational databases.

2440:180. Introduction to Database Management. (3 Credits)
Prerequisites: 2440:121. Overview of database system models and functions. Covers introduction to database design and relational database definition and manipulation using SQL.

2440:201. Networking Basics. (3 Credits)
Prerequisites: 2440:105 or placement exam. The introductory course in networking. It includes study of the common network protocols, structures, and models. Basic router and switch configurations are introduced.

2440:202. Router and Routing Basics. (3 Credits)
Prerequisite: 2440:201. The second course to networking. It covers basic router configuration as well as routed and routing protocols.

2440:203. Switching Basics and Wireless. (3 Credits)
Prerequisites: 2440:201 and 2440:202 with a grade of C or better in both. The third of four courses leading to the CCNA certification. The course covers switching basics and basic wireless networking.

2440:204. WAN Technologies. (3 Credits)
Prerequisite:2440:202 and 2440:203. The fourth of four courses leading to the CCNA certification. Topics covered include IP services and Wide Area Network theory and design.

2440:210. Client/Server Programming. (3 Credits)
Prerequisite: 2440:180. Introduces student to client/server programming. Includes hands-on experience using a Rapid Application Development (RAD) tool to show integration of database and program development.

2440:211. Interactive Web Programming. (3 Credits)
Prerequisites: 2440:121 and 2440:140. Provides students with instruction on interactive Web programming using XML and DHTML (HTML/XHTML/HTML5, CSS, and Web scripting).

2440:212. Multimedia & Interactive Web Elements. (3 Credits)
Prerequisite: 2440:140. Reviews and demonstrates web tools and techniques like RealAudio, Shockwave, QuickTime, video conferencing and other dynamic graphical elements to enhance Web-based communication. Multimedia software may change to reflect current technology.

2440:240. Computer Information Systems Internship. (3 Credits)
Prerequisites: 2440:241, or 2440:202 and 2440:247, or 2440:282 and 2440:247. Provides student experience in computing/information technology in the workplace. Students meet with instructor to discuss and examine experiences.

2440:241. Systems Analysis & Design. (3 Credits)
Prerequisite: 2440:180 and [2440:160 or 2440:170 or 2440:256]. Covers all phases of business systems analysis, design, development, and implementation. Such principles as system flowcharting and file and document design emphasized.

2440:247. Hardware Support. (3 Credits)
Prerequisites: Admission to program or permission of program director. This course introduces the student to the basic skills required to troubleshoot, maintain and repair computers.

2440:248. Server Hardware Support. (3 Credits)
Prerequisite: 2440:247. This course introduces the student to server hardware and expands student knowledge of client hardware.

2440:251. CIS Projects. (3 Credits)
Prerequisite: 2440:241 or permission. Using a simulated work environment, project teams are set up and required to analyze an unstructured problem, prepare alternative designs and implement a solution.

2440:256. C++ Programming. (3 Credits)
Prerequisite: 2440:121. This course explores object-oriented programming through C++ program development.

2440:258. Information Continuity and Recovery. (3 Credits)
Prerequisites: 2440:201, 2440:247. This course focuses on issues in keeping organizational information secure and available. It also covers contingency planning for disasters and security breaches.

2440:259. Computer and Network Security. (3 Credits)
Prerequisites: 2440:202, 2440:247. This course focuses on computer and network security issues related to conducting business over the Internet. A common framework of information security terms and principles is used, and students learn to implement these principles in a business environment.

2440:281. Microsoft Networking I. (3 Credits)
Prerequisite: 2440:105. Provides the knowledge and skills necessary to manage and maintain Windows in the enterprise. This course also helps prepare the student to pass the MCTS exam.

2440:282. Microsoft Networking II. (3 Credits)
Prerequisite: 2440:281. Provides the knowledge and skills necessary to manage and maintain computers with the Windows Server 2008 Network Operating System. This course will also help prepare you to pass the MCTS Exam.

2440:283. Microsoft Networking III. (3 Credits)
Prerequisite: 2440:282. Provides the knowledge and skills necessary to manage and maintain an active directory service hosted by the Server 2008 Network Operating System. This course also helps prepare the student to pass the MCTS Exam.

2440:284. Microsoft Networking IV. (3 Credits)
Prerequisites: 2440:283 or passing score on the 70-640 Microsoft Certification Exam. This course will provide you with the knowledge and skill necessary to install, configure, manage and maintain the server services provided with Server 2008.

2440:290. Special Topics: Computer Information Systems. (1-5 Credits)
Selected topics or subject areas of interest in computer information systems.

2440:300. Network Authentication and Security. (3 Credits)
Prerequisite: 2440:204. WAN Technologies Junior/Senior standing and compliance with the repeat policy. This course focuses on network security issues related to conducting business over the Internet, including authentication, authorization, and firewalls.

2440:303. Voice, Data, and Video. (3 Credits)
Prerequisite: 2440:204 Wan Technologies. Junior/Senior standing and compliance with the repeat policy. This course focuses on network issues related to the integration of voice, data, and video over the same network media and equipment.

2440:306. Ethics & Law in Information Technology. (3 Credits)
Prerequisite: Junior/Senior standing. This course is designed to introduce the student to the central issues concerning intellectual property, privacy, and copyright law as it pertains to the development and distribution of software systems.

2440:310. Wireless Networking. (3 Credits)
Prerequisite: 2440:204 and compliance with repeat policy, or permission. This course provides students with various wireless networking technologies.

2440:311. Client/Server Programming II. (3 Credits)
Prerequisite: 2440:210. Discusses tools for client-server programming, distributed computing, socket programming, and security implementation.

2440:321. Server-Side Scripting. (3 Credits)
Prerequisites: 2440:121 & 2440:140. This course provides students with instruction on using server-side scripting languages to develop interactive client/server web-based applications.

2440:331. Programming for Cybersecurity. (3 Credits)
Prerequisites: 2440:121 and 2440:145 (must pass with a C or better). This course will introduce basic programming techniques used for ethical hacking using the Linux Operating System and other tools that are commonly used in cybersecurity.

2440:340. Network Forensics I. (3 Credits)
Prerequisities: Junior/Senior standing and 2220:281 with a grade of C or better. This course will provide the student with basic knowledge of surveillance of networking devices, identifying and preventing attacks and incident response.

2440:360. Java Programming II. (3 Credits)
Prerequisite: 2440:160. This course covers advanced object-oriented programming concepts, GUI programming, web application programming, network and security programming, JavaBeans and explores aggregations.

2440:365. E-Business Application Development. (3 Credits)
Prerequisites: 2440:211 & 2440:321. This course covers web programming techniques to develop Web-based e-business solution and covers e-business models and business issues.

2440:370. Visual Basic Programming II. (3 Credits)
Prerequisite: 2440:170. This course explores object-oriented programming through Visual Basic program development at a more advanced level, with more attention to business applications.

2440:388. Advanced UNIX/Linux. (3 Credits)
Prerequisite: 2440:145 and Junior/Senior standing. This course provides students with the necessary knowledge and skills to perform basic administrative tasks on a UNIX/Linux operating system.

2440:400. Advanced Routing. (4 Credits)
Prerequisites: 2440:201, 2440:202, 2440:203, 2440:204, 2440:300, 2030:154 OR possess a current CCNA certification and be able to configure a router to the CCNA standards and compliance with the repeat policy. This course focuses on advanced routing protocols and features and complies with the content of the Cisco Academy Cisco Certified Network Profession (CCNP) Advanced Routing course.

2440:401. Multilayer Switching. (3 Credits)
Prerequisites: Must have a current CCNA certification and be able to program a router to the CCNA standards. Requires permission. OR Must have successfully completed all four Cisco Networking Academy CCNA courses from an accredited academy (2440:201, 2440:202, 2440:203, 2440:204) and compliance with the repeat policy, or permission. This course focuses on switching protocols and features. This course complies with the content of the Cisco Academy Cisco Certified Network Profession (CCNP) Switching course.

2440:402. Troubleshooting Complex IP-based Networks. (4 Credits)
Prerequisites: 2440:400 and 2440:401 with grades of C or better and compliance with the repeat policy. This course focuses on methodologies and hands-on skills needed to maintain and troubleshoot complex IP networks.

2440:430. Network Monitoring and Management. (3 Credits)
Prerequisite: 2440:204 WAN Technologies OR Junior Standing and compliance with the repeat policy. This course provides students the basic theory and practical application of network monitoring and management skills.

2440:440. Intrusion Detection. (3 Credits)
Prerequisites: Junior/Senior standing and 2440:388 and 2440:340 with a grade of C or better. This course will introduce students to the various methods used to detect external and internal intrusion of computer systems.

2440:441. Cyber Security. (3 Credits)
Prerequisites: Junior/Senior standing and 2030:361, 2440:388 and 2440:340 with a grade of C or better. This course will address issues involving hacking, malware, social theories, protocols, firewalls, intrusion detection, the prevention and containment of intrusion incidents, the incident response process, and computer forensic examination.

2440:442. Wireless Forensics. (3 Credits)
Prerequisite: Junior/Senior standing and a grade of C or better in 2440:340. The forensic identification and tracking of attacks on wireless networks and mobile communications devices.

2440:443. Network Forensics II. (3 Credits)
Pre-requisite: Junior/Senior standing or 2440:340 with a grade of C or better. Deployment, building and running an NSM operation using open source software and vendor neutral tools with the Linx Operating System.

2440:450. Applied Data Mining. (3 Credits)
Prerequisite: 2030:345 and Junior/Senior standing. This course is designed to introduce the student to the central issues in business data mining.

2440:451. Senior Programming Projects. (3 Credits)
Prerequisite: Senior Standing. This course is the capstone course where senior students will apply learned material by simulating a realistic work environment.

2440:452. CIS Practicum. (3 Credits)
Prerequisite: Permission. Provides students with experience in computer information systems operation and maintenance in the workplace. Practicum must be relevant to the specialization area.

2440:456. C++ Programming II. (3 Credits)
Prerequisite: 2440:256. This course explores object-oriented programming through C++ program development at a more advanced level. Also considers Visual programming and connection to databases.

2440:465. Data Communications & Networking. (3 Credits)
Prerequisite: Junior/Senior Standing. Introduces students to business data communication and networking concepts. The OSI model, various network configuration and popular industry communication protocols are explored at an advanced level.

2440:470. Database Management II. (3 Credits)
Prerequisite: 2440:180. Covers advanced database design, definition, manipulation, and administration tasks with emphasis placed on the relational model, the object-oriented model, and client/server systems.

2440:480. Current Topics in Computer Information Systems. (3 Credits)
Prerequisite: Permission. Seminar in topics of current interest in information technology or special individual topics in information technology.

2440:490. CIS Senior Networking Projects. (3 Credits)
Prerequisites: 2440:388; and at least two of: 2440:310, 2440:400, 2440:401 or 2440:402 and compliance with the repeat policy, or permission. This course is used to research, document and implement current and advanced IT topics beyond the scope of what was learned in the prior CIS courses.

Computer Science (3460)

3460:101. Essentials of Computer Science. (3 Credits)
Explore major topics in Computer Science - computing systems, data representation, hardware, programming topics, and important applications such as networks, robotics, databases, and gaming.

3460:125. Descriptive Computer Science. (2 Credits)
Computer literacy: terminology; methods, media for data representation, storage; elements of a computing system; data organization.

3460:126. Introduction to Visual Basic Programming. (3 Credits)
Windows GUI and Microsoft's Visual BASIC programming environment. Design of user interfaces, event-driven programming, basic control structures, simple variables, arrays, and sequential files.

3460:209. Computer Science I. (4 Credits)
Prerequisite: Completion of 3450:145 or 3450:149 with a grade of C- or better. Introduction to problem-solving methods and algorithms. Programming in a high-level language including how to design, code, debug and document programs with good programming style.

3460:210. Computer Science II. (4 Credits)
Prerequisites: 3460:209 and 3450:208 with a grade of C- or better. Dynamic memory allocation methods, elementary data structures, internal representations, and associated algorithms. Topics include lists, stacks, queues, trees, and sorting methods.

3460:289. Selected Topics in Computer Science. (1-3 Credits)
Prerequisite: Permission. Selected topics of interest in computer science.

3460:306. Assembly and System Programming. (4 Credits)
Prerequisite: Completion of 3460:210 or equivalent with a grade of C- or better. Basic computer organization, digital logic, and data representation. Programming in assembly and C languages on a typical digital computer.

3460:307. Internet Systems Programming. (3 Credits)
Prerequisite: Completion of 3460:210 or equivalent with a grade of C- or better. Overview of current programming languages, tool and scripting technologies for the Internet and World Wide Web.

3460:316. Data Structures. (3 Credits)
Prerequisites: 3460:210 and [3450:221 or 3450:210] with grades of C- or better. A continuation of topics in 3460:210. Topics include: graphs and graph algorithms, external sorting, hashing, advanced tree and file structures.

3460:389. Intermediate Topics in Computer Science. (1-3 Credits)
Prerequisite: Permission of instructor. Selected topics of interest in computer science at an intermediate level.

3460:395. Internship in Computer Science. (1-12 Credits)
Prerequisites: Completion of 3460:209 and 3460:210 with grades of C- or better, and permission of a faculty supervisor. Placement in industry for experience related to computer science. (May be repeated to a maximum of 12 credit hours. No more than three credits may be applied towards a computer science major.)

3460:406. Introduction to C & UNIX. (3 Credits)
Prerequisite: Programming experience. Syntax of C with flow structures, pointers, and command line concepts. For UNIX, shell scripts, UNIX file structure, system calls and interprocess communication protocols. (Not an approved mathematics and computer science major, minor, or certificate elective.)

3460:408. Windows Programming. (3 Credits)
Prerequisites: Completion of 3460:208 or 3460:210 or 3460:406 with a grade of C- or better or permission. Windows operating systems, integrated development environment, event-driven programming, graphical user interface design, object libraries, component object model, object linking, embedding, client-server objects.

3460:418. Introduction to Discrete Structures. (3 Credits)
Prerequisite: Completion of 3460:210 with a grade of C- or better or permission. Introduction to a number of structures in algebra of particular use to student in computer science. Topics include algorithms and flow chart language, graphs and digraphs, trees, lattices codes.

3460:421. Object-Oriented Programming. (3 Credits)
Prerequisite: Completion of 3460:210 with a grade of C- or better. Object-oriented design, analysis, and programming using different development models. Comparison with other programming paradigms.

3460:426. Operating Systems. (3 Credits)
Prerequisites: Completion of 3460:316 and 4450:320 or equivalents with grades of C- or better. Introduction to aspects of all modern operating systems: types; storage management; process and resource control; interacting process synchronization.

3460:428. UNIX System Programming. (3 Credits)
Prerequisite: Completion of 3460:210 with a grade of C- or better and knowledge of C. An overview of the UNIX operating system. Shell programming. Process management, processor management, storage management, scheduling algorithms, resource protection, and system programming.

3460:430. Theory of Programming Languages. (3 Credits)
Prerequisite: Completion of 3460:210 with a grade of C- or better. Advanced concepts underlying programming languages and their applications, formal definitions of programming languages, Backus Normal Form, semantics. Alternative programming paradigms including functional programming.

3460:435. Algorithms. (3 Credits)
Prerequisite: Completion of 3460:316 with a grade of C- or better. Design and analysis of efficient algorithms for random access machines; derivation of pattern classification algorithms.

3460:440. Compiler Design. (3 Credits)
Prerequisites: Completion of 3460:210 and (4450:320 or 3460:306), with a grade of C- or better. Techniques used in constructing compilers, including lexical and syntactic analysis, parsing techniques, object code generation and optimization. Course requires a compiler implementation project.

3460:445. Introduction to Bioinformatics. (3 Credits)
Prerequisite: Completion of 3460:210 with a grade of C- or better or permission. Introduce major themes in bioinformatics. Topics include concepts of molecular genetics, biological databases, database searching, sequence alignments, phylogenetic trees, structure prediction, and microarray data analysis.

3460:453. Computer Security. (3 Credits)
Prerequisites: Completion of 3460:210 with a grade of C- or better. Principles of computer security -- cryptography, authentications, secure network protocols, intrusion detection and countermeasures.

3460:455. Data Communication & Computer Networks. (3 Credits)
Prerequisites: Completion of 3460:210 with a grade of C- or better. ISO-OSI, TCP/IP, SNA data switching, protocols, flow and error control, routing, topology, Network trends, network taxonomies, and socket-based programming.

3460:457. Computer Graphics. (3 Credits)
Prerequisite: Completion of 3460:210 with a grade of C- or better. Topics in vector and raster graphics, interactive graphics languages, scan conversion, clipping, geometric transformation, projection, shading, animation and virtual reality.

3460:460. Artificial Intelligence & Heuristic Programming. (3 Credits)
Prerequisite: Completion of 3460:210 with a grade of C- or better. Study of various programs which have displayed some intelligent behavior. Exploration of level at which computers can display intelligence.

3460:463. Pervasive Computing. (3 Credits)
Prerequisites: Completion of 3460:210 with a grade of C- or better. Computing from a wireless perspective. Topics include protocols, algorithms, security and sensor networks.

3460:465. Computer Architecture. (3 Credits)
Prerequisite: Completion of 3460:210 and (4450:320 or 3460:306), with a grade of C- or better. An introduction to the hardware organization of the computer at the register, processor and systems level. In-depth study of the architecture of a particular computer system family.

3460:468. Mobile Robotics. (3 Credits)
Prerequisites: Completion of 3460:210 with a grade of C- or better. Introduction to history, hardware and software components, and design of autonomous mobile robots. Multiple projects involving both physical robots and software emulation.

3460:475. Database Management. (3 Credits)
Prerequisite: Completion of 3460:210 with a grade of C- or better. Fundamentals of database organization, data manipulations and representation, data integrity, privacy.

3460:477. Introduction to Parallel Processing. (3 Credits)
Prerequisites: Completion of 3460:316 with a grade of C- or better and knowledge of C. Commercial processors: past and present. Parallel languages, models of parallel computation, parallel algorithm design and performance evaluation. Parallel paradigms with relation to real world applications.

3460:480. Software Engineering. (3 Credits)
Prerequisite: Completion of 3460:210 with a grade of C- or better. Introduction to formal software specification and validation. Introduction of methodologies and tools of design, development and validation, and maintenance.

3460:489. Topics in Computer Science. (1-3 Credits)
Prerequisite: Permission of instructor. Selected topics in computer science at an advanced level.

3460:490. Senior Seminar in Computer Science. (3 Credits)
Prerequisites: Must have completed at least 30 hours of 3460 (computer science) courses. Corequisites: 3460:435 and [3460:426 or 4450:325]. Professional software development, surviving "Mission Impossible" projects, computer ethics, intellectual property rights (patents and copyrights), and other current topics.

3460:497. Individual Study in Computer Science. (1-3 Credits)
(May be repeated. Can apply to degree, minor or certificate only with department approval.) Prerequisite: Permission. Directed studies designed as introduction to research problems under guidance of designated faculty member.

3460:498. Senior Honors Project: Computer Science. (1-3 Credits)
Prerequisites: 3460:497 and Senior student in Honors Program. Directed study for senior student in the Honors Program who has completed 3460:497. An introduction to research problems in the computer science under the guidance of selected faculty.

Computer Serv & Network Technology (2600)

2600:100. Basic Electronics for Technicians. (5 Credits)
Corequisites: 2030:151 and 2030:152. Fundamentals of electrical/electronic operations, linear devices and instrumentation essential to electrical/electronics maintenance and troubleshooting. Laboratory.

2600:125. Digital Electronics for Technicians. (4 Credits)
Prerequisite: 2600:100. Mathematical principles of electronic switching for logic-based systems and examination of methods of switching syntheses.

2600:160. Personal Computer Servicing. (4 Credits)
Prerequisite: 2600:100, 2440:145. Techniques for isolating and correcting faults in personal computers including the use of software diagnostic routines and electronic test equipment.

2600:180. Microprocessor Service Practicum. (2 Credits)
Corequisite: 2600:160. Work experience in the repair of microprocessor-based equipment using failed or malfunctioning equipment.

2600:185. Microprocessor Service Practicum Seminar. (1 Credit)
Corequisite: 2600:180. Integrates on-the-job technical experience acquired in 2600:180 with the fundamental concepts and skills acquired through course work.

2600:245. Network Operating Systems. (3 Credits)
Prerequisite: 2600:270. Examination of contemporary network operating systems. Provides skills to competently install and perform entry level management tasks. Includes troubleshooting TCP/IP, DHCP, DNS, WINS, and Network Access. Laboratory.

2600:252. Microsoft Active Directory. (3 Credits)
Prerequisite: 2600:245. Provides the knowledge and skills to plan, implement, and troubleshoot Microsoft Windows Server Active Directory service infrastructure including domain structure, site replication, and account strategies. Laboratory.

2600:254. Microsoft Networking VI. (1-4 Credits)
Prerequisite: 2600:240 or 2600:242. Provides the knowledge and skills to design a Microsoft Active Directory service and network infrastructure for a Microsoft Windows Server environment.

2600:256. Microsoft Networking VII. (1-4 Credits)
Prerequisite: 2600:240 or 2600:242. Provides the knowledge and skills to analyze business requirements for security and to design a security solution that meets those requirements in a Windows network environment.

2600:261. Network Security. (1-4 Credits)
Prerequisite: 2600:270 or permission. Provides the knowledge and skills to identify, troubleshoot, and implement network security, such as: general security concepts, communications security, infrastructure security, cryptography, and operational/organizational security.

2600:262. Linux Networking. (1-4 Credits)
Prerequisite: 2600:270 or permission. Provides the knowledge and skills needed to install, configure, administer, and troubleshoot Linux network operating systems including: licenses, administration, network configuration, and network protocol and security management.

2600:270. Introduction to Network Technology. (3 Credits)
Prerequisite: 2440:145. Provides students with an excellent foundation upon which to build their network training. Covers basic terms and concepts of computer networking.

2600:272. Network Hardware I. (3 Credits)
Corequisite: 2600:270. Study of contemporary networking hardware used in Local Area Networks and Wide Area Networks. Emphasis on routers and routing protocols. Use of simulation software encouraged. Laboratory.

2600:274. Network Hardware II. (3 Credits)
Prerequisite: 2600:272. A second course in contemporary networking hardware. Emphasis on switches used in LANs and routers used in WANs. Use of simulation software is encouraged. Laboratory.

2600:276. Advanced Network Technologies. (3 Credits)
Prerequisite: 2600:274. Examination of convergence technologies and the integration into LAN/WAN environments. Wireless networking and Voice over IP (VoIP) will be studied. Use of simulation software is included. Laboratory.

2600:280. Field Experience in Networking and Computer Support. (1-3 Credits)
Prerequisite: Permission. Paid field work activity in data processing or computer networking applications related to an occupational objective. One credit requires 180 hours of work. May be repeated up to 3 credits maximum.

2600:290. Special Topics: Computer Services & Networking. (1-5 Credits)
Prerequisite: Permission. This course is designed to allow for special topics and subject areas of particular interest to students.

Construction Engr Tech (2990)

2990:125. Statics. (3 Credits)
Prerequisites: 2030:154 and 2820:160. This course covers forces, resultants, and couples. Equilibrium of force systems. Trusses, frames, centroid, moment of inertia, and friction.

2990:129. Computer Applications in Construction. (3 Credits)
This course introduces students to important computing skills for construction managers including software for estimating, scheduling, presentations, general business administration and graphics.

2990:131. Building Construction. (2 Credits)
Materials and methods used in construction. Encompasses buildings constructed with wood, steel, concrete or a combination of these materials.

2990:150. Plan Reading. (2 Credits)
Prerequisite: 2990:131. The language of construction. Symbols, scales, plan views, elevation views, sections and details. Quantity take-off estimation.

2990:225. Strength of Materials. (3 Credits)
Prerequisite: 2990:125. Stress, strain and stress-strain relationships. Tension, compression, torsion, beams. Shear and moment diagrams. Combines stresses.

2990:226. Construction Supervision. (3 Credits)
Introduction to topics on construction supervision including planning, directing and coordinating onsite activities to build quality defined by drawings and specifications.

2990:234. Elements of Structures. (3 Credits)
Prerequisite: 2990:125 and 2990:225. Principles of stress and structural analysis, concepts of steel, timber design, and reinforced concrete.

2990:235. Construction Inspection. (3 Credits)
Prerequisite: 2990:131. Fundamentals of total quality management and construction inspection.

2990:237. Materials Testing I. (2 Credits)
Prerequisite: 2030:154. Laboratory testing of soils with emphasis on physical properties of soil. Laboratory and field procedures used for quality control.

2990:238. Materials Testing II. (2 Credits)
Prerequisite: 2030:154. Mix design of concrete. Laboratory testing of concrete containing ordinary Portland cement and pozzolanic admixtures. Experiments demonstrate physical properties as related to design and quality control.

2990:245. Construction Estimating. (3 Credits)
Prerequisite: 2030:154 and 2990:150. Quantity takeoffs in construction to include mass excavations, foundation systems, structural steel, residential construction, and various commercial construction methods.

2990:246. Site Engineering. (3 Credits)
Prerequisites: 2990:131 The content includes study of the development of a site including surveying, excavation, soil treatment, heavy equipment requirements, storm water management, pavement design, and construction of roadways.

2990:248. Construction Graphics. (3 Credits)
Introduction to terminology and drawing basics with a focus on civil/site plans, architectural and structural drawing.

2990:254. Building Codes. (3 Credits)
Prerequisite: 2990:131. Students learn fundamental concepts for construction related to the residential building code.

2990:310. Residential Building Construction. (3 Credits)
Introduction to building design, wood framing, and mechanical systems as commonly found in residential housing.

2990:312. Neighborhood Revitalization Project. (3 Credits)
Residential construction and inspection knowledge used to perform field work, service projects, and written inspection reports.

2990:320. Advanced Materials Testing. (3 Credits)
Prerequisite: 2990:241. This course investigates the usage of precision strain gage applications used by technicians in determining stresses in structural elements and mechanical parts.

2990:351. Construction Quality Control. (3 Credits)
Prerequisites: Admission into the BCET program or permission of instructor. Overview of quality control concepts and techniques as related to the construction industry including the necessary statistical tools; exposes students to civil, mechanical and electrical inspection requirements.

2990:352. Field Management & Scheduling. (2 Credits)
Prerequisites: 2990:245 or permission. Planning, scheduling, and controlling of field work within time and cost constraints. Manual methods and computer software packages studied.

2990:354. Foundation Construction Methods. (3 Credits)
Prerequisites:2990:234 and 2990:237. Soil mechanics and soils exploration as related to construction. Foundation construction methods and practice in the interest of safety and suitable economy.

2990:356. Safety in Construction. (3 Credits)
The purpose of this course is to explain what creates hazards and why, and to suggest where to anticipate trouble in each phase of the work as it progresses.

2990:358. Advanced Estimating. (3 Credits)
Prerequisite: 2990:245 or permission of instructor. This course focuses on estimating and bidding for public and private construction. Includes heavy/highway, residential and building construction with use of computer software to facilitate bid price.

2990:359. Construction Cost Control. (3 Credits)
Prerequisite: 6200:201 or 2420:211. Course develops a practical understanding of the latest managerial accounting principles and practices as they apply to the construction business.

2990:361. Construction Formwork. (3 Credits)
Prerequisite: 2990:234 or permission. Introduction to design and construction of formwork and temporary wood structures.

2990:362. Advanced Elements of Structures. (3 Credits)
Prerequisite: 2990:234. This course examines advanced topics in structural engineering and is an extension of Elements of Structures.

2990:371. Green & Sustainable Building Practices. (3 Credits)
This course is designed to provide an understanding of sustainable construction practices and their importance on environmental issues.

2990:453. Legal Aspects of Construction. (2 Credits)
Prerequisite: Admission into the BCET program or permission of instructor. Study of business of contracting and subcontracting and legal problems therein such as breach, partial performance, payment, insolvency, subsurface. Review of standard contracts and construction industry rules of arbitration.

2990:455. Computerized Precision Estimating. (3 Credits)
Prerequisite: 2990:245. Students will explore sophisticated software programs utilized by the construction industry to prepare estimates and bid packages.

2990:462. Mechanical Service Systems. (3 Credits)
Introduction to materials and equipment used in mechanical heating, ventilating, air conditioning, water and waste systems.

2990:463. Electrical Service Systems. (3 Credits)
Introduction to materials and equipment in electrical systems of buildings. Includes illumination, electrical sources, materials and distribution. Emphasis of fire safety.

2990:465. Heavy Construction Estimating. (3 Credits)
Prerequisite: 2990:245. Quantity takeoffs and cost analysis to include methods, systems, and equipment relevant to heavy highway and civil infrastructure projects.

2990:466. Hydraulics. (3 Credits)
Prerequisite: 2030:356. Introduction to hydrology. Flow in closed conduits and open channels, distribution, systems, storage requirements and basic concepts of hydraulic structures. Basic concepts of seepage and working knowledge of pumps.

2990:468. Construction Management. (3 Credits)
Prerequisites: 2990:352 and 2990:358. Construction Management takes established construction practices, current technological advances, and latest management methods and makes them into an efficient, smooth working system.

2990:469. Contracts and Specifications. (2 Credits)
Prerequisite: Admission to BSCET program or permission. This course studies the principles and applications of construction specifications, contracts, processes for managing professional risk and increasing economic performance of the construction process.

2990:471. Understanding LEED Guidelines. (3 Credits)
Prerequisite: 2990:371 or permission of instructor. Provides an understanding of LEED guidelines and requirements and help prepare the student for the LEED associate exam.

2990:479. CPC Seminar. (3 Credits)
Prerequisite: Must be of senior level status towards a B.S. Degree in Construction Engineering Technology or permission of instructor. This course prepares students for the content and format of the Certified Professional Constructor's Examination.

2990:489. Special Topics in Construction. (1-3 Credits)
Prerequisite: Permission of instructor. (May be repeated for up to six credits.) Special lecture/laboratory courses offered once or only occasionally in areas where no formal courses exist.

2990:490. Workshop in Construction. (1-3 Credits)
Prerequisites: Permission of instructor. (May be repeated for up to six credits.) Group studies of special topics in construction. May not be used to meet undergraduate major requirements in construction. May be used for elective credit only.

2990:497. Honors Project. (1-3 Credits)
Prerequisite: Senior standing in Honors College and permission of supervising faculty in student's degree field and pursuit of major in CET. Individual Senior Honor's Project relevant to student's major field of study. Specific projects are approved and supervised by a designated member of the faculty in the student's degree field.

2990:498. Independent Study in Construction. (1-3 Credits)
Prerequisite: Permission of instructor. (May be repeated for up to six credits.) Directed study in a special field of interest chosen by student in consultation with instructor.

Corrosion Engineering (4250)

4250:101. Tools for Corrosion Engineering. (2 Credits)
Corequisites: 3450:149 and 4200:110. Introduction to corrosion engineering. Basic concepts of engineering practice. Introduction to professional level software needed for later studies.

4250:105. Corrosion Engineering Computations. (2 Credits)
Prerequisite: 4200:101 or 4250:101. Corequisite: 3150:153. Structure, processing and properties of metals, ceramics, and polymers.

4250:194. Design Project 1. (1 Credit)
Prerequisite: Permission. Individual design project in Corrosion Engineering that is supervised by a faculty member.

4250:200. Material and Energy Balances for Corrosion Engineers. (4 Credits)
Prerequisites: [4200:121 or 4250:105], 3150:151 and 3450:221. Introduction to material and energy balance calculations applied to the solution of chemical processing and corrosion engineering problems.

4250:294. Design Project 2. (1-2 Credits)
Prerequisite: Sophomore Standing. Individual design project in Corrosion Engineering that is supervised by a faculty member.

4250:300. Fundamentals of Aqueous Corrosion. (3 Credits)
Prerequisites: 4200:225 and [4200:305 or 4600:380] and admission to the College of Engineering. Corequisites: 4250:301. Fundamentals of aqueous corrosion will cover corrosion tendencies, processes and rates at low temperature. An in-depth understanding of the aqueous corrosion mechanisms, materials performance, and the effects of stress will be covered.

4250:301. Aqueous Corrosion Lab I. (1 Credit)
Prerequisites: 3150:154 and admission to the College of Engineering. Corequisite: 4250:300. Laboratory exercises will reinforce the fundamentals of aqueous corrosion.

4250:305. Aqueous Corrosion Prevention. (3 Credits)
Prerequisite: 3150:263, 4250:300 and admission to the College of Engineering. Corequisite: 4250:306, 4300:202 and 4400:307. This course presents a functional approach to controlling and preventing aqueous corrosion based upon engineering methodologies to proper materials selection, organic coatings, chemical inhibitors, and electrochemical protection. Applications in specific industries will be covered.

4250:306. Aqueous Corrosion Lab II. (1 Credit)
Prerequisite: 4250:301 and admission to the College of Engineering. Corequisite: 4250:305. Laboratory exercises will reinforce the fundamentals of aqueous corrosion.

4250:310. Fundamentals of Dry Corrosion. (3 Credits)
Prerequisite: 4250:300 and admission to the College of Engineering. Corequisite: 4250:311. Fundamentals of dry/hot corrosion will cover corrosion tendencies, processes and rates at high temperature. An in-depth understanding of the high temperature corrosion mechanisms, materials performance, and the effects of stress will be covered.

4250:311. High Temperature Corrosion Lab. (1 Credit)
Prerequisite: 4250:306 and admission to the College of Engineering. Corequisite: 4250:310. Laboratory exercises will reinforce the fundamentals of high temperature corrosion.

4250:340. Corrosion Prevention (Dry). (3 Credits)
Prerequisite: 4250:305. Corequisite: 4250:310, 4600:380. This course presents a functional approach to controlling and preventing dry corrosion based upon engineering methodologies to proper materials selection, inorganic coatings, and passivation. Applications in specific industries will be covered.

4250:394. Design Project 3. (1-3 Credits)
Prerequisite: Junior Standing. Individual design project in Corrosion Engineering that is supervised by a faculty member.

4250:440. Corrosion Management I. (3 Credits)
Prerequisite: 4250:305 and admission to the College of Engineering. This course applies the lessons learned in corrosion prevention and laboratory courses to corrosion case studies. Solutions to existing corrosion problems will be developed based on the analysis of test data.

4250:441. Corrosion Management II. (3 Credits)
Prerequisites: 4250:440 and admission to the College of Engineering. This course focuses on understanding the financial, political, social and health implications of corrosion, corrosion mitigation, and corrosion prevention. Solutions to existing corrosion problems will be developed based on economic, political, social, and health issues. The course will also cover methodologies for preserving assets and reducing operation costs.

4250:450. Engineering Principles of Corrosion. (3 Credits)
Prerequisite: Junior level standing or permission. Engineering principles for understanding corrosion and corrosion mitigation methods. Case studies of corrosion management to reliability and reduce corrosion. Multidisciplinary engineering enrollment encouraged.

4250:494. Design Project 4. (1-3 Credits)
Prerequisite: Senior Standing. Individual design project in Corrosion Engineering that is supervised by a faculty member.

4250:496. Special Topics in Corrosion Engineering. (1-3 Credits)
Prerequisite: Permission. (May be repeated for a total of six credits). Topics selected from new and developing areas of corrosion engineering.

4250:497. Honors Project. (1-3 Credits)
Prerequisites: Senior standing in Honors College or permission. Individual research or design project in Corrosion Engineering that is supervised by a faculty member. Conducted in accordance with the Honors College requirements.

Corrosion Engineering Technology (2850)

2850:100. Introduction to Corrosion Technology. (2 Credits)
Prerequisite: 2030:151 or higher. Analysis of material selection and environmental conditions on corrosion; review of corrosion types, environments and characteristics of structural materials; economic impact, control methods are explored.

2850:120. Corrosion Engineering Technology Fundamentals I. (3 Credits)
Corequisite: 2820:111. Introduction to corrosion engineering topics including economic impacts of corrosion, types of corrosion, their recognition and prevention, parameters affecting corrosion, and methods of corrosion control.

2850:121. Corrosion Engineering Technology Fundamentals II. (4 Credits)
Prerequisite: 2850:120. Basic understanding of steps and methods required for combating corrosion including proper design, material selection, protective coating application, inhibitors use, and cathodic and anodic protection.

2850:200. Advanced Corrosion Technology. (3 Credits)
Prerequisite: 2850:100. Study of corrosion control methods through design, materials selection, protective coatings, cathodic and anodic protection; corrosion testing and monitoring; disagnosis of corrosion failures; selection of treatment options; corrosion data analysis.

2850:220. Strategies for Corrosion Prevention. (4 Credits)
Prerequisite: 2850:121. Corequisite: 2820:163. This course focuses on the control of corrosion by applying coatings and cathodic protection.

2850:221. Corrosion Engineering Technology Projects. (4 Credits)
Prerequisite: 2850:220. Course focuses on corrosion/failure analysis and corrosion mitigation, and discussion of regulatory compliance and resource acquisition and allocation.

Criminal Justice Studies (3800)

3800:100. Introduction to Criminal Justice. (3 Credits)
Overview of criminal justice system, its history, development and evolution within the United States including subsystems of police, courts, corrections. Constitutional limitations, current criminal justice practices human relations, professionalization, prevention.

3800:101. Introduction to Security Administration Technology. (3 Credits)
Introduces fundamentals such as equipment, technology, design theories, management practices, trends, concerns, and issues in security administration.

3800:102. Principles of Criminal Law. (3 Credits)
Prerequisite: 3800:100. This course examines the central principles of criminal law, including its history, philosophy, the elements of major crimes and criminal defenses.

3800:103. Introduction to Corrections. (3 Credits)
Prerequisite: 3800:100. Introduction to history and goals of institutional and community corrections.

3800:104. Evidence & Criminal Legal Process. (3 Credits)
Prerequisite: 3800:100. Study of evidence law, constitutional perspectives and law enforcement officer's relationship thereto. Court procedures from arrest to incarceration.

3800:105. Introduction to Police Studies. (3 Credits)
Prerequisite: 3800:100. Provides a foundation for understanding police role, structure, and function in American society at the local, state, and federal levels.

3800:106. Juvenile Justice Process. (3 Credits)
Prerequisite: 3800:100. Examination of juvenile justice system, functions of its various components; adolescent subculture, legislation, causative factors, prevention and treatment methodologies and programs.

3800:120. Crime Prevention: Theory, Practice, and Management. (3 Credits)
Examines contemporary crime prevention and security strategies used in target hardening. Central theme is the use of community resources to prevent crime.

3800:222. Interview & Interrogation. (3 Credits)
Prerequisite: OPOTC Certification. A course of study on interview and interrogation which will teach the student how to obtain information in an orderly, effective, and legally sufficient manner.

3800:224. Profiling Serial Killers. (3 Credits)
Prerequisite: 3800:100. Introduction to the theories, analyses, and methodology used in profiling serial killers. Actual serial profiles and paradigms of crime scene analyses also examined.

3800:225. The Police Experience. (3 Credits)
Prerequisites: 3800:100 and permission. Academic refresher course of basic police academy. Completion (C or better) and 3800:100 qualifies a commissioned police officer to test out of certain courses (see adviser).

3800:226. Interviews, Interrogations, and Hostage Negotiations. (3 Credits)
Prerequisite: 3800:100. An overview of the legal, theoretical, and applied aspects of conducting interviews, interrogations, and hostage negotiations within the field of law enforcement.

3800:231. Physical Security: Systems, Design, and Control. (3 Credits)
Prerequisite: 3800:101. Topics include: controlling and monitoring the access of persons and vehicles, prevention and detection of unauthorized intrusions and surveillance, and safeguarding key assets.

3800:232. Legal Issues in Security Administration. (3 Credits)
Prerequisite: 3800:101. Survey of laws applicable to the security administration function including tort, labor, employment, unemployment, workers' compensation, contract, insurance, cyber, criminal and constitutional law.

3800:233. Security Investigations: Principles and Practice. (3 Credits)
Overview of investigative methods employed by the security manager. Students will examine legal and ethical duties and issues related to investigation.

3800:234. Computer and Information Security. (3 Credits)
Prerequisite: 3800:101. Examines practical applications of effective information security measures and legal, ethical and privacy issues concerning the storage and use of information in society.

3800:235. School Crime and Violence Prevention. (3 Credits)
Prerequisites: 3800:101, 3800:120. Examines the nature and extent of crime and deviance in American schools. Particular focus is on the use of a systems approach to prevent crime.

3800:240. Vice & Organized Crime. (3 Credits)
Prerequisites: 3800:100 and permission. An overview of organizations operating nationally and internationally in a variety of criminal activities with a particular emphasis on narcotics trafficking.

3800:245. Homeland Security: Principles and Practice. (3 Credits)
Prerequisite: 3800:101. Overview of fundamental homeland security concepts and issues such as: intelligence, critical infrastructure protection, hazards, strategy, policy, risk, organizational design and leadership.

3800:250. Criminal Case Management. (6 Credits)
Prerequisites: 3800:100, 2820:105 and permission. Reconstruction of chronological sequence of a crime including searching, collection, preserving and evaluation of physical and oral evidence. Scientific approach to criminal investigation.

3800:251. Criminal Investigation. (3 Credits)
Prerequisite: 3800:100. The course provides the student with fundamental investigative skills and the ability to manage a criminal case from initiation through conclusion.

3800:253. Basic Forensic Methods. (3 Credits)
Prerequisites: 3800:100 and 2820:105. Introduction to the science, technology and application of forensic methods in the investigation of crime.

3800:255. Introduction to Forensic Investigation. (3 Credits)
Prerequisite: 3800:100. This course is designed to introduce the student to the field of forensic science. The emphasis will be on skills and techniques of evidence evaluation.

3800:260. Critical Incident Interventions for Criminal Justice. (3 Credits)
Prerequisite: 3800:100. This course is designed to introduce the student to the stressors and emotions of dealing with people and workers involved in crisis situations.

3800:262. Police Administration. (3 Credits)
Prerequisite: OPOTC Certification. Approaches to police administration from an overview perspective providing the fundamentals of administration and management while giving the law enforcement student a framework for understanding.

3800:270. Community Corrections. (3 Credits)
Prerequisite: 3800:100. Examines the corrections component of the criminal justice system. Special focus on the development and use of probation, parole, and other alternative forms of sentencing.

3800:275. Legal Aspects of Corrections. (3 Credits)
Examination of the influence of the legal system on corrections, especially United States Supreme Court decisions.

3800:286. Courtroom Communication. (3 Credits)
Prerequisite: 3800:100. Witnessing studies the trial process, emphasizing role of witnesses. Effective communication to juries, applicable evidentiary rules and preparation techniques are taught, preparing students for direct and cross-examination.

3800:287. The Legal System and Psychology. (3 Credits)
Prerequisite: 3800:100. Examination of various areas where law and psychology interface, particularly in criminal cases by examining the expanding rule of psychology in justice system and the courtroom.

3800:292. Special Topic: Criminal Justice. (1-4 Credits)
(May be repeated for a total of six credits). Prerequisite: Permission. Workshops and special programs in selected areas of criminal justice such as community relations, crime statistics, ethics, survival.

3800:296. Current Topics in Criminal Justice. (1-3 Credits)
Prerequisite: 3800:100. A variety of course topics on current subjects relative to law enforcement and the Criminal Justice System. May be repeated for up to 12 credits.

3800:297. Independent Study: Criminal Justice. (1-3 Credits)
Prerequisite: 3800:100 and permission. Selected topics and special areas of study in Criminal Justice Technology under the supervision of a selected faculty member with whom specific arrangements have been made.

3800:298. Applied Ethics in Criminal Justice. (3 Credits)
Prerequisite: 3800:100. This course deals with ethical considerations which confront justice practitioners and the legal ramifications of misconduct.

3800:302. Theory of Criminal Law. (3 Credits)
Prerequisite: 3800:102. Criminal law is built on a number of core issues. This course examines the principles and doctrines that shape and limit criminal liability and punishment.

3800:305. Policing Administration and Management. (3 Credits)
This course prepares students for promotion through the ranks of policing organizations, covering issues of interest to first-line supervisors and mid-level managers.

3800:307. Foundations of Crime Analysis. (3 Credits)
Introduction to the profession of crime analysis. Provides an overview of crime analysis techniques.

3800:405. Policing Theory and Strategy. (3 Credits)
Students will use social science theory and methods to evaluate police officers, practices and organizations.

3800:407. Advanced Crime Analysis. (3 Credits)
Prerequisite: 3800:307. Introduction to advanced concepts and techniques for all major types of crime analysis: tactical, strategic, operations, administrative, intelligence, and investigative.

3800:457. Crime Analysis Applications. (3 Credits)
Prerequisites: 3800:307 and 3800:407. Students apply theories, strategies, techniques, and methods with the breadth and quality of work expected of crime analysis professionals. Students should complete all technology core requirements for the Bachelor of Science degree in Criminal Intelligence Analysis before attempting this course.

3800:465. Critical Incidents: Assessment and Interventions. (3 Credits)
Introduction to the stressors and emotions of dealing with people in crisis situations. Intervention, assessment and prevention strategies to help people in traumatic situations.

Criminal Justice Technology (2220)

2220:480. Digital and Scientific Evidence. (3 Credits)
Prerequisite: 2220:104. Examination of the role of scientific and digital evidence in the legal system. Courtroom admissibility and presentation rules are covered.

Curricular and Instructional Studies (5500)

5500:223. Urban Youth Mentoring. (3 Credits)
Urban youth mentoring and mentorship theory and practice in school-based settings; including the completion of 30 hours of urban mentorship field experience.

5500:230. Educational Technology. (3 Credits)
Prerequisite: 13-15 sem. hrs. with a 'C' or better in specific GenEd courses; 5100:200 (may be taken as prerequisite or corequisite); FBI/BCI background checks. Effectively identifying, locating, evaluating, designing, preparing, and efficiently using educational technology as instructional resource in the classroom to support learning and teaching.

5500:240. Foundations of Literacy. (3 Credits)
Focus on building blocks of teaching children how to read with an emphasis on literacy development and an emphasis on research-based components of reading instruction.

5500:241. Word Study, Phonics & Spelling. (3 Credits)
Prerequisite: 5500:240. Candidates will explore a variety of genres, types of texts, resources, and instructional strategies to maximize students' comprehension, fluency, and vocabulary growth.

5500:245. Understanding Literacy Development & Phonics. (3 Credits)
Prerequisite: admission to Teacher Preparation Program. Children's literacy development is explored through an integrated instructional model, with emphasis on the role of comprehension, phonics, and functional spelling in language learning. (10 hours of service learning)

5500:251. Teaching Personal Finance in the PK-12 Classroom. (3 Credits)
Teacher candidates learn best practices in planning and implementing standards-based personal finance and economic instruction.

5500:286. Teaching Multiple Texts. (3 Credits)
Prerequisite: 5500:240. Candidates will explore a variety of genres, types of texts, resources, and instructional strategies to maximize students' comprehension, fluency, and vocabulary growth.

5500:308. Instructional Design and Assessment. (6 Credits)
Prerequisites: 5100:220 and 5610:225. Theoretical and practical foundations for standards-based instruction and assessment; including instructional design, assessment development, and classroom practice for all learners in diverse and inclusive settings.

5500:310. Instructional Design. (3 Credits)
Prerequisites: 5100:210, 5100:211, and admission to College of Education. Corequisite: 5500:311. Design and teach lessons using instructional models, strategies, and resources for students with different characteristics and design appropriate assessments to measure content mastery.

5500:311. Instructional Resources. (3 Credits)
Prerequisites: 5100:210, 5100:211; Corequisite: 5500:310. Examines existing and developing media, technological, human and environmental resources as they relate to learning. Includes identifying, locating, evaluating, using, designing, and preparing educational resources.

5500:320. Diversity in Learners. (3 Credits)
Prerequisites: 5100:210, 5100:211. Students learn to appreciate common core culture, the diversity in the student population and the democratic ideal of equal access to educational opportunity. (10 hours of field experience included.)

5500:330. Classroom Management. (3 Credits)
Prerequisites: 5100:210, 5100:211. Content regarding effective organization of the classroom as well as procedures and models for mediation of student behaviors will be presented.

5500:341. Laboratory Practicum in Reading. (3 Credits)
Prerequisite: 5500:445. Laboratory experience with classroom, small groups and individual situations. A student diagnoses, implements procedures and follows prescribed reading improvement practices. (25.5 field hours)

5500:352. Teaching Mathematics to Inclusive Early Childhood Settings. (3 Credits)
Prerequisite: 5500:308. To examine and to know the standards-based mathematics curriculum and the instruction appropriate for inclusive early childhood ecologies.

5500:360. Educational Planning: Instruction, Assessment and Classroom Management. (3 Credits)
Prerequisites: 5500:230, 5100:200, 5100:220; 5610:225; prerequisite or corequisite: 5100:300. Theoretical foundations for standards-based thematic units and lesson plans, classroom assessment and organization, including procedures and models for mediating student behavior and classroom management.

5500:370. Educational Implementation: Instruction, Assessment and Classroom Management. (3 Credits)
Prerequisites: 5500:360, 5100:300. Interpretation and application of standards-based thematic units and lesson plans; classroom assessment and organization, including mediation of student behaviors and classroom management.

5500:430. Clinical Teaching I. (3 Credits)
Prerequisite: 5500:308. Corequisite: 5300:420. Observe and apply education methodologies and theories in a school/classroom field-based environment. (50 clinical hours)

5500:431. Clinical Teaching II. (3 Credits)
Prerequisites: 5300:420 and 5500:430. Corequisite: 5300:421. Course following Clinical Teaching I - Apply education methodologies and theories in a classroom environment in a full-time school environment. (640 clinical hours)

5500:439. Engineering for Educators. (3 Credits)
Prerequisite: 5500:308. Engineering design concepts and their applications course for teachers/teacher candidates. Students will engage in engineering problem solving activities and design lesson plans that address science and engineering practices. (Next Generation Science Standards)

5500:440. Literacy in the Content Areas. (3 Credits)
Prerequisite: 5500:308. Prepare candidates to understand issues and use methods and materials to promote disciplinary literacy in middle and secondary classrooms (20 hours clinical).

5500:442. Teaching Reading to Culturally Diverse Learners. (3 Credits)
Prerequisites: 5500:245, 5500:286. The course is designed to provide students with knowledge, skills, and attitudes that will enable employment of effective methods of teaching reading to culturally different learners and/or learners whose language patterns are nonstandard.

5500:445. Assessment and Instruction in Literacy. (3 Credits)
Prerequisites: 5500:240, 5500:241, and [5500:286 or 5500:480]. This course explores the assessment of students' progress in language literacy. Formal and informal instruments identifying progress in reading, writing, speaking, and listening are examined.

5500:450. Nature, History, and Philosophy of Science. (3 Credits)
(May be repeated with a change in topic). Provides opportunities to examine the historical and philosophical perspectives of science in an online medium and the impact of science and technology on society.

5500:455. Literacy for Multiage Licensure. (3 Credits)
Prerequisite: Admission to Teacher Education Program. Organizing instruction, use of oral language development protocols, strategies for word skill development, comprehension and assessment as they relate to content areas.

5500:456. Scaffolding Language and Content Learning for English Learners. (3 Credits)
Prerequisite: 3300:473. This course prepares students to use quality, research-based sheltered instruction for improving teaching effectiveness and accelerating academic achievement achievement for English learners.

5500:458. Inclusive Field Experience. (1 Credit)
Corequisite: 5610:457. In this inclusive field experience, teacher candidates explore the challenges and best practices in providing quality educational services for all learners. (20 field hours)

5500:475. Instructional Technology Applications. (3 Credits)
Prerequisite: 5500:230 and 5500:360. Focus on developing learner competencies in the use of instructional technologies to enhance both the instructor's personal and professional productivity.

5500:480. Special Topics: Curriculum & Instruction. (1-6 Credits)
Group study of special topics of critical, contemporary concern in professional education. (May be repeated with a change in topic)

5500:484. Principles of Bilingual/Multicultural Education. (3 Credits)
An introduction to the theoretic, cultural, sociolinguistic bases of bilingual/multicultural education. Legislation, court decisions, program implementation included.

5500:485. Teaching Literacy to English Learners. (3 Credits)
Prerequisite: Admission to the College of Education. Course applies methodologies for teaching literacy to English learners, assessment of literacy skills and development of materials. 12 field hours of field experience are required.

5500:486. Teaching Mathematics, Social Studies & Science to Bilingual Students. (3 Credits)
Prerequisites: Completion of all age-appropriate methods courses. Course applies methodologies for teaching mathematics, science, social studies in the bilingual/multicultural classroom. The bilingual student's native language stressed.

5500:487. Techniques of Teaching English as a Second Language. (3 Credits)
Course includes teaching language skills to Limited English Proficient students in grades K-12, administration of language assessment tests, selection and evaluation of materials. (10 field hours)

5500:488. Practicum: Teaching English as a Second Language. (2 Credits)
Prerequisites: 5500:485 and 5500:487. A practical experience in which teacher candidates observe, participate, and practice teaching in an ESL classroom under the supervision of an experienced, certified/licensed teacher.

5500:490. Workshop: Curriculum & Instruction. (1-3 Credits)
Emphasizes development of teaching devices and/or curriculum units, demonstration of teaching techniques.

5500:491. Workshop: Curriculum & Instruction. (1-3 Credits)
Emphasizes development of teaching devices and/or curriculum units, demonstration of teaching techniques.

5500:492. Workshop: Curriculum & Instruction. (1-3 Credits)
Emphasizes development of teaching devices and/or curriculum units, demonstration of teaching techniques.

5500:497. Independent Study. (1-3 Credits)
Prerequisite: Permission of advisor and department chair. Specific area of curriculum investigation pertinent to the general curriculum and instruction area as determined by student's academic needs.

Dance (7900)

7900:101. Dance Somatics: Yoga. (1 Credit)
Prerequisite: 7900:120 or 7900:125, or 7900:219 or 7900:220 or 7900:224 or 7900:225 or 7920:122 or 7920:222 or 7920:228 or 7920:229 or 7920:322 or 7920:328 or 7920:329 or 7920:422 Exploration of alternative movement disciplines aimed at increasing body-mind awareness and dancer health. Must be taken by dance majors in first two years of study.

7900:102. Dance Somatics: Pilates. (1 Credit)
Prerequisite: 7900:120 or 7900:122 or 7900:125 or 7900:219 or 7900:220 or 7900:222 or 7900:224 or 7900:225 or 7900:228 or 7900:229 or 7900:322 or 7900:328 or 7900:329 or 7900:422. Exploration of alternative movement disciplines aimed at increasing body-mind awareness and dancer health. Must be taken by dance majors in first two years of study.

7900:103. Orientation for Dance. (0 Credits)
Orientation to the dance program and field. Must be taken by all dance majors in their first semester of study. Dance Orientation is a degree requirement and is offered on a credit/noncredit basis.

7900:104. Dance Somatics: Gyrokinesis. (1 Credit)
Prerequisite: 7900:120 or 7900:122 or 7900:125 or 7900:219 or 7900:220 or 7900:222 or 7900:224 or 7900:225 or 7900:228 or 7900:229 or 7900:322 or 7900:328 or 7900:329 or 7900:422. Exploration of alternative movement disciplines aimed at increasing body-mind awareness and dancer health. Must be taken by dance majors in first two years of study.

7900:105. Dance Somatics: Alexander Technique. (1 Credit)
Prerequisite: 7900:120 or 7900:122 or 7900:125 or 7900:219 or 7900:220 or 7900:222 or 7900:224 or 7900:225 or 7900:228 or 7900:229 or 7900:322 or 7900:328 or 7900:329 or 7900:422. Exploration of alternative movement disciplines aimed at increasing body-mind awareness and dancer health. Must be taken by dance majors in first two years of study.

7900:111. Topics in World Dance. (1 Credit)
May be repeated for a total of six credits. Prerequisite: 7900:120 or 7900:125, or higher levels of ballet or modern dance technique. Exploration of various dance genres from world and historical traditions.

7900:115. Dance As An Art Form. (2 Credits)
Survey of dance for novice observer: aesthetics, philosophies, methods of training. Lecture and discussion of readings, viewing of film, videotape and live performances.

7900:116. Physical Analysis for Dance I. (2 Credits)
Prerequisites: 3100:200, 3100:201; 7400:133. Required for all dance majors. Recommended to be taken in the first two years. Lecture/ laboratory. Skeletal and muscular analysis for dance technique.

7900:117. Physical Analysis for Dnce II. (2 Credits)
Prerequisite: 7900:116. Support systems, conditioning injury prevention, rehabilitation, nutrition for dancers.

7900:119. Modern I. (2 Credits)
(May be repeated for a total of four credits) Exploring the basic principles of modern dance with an emphasis on body alignment and muscular awareness.

7900:120. Modern II. (2 Credits)
Prerequisite: permission or grade of B or better for one semester in 7900:119. (May be repeated for a total of four credits) Continuation of 119. Increasing movement vocabulary, muscular strength and coordination of modern dance.

7900:122. Ballet V. (4 Credits)
(May be repeated for a total of 16 credits) Prerequisite: permission or a grade of B+ or better for one semester in 7900:225. Theory, vocabulary, structure, placement. Concurrent enrollment in pointe class recommended.

7900:124. Ballet I. (2 Credits)
(May be repeated for a total of four credits) Emphasis on body placement, muscular awareness.

7900:125. Ballet II. (2 Credits)
Prerequisite: permission or grade of B or better for one semester of 7900:124. (May be repeated for a total of four credits) Continuation of 124. Basic exercises of classical ballet.

7900:130. Jazz Dance I. (2 Credits)
(May be repeated for a total of four credits.) Basic jazz dance technique and jazz dance origins.

7900:141. Pointe I. (2 Credits)
(May be repeated for a total of eight credits) Prerequisite: permission or 7900:122 or above. Corequisite: 7900:122 or above. Reinforcement of selection principles for pointe shoes, proper holding of foot muscularly and control of heel while ascending and descending from pointe.

7900:144. Tap Dance I. (2 Credits)
(May be repeated for a total of four credits.) Basic tap dance technique and terminology.

7900:145. Tap Dance II. (2 Credits)
(May be repeated for a total of four credits.) Prerequisite: permission or a grade of B or better for one semester in 7900:144 Tap I. Refinement of tap technique and stylistic range of tap dance.

7900:150. Ballroom Dance I. (1 Credit)
(May be repeated for a total of four credits.) Introduction to the basic patterns and techniques of major ballroom dances.

7900:200. Viewing Dance. (3 Credits)
To explore dance as an art form through experiential activities, dance literature, film and live performance for non-dance majors.

7900:219. Modern III. (2 Credits)
(May be repeated for a total of 4 credits.) Prerequisite: permission or a grade of B or better for one semester in 7900:120 Modern II. Continuation of 120. Introduction to current modern dance styles and technique.

7900:220. Modern IV. (2 Credits)
(May be repeated for a total of 4 credits.) Prerequisite: permission or a grade of B or better for one semester in 7900:219 Modern III. Continuation of 219. Application of basic modern dance theory of current modern dance styles and techniques.

7900:222. Ballet VI. (4 Credits)
(May be repeated for a total of 16 credits) Prerequisite: permission or a grade of B+ or better for one semester in 7920:122. Continuation of 122, expanding theory on vocabulary, structure, placement. Concurrent enrollment in pointe class recommended.

7900:224. Ballet III. (3 Credits)
(May be repeated for a total of 6 credits.) Prerequisite: permission or a grade of B or better for one semester in 7900:125 Ballet II. Continuation of 125. Emphasis on barre and developing strength.

7900:225. Ballet IV. (3 Credits)
Prerequisite: Permission or grade of B or better for one semester in 7900:224. Continuation of 224. Emphasis on the increase of strength and flexibility. (May be repeated for a total of twelve credits)

7900:228. Modern V. (3 Credits)
(May be repeated for a total of 6 credits.) Prerequisite: Permission or a grade of B or better for one semester in 7900:220 Modern IV. The intermediate study of modern dance styles and technique through the application of more complex movement theories, rhythmic patterns, and improvisational studies.

7900:229. Modern VI. (3 Credits)
(May be repeated for a total of 6 credits.) Prerequisite: permission or a grade of B or better for one semester in 7920:228 Modern V. Introduction to intermediate theory of current modern dance styles and techniques.

7900:230. Jazz Dance II. (2 Credits)
(May be repeated for a total of 4 credits.) Prerequisite: permission or a grade of B or better in 7900:130 Jazz I. Continuation of basic jazz technique and stylistic range of jazz dance.

7900:241. Pointe II. (2 Credits)
(May be repeated for a total of 12 credits) Prerequisite: permission or a grade of B or better for one semester in 7920:141. Corequisite: 7920:222 or above. Continuation of 141. Continued development of strength, coordination and endurance of holding foot muscularly. Further development and emphasis on principles of weight transfer.

7900:246. Tap Dance III. (2 Credits)
(May be repeated for a total of 4 credits.) Prerequisite: permission or a grade of B or better for one semester in 7900:145 Tap II. Advancement of tap dance technique through the use of complex combinations, syncopation, routines, and styles.

7900:274. Digital Technology for Dance. (3 Credits)
Hands-on exploration of theories and methods used in electronic development of promotional and creative materials. Activities include still and motion image capture, editing, and distribution.

7900:316. Choreography I. (2 Credits)
Prerequisite: Permission or 7900:220 Modern IV or above. Theoretical and practical introduction to principles of choreography: space, time, energy.

7900:317. Choreography II. (2 Credits)
Prerequisite: 7900:316 or permission. Continuation of 316. Emphasis on musical choices and finding movement specific to the individual choreographer.

7900:320. Movement Fundamentals. (2 Credits)
Beginning study of Labanotation method of recording movement, and Laban's theories of effort, space, and shape.

7900:321. Rhythmic Analysis - Dance. (2 Credits)
Prerequisites: 32 credits and 7900:120 or 7900:125, or higher levels of ballet or modern dance technique, or permission. Lecture and application of basic rhythmic structures used in dance and dance instruction.

7900:322. Ballet VII. (4 Credits)
(May be repeated for a total of 24 credits.) Prerequisite: Permission or a grade of B+ or better for one semester in 7900:222 Ballet VI. Continuation of 222. Emphasis on technique, style, line. Concurrent enrollment in point class is recommended.

7900:328. Modern VII. (3 Credits)
(May be repeated for a total of 12 credits.) Prerequisite: permission or a grade of B or better in 7900:229 Modern VI. Refinement and stylization of modern techniques for performance of modern dance.

7900:329. Modern VIII. (3 Credits)
(May be repeated for a total of 12 credits.) Prerequisite: permission or a grade of B or better in 7920:328 Modern VII. Application of advanced modern dance techniques and styles.

7900:333. Partnering. (2 Credits)
Prerequisite: [7920:122 or 7920:222 or 7920:322 or 7920:422] and [7920:228 or 7920:299 or 7920:328 or 7920:329] or permission. An exploration of the fundamentals of dance partnering: weight sharing, centering, safety via contact improvisation.

7900:334. Pas De Deux I. (2 Credits)
(May be repeated for a total of eight credits) Prerequisites: Permission; concurrent enrollment in a pointe class recommended. Provides student with the beginning understanding and practice of pas de deux.

7900:347. Tap Dance IV. (2 Credits)
(May be repeated for a total of 8 credits.) Prerequisite: Permission or a grade of B or better for one semester in 7920:246 Tap III. Advanced tap combinations, styles, routines.

7900:351. Jazz Dance III. (2 Credits)
(May be repeated for a total of 4 credits.) Prerequisite: permission or a grade of B or better for one semester in 7900:230 Jazz II. Intermediate jazz dance technique and the jazz eras.

7900:361. Learning Theory for Dance. (2 Credits)
Prerequisites: 7900:115, 7900:224 (or higher levels of ballet technique); 3750:100 or 5100:220; or permission of instructor. Theories of learning and their use in teaching dance.

7900:362. Instructional Strategies for Dance. (2 Credits)
Prerequisite: 7900:361. Practical work and development of teaching skills in dance for public and private settings.

7900:403. Special Topics in Dance. (1-4 Credits)
(May be repeated. No more than 10 credits may be applied toward the B.F.A. or B.A.) Prerequisite: Permission. Traditional and nontraditional topics in dance.

7900:416. Choreography III. (2 Credits)
Prerequisite: 7900:317 or permission. Continuation of 317. Emphasis on form and choreographic analysis.

7900:417. Choreography IV. (2 Credits)
Prerequisite: 7900:416 or permission. Continuation of 416. Expanding into group choreography and longer works.

7900:422. Ballet VIII. (4 Credits)
(May be repeated for a total of 32 credits.) Prerequisite: permission or a grade of B+ or better for one semester in 7920:322 Ballet VII. Continuation of 322. Advanced level of technique. Concurrent enrollment in pointe class recommended.

7900:432. History of Ballet. (2 Credits)
Prerequisite: 7900:115 or 7900:200 or permission. Development of ballet beginning with its origins in French Courts through the Romantic and Diaghilev Eras to current times.

7900:433. Dance History: 20th Century. (2 Credits)
Prerequisite: 7900:115 or 7900:200 or permission. Development of modern dance as an art form and the further evolution of ballet and concert dance.

7900:445. Dance Philosophy and Criticism. (3 Credits)
Prerequisites: 3400:210 or 3400:221, 3600:101, 7900:115 and 7920:432 or 7920:433. Review of historical dance philosophies, performance, attributes, choreographic and theatrical elements of dance and criticism.

7900:451. Jazz Dance IV. (2 Credits)
(May be repeated for a total of eight credits.) Prerequisite: permission or a grade of B or better for one semester in 7920:351 Jazz III. Advanced jazz dance technique and styles for the professional dancer.

7900:461. Seminar & Field Experience in Dance Education. (2 Credits)
Prerequisite: 7900:362. Supervised observation and teaching experience in dance education in the field. Concurrent enrollment in 7910:108 Choreographers' Workshop.

7900:462. Professional Issues in Dance Education. (2 Credits)
Prerequisite: 7900:461. An examination of current issues and goals in dance education. Concurrent enrollment in 7910:108 Choreographers' Workshop.

7900:471. Senior Seminar. (1 Credit)
Prerequisite: 7900:274; senior standing or permission. A forum to develop professional skills to make the transition to a dance career: artistic, academic, or business.

7900:490. Workshop in Dance. (1-3 Credits)
(May be repeated for a total of eight credits) Prerequisite: Permission. Group study/projects investigating a particular field of dance not covered by other courses.

7900:497. Independent Study in Dance. (1-3 Credits)
(May be repeated for a total of four credits) Prerequisite: Permission and prearrangement with instructor. Individual creative project, research or readings in dance with faculty advisor.

7900:498. Honors Research Project in Dance. (1-3 Credits)
May be repeated for a total of six credits.Prerequisite: Approval of department preceptor. Creative project or research supervised by dance preceptor.

Dance Organizations (7910)

7910:101. Classical Ballet Ensemble. (1 Credit)
By audition only. Participation in rehearsal and preparation for public performance of classical ballet repertoire. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.

7910:102. Character Ballet Ensemble. (1 Credit)
By audition only. Participation in rehearsal and preparation for public performance of character ballet repertoire. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.

7910:103. Contemporary Dance Ensemble. (1 Credit)
By audition only. Participation in rehearsal and preparation for public performance of contemporary dance repertoire. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.

7910:104. Jazz Dance Ensemble. (1 Credit)
By audition only. Participation in rehearsal and preparation for public performance of jazz dance repertoire. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.

7910:105. Musical Comedy Ensemble. (1 Credit)
By audition only. Participation in rehearsal and preparation for public performance of dance production numbers in a musical comedy. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.

7910:106. Opera Dance Ensemble. (1 Credit)
By audition only. Participation in rehearsal and preparation for public performance of dance sequences in an opera. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.

7910:107. Experimental Dance Ensemble. (1 Credit)
By audition only. Participation in rehearsal and preparation for public performance of avant-garde dances. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.

7910:108. Choreographers Workshop. (1 Credit)
By audition only. Participation in rehearsal and preparation for public performance of student dances. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.

7910:109. Ethnic Dance Ensemble. (1 Credit)
By audition only. Participation in rehearsal and preparation for public performance of ethnic dance repertoire. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.

7910:110. Period Dance Ensemble. (1 Credit)
By audition only. Participation in rehearsal and preparation for public performance of dances from specific historical periods such as the Renaissance or Baroque eras. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.

7910:111. Touring Ensemble. (1 Credit)
By audition only. Participation in rehearsal and preparation for public performance of any dances prepared for touring purposes. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.

7910:112. Dance Production Ensemble. (1 Credit)
By permission only. Participation in technical assistance, preparation and performance of student dance productions: theory and laboratory. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.

7910:113. Dance Organizations: Workshop. (1 Credit)
By permission only. Participation in a dance workshop as volunteer, participant and/or presenter that forwards and augments the student's dance education and networking skills.

7910:200. BFA Audition. (0 Credits)
Prerequisite: 7910:201 or permission. Passing the BFA Audition is a requisite for becoming a BFA dance major. It is also a degree requirement. It may not be taken more than twice. Offered on a credit/noncredit basis.

7910:201. Freshman Jury and Interview. (0 Credits)
The passing of the Freshman Jury and interview is a requisite for becoming a BA dance major. It is also a degree requirement. Students may take the Freshman Jury and Interview the following semester if failed the first time. It may not be taken more than twice. Offered on a credit/non credit basis.

Dance Performance (7920)

7920:403. Special Topics in Dance. (1-4 Credits)
(May be repeated. No more than 10 credits may be applied toward the B.F.A. or B.A.) Prerequisite: Permission. Traditional and nontraditional topics in dance.

Developmental Programs (2010)

2010:42. Basic Writing. (0 Credits)
Provides intensive practice in the process of writing, in sentence structure and punctuation, and in correct written expression. Upon successful completion of Basic Writing, the student should be prepared to enter English (2020:121), or English Composition I (3300:111). Writing Lab hours are required.* * Load hours do not carry academic credit toward a degree program but do count in computing a student's course load for financial aid or student employment, and are used in probation and dismissal decisions.

2010:50. Basic Mathematics I. (0 Credits)
Prerequisite: Placement. An intensive review of arithmetic and an introduction to the concepts of elementary algebra. Emphasis is placed on developing learning strategies and controlling anxieties. Upon successful completion of Basic Mathematics I, the student should be prepared to enter Basic Mathematics II.* * Load hours do not carry academic credit toward a degree program but do count in computing a student's course load for financial aid or student employment, and are used in probation and dismissal decisions.

2010:52. Basic Mathematics II. (0 Credits)
Prerequisite: Completion of 2010:050 (formerly 1020:050) with a grade of C or better or Placement. A brief review of arithmetic and intensive instruction in elementary algebra. Emphasis is placed on developing learning strategies and controlling anxieties. Upon successful completion of Basic Mathematics II, the student should be prepared to enter Business Mathematics (2420:170); Introduction to Technical Math (2020:130); Elements of Math I (2030:151); or Fundamentals of Math V (2010:85).* * Load hours do not carry academic credit toward a degree program but do count in computing a student's course load for financial aid or student employment, and are used in probation and dismissal decisions.

2010:54. Basic Mathematics II Supported. (0 Credits)
Prerequisites: 2010:050 and approval from Developmental Programs. See Basic Mathematics II (2010:052). Double length class period allows supplemental instruction and assistance in beginning algebra. Emphasis on developing learning strategies and controlling anxieties. Upon successful completion of Basic Mathematics II Supported, the student should be prepared to enroll in 2010:85 or 2420:170 or 2030:130 2030:151 or 2030:161 or 3450:100 or 3470:250 or 3450:135.

2010:56. Basic Mathematics II Extended - Part A. (0 Credits)
Prerequisite: 2010:050 and approval from Office of Accessibility. First half of a slower paced two-semester version of Basic Mathematics II (2010:052). Introduces elementary algebra, linear equations, polynomials, graphing, slope.

2010:57. Basic Mathematics II Extended - Part B. (0 Credits)
Prerequisite: 2010:056 (Part A). Second half of a slower paced two-semester version of Basic Mathematics II (2010:052) covering factoring, rational expressions, radicals, and quadratic equations.

2010:60. College Reading. (0 Credits)
Prerequisite: Placement. Designed to strengthen the basic comprehension skills needed for academic work, including recognition of main points and key supporting ideas, inferencing, summarizing, and vocabulary development. Upon satisfactory completion of College Reading, the student should be prepared to enter College Reading and Study Skills (1020:062). Lab hours are required. * * Load hours do not carry academic credit toward a degree program but do count in computing a student's course load for financial aid or student employment, and are used in probation and dismissal decisions.

2010:62. College Reading & Study Skills. (0 Credits)
Prerequisite: College Reading (1020:060) or placement. Continued practice of comprehension strategies with emphasis on textbook reading, and implementation of effective study strategies such as note-taking, test-taking, and memory techniques. Upon successful completion of College Reading and Study Skills, the student should be prepared to apply reading and study strategies in college classes. Lab hours are required.* * Load hours do not carry academic credit toward a degree program but do count in computing a student's course load for financial aid or student employment, and are used in probation and dismissal decisions.

2010:64. Applied Study Strategies. (0 Credits)
Corequisite: Selected General Education Courses taken concurrently. Designed to help students apply various study strategies to a specific course, such as psychology, sociology and others. Includes lecture and textbook analysis, memory techniques, and test-taking strategies. Lab hours are required.* * Load hours do not carry academic credit toward a degree program but do count in computing a student's course load for financial aid or student employment, and are used in probation and dismissal decisions.

2010:71. Developmental Chemistry. (0 Credits)
Prerequisite: 2010:052 or 2010:057 or equivalent with a grade of C or better. A mathematics review applied to chemistry and intensive instruction in principles of general chemistry. Emphasis is placed on developing learning strategies and controlling anxieties.* * Load hours do not carry academic credit toward a degree program but do count in computing a student's course load for financial aid or student employment, and are used in probation and dismissal decisions.

2010:81. Fundamental Mathematics I. (0 Credits)
Prerequisite: Placement by Academic Advisor. An intensive review of arithmetic with an emphasis on learning strategies and controlling anxieties. Upon successful completion of Fundamental Mathematics I, the student should be prepared to enroll in Fundamental Math II. **Load hours do not carry academic credit toward a degree program, but do count in computing a student's course load for financial aid or student employment, and are used in probation and dismissal decisions.**

2010:82. Fundamental Mathematics II. (0 Credits)
Prerequisites: Placement by academic advisor or 2010:81. Upon successful completion of Fundamental Mathematics II, the student should be prepared to enroll in Fundamental Math III. **Load hours do not carry academic credit toward a degree program, but do count in computing a student's course load for financial aid or student employment, and are used in probation and dismissal decisions.**

2010:83. Fundamental Mathematics III. (0 Credits)
Prerequisites: Placement by academic advisor or 2010:82. Upon successful completion of Fundamental Mathematics III, the student should be prepared to enroll in Fundamental Math IV. **Load hours do not carry academic credit toward a degree program, but do count in computing a student's course load for financial aid or student employment, and are used in probation and dismissal decisions.**

2010:84. Fundamental Mathematics IV. (0 Credits)
Prerequisites: Placement by academic advisor or 2010:83. Upon successful completion of Fundamental Mathematics IV, the student should be prepared to enroll in 2010:85 or 2420:170 or 2030:130 2030:151 or 2030:161 or 3450:100 or 3470:250 or 3450:135. **Load hours do not carry academic credit toward a degree program, but do count in computing a student's course load for financial aid or student employment, and are used in probation and dismissal decisions.**

2010:85. Fundamentals of Mathematics V. (0 Credits)
Prerequisites: Placement or successful completion of one of the following: 2010:52, 2010:54, 2010:57, 2010:84. Introduction in elementary algebra including factoring, functions, graphing, roots and radicals. Upon successful completion of Fundamental Mathematics V, the student should be prepared to enroll in Algebra for Calculus. **Load hours do not carry academic credit towards a degree program but do count in computing a student's course load for financial aid or student employment, and are used in probation and dismissal decisions.**

2010:99. Special Topics: Developmental Programs. (0 Credits)
Instruction in one or more of the following basic skills: writing, reading, mathematics, and study skills. A combination of these skills may be presented with an overall theme such as "writing, reading and technology." See the current Schedule of Classes for course offerings.* * Load hours do not carry academic credit toward a degree program but do count in computing a student's course load for financial aid or student employment, and are used in probation and dismissal decisions.

Distinguished Studies Program (2015)

2015:150. Distinguished Student Colloquium. (2 Credits)
See department for course description.

Drafting & Comp Drafting Technology (2940)

2940:122. Technical Drawing II. (3 Credits)
Prerequisite: 2940:121, 2940:210. Covers dimensioning; allowances and tolerances; geometric tolerancing; threads and fasteners; descriptive geometry; intersections; developments; and computer applications. Laboratory.

2940:150. Drafting Design Problems. (2 Credits)
Prerequisite: 2030:152. Introductory course in basic concepts in engineering technology computations. A study of technical terminology and applied mathematics.

2940:180. Introduction to Computer Aided Drafting. (1 Credit)
Drafting techniques using AutoCAD. Topics include drawing, editing, dimensioning, plotting, layers and text. Credit not applicable toward the AAS in Drafting and Computer Aided Drafting Technology. Laboratory.

2940:200. Advanced Drafting. (3 Credits)
Prerequisite: 2940:122. Principles of descriptive geometry applied to practical problems pertaining to the civil and mechanical fields of technology. Laboratory.

2940:230. Mechanical Systems Drafting. (3 Credits)
Prerequisite: 2940:122. Drawing fundamentals and terminology of welding, gears, cams, piping, sheet metal, and fluid power drawings. Laboratory.

2940:240. Electrical & Electronic Drafting. (3 Credits)
Corequisite: 2940:122. Drafting fundamentals, terms, and symbols required for electrical, electronics, and instrumentation drawings. Included are interconnecting diagrams, PC boards, and architectural and industrial plans. Laboratory.

2940:245. Structural Drafting. (2 Credits)
Prerequisite: 2920:121, 2940:210 or equivalent. Duties of the structural draftsman in preparation of detailed working drawings for steel and concrete. Emphasis on portrayal, dimensions, and notes on a working drawing. Laboratory.

2940:250. Architectural Drafting. (3 Credits)
Prerequisite: 2920:121. Drawing fundamentals, terminology, and symbols for developing a set of basic construction plans and details. Included also are presentation drawings and interior and exterior planning. Laboratory.

2940:260. Drafting Technology Project. (3 Credits)
Prerequisite: Completion of 20 credits of 2940. Provides opportunity to research and develop a specific drafting project within chosen field of interest.

2940:290. Special Topics: Drafting Technology. (1-3 Credits)
(May be repeated for a total of three credits) Prerequisite: Permission. Selected topics on subject areas of interest in drafting technology.

Early Childhood Education (5200)

5200:100. Orientation to Early Childhood Specialist. (0 Credits)
Corequisite: 5100:200. Orientation to the information and strategies necessary for a student to be successful in the program, including portfolio development.

5200:200. Pre-Kindergarten Participation I. (1 Credit)
Prerequisite: 3760:265, 2200:245. Planned field experience in a pre-kindergarten infant/toddler classroom where students work with children age birth to 3 years both individually and in small groups.

5200:215. The Child, the Family, and the School. (3 Credits)
Prerequisites: 5100:220, 5610:225. The purpose of this course is to learn about why we create reciprocal working relationships with parents, and methods of creating these types of relationships. (10 field/clinical hours).

5200:220. Visual Arts Culture in Early Childhood. (1 Credit)
Prerequisite: admission to Teacher Education Program. Art education concepts, structures, and knowledge base to provide curricular opportunities for education majors to develop as creative problem solvers in an elementary school setting. First offered Fall 1993.

5200:250. Developing Processes of Investigation. (3 Credits)
Prerequisites: 5100:210, 5100:211, and admission to Teacher Education Program. This course will enable students to identify and acquire those investigative and discovery processes and skills that are common in mathematics, science, and social studies.

5200:300. Pre-Kindergarten Participation II. (1 Credit)
Prerequisites: 5200:200, 5610:450 and admission to Teacher Education Program. Planned field experience in pre-kindergarten early intervention program where student works in both small and large group settings and with individual children.

5200:319. Integrated Expressive Arts in Early Childhood. (3 Credits)
Prerequisites: [7100:210 or 7500:201] and admission to teacher education program. Use of expressive arts as a means for young children to represent their thinking and to enhance their learning of curriculum content.

5200:320. Visual Arts Application in the Elementary School. (3 Credits)
Prerequisite: 5200:220. Exploration of materials, methods, processes and visual techniques relating two and three-dimensional art experiences for the teacher of elementary children.

5200:321. Instructional Techniques: Modern Languages K-8. (3 Credits)
Prerequisite: admission to the College of Education. Focus on theories of language acquisition, models of instruction suited to teaching foreign languages and cultures in the elementary school (K-8), and strategies that promote appropriate levels of language proficiency and competency for young learners.

5200:325. Early Childhood Inclusive Practicum. (3 Credits)
Prerequisite: 5500:240. Corequisite: 5500:241. Prerequisite or Corequisite: 5500:308. This field-based course emphasizes developmental domains of preschool children. Candidates design appropriate activities for culturally and linguistically diverse population of typically and atypically developing children.

5200:331. Kindergarten Methods & Material. (4 Credits)
Prerequisites: 5200:330 and 3760:265. Scope and sequence of kindergarten curricula, with emphasis on developmentally appropriate methods and materials. This course is not part of the new teacher licensure program.

5200:334. Teaching Art in the Elementary School. (3 Credits)
Prerequisite: Admission to Teacher Education Program, Art K-12. Visual arts in elementary schools. Art education concepts with studio orientation including history of art education, developmental stages, curriculum and organization, methods, evaluation and research, and practical participation.

5200:340. Developmental Writing and Digital Literacies in Inclusive Early. (3 Credits)
Prerequisite: 5500:240. Prerequisite or corequisite: 5500:241, 5500:308, and 5610:448. This course focuses on theoretically grounded developmental writing and communication using digital literacy in the information age specifically for children age 3 to third grade.

5200:342. Teaching Math to Young Children. (3 Credits)
Prerequisites: 3450:140, 3450:240. Prerequisite or corequisite: 5500:370. Trends in mathematics instruction in early childhood/middle level classrooms. Procedures for the development of mathematics concepts and skills.

5200:395. Field Experience. (1-3 Credits)
Prerequisites: Permission of advisor and department head. Independent field work in area selected by student's adviser, based on student's needs.

5200:420. Integrated Primary Curriculum. (4 Credits)
Prerequisite or corequisite: 5500:370. Course models an inquiry-based format that integrates math, science, social studies, and technology standards where students learn how to create, implement, manage, and evaluate student-centered learning environments. (25 hours field and 35 clinical hours).

5200:425. Advanced Integrated Primary Curriculum. (4 Credits)
Prerequisites: 5200:420 and admission to teacher education program. This course further explores an inquiry-based format that integrates math, science, social studies, and technology standards by having the students implement, manage, and evaluate their own and their students' learning. (25 field and 35 clinical hours).

5200:430. Honors Research Project: Early Childhood. (1-6 Credits)
Prerequisite: Permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry. (May be repeated for a total of six credits).

5200:453. Building Understanding in Early Childhood Settings. (3 Credits)
Prerequisite: 5500:240. Corequisite: 5500:241 and 5610:448. Prerequisite or corequisite: 5500:308. This course prepares teachers to work in inclusive programs, able to meet the needs of children; exceptional, cultural and linguistic diverse, and typically.

5200:454. Inquiry Learning in Early Childhood Inclusive Settings. (3 Credits)
Prerequisites: 5200:453, 5500:241, 5500:308, and 5610:448. Anchored in the authentic work of teacher and students, this capstone methods class utilizes action research strategies in field based settings to inform teaching practice. 30 field hours and 5 clinical hours.

5200:480. Special Topics: Elementary Education. (1-4 Credits)
(May be repeated with a change in topic) Prerequisite: Permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

5200:490. Workshop: Elementary Education. (1-3 Credits)
Elective workshop for elementary education major who would pursue further refinement of teaching skills. Emphasizes demonstrations of teaching techniques and development of suitable teaching devices.

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Elective workshop for elementary education major who would pursue further refinement of teaching skills. Emphasizes demonstrations of teaching techniques and development of suitable teaching devices.

5200:495. Student Teaching (Pre K through K). (5 Credits)
Prerequisites: Approval of the Student Teaching Committee, considered based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio. Corequisite: 5200:498. Planned teaching experience in schools selected and supervised by Office of Field Experience.

5200:496. Student Teaching (Grades 1-3). (6 Credits)
Prerequisites: Approval of the Student Teaching Committee, considered based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio. Corequisite: 5200:498. Planned teaching experience in schools selected and supervised by Office of Field Experience.

5200:497. Independent Study: Elementary Education. (1-3 Credits)
Prerequisites: permission of adviser and department head. Specific area of curriculum investigation pertinent to elementary education as determined by student's academic needs.

5200:498. Student Teaching Colloquium. (1 Credit)
Prepares students for the final phase of becoming decision makers. The colloquium will explore problems encountered in classrooms, initiate reflective practice and concepts of action research, and focus on preparation of unit outlines with emphasis on applied decision making.

5200:499. Student Teaching in Inclusive Early Childhood Settings. (9 Credits)
Prerequisite: Approval of the Student Teaching Committee, based upon approved application to student teaching, passing at least one of Ohio Assessments for Educators subject-specific tests. Co-requisite: 5610:470. Planned 16-week experience in schools selected and supervised by the Office of Field Experiences. 322 Clinical Hours.

Economics (3250)

3250:100. Introduction to Economics. (3 Credits)
May not be substituted for 3250:200, 3250:201, or 3250:244. Economics primarily concerned in a broad social science context. Adequate amount of basic theory introduced. Cannot be used to satisfy major or minor requirements in economics.

3250:200. Principles of Microeconomics. (3 Credits)
Analysis of behavior of the firm and household, and their impact on resource allocation, output and market price. No credit if 3250:244 already taken.

3250:201. Principles of Macroeconomics. (3 Credits)
Prerequisite: 3250:200. Study of the economic factors which affect the price level, national income, employment, economic growth. No credit if 3250:244 already taken.

3250:226. Computer Skills for Economic Analysis. (3 Credits)
Prerequisites: 3250:100 or 3250:200 or 3250:244. Application of word processing, spreadsheets, presentation packages, SAS, the Internet, library resources, and other computer tools in communicating economic analysis.

3250:230. Economics of Social Policy Issues. (3 Credits)
Prerequisite: 3250:100, or 3250:200 and 3250:201, or 3250:244 or permission of the instructor. Investigation of selected labor and social policy issues. Examples include health care, economic demography, anti-poverty programs, immigration, discrimination, and the impact of unemployment and inflation.

3250:244. Introduction to Economic Analysis. (3 Credits)
Recommended for engineering and mathematical science majors. Intensive introduction to analysis of modern industrial society and formulation of economic policy. Structure of economic theory and its relation to economic reality. No credit to a student who has completed 3250:200 and 3250:201.

3250:310. Managerial Economics. (3 Credits)
Prerequisites: 3250:200 or 3250:244, 3470:261, 3470:262. Application of economic analysis to management problems; the organization of enterprises and the allocation of their resources; decision making under uncertainty; strategic behavior.

3250:325. Applied Econometrics I. (3 Credits)
Prerequisites: [3470:261 and 3470:262] or 6500:304. Students learn SAS coding and the foundations of data science. Course covers multiple regression estimation and inference analysis and concludes with a team-based research paper.

3250:326. Applied Econometrics II. (3 Credits)
Prerequisite: 3250:325. Violations of the classical assumptions of the regression model and corrections are explored along with regression analysis of time series data. Culminates with a research paper.

3250:330. Labor Problems. (3 Credits)
Prerequisites: [3250:200, or 3250:201, or 3250:244]. Labor economics, principles and public policy. Study of structure of labor market and impact unions have on labor management relations.

3250:333. Labor Economics. (3 Credits)
Prerequisite: 3250:200 or 3250:244. Theoretical tools used in analysis of problems of labor in any modern economic system. Emphasis given to examination of determinants of demand for and supply of labor.

3250:360. Industrial Organization & Public Policy. (3 Credits)
Prerequisites: 3250:200 or 3250:244. Role of industrial structure and firm conduct in performance of industry and way in which antitrust policy is designed to provide remedies where performance is unsatisfactory.

3250:380. Money & Banking. (3 Credits)
Prerequisite: 3250:201. Institutions of money, banking and credit, monetary expansion and contraction, public policies affecting this process, development of our money and banking system.

3250:385. Economics of Natural Resources & the Environment. (3 Credits)
Prerequisites: [3250:100 or 3250:200 or 3250:244] or permission. Introduction to economic analysis of use of natural resources and economics of environment. Problems of water and air pollution, natural environments, natural resource scarcity, conservation, economic growth.

3250:400. Intermediate Macroeconomics. (3 Credits)
Prerequisites: 3250:201 and [3450:145 or equivalent]. Changes in national income, production, employment, price levels, long-range economic growth, short-term fluctuations of economic activity.

3250:405. Economics of the Public Sector. (3 Credits)
Prerequisites: [3250:200 and 3250:201] or 3250:244. Considers nature and scope of government activity, rationale for government intervention, problems of public choice, taxation and revenue-raising, cost-benefit analysis, program development and evaluation.

3250:406. State & Local Public Finance. (3 Credits)
Prerequisite: 3250:410; recommended: 3250:405. Examines economic rationale and problems for provision of goods and services by different governmental units. Considers alternative revenue sources and special topics.

3250:410. Intermediate Microeconomics. (3 Credits)
Prerequisites: [3250:200 or 3250:244] and [3450:145 or equivalent]. Advanced analysis of consumer demand, production costs, market structures, determinants of factor income.

3250:415. Cost-Benefit Analysis. (3 Credits)
Prerequisites: [3250:200 and 3250:201] or 3250:244. Introduction to tool for public project evaluation. Includes development of analytical framework and methods of determining benefits and costs over time. Stresses application of techniques.

3250:423. Applied Game Theory. (3 Credits)
Prerequisite: 3250:200. Application of the basic concepts of game theory (analysis of strategic behavior) to relevant economics issues including bargaining, cartels, voting, conflict resolution and non-competitive pricing.

3250:426. Applied Econometrics. (3 Credits)
Prerequisites: 3470:261, 3470:262, and [3250:200 and 3250:201] or 3250:244. Application of regression analysis to economic and social sciences data. Discusses typical problems from applied research, including estimation technique, hypothesis testing, and modeling framework.

3250:427. Economic Forecasting. (3 Credits)
Prerequisites: 3470:261, 3470:262, and [3250:200 and 3250:201] or 3250:244. Methods for building, identifying, fitting and checking dynamic economic models and use of these models for forecasting. Emphasis on application of available computer software systems.

3250:430. Labor Market and Social Policy. (3 Credits)
Prerequisite: [3250:200 and 3250:201] or 3250:244 or permission of instructor. Intensive study of current labor and social policy issues (e.g., discrimination, poverty, migration, education, demographic and labor market changes, impact of international trade on employment).

3250:432. Economics & Practice of Collective Bargaining. (3 Credits)
Prerequisite: 3250:200 or 3250:244. Principles and organization of collective bargaining, collective bargaining agreements, issues presented in labor disputes and settlements, union status and security, wage scales, technological change, production standards, etc.

3250:434. Labor Market Analysis and Evaluation. (3 Credits)
Prerequisites: 3250:410, 3250:426, 3250:430. Applied labor market research using specialized techniques. Employment, health, education, and other current policy issues and programs analyzed and evaluated. Original research project required.

3250:436. Health Economics. (3 Credits)
Prerequisites: 3250:100 or 3250:200 or 3250:244 or permission of instructor. Economic analysis of health care. Stresses health policy issues, includes study of demand and supply of medical services and insurance, analysis of health care industries.

3250:438. Economics of Sports. (3 Credits)
Prerequisites: 3250:100 or 3250:200 or 3250:244 or permission of instructor. Sports franchises as profit maximizing firms; costs and benefits of a franchise to a city; labor markets in professional sports; the economics of college sports.

3250:440. Special Topics in Economics. (3 Credits)
Prerequisite: Permission. Opportunity to study special topics and current issues in economics.

3250:460. Economics of Developing Countries. (3 Credits)
Prerequisites: [3250:200 and 3250:201] or 3250:244. Basic problems in economic development. Theories of economic development, issues of political economy and institutions. Topics include poverty, population, migration, employment, finance, international trade and environment.

3250:461. Principles of International Economics. (3 Credits)
Prerequisites: [3250:200 and 3250:201] or 3250:244, or permission of the Economics department. International trade and foreign exchange, policies of free and controlled trade, international monetary problems.

3250:475. Development of Economic Thought. (3 Credits)
Prerequisites: [3250:200 and 3250:201] or 3250:244, or permission of the Economics department. Evolution of theory and method, relation of ideas of economists contemporary to conditions.

3250:481. Monetary & Banking Policy. (3 Credits)
Prerequisites: 3250:380, 3250:400; or permission of the Economics department. Control over currency and credit, policies of control by central banks and governments, United States Treasury and Federal Reserve System.

3250:487. Urban Economics:Theory & Policy. (3 Credits)
Prerequisites: [3250:200 and 3250:201] or 3250:244, or permission of instructor. Analysis of urban issues from an economic perspective. Emphasis on urban growth, land-use patterns, housing, income distribution, poverty and urban fiscal policy.

3250:490. Individual Study in Economics. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisite: Permission of instructor. Independent study in economics under supervision and evaluation of selected faculty member.

3250:491. Workshop: Economics. (1-3 Credits)
(May be repeated) Prerequisite: Permission of the Economics department. Group studies of special topics in economics. May not be used to meet undergraduate or graduate major requirements in economics. May be used for elective credit only.

3250:495. Internship in Economics. (1-3 Credits)
Prerequisites: 3250:200, 3250:201 and at least three additional courses in economics at the 300- or 400-level. Supervised placement in appropriate position in public or private sector organizations. Reports and written assignments required.

3250:496. Senior Project in Economics. (2 Credits)
Prerequisites: 3250:400, 3250:410, 3250:426. Corequisites: 3250:405 or 3250:423 or 3250:430 or 3250:460 or 3250:461 or 3250:475 or 3250:481 or 3250:487. Taken concurrently with or following a 400-level field Economics course. Involves independent out-of-class work on a project designed in consultation with the designated 400-level course instructor.

3250:497. Honors Project in Economics. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisite: Senior standing in Honors College. Individual senior honors thesis on a creative project relevant to economics, approved and supervised by faculty member of the department.

Educ: Cooperative Education (5000)

5000:301. Cooperative Education. (0 Credits)
(May be repeated) For cooperative education students only. Work experience in business, industry or governmental agency. Comprehensive performance evaluation and written report required.

Educational Foundations & Leadership (5100)

5100:150. Democracy & Education. (3 Credits)
Based on an interdisciplinary inquiry, this course examines varied theories and practices of democratic education.

5100:200. Introduction to Education. (3 Credits)
Prerequisite: 13-15 sem. hrs. of specific GenEd courses; FBI/BCI background checks. Introduction to the teaching profession designed to explore the purposes of schools in society and what is required to be an effective teacher today. This course will include 10 field hours of field observation in an urban setting.

5100:205. Fundamental Educational Computer Skills. (1 Credit)
Elective Course: Computer skills for education majors with little or no computer experience. Includes word processing, databases, graphics and communications. Cannot substitute for any required course.

5100:210. Characteristics of Learners. (3 Credits)
Prerequisite: Completion of all College of Education program admission requirements; Corequisite: 5100:211. Describe cognitive, psychosocial, physical, language, and moral development of learners Pre-K through adult. Identifies learner needs, roles of teachers and schools in fostering optimal development. (10 hours of field experience included.)

5100:211. Teaching & Learning Strategies. (3 Credits)
Prerequisite: Completion of all College of Education admission requirements; Corequisite: 5100:210. From course content and activities, students will recognize, select, and practice various instructional models. Students will acquire and apply appropriate learning and motivational strategies. (10 hours of field experience included.)

5100:220. Educational Psychology. (3 Credits)
Prerequisite: 13-15 sem. hrs. of specific GenEd courses; 5100:200 (may be taken as prerequisite or corequisite); FBI/BCI background checks. Focuses on the developmental influences and characteristics of learners, and psychological principles pertaining to teaching and learning processes, motivation and self-regulation in learners.

5100:300. Educational Equity and Excellence in a Culturally Pluralistic Society. (3 Credits)
Prerequisites: 5100:200, 220, 5500:230, 5610:225. Corequisite with or prerequisite to 5500:360. Engages teacher candidates in inquiry-based seminars and service learning that facilitate their developing pedagogical competence implementing equity and excellence in education.

5100:330. Early Adolescent Learner. (3 Credits)
Study of issues in adolescent development, particularly as it relates to educational settings. Physical, cognitive, language, emotional, social, and moral development in learners 8-14 years old.

5100:410. Professional Issues in Education. (3 Credits)
Prerequisites: 5500:310, 5500:311, 5500:320, 5500:330, and admission to the College of Education. Course work applies social and philosophical foundations of education to current and historical issues in education with attention to roles and responsibilities of contemporary teachers.

5100:420. Introduction to Instructional Computing. (3 Credits)
Prepares the student in the use of instructional technologies in educational and business settings. Segments of the course are offered in an online format.

5100:430. Senior Honors Project: Foundations. (1-6 Credits)
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.

5100:480. Special Topics: Educational Foundations. (1-4 Credits)
(May be repeated with a change in topic) Prerequisite: Permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

5100:490. Workshop: Educational Foundations & Leadership. (1-3 Credits)
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

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Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

5100:492. Workshop: Educational Foundations & Leadership. (1-3 Credits)
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

5100:494. Educational Institutes in Educational Foundations & Leadership. (1-4 Credits)
Special course designed as in-service upgrading programs.

5100:497. Independent Study. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisites: Permission of department head and instructor. Specific area of study determined in accordance with program and professional goals.

Educational Foundations & Leadership (Inactive) (5700)

5700:480. Special Topics: Educational Administration. (1-4 Credits)
(May be repeated with a change in topic) Prerequisite: Permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

5700:492. Workshop: Educational Foundations & Leadership. (1-3 Credits)
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

5700:493. Workshop: Educational Foundations & Leadership. (1-3 Credits)
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

5700:494. Educational Institutes: Education Foundations & Leadership. (1-4 Credits)
Special courses designed as in-service upgrading programs, frequently provided with the support of national foundations.

Educational Guidance/Counseling (5600)

5600:401. Introduction to Suicidology. (3 Credits)
Introduction to Suicidology covers a broad range of issues related to suicide from global, U.S. national, state and local perspectives.

5600:410. Personnel Services in School. (2 Credits)
Prerequisite: senior standing. Introduction to background, role and function, techniques, community agencies and issues in personnel field. For student considering pupil personnel fields, social work.

5600:415. Mental Illness & Media. (2 Credits)
Mental illness is often portrayed negatively the media. This course focuses on mental illness, stigma, and how movies portray specific mental disorders.

5600:426. Career Education. (2 Credits)
Prerequisite: junior, senior or graduate standing. Examination of current career education models and programs with emphasis on infusion of career education activities into elementary and secondary curriculum.

5600:436. Helping Skills for Resident Assistants. (2 Credits)
Open to resident assistants in University housing. A course designed to help student personnel workers become more effective in professional role.

5600:450. Counseling Problems Related to Life-Threatening Illness & Death. (3 Credits)
Prerequisite: Permission. Consideration of the global issues, current research, coping behavior, support systems and family and individual needs in regard to life-threatening situations.

5600:480. Special Topics: Educational Guidance & Counseling. (1-4 Credits)
(May be repeated with a change in topic) Prerequisite: Permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

5600:490. Workshop: Educational Guidance & Counseling. (1-3 Credits)
Special instruction designed as in-service and/or upgrading individuals on current issues and practices in counseling.

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5600:493. Workshop: Educational Guidance & Counseling. (1-4 Credits)
Special instruction designed as in-service and/or upgrading individuals on current issues and practices in counseling.

5600:494. Counseling Institute. (1-4 Credits)
In-service programs for counselors and other helping professionals.

Electrical Engineering (4400)

4400:101. Tools for Electrical Engineering. (3 Credits)
Corequisite: 3450:221 or 3450:149. Orientation to degree programs and design practice in electrical and computer engineering. Introduction to computer applications and resources for engineering studies.

4400:230. Circuits I Laboratory. (1 Credit)
Corequisite: 4400:231. Computation, computer aided circuit analysis, circuit theorem confirmation, report writing to include data analysis and reduction, introduction to electrical measurements.

4400:231. Circuits I. (3 Credits)
Corequisite: 4400:230, 3450:223, 3650:292. DC and AC linear circuit analysis. Operational amplifier circuits. Loop and nodal analyses. Network theorems. Phasor techniques, steady-state AC power, three-phase systems.

4400:301. Undergraduate Research I: Electrical Engineering. (1 Credit)
Prerequisites: 4400:230, 4400:231, 4400:330, 4400:332, 4450:220, [4400:101 or 4450:101] with a combined average grade of 3.0 or higher, admission to the College of Engineering, and permission. Research project, supervised by faculty member of the department; requires oral research presentation and written report.

4400:302. Undergraduate Research II: Electrical Engineering. (1 Credit)
Prerequisites: [4400:301 or 4450:301], admission to the College of Engineering and permission. Research project, supervised by faculty member of the department; requires oral research presentation and written report.

4400:303. Undergraduate Research III: Electrical Engineering. (1 Credit)
Prerequisites: [4400:302 or 4450:302], admission to the College of Engineering and permission. Research project, supervised by faculty member of the department; requires oral research presentation and written report to the department, and presentation of work in a research venue outside the department.

4400:304. Undergraduate Research IV: Electrical Engineering. (1 Credit)
(May be repeated. May not be applied to degree requirements.) Prerequisite: 4400:303 or 4450:303, and permission. Research project, supervised by faculty member of the department; requires oral research presentation and written report.

4400:307. Basic Electrical Engineering. (4 Credits)
Prerequisite: 3650:292; corequisite: 3450:335. Covers fundamental aspects of electrical circuits, electronics and electrical machinery. Not open to an electrical or computer engineering major.

4400:309. Design Project Seminar: Electrical Engineering. (1 Credit)
Prerequisites: junior standing, admission to the College of Engineering and permission. Project selection and proposal. Project specifications and alternative design. Professional ethics. Intellectual property. Societal impact issues in engineering design. Senior Design Project II presentations.

4400:330. Circuits II Laboratory. (1 Credit)
Corequisite: 4400:332. Computation, computer aided circuit analysis, circuit theorem confirmation, report writing to include data analysis and reduction, intermediate electrical measurements.

4400:332. Circuits II. (3 Credits)
Prerequisite: 4400:231 with a grade of C- or better. Corequisites: 3450:335 and 4400:330. Coupled magnetic circuits. Transient and frequency domain analyses of linear circuits. Bode plots, Laplace transforms, transfer functions, resonance, passive and active filters.

4400:340. Signals & Systems. (4 Credits)
Prerequisites: [3460:209 or 4450:208 or 4800:220], 3450:335, 4400:332 and admission to the College of Engineering. Linear systems theory and transform analysis techniques for continuous and discrete systems. Convolutions, Laplace transforms, continuous and discrete Fourier transforms. Difference equations and Z transforms.

4400:341. Introduction to Communication Systems. (3 Credits)
Prerequisites: 4400:340 and admission to the College of Engineering. Introduces analog and digital communication systems and signal processing. Time-sampling and filtering. Modulation and demodulation techniques. Noise and bandwidth requirements. System design and performance analysis.

4400:353. Electromagnetics I. (4 Credits)
Prerequisite: 4400:231 and admission to the College of Engineering. Corequisite: 3450:335. Vector analysis. Electrostatics: electrostatic field, scalar potential, dielectrics, boundary-value problems. Magnetostatics: magnetic circuits. Maxwell's equations: Faraday's law, time-harmonic fields. Introduction to plane waves.

4400:354. Electromagnetics II. (3 Credits)
Prerequisites: 4400:353 and admission to the College of Engineering. Theory and application of transmission lines: transient and steady-state waves. Plane EM waves: propagation, reflection, and refraction. Waveguides open and closed-boundary guiding structures.

4400:360. Physical Electronics. (3 Credits)
Prerequisites: 4400:332, 4450:220 and admission to the College of Engineering. PN junction, diffusion, tunneling, FET and BJT device physics, equivalent circuits for electronic devices, time and frequency analysis, biasing and logic families.

4400:361. Electronic Design. (4 Credits)
Prerequisites: 4400:340, 4400:360 and admission to the College of Engineering. Power amplification, feedback, oscillators, linear integrated circuits, modulation and demodulation circuits.

4400:371. Control Systems I. (4 Credits)
Prerequisites: 4400:340 and admission to the College of Engineering. Introduction to servomechanisms and feedback. Modeling and response of feedback control systems. Stability of linear systems. Experiments include analog simulation and basic servomechanism.

4400:381. Energy Conversion. (4 Credits)
Prerequisites: 4400:332 and admission to the College of Engineering. Corequisite: 4400:353. Nonelectrical to electrical energy conversions and vice versa: thermal, chemical, solar. Fundamentals of electromechanical energy conversion. Principles of operation of transformers, commutator machines, induction and synchronous machines.

4400:401. Senior Design Project I - Electrical Engineering. (2 Credits)
Prerequisites: 4400:309, senior standing, admission to the College of Engineering and 4400:341, 4400:354, 4400:361, 4400:371, and 4400:381 with a combined average grade of 2.0 or higher. Design and preparation phase of an engineering project. Requires project presentation, approval of a written proposal, and ordering of required parts.

4400:402. Senior Design Project II - Electrical Engineering. (3 Credits)
Prerequisite: 4400:401 and admission to the College of Engineering. Implementation and evaluation phases of an engineering design project. Requires a project presentation and report.

4400:434. Active Circuits. (3 Credits)
Prerequisite: 4400:340. Applications of operational amplifiers including bilinear transfer functions, scaling, cascade design, biquad circuits, lowpass, high pass, bandpass-filters, Butterworth and Chebyshev response, sensitivity, delay filters, frequency transformations, ladder design, simulated element design, leapfrog simulation and switched-capacitors.

4400:441. Digital Communication. (3 Credits)
Prerequisite: 4400:341 or 4450:440. Introduction to digital communications theory and systems. Sampling, formatting and baseband communications. Digital modulation techniques and optimal receivers. Error performance analysis. Error control.

4400:445. Wireless Communications. (3 Credits)
Prerequisite: 4400:441. Theory and analysis of wireless communication systems, wireless propagation, multiple access, modulation, demodulation, multipath channel characterization, diversity, cellular and PCS services and standards.

4400:447. Random Signals. (3 Credits)
Prerequisite: 4400:340. Applications of set theory, discrete and continuous sample spaces; probability, random variables, distribution functions, density functions, stochastic processes, random signals, system function, power spectrum and correlation functions.

4400:448. Optical Communication Networks. (3 Credits)
Prerequisites: 4400:360. Optical waveguides and integrated components. Optical transmitters and receivers. Optical communications network design.

4400:451. Electromagnetic Compatibility. (3 Credits)
Prerequisite: 4400:360. Introduction to electromagnetics, electromagnetic compatibility, crosstalk and effects on computers, communication lines and systems.

4400:453. Antenna Theory. (3 Credits)
Prerequisite: 4400:354. Theory of EM radiation. Wire antennas, arrays, receiving antennas, reciprocity. Integral equations for induced currents, self and mutual impedances. Equivalence principle, radiation from aperture antennas.

4400:455. Microwaves. (4 Credits)
Prerequisite: 4400:354. Dynamic fields, Maxwell's equation and wave equations. Field analysis of wave guides, microwave components, techniques and systems.

4400:461. Optical Electronics & Photonic Devices. (3 Credits)
Prerequisites: 4400:360. Lightwave engineering, photonic principles and optical electronic device technology.

4400:469. Introduction to Sensors and Actuators. (3 Credits)
Prerequisite: senior standing or permission. Introduction to the theory and practice of sensors and actuators; sensing and actuation technologies; performance, and interfacing.

4400:472. Control Systems II. (4 Credits)
Prerequisite: 4400:371. Sampled-data control system analysis and design. Discrete-time representation of sampled-data systems. Cascade, feedforward and state-variable compensation techniques. Digital computer implementation.

4400:481. Modern Power Systems. (3 Credits)
Prerequisite: 4400:381. Introduction to electricity utility load flow, faulty analysis, stability, surge protection and relaying.

4400:483. Power Electronics I. (3 Credits)
Prerequisite: 4400:360. Steady-state analysis and design of power electronic converters: AC/DC converters (rectifiers), DC/DC converters, DC/AC PWM and resonant converters, AC/AC converters and cycloconverters.

4400:484. Power Electronics Laboratory & Design Project. (2 Credits)
Prerequisite: 4400:483, 4400:583 or equivalent. Experiments on different types of power electronic converters: AC/DC, DC/DC, DC/AC, and AC/AC. Design project to include design, simulation, building, and testing of a power electronic circuit.

4400:485. Electric Motor Drives. (3 Credits)
Prerequisite: 4400:381. Application of electric machines, choice of motor for particular drive. Application of power semiconductor circuits in electric machinery.

4400:486. Dynamics of Electric Machines. (3 Credits)
See department for course description.

4400:487. Electromagnetic Design of Electric Machines. (3 Credits)
See department for course description.

4400:488. Control of Machines. (4 Credits)
See department for course description.

4400:489. Electric and Hybrid Vehicles. (3 Credits)
Prerequisite: 3450:335. Basic principles of electric and hybrid vehicles. Characteristics of electric machines, internal combustion engines, transmissions, batteries, fuel cells, ultracapcators. Vehicle control strategies, communication networks, and overall system integration.

4400:498. Special Topics: Electrical Engineering. (1-3 Credits)
(May be taken more than once) Prerequisite: Permission of department chair. Special topics in electrical engineering.

Electronic Engr Technology (2860)

2860:120. Circuit Fundamentals. (4 Credits)
Prerequisite: 2030:152 or permission. SI units, current, voltage, resistance, Ohm's Law, circuit analysis, network theorems, computer simulation, inductor, capacitor, RLC dc analysis, transients, laboratory support of circuit concepts, ac introduction.

2860:121. Introduction to Electronics and Computers. (2 Credits)
Prerequisite: 2030:151 or placement. Corequisite: 2860:120. Supporting 2860:120 Circuit Fundamentals, this course introduces students to computers and software, technical communications, laboratory practices, and to the electronics industry.

2860:122. AC Circuits. (3 Credits)
Prerequisite: 2860:120; corequisites: 2030:154. Sinusoidal voltage and current, reactance and impedance, methods of AC circuit analysis, AC power, transformers, AC meters and oscilloscopes, dependent and independent sources.

2860:123. Electronic Devices. (4 Credits)
Prerequisite: 2860:120. Physical theory, characteristics and operational parameters of solid-state devices. Analysis and design of electronic circuits incorporating these devices, utilizing characteristic curves and linear modeling.

2860:210. Industrial Control Panel Fabrication. (2 Credits)
Prerequisite: 2030:152. This course will introduce students to shop fabricating skills involved in the creation of electrical control panels using mechanical and electrical fabricating tools.

2860:225. Applications of Electronic Devices. (4 Credits)
Prerequisite: 2860:123, 2030:154. Frequency response, filter concepts, electronic amplifiers, power amplifiers, multistage amplifiers, differential amplifiers, operational amplifiers, voltage regulators, feedback and oscillators, special devices, computer simulation analysis.

2860:237. Digital Circuits. (4 Credits)
Prerequisites: 2860:123. Devices used in logic circuits, interfacing, combinational logic, arithmetic circuits, encoders, multiplexers, programmable logic devices, flip-flops, counters, shift registers, computer modeling of digital circuits.

2860:238. Microprocessor Applications. (4 Credits)
Prerequisite: 2860:237. Programmable logic devices, computer modeling of digital circuits, memory circuits. Computer architecture, programming the microprocessor, microprocessor hardware, microprocessor applications, parallel I/O and programmable timers.

2860:242. Machinery & Controls. (3 Credits)
Prerequisites: 2860:120, 2860:121 or 2860:370 (previously 270). Study of DC and AC motors and generators and their control. Fundamentals of power transformers. Three-phase distribution and motor control. Principles of industrial electronic devices.

2860:251. Electronic Communications. (4 Credits)
Prerequisite: 2860:225. Resonance, coupling, filters, oscillators, mixers, power amplifiers, AM, FM, receivers.

2860:260. Electronic Project. (2 Credits)
Prerequisites: final semester or permission and 2940:210. Design, construction, and testing of an electronic circuit of choice. Progress reports, oral, and a formal written report required. Discussion of electronic design, fabrication, and troubleshooting techniques.

2860:290. Special Topics: Electronic Engineering Technology. (1-4 Credits)
Prerequisite: Permission of instructor. Directed study in a special field of interest chosen by the student in consultation with the instructor(may be repeated for a total of six credits).

2860:310. National Electrical Code and Electrical System Design. (3 Credits)
Prerequisite: 2860:122 or 2860:370. This course provides students with the skills necessary to apply the National Electrical Code (NFPA 70) to the design and installation of electrical systems and circuits.

2860:350. Advanced Circuit Theory. (3 Credits)
Prerequisite: 2860:251. Corequisite: 2030:356. Nodal, mesh, Thevenin, and dependent sources in resistive circuits. Inductor and capacitor as time domain elements. First- and second-order circuit analysis. Phasor analysis. Operational amplifier analysis.

2860:352. Microcontrollers. (4 Credits)
Prerequisite: 2860:238; corequisite: 2860:350. Using a typical microcontroller, study its architecture, program it, use subroutines and interrupts, use it in various applications, utilize various on-board modules including analog-to-digital, and timers.

2860:354. Advanced Circuits Applications. (3 Credits)
Prerequisites: 2860:350, 2030:356. Introduction to calculus based circuit analysis. Emphasizing Laplace transforms in operational circuit analysis, transfer functions, impulse function, Bode diagrams, Fourier Series.

2860:360. Virtual Instrumentation and Data Acquisition. (3 Credits)
Prerequisites: 2860:122 and 2860:370. An introduction to instrumentation, data acquisition (DAQ) and graphical programming used in manufacturing and laboratory environments.

2860:370. Survey of Electronics I. (3 Credits)
Prerequisite: 2820:163. Fundamentals of DC and AC electrical circuits and rotating machinery. For non-Electronic Engineering Technology majors.

2860:371. Survey of Electronics II. (3 Credits)
Prerequisite: 2860:370. Survey of the most commonly used solid state circuit components including typical applications. Introduction into digital circuits and microprocessor applications. For non-Electronic Technology majors.

2860:400. Computer Simulations in Technology. (3 Credits)
Prerequisites: 2860:354, 2030:345. Introduce the use of software widely used in industry to simulate and study electrical circuits and signals. Methods of data sampling, management and presentation will be studied.

2860:406. Communication Systems. (3 Credits)
Prerequisites: 2860:251 and 2860:354. Digital communications, transmission lines, waveguides, microwave devices and antennas.

2860:420. Biomedical Electronic Instrumentation. (3 Credits)
Prerequisite: 2860:354. Introduction to electrical signals from the body, transducers, recording devices, telemetry, microprocessor applications, and electrical safety of medical equipment.

2860:451. Industrial Electrical Systems. (3 Credits)
Prerequisites: 2860:354. Electric power, industrial nameplates, power factor correction, mutual inductance, linear transformers, power transformers, polyphase systems, per-phase analysis, system grounding, protective device coordination computer-aided analysis.

2860:453. Control Systems. (4 Credits)
Prerequisites: 2860:354, 2870:301. Modeling and responses of closed-loop systems. Laplace transforms, root-locus analysis. Stability, compensation, digital control, optimal control. Digital computer in system simulation and design.

2860:455. Senior Project. (2 Credits)
Capstone experience consisting of Electrical or Electronic Project emphasizing creative technical analysis or design and presentation.

2860:490. Special Topics: Electronic Engineering Technology. (1-4 Credits)
Prerequisite: Permission of instructor. Directed study in a special field of interest chosen by the student in consultation with the instructor (may be repeated for a total of six credits).

2860:497. Senior Honors Project: Electronic Technology. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program, permission of department preceptor and major in electronic technology. Independent research leading to completion of Senior Honors Thesis or other original work.

Emergency Management and Homeland Security (2235)

2235:100. Introduction to Digital Forensics. (3 Credits)
An overview of digital forensics and computer-related issues facing government and businesses. Specific focus on forensic examinations and methodologies used in the field.

2235:105. Introduction to Disaster, Hazards & Risk. (3 Credits)
Provides a research based and practitioner overview of how people perceive and react to extreme events before, during, and after disasters.

2235:201. Police Academy: Administration & Legal. (3 Credits)
Prerequisite: Acceptance into the Police Academy. Corequisites: 2235:202, 2235:203, 2235:204 and 2235:205. Overview of the administration and legal issues of becoming an Ohio Peace Officer.

2235:202. Police Academy: Homeland Security. (3 Credits)
Prerequisite: Acceptance into the Police Academy. Corequisites: 2235:201, 2235:203, 2235:204 and 2235:205. Overview of human relations, civil disorders, investigation, and homeland security involved in becoming an Ohio Peace Officer.

2235:203. Police Academy: Traffic. (3 Credits)
Prerequisite: Acceptance into the Police Academy. Corequisites: 2235:201, 2235:202, 2235:204 and 2235:205. Overview of motor vehicle offenses, traffic crash investigation, speed measuring and sobriety testing required to pass the Ohio Peace Officer Training program.

2235:204. Police Academy: Practicals I. (3 Credits)
Prerequisite: Acceptance into the Police Academy. Corequisites: 2235:201, 2235:202, 2235:203 and 2235:205. Classroom and practical skills training in firearms, patrol, and driving to satisfy all state requirements for the Ohio Peace Officer Training Program.

2235:205. Police Academy: Practicals II. (3 Credits)
Prerequisite: Acceptance into the Police Academy. Corequisites: 2235:201, 2235:202, 2235:203 and 2235:204. Classroom and skills in defense tactics, physical fitness and First Aid/CPR/AED & WMD Awareness to satisfy requirements to become an Ohio Peace Officer.

2235:210. Occupational Safety & Risk. (3 Credits)
Introduction to the field of health and safety as related to business and industrial operations. Emphasis is placed on hazard/risk analysis and the regulatory environment.

2235:220. Environmental Law & Regulations. (3 Credits)
Introduction to the legal system and to the laws and regulations dealing with water, air, land, noise and other sources of pollution.

2235:221. Environmental Law & Regulations II. (3 Credits)
Prerequisites: 2235:220 or permission. Designed to provide students the opportunity to apply common regulatory reporting mechanisms in a practical manner utilizing a variety of software programs recognized in the environmental field.

2235:230. Water & Atmospheric Pollution. (3 Credits)
Prerequisite: 3100:104, and 2235:105. Basic concepts of aquatic and atmospheric systems and the processes which pollute them. Emphasis on control and monitoring of cultural, industrial, and agricultural pollution sources. Laboratory.

2235:232. Environmental Sampling Laboratory. (2-3 Credits)
Corequisite: 2800:230. Field experience with a wide range of environmental sampling techniques and equipment.

2235:280. Cybercrime. (3 Credits)
Examines crime and deviance in cyberspace. Particular focus is on the prevention of computer intrusion in the workplace.

2235:281. Computer Forensic Methods. (3 Credits)
Prerequisite: 2235:100. Examination of computer forensic methods employed to identify, collect, recover, authenticate, preserve, analyze, and document electronic evidence for criminal or civil legal purposes.

2235:282. Digital Forensic Imaging. (3 Credits)
This course cover the general principles of photography and practical elements and advanced concepts of forensic photography.

2235:283. Cyber Warfare. (3 Credits)
Prerequisites: 2235:100 or 3800:100. Examines the participants, tools and techniques in digital conflicts and explores how to defend against espionage, hactivism, non-state actors and terrorists.

2235:285. Disasters in Film and Media. (3 Credits)
Examines how contemporary culture perpetuates myths of natural and technological disasters. Students deconstruct and analyze reality from the myths in various types of media.

2235:305. Principals of Emergency Management. (3 Credits)
An overview of the history and philosophy, terms and concepts, and local, state and federal roles in emergency management. Emphasizes manmade, natural and technological hazards.

2235:340. Disaster Research Methods. (3 Credits)
Introduction to scientific method and processes, research ethics, and qualitative and quantitative methods. Use of research for appropriate decision making.

2235:350. Disaster Preparedness & Response. (3 Credits)
Prerequisite: 2235:305. Legal requirement, planning formats, and response procedures are presented. Special focus community risk assessment: hazard analysis, vulnerability assessment, and community response capability assessment.

2235:360. Introduction to Terrorism. (3 Credits)
Corequisite: 2235:305. Examines terrorism from historical, international, transnational, and domestic perspectives. Includes political and religious terrorism along with emergency management considerations.

2235:365. Disaster Mitigation. (3 Credits)
Prerequisite: 2235:305. Examines disaster prevention and risk reduction. Focuses on such concepts as sustainability, resiliency, non-structural and structural mitigation and various sectors' responsibilities.

2235:367. Disaster Recovery. (3 Credits)
Prerequisite: 2235:305. Provides foundations for disaster relief and recovery planning, stages of recovery, resources used, and formation of public/private partnerships for recovery action and resource allocation.

2235:368. Professionalism in Emergency Management and Homeland Security. (3 Credits)
Prepares students for career entry into Emergency Management and Homeland Security areas. Professionalism, resume building, interview techniques, and resource sites will be examined.

2235:370. Hazard Science and Management. (3 Credits)
Overview of hazards theory, the science of hazard development, and various hazard types. Emphasis on emergency management and homeland security perspectives in regard to various hazard management related topics.

2235:381. Computer Forensic Methods II. (3 Credits)
Prerequisite: 2220:281. Obtaining and analyzing digital information from computer storage media to determine details of origin and content.

2235:382. File System Analysis. (3 Credits)
Prerequisite: 2235:281. The analysis of volumes, partitions, and data files to understand the design of file systems and data structures.

2235:383. Ethical Hacking. (3 Credits)
Prerequisite: 2235:283. An examination of the tools, methods, and structured approaches to conducting basic security testing to protect computer networks from attacks.

2235:384. Intelligence: Cyber and Homeland Security. (3 Credits)
This course introduces students to the role and operation of the intelligence community within the homeland security framework: History, mission, structure, capabilities, and methods.

2235:401. Crisis Leadership. (3 Credits)
This course presents leadership research from an interdisciplinary perspective. Content is drawn the fields of business, training, simulation, organizational theory, government, and others. This course covers early leadership theory, horizontal theories, crisis training models and approaches, and crisis cognitive processing strategies. Students will examine the overall system of building better crisis leaders.

2235:406. Disaster Management Technology. (3 Credits)
Prerequisite: 2235:305. Provides an overview of the various types of technology utilized in disasters, emergency management and homeland security. Topics include communications, watches, warnings, and operational challenges.

2235:407. Hazardous Weather Observations. (3 Credits)
Overview of meteorological variables and weather data useful to EM including meteorological instruments, forecasts, model, radar and satellite imagery, thunderstorms, tornadoes, winter storms and hurricanes.

2235:420. Disaster Vulnerability. (3 Credits)
Prerequisites: 2235:305. Analysis of citizen actions regarding major disasters including perspectives of individuals and emergency managers using case studies, theories, and social problems.

2235:425. Private Sector Disaster Applications. (3 Credits)
Prerequisites: 2235:305. Examines emergency management and homeland security business components in the private and public sectors. Emphasizes business continuity plans along with case studies in hazards and disasters.

2235:430. Contemporary Issues in Emergency Management and Homeland Security. (3 Credits)
Discussion of relevant issues impacting the field of emergency management and homeland security by analyzing various case studies.

2235:435. Cyber Issues in Emergency Management and Homeland Security. (3 Credits)
Prerequisite: 2235:305. Discussion and analysis of cyber issues impacting the public, private, and nonprofit sectors of emergency management and homeland security.

2235:480. Emergency Management & Homeland Security Capstone. (3 Credits)
Prerequisite or Corequisite; 2235:495. Ties together relevant concepts in emergency management and homeland security to help prepare graduates for professional careers integrating theory and applications.

2235:490. Current Topics in Emergency Management. (1-4 Credits)
Prerequisites: 2235:305 and 2235:350. A variety of course topics on current subjects related to emergency management and disaster preparedness. May be repeated for up to 12 credits.

2235:495. Emergency Management & Homeland Security Internship. (3 Credits)
Prerequisite: 30 hours in program and permission from program director. Supervised work experience in emergency management and/or homeland security to increase student understanding by applying program education to an applied work experience.

2235:497. Independent Study in Emergency Management. (1-4 Credits)
Prerequisites: 2235:305 and 2235:350. Selected topics, special areas of study in emergency management, disaster preparedness under the supervision of a faculty member with whom specific arrangements have been made.

Emergency Medical Services (2240)

2240:100. Introduction to EMT Training. (3 Credits)
Corequisites: 2240:101 and 2240:102. Overview of the EMS System, safety/well being of an EMT, medical/legal and ethical issues in providing emergency care.

2240:101. EMT-B Fundamentals. (2 Credits)
Corequisite: 2240:100. Develop skils required of EMT-Basic for Assessment, air way management, patient evaluation for shock, trauma/special needs patient, learn appropriate interventions for all situations.

2240:102. EMT-B Fundamentals II. (2 Credits)
Corequisites: 2240:100 and 2240:101. Provide students with the tools to start the EMT-Basic course and will prepare students to achieve national certification as an EMT-Basic.

2240:201. Fundamentals of EMT-Paramedic I. (3 Credits)
Corequisites: 2240:202, 2240:203, 2240:204, and 2240:205. Introduction to emergency medical care-paramedic, the well-being of the EMT-paramedic, and illness and injury prevention.

2240:202. Fundamentals of EMT-Paramedic II. (3 Credits)
Corequisites: 2240:201, 2240:203, 2240:204, and 2240:205. Instruction in medical/legal issues, ethics, and the paramedic, and general principles of anatomy and physiology.

2240:203. Fundamentals of EMT-Paramedic III. (3 Credits)
Corequisites: 2240:201, 2240:202, 2240:204, and 2240:205. Instruction in medical math, pharmacology, venous access , and medication administration.

2240:204. Fundamentals of EMT-Paramedic IV. (3 Credits)
Corequisites: 2240:201, 2240:202, 2240:203, and 2240:205. Instruction includes therapeutic communications, life span development, and airway management/ventilation.

2240:205. Fundamentals of EMT-Paramedic V. (3 Credits)
Corequisites: 2240:201, 2240:202, 2240:203, and 2240:204. Skill Session Practices, competency Testing from skills learned throughout the semester.

2240:206. Fundamentals of EMT-Paramedic VI. (3 Credits)
Prerequisites: 2240:201, 2240:202, 2240:203, 2240:204, and 2240:205. Corequisites: 2240:207, 2240:208, 2240:209, and 2240:211. Instruction is respiratory emergencies and cardiovascular emergencies.

2240:207. Fundamentals of EMT-Paramedic VII. (3 Credits)
Prerequisites: 2240:201, 2240:202, 2240:203, 2240:204 and 2240:205. Corequisites: 2240:206, 2240:208, 2240:209, and 2240:211. Instruction in cardiovascular emergencies, diabetic emergencies, and allergic reactions.

2240:208. Fundamentals of EMT-Paramedic VIII. (3 Credits)
Prerequisites: 2240:201, 2240:202, 2240:203, 2240:204 and 2240:205. Corequisites: 2240:206, 2240:207, 2240:209, and 2240:211. Instruction in paramedic skills, practical trauma, and medical skills practical.

2240:209. Fundamentals of EMT-Paramedic IX. (3 Credits)
Prerequisites: 2240:201, 2240:202, 2240:203, 2240:204 and 2240:205. Corequisites: 2240:206, 2240:207, 2240:208 and 2240:211. Medical skills practical and skills testing.

2240:211. Fundamentals of EMT-Paramedic X. (3 Credits)
Prerequisites: 2240:201, 2240:202, 2240:203, 2240:204 and 2240:205. Corequisites: 2240:206, 2240:207, 2240:208 and 2240:209. Practical skills testing, client orientation, and written skills testing.

English (3300)

3300:110. English Composition I + Workshop. (4 Credits)
Prerequisite: Placement. Extensive and varied experience in developing writing skills, with practice in expressive, reflective, and analytic forms of writing. Includes one credit, support-intensive workshop.

3300:111. English Composition I. (3 Credits)
Extensive and varied experience in developing writing skills, with practice in expressive, reflective, and analytic forms of writing.

3300:112. English Composition II. (3 Credits)
Prerequisites 3300:110 or 3300:111 or 3300:113 or 2020:121. Designed to develop skills in analyzing and writing persuasive arguments.

3300:113. African American Language and Culture I: College Composition. (3 Credits)
Discussion, argumentation, and writing related to African American culture and language. An option to 3300:111 English Composition I. Open to all students.

3300:114. African American Language and Culture II: College Composition. (3 Credits)
Prerequisites: 3300:110 or 3300:111 or 3300:113 or 2020:121. Composition and discussion topics focus on the structure, history, and culture of African American English. An option to 3300:112 English Composition II. Open to all students.

3300:250. Classic & Contemporary Literature. (3 Credits)
Prerequisites: 3300:111 and 3300:112 or their equivalents, and 3400:210 or 3300:221, or permission of the instructor. Close reading and analysis of fiction, poetry, and drama from the evolving canon of American, British, and World literature. This course fulfills the General Education Humanities Requirement. It cannot be used to meet requirements in English.

3300:252. Shakespeare & His World. (3 Credits)
Prerequisites: 3300:111 and 3300:112 or their equivalents, and 3400:210 or 3300:221. An introduction to the works of Shakespeare and their intellectual and social contexts. Each section "places" Shakespeare through compact readings of works by the playwright's contemporaries. This course fulfills the General Education Humanities Requirement. It cannot be used to meet requirements in English.

3300:275. Specialized Writing. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, or permission of the instructor. (May be repeated for different topics, with permission) Principles and practice of style, structure and purpose in writing, with special applications to writing demands of a specific career area.

3300:276. Introduction to Creative Nonfiction Writing. (3 Credits)
Prerequisites: 3300:111 and 3300:112. This course introduces the techniques of Creative Nonfiction through writing exercises that give experience with the form.

3300:277. Introduction to Poetry Writing. (3 Credits)
Prerequisite: 3300:111 and 3300:112. Practice in writing poems. Study of techniques in poetry, using contemporary poems as models. Class discussion of student work. Individual conferences with instructor to direct student's reading and writing.

3300:278. Introduction to Fiction Writing. (3 Credits)
Prerequisite: 3300:111 and 3300:112. Practice in writing short stories. Study of various techniques in fiction, using contemporary stories as models. Class discussion of student work. Individual conferences with instructor to direct student's reading and writing.

3300:279. Introduction to Script Writing. (3 Credits)
Prerequisite: 3300:111 and 3300:112. Practice in writing scripts. Study of various techniques in script writing, using contemporary models for study. Class discussion of student work. Individual conferences with instructor to direct student's reading and writing.

3300:280. Poetry Appreciation. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, or permission of the instructor. Close reading of a wide selection of British and American poems with emphasis on dramatic situation, description, tone, analogical language, theme and meaning.

3300:281. Fiction Appreciation. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, and 3400:210 or 221. Close reading of modern masters of short story and novel. Fulfills the General Education Humanities Requirement. It cannot be used to meet requirements in English.

3300:283. Film Appreciation. (3 Credits)
Prerequisite: 3300:112 or equivalent, or any 200-, 300- or 400-level English course. Introduction to dramatic choices made by filmmakers in scripting, directing, editing and photographing narrative films; and qualities of reliable film reviews.

3300:300. Critical Reading & Writing. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, or permission of the instructor. An introduction to English studies, focusing on critical methods for reading and writing about literature, with attention to research skills and uses of computer technology.

3300:301. English Literature I. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, or permission of the instructor. Studies in English literature from Old English to 1800, with emphasis upon specific representative works and upon the cultural and intellectual background which produced them. Literature to be read will include both major and minor poetry, prose and drama.

3300:315. Shakespeare: The Early Plays. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, or permission of the instructor. Introduction to early drama of Shakespeare with close reading of tragedies, histories and comedies. Includes explanatory lectures of both the plays and their backgrounds.

3300:316. Shakespeare: The Mature Plays. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, or permission of the instructor. Study of Shakespeare's plays after 1598, beginning with mature comedies. Concentration on major tragedies and romances.

3300:341. American Literature I. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, or permission of the instructor. Historical survey of major and minor American writers to 1865.

3300:350. Black American Literature. (3 Credits)
Prerequisite: Completion of 3300:112 or equivalent, or any [3300:200-, or 3300:300- or, 3300:400-] level course, or permission of the instructor. Survey of representative black American writers from the 19th Century to present, with particular attention to historical and social backgrounds.

3300:360. Old Testament As Literature. (3 Credits)
Prerequisite: Completion of 3300:112 or equivalent, or any [3300:200-, or 3300:300-, or 3300:400-] level course. History of Hebrews to 586 B.C., as revealed through epic, fiction, saga and poetry, viewed against background of the Asian World.

3300:361. The New Testament and Apocrypha as Literature. (3 Credits)
Prerequisite: Completion of 3300:112 or equivalent, or any [3300:200-, or 3300:300-, or 3300:400-] level course. These two bodies of literature read with emphasis on form of gospel and epistle, and concept of apocalypse. Both are viewed against their historical and social backgrounds.

3300:362. World Literatures. (3 Credits)
The course is a study of short fiction, poems, plays, and novels of the non-Western world from early antiquity to the present.

3300:364. Women Writers. (3 Credits)
Prerequisite: 3300:112 or equivalent, or permission of instructor. A study of the diverse voices of female experiences through literature written by women.

3300:366. European Background of English Literature. (3 Credits)
Prerequisite: Completion of 3300:112 or equivalent, or any [3300:200-, or 3300:300-, or 3300:400-] level course. Representative continental texts from Homer to Cervantes, selected both for their excellence and for their important influence on English and American literature.

3300:371. Introduction to Linguistics. (3 Credits)
Prerequisite: Completion of 3300:112 or equivalent, or any [3300:200-, or 3300:300- or, 3300:400-] level English course or permission. Scientific introduction to the study of written and spoken linguistic behavior in English. History of English, varieties of English, and acquisition of English also introduced.

3300:376. Legal Writing. (3 Credits)
Prerequisite: Completion of 3300:112 or any [3300:200-, or 3300:300- , or 3300:400-] level course. Intensive practice in writing for prelaw students through assignments based on actual legal situations and real cases. Particular attention to stating legal issues, writing persuasively, applying rules of law, and other topics that will help those preparing for law school and the profession.

3300:377. Advanced Poetry Writing. (3 Credits)
Prerequisites: 3300:277, 3300:111 and 3300:112. Advanced practice in writing poems, emphasis on shaping publishable works. Survey of market. Class discussion of student poems; individual conference with instructor.

3300:378. Advanced Fiction Writing. (3 Credits)
Prerequisites: 3300:278, 3300:111 and 3300:112. Advanced practice in writing short stories, emphasis on shaping publishable works. Survey of market. Class discussion of student stories; individual conference with instructor.

3300:379. Advanced Script Writing. (3 Credits)
Prerequisites: 3300:112 and 3300:279. This course focuses on writing for the screen and developing the visual imagination.

3300:380. Film Criticism. (3 Credits)
Prerequisite: 3300:112 or any 200-, 300- or 400-level English course. Application of literary critical theory to the study of film.

3300:381. Advanced Creative Nonfiction Writing. (3 Credits)
Prerequisite: 3300:276. This course advances student practice in the craft of Creative Nonfiction through writing exercises and workshop sessions.

3300:389. Special Topics: Literature & Language.. (3 Credits)
Prerequisite: Completion of 3300:112 or any [3300:200-, or 3300:300- or, 3300:400-] level course. (May be repeated for credit as different topics are offered). Traditional and nontraditional topics in English literature and language, supplementing course listed in this General Bulletin, generally constructed around theme, genre and language study.

3300:390. Professional Writing I. (3 Credits)
Prerequisite: Completion of 3300:112 or equivalent, or any [330:200-, or 3300:300-, or 3300:400-] level English course, or permission of the instructor. Designed to help prepare student for a career as professional business writer. Stresses theory and practice of written and oral communication in business organization. Individual and group performance, relating to communication theories, concepts of semantics. Functional writing as well as special needs of business are illustrated by actual cases. Adapting style and organization is practiced.

3300:391. Professional Writing II. (3 Credits)
Prerequisite: Completion of 3300:112 or equivalent, or any [330:200-, or 3300:300-, or 3300:400-] level English course, or permission of the instructor. Designed to help prepare student for a career as professional technical writer. Covers principles and practices concerning editing company technical communications, such as specifications, annual reports, promotional brochures for technical products, services, scientific abstracts, proposals. Also treats problems of adapting materials to formats, graphic display of technical information, adaptation of technical material to nontechnical reader.

3300:392. Internship in English. (1-3 Credits)
Prerequisite: Minimum GPA of 2.5, permission of the instructor. (May be repeated for a maximum of six credits.) Critical reading and writing focused on career applications of the discipline of English. May count up to three credit hours toward the English major.

3300:399. The Gothic Imagination. (3 Credits)
Prerequisite: 3300:112 or equivalent, or any 200-, 300- or 400-level English course. A loosely chronological study of major British, American, and European authors in the Gothic tradition. Focus on the literary conventions of Gothic fiction, to the "popular" nature of the literature and to its major themes/motifs.

3300:400. Anglo Saxon. (3 Credits)
Prerequisite: Completion of 3300:112 or equivalent, or any [3300:200-, or 3300:300- or, 3300:400-] level English course, and a minimum of Junior standing or higher, or permission of the instructor. Studies in Old English language and Old English prose and poetry, including Beowulf.

3300:403. Development of the Arthurian Legend. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, 64 credits or permission of the instructor. Traces evolution of Arthurian materials from 540 to 1500 and beyond, with emphasis on characters, themes, events and treatments.

3300:406. Chaucer. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, 64 credits or permission of the instructor. Close study of Chaucer's major works The Canterbury Tales and Troilus and Criseyde in Middle English.

3300:407. Middle English Literature. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112, 64 credits or permission. Study of genres, topics, styles and writers of the Middle English literary works from 12th to 15th Centuries. Readings in Middle English.

3300:424. Early English Fiction. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112, 64 credits or permission. Development of English novel before 1830. Focus on works of Defoe, Richardson, Fielding, Smollett, Sterne, Austen and Scott.

3300:425. Studies in Romanticism. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, 64 credits or permission of the instructor. Literary, philosophical, psychological and social revolutions of romantic period as reflected in works of such major writers as Wordsworth, Byron and Keats.

3300:430. Victorian Poetry & Prose. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, 64 credits or permission of the instructor. Poetry, prose of the late 19th Century, excluding fiction, with attention to Tennyson, Browning, Arnold, Carlyle, Ruskin and other major writers.

3300:431. Victorian Fiction. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, 64 credits or permission of the instructor. Reading of at least five major novels of Victorian era, of varying length, by Emily Bronte, Dickens, Eliot, Thackeray and Hardy. Characterization, theme and attitude toward life emphasized.

3300:435. 20th Century British Poetry. (3 Credits)
Prerequisite: 3300:112 or equivalent, or any 200-, 300- or 400-level English course, 64 credits or permission. Junior standing. Concentrated study of major poems of Yeats, Eliot and Auden, with attention also to Hardy, Housman, Spender, C. Day Lewis, Dylan Thomas and others.

3300:436. British Fiction: 1900-1925. (3 Credits)
Prerequisite: 3300:112 or equivalent, or any 200-, 300- or 400-level English course, 64 credits or permission. Junior standing. Study of Conrad, Joyce, D. H. Lawrence and Virginia Woolf, with attention to their innovations in narrative and style, their psychological realism and symbolism. Brief consideration of other important fiction writers of the period, including Wells, Bennett and Mansfield.

3300:437. British Fiction Since 1925. (3 Credits)
Prerequisite: 3300:112 or equivalent, or any 200-, 300- or 400-level English course, 64 credits or permission. Junior standing. Study of important British novelists since 1925, excluding Lawrence, Joyce and Woolf. Attention to development of British short story from 1925 to present.

3300:440. Women and Film. (3 Credits)
Prerequisites: [3300:111 and 3300:112] or any 200-, 300- or 400-level English course. Junior standing. This course explores representations of the feminine and treatments of gender issues in mainstream Hollywood films within a critical framework of feminist film theory.

3300:448. American Romantic Fiction. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, 64 credits or permission of the instructor. Examination of early American fiction, tracing its genesis, romantic period and germinal movements toward realism. Writers discussed include Cooper, Poe, Hawthorne and Melville.

3300:449. American Fiction: Realism & Naturalism. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, 64 credits or permission of the instructor. Examination of American writers of realistic and naturalistic fiction (e.g., Howells, James, Crane, Dreiser), tracing developments in American fiction against background of cultural and historical change.

3300:450. Modern American Fiction. (3 Credits)
Prerequisite: 3300:112 or equivalent, or any 200-, 300- or 400-level English course, 64 credits or permission. Junior standing. Study of significant American short and long fiction from World War I to the present.

3300:451. American Poetry to 1900. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, 64 credits or permission of the instructor. Survey of American poetry of the 17th, 18th and 19th Centuries.

3300:452. Modern American Poetry. (3 Credits)
Prerequisite: 3300:112 or equivalent, or any 200-, 300- or 400-level English course, 64 credits or permission. Junior standing. Survey of 20th Century American poetry beginning with Edwin Arlington Robinson and ending with contemporary poets.

3300:453. American Women Poets. (3 Credits)
Prerequisite: 3300:112 or equivalent, or any 200-, 300- or 400-level English course, 64 credits or permission. Junior standing. Study of modern poets' uses and revisions of tradition, women's relationships, conceptions of art and of the artist-as-woman, and the debate between "public" and "private" poetry.

3300:454. 20th Century American Drama. (3 Credits)
Prerequisite: 3300:112 or equivalent, or any 200-, 300- or 400-level English course, 64 credits or permission. Junior standing. Examination of major, established playwrights (including O'Neill, Miller and Williams) and sampling of new and rising ones.

3300:455. The American Short Story. (3 Credits)
Prerequisite: 3300:112 or equivalent, or any 200-, 300- or 400-level English course, 64 credits or permission. Junior standing. A study of the development of the short story as a particularly American genre, from Washington Irving to the present.

3300:456. Thoreau, Emerson, and Their Circle. (3 Credits)
Prerequisite: A minimum of Junior academic standing or higher, or permission. A study of work and life of Henry David Thoreau, Ralph Waldo Emerson, and other key figures of the American Renaissance.

3300:457. Writers on Writing. (3 Credits)
Prerequisite: 3300:111 and 3300:112 and Junior standing. A close look at what established writers have to say about the process of writing. Students write response essays and take exams on readings.

3300:460. Film and Literature. (3 Credits)
Prerequisites: 3300:111 and 3300:112 or their equivalents, 64 credits or permission of instructor. Analysis of literary texts and their film adaptations. Emphasis on genre, structure, and visual elements as counterparts to written texts.

3300:466. Linguistics and Language Arts. (3 Credits)
Prerequisite: Completion of 3300:112 or equivalent, or any [3300:200-, or 3300:300- or, 3300:400-] level course, and a minimum of Junior standing or higher, or permission of the instructor. Foundation course in linguistics with pedagogical implications for second language learners. Fundamental topics (morphology, syntax, semantics, phonetics, pragmatics) and related topics (sociolinguistics, contrastive analysis) covered.

3300:467. Modern European Fiction. (3 Credits)
Prerequisite: Completion of [3300:112 or equivalent], or any [200- or 300- or 400-level] English course, minimum Junior standing, or permission. Representative European writers from about 1850 to present, in translation. Focus on fiction of such writers as Dostoyevsky, Gide, Camus, Mann, Kafka and Kundera.

3300:468. International Poetry. (3 Credits)
Prerequisite: 3300:112 or equivalent, 64 credits or permission of instructor. Junior standing. This survey of world poetry focuses on the stylistic concerns and social consequences of literature from Latin America, Africa, Asia, Europe, and beyond.

3300:469. Eros & Love in Early Western Literature. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, 64 credits or permission of the instructor. An analysis of the use of sex and love in the literature of the Western World from Greco- Roman times to 1800, with special emphasis on how sexuality and "romantic" love are used as allegorical, satiric, fantastic or realistic devices.

3300:470. History of English Language. (3 Credits)
Prerequisite: Completion of 3300:112 or equivalent, or any [3300:200-, or 3300:300- or, 3300:400-] level English course, and a minimum of Junior standing or higher, or permission of the instructor. Development of English language, from its beginnings: sources of its vocabulary, its sounds, its rules; semantic change; political and social influences on changes; dialect origins; correctness.

3300:471. U.S. Dialects: Black & White. (3 Credits)
Prerequisite: Completion of 3300:112 or any [3300:200-, or 3300:300- or, 3300:400-] level course or equivalent, and a minimum of Junior standing or higher, or permission of the instructor. Study of differences in pronunciation, vocabulary and grammar among U.S. language varieties. Origins, regional and social dimensions are explored. Correctness, focusing on black English and Appalachian speech, explored.

3300:472. Syntax. (3 Credits)
Prerequisite: [3300:371 and 3300:112] or any [3300:200-, or 3300:300-, or 3300:400-] level English course or their equivalents, minimum of Junior standing or higher, or permission of the instructor.Principles of syntactic description. Sentence structures are investigated from a variety of languages, with emphasis on English.

3300:473. Theoretical Foundations and Principles of ESL. (3 Credits)
Prerequisite: Completion of 3300:112 or equivalent, or any [3300:200-, or 3300:300- or, 3300:400-] level course and a minimum of Junior standing or higher, or permission. Second language acquisition theories and teaching methodologies surveyed. Second language teaching principles from research in linguistics, psycholinguistics, and second language pedagogy explored.

3300:474. African American English. (3 Credits)
Prerequisite: 64 credits or permission. Junior standing. African American English grammatical structure, pronunciations, origins, and cultural role. Comparisons with academic English. Discussion of language correctness, legal status, and role in education.

3300:475. Theory of Rhetoric. (3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, 64 credits or permission of the instructor. Ancient and modern theories of rhetoric, with attention to classical oration, "topics" of rhetoric and their application to teaching of English.

3300:477. Sociolinguistics. (3 Credits)
Prerequisite: Completion of 3300:112 or equivalent, or any [3300:200-, or 3300:300- or, 3300:400-] level course, or permission of the instructor. Major sociolinguistic concepts and methodology examined, as well as relationships between language, socio-cultural factors, and education. Issues of Standard English, power, and gender also examined.

3300:478. Grammatical Structures of Modern English. (3 Credits)
Prerequisite: Completion of 3300:112 or equivalent, or any [3300:200-, or 3300:300- or, 3300:400-] level course, and a minimum of Junior standing or higher, or permission of the instructor. Contemporary understanding of Modern English sentence structure: parts of speech, sentence types, phrase types, modification, coordination and subordination, parentheticals. Traditional grammar and sentence rhetoric discussed.

3300:479. Management Reports. (3 Credits)
Prerequisites: Completion of 3300:112 or any [3300:200-, or 3300:300- or, 3300:400-] level course or equivalent, and a minimum of Junior standing or higher, or permission. Study of principles and writing practice in effective business style, specialized structure, and purpose for business reports.

3300:482. Senior Honors Project in English. (1-3 Credits)
(May be repeated for a total of six credits). Prerequisites: Completion of 1100:111 and 1100:112 or their equivalents, or permission of the instructor, senior standing in Honors College and approval of honors preceptor; open only to English majors enrolled in Honors College. Independent study leading to completion of senior honors thesis or other original work.

3300:484. Fantasy. (3 Credits)
Prerequisite: [3300:111 and 3300:112] or any or any 200-, 300- or 400-level English course, 64 credits or permission. Junior standing. A study of forms of literature, primarily fiction, based on and controlled by an overt violation of what is generally considered as possibility.

3300:485. Science Fiction. (3 Credits)
Prerequisite: 64 credits or permission. Junior standing. A study of twentieth-century British and American science fiction, featuring primary forms of the science fiction story and the work of major authors.

3300:486. Learner English. (3 Credits)
Prerequisite: Completion of 3300:112 or equivalent, or any [3300:200-, or 3300:300- or, 3300:400-] level course, or permission of the instructor. Introduction to tools for and practice in analyzing second language learners' production of English. Theory and practice of teaching oral and written English also covered.

3300:487. Field Experience: Teaching Second Language Learners. (3 Credits)
Prerequisite: Permission of instructor. Practical experience in which second language teachers-in-training observe, participate in, and practice teaching under the supervision of the instructor and/or an experienced, certified teacher.

3300:489. Seminar in English. (2-3 Credits)
Prerequisite: 3300:112 or any [3300:200-, or 3300:300- or, 3300:400-] level course or equivalent, and a minimum of Junior standing or higher, or permission. (May be repeated with different topics.) Special studies, and methods of literary research, in selected areas of English and American literature and language.

3300:490. Workshop in English. (1-3 Credits)
Prerequisite: Completion of 3300:111 and 3300:112 or their equivalents, 64 credits or permission of the instructor. (May be repeated with different topics) Group studies of special topics in English. Cannot be used to meet undergraduate or graduate major requirements in English; for elective credit only.

3300:492. Senior Seminar. (3 Credits)
Discussion of select literary topic and reflection on student development in the major. Requires independent research and reflection papers. Limited to senior English majors.

3300:498. Independent Study in English. (1-3 Credits)
Prerequisite: completion of 3300:111 and 3300:112 or their equivalents, 64 credits or permission. Directed study in a special field of interest chosen by student in consultation with instructor.

English - Associate Studies (2020)

2020:120. Writing and Editing. (1 Credit)
Examination of the editing process of writing. Focuses on developing a clear, effective, and correct professional writing style appropriate for academic and business documents.

2020:121. English. (3 Credits)
English composition focused on inventive writing, essay structure, process, consideration of strength, source of evidence, and citation; and development options leading to persuasion and argument.

2020:123. Writing for Presentations. (1 Credit)
A writing intensive course that focuses on the rhetorical and theoretical challenges and considerations of effective presentations.

2020:216. Collaborative Writing. (1 Credit)
Prerequisites: 3300:111 or 2020:121 or equivalent. A writing course that focuses on strategies and techniques for successful collaborative writing in the workplace.

2020:220. Writing and Research. (1 Credit)
Prerequisite: 2020:121 or 3300:111 or equivalent. Practical examination of writing effectively and professionally about primary and secondary research sources in the student's choice of several citation methods.

2020:222. Technical Report Writing. (3 Credits)
Prerequisites: 2020:121 or 3300:110 or 3300:111 or equivalent. Prepares students to write the types of reports most often required of technicians, engineers, and scientists. Includes types of reports, memoranda, and letters; techniques of research, documentation and oral presentations.

2020:224. Writing for Advertising. (3 Credits)
Prerequisite: 2020:121, 3300:111 or equivalent. Introduction to the copywriter's role in print, broadcast, and Web advertising. Study of advertising language; practice in writing advertisements and producing collateral copywriting materials.

2020:226. Electronic Reference Resources in the Computer Age. (3 Credits)
Prerequisites: 2020:121 or 3300:111. Designed for individuals to broaden their scope and understanding of various electronic research techniques. Study, evaluation, and use of current and emerging technologies will be examined.

2020:227. Writing for the World Wide Web. (3 Credits)
Prerequisites: 2020:121 or equivalent (3300:111), familiarity with Internet (or attend Computer Center training seminar) knowledge of word processing software. Introductory course examines spoken and written contexts merging into one "writing space"; provides writing theory and practice for effective e-mail, newsgroup, chat, and web site writing.

2020:290. Special Topics: Associate Studies. (1-4 Credits)
(May be repeated with a change in topic) Prerequisite: permission. Selected topics on subject areas of interest in associate studies.

2020:325. Signs of Professional Writing. (1 Credit)
Prerequisite: 2020:121, 3300:111, or equivalent. Practical examination of concrete and abstract indicators that lead readers to judge the professional quality of a written text beyond its meaning and correctness.

English Language Institute (3030)

3030:31. ELI Written Expression. (0 Credits)
Prerequisite: Permission of instructor. Intensive course in English as a second language writing skills, designed to help students develop effective strategies for expressing ideas clearly and correctly in writing. May be repeated an unlimited number of times as course is noncredit.

3030:32. ELI Reading Comprehension. (0 Credits)
Prerequisite: Permission of instructor. Intensive course in English as a second language reading skills, designed to help students develop efficient reading strategies and build vocabulary. May be repeated an unlimited number of times as course is noncredit.

3030:33. ELI Grammar and Oral Communication. (0 Credits)
Prerequisite: Permission of instructor. Intensive course in English as a second language grammar with an emphasis on oral skills, designed to help students speak fluently and correctly. May be repeated an unlimited number of times as course is noncredit.

3030:34. ELI Listening Comprehension. (0 Credits)
Prerequisite: Permission of instructor. Intensive course in English as a second language listening skills, designed to help students develop strategies to understand spoken English and take academic lecture notes. May be repeated an unlimited number of times as course is noncredit.

3030:41. ESL Writing: Developing Writing Proficiency. (0 Credits)
Prerequisite: Permission of instructor. Provides intensive instruction in English as a second language writing. Students develop effective composing strategies while learning to write for a variety of academic purposes. May be repeated an unlimited number of times as course is noncredit.

3030:42. ESL Reading: Developing Reading Proficiency. (0 Credits)
Prerequisite: Permission of instructor. Provides intensive instruction in English as a second language reading. Students acquire effective reading and vocabulary development strategies for a range of academic purposes. May be repeated an unlimited number of times as course is noncredit.

3030:43. ESL Grammar: Developing Oral Proficiency. (0 Credits)
Prerequisite: Permission of instructor. Provides intensive instruction in English as a second language grammar for speaking purposes. Students review grammar basics and expand their knowledge and usage of patterns. May be repeated an unlimited number of times as course is noncredit.

3030:44. ESL Listening: Developing Aural Proficiency. (0 Credits)
Prerequisite: Permission of instructor. Provides intensive instruction in English as a second language listening for academic purposes. Students acquire effective listening strategies for a range of contexts. May be repeated an unlimited number of times as course is noncredit.

3030:45. ESL Speaking: Developing Speakng Proficiency. (0 Credits)
Prerequisite: Permission of instructor. Provides intensive instruction in English as a second language speaking for academic purposes. Students acquire effective speaking strategies for a range of contexts. May be repeated an unlimited number of times as course is noncredit.

3030:51. ESL Writing and Study Skills. (0 Credits)
Prerequisite: Permission of instructor. Intensive course in English as a second language writing and study skills. Students learn and extensively practice techniques for writing, revising, and editing academic texts. May be repeated an unlimited number of times as course is noncredit.

3030:52. ESL Reading and Study Skills. (0 Credits)
Prerequisite: Permission of instructor. Intensive course in English as a second language reading and study skills. Students learn and extensively practice techniques for comprehending a variety of academic texts. May be repeated an unlimited number of times as course is noncredit.

3030:53. ESL Grammar and Speaking Skills. (0 Credits)
Prerequisite: Permission of instructor. Intensive course in English as a second language grammar. Students learn and extensively practice a range of grammatical forms and functions in spoken contexts. May be repeated an unlimited number of times as course is noncredit.

3030:54. ESL Listening and Study Skills. (0 Credits)
Prerequisite: Permission of instructor. Intensive course in English as a second language listening and study skills. Students learn and practice techniques for comprehending spoken English in an academic setting. May be repeated an unlimited number of times as course is noncredit.

3030:96. ELI Workshop. (0 Credits)
Prerequisite: Permission of instructor. Provides instruction in English language and related topics for speakers of languages other than English. May be repeated an unlimited number of times as course is noncredit.

3030:99. ELI Independent Study. (0 Credits)
Prerequisite: Permission of instructor. Independent study in English as a Second Language under the supervision and evaluation of selected faculty member. May be repeated an unlimited number of times as course is noncredit.

Entrepreneurship (6300)

6300:201. Introduction to Entrepreneurship. (3 Credits)
Students are exposed to career options in entrepreneurship where they learn skills related to starting or buying a small business, working for a fast growth business or corporation, family business, and franchising. Open to all university students. 3 credits.

6300:301. New Venture Creation. (3 Credits)
Prerequisite: 6300:201 or by permission of instructor. Students work on the development of a business plan based on their chosen career path in the field of entrepreneurship (starting or buying a small business, working for a fast growth business or corporation, new product, family business, or franchising). Open to all university students.

6300:360. Entrepreneurial Field Project. (3 Credits)
Prerequisites: 6300:201 or permission of the instructor. A practical field experience where students work in a consulting role on an actual entrepreneurial project involving a small business development center, a small business incubator, or an existing small business.

6300:450. Business Plan Development. (3 Credits)
Prerequisite: 6300:301. Students will work independently, with mentoring from the instructor, on an entrepreneurial project. Students will gain hands-on experience in developing a business plan for starting, acquiring, or expanding a business.

Environmental Health & Safety Technology (2800)

2800:200. Internet: Physics for Environment Technicians. (1 Credit)
Online course utilizing aspects of the Internet introducing various topics of physics important to Environmental Technicians including mechanic energy, heat, sound, fluid flow, and radioactivity.

2800:250. Internship: Environmental Health & Safety. (3 Credits)
Prerequisite: Students must have permission of program coordinator, completed at least 30 hours of course work, and have completed at least one of the following courses pertinent to internship: 2230:250; 2230:257; 2800:210; 2800:220; 2800:230 and 2800:232. A supervised work experience in environmental health and/or safety to increase student understanding of the practical application of health and safety training.

2800:290. Special Topics: Environmental Health & Safety. (0.5-4 Credits)
Prerequisite: Permission. Special topics and subject areas of particular interest to students.

Exercise Science Technology (2670)

2670:250. Exercise Science Technology Internship. (3 Credits)
Prerequisites: Completion of 32 credits, including 5550:201, 2670:220, 2670:330, and permission. Corequisite: 5550:352. Supervised observation and work experience in a fitness organization or environment in which students apply theories, concepts and skills to practical situations.

2670:290. Special Topics in Exercise Science Technology. (1-3 Credits)
Prerequisite: Permission. Special topics in subject area of interest for Exercise Science Technology.

Family and Consumer Sciences (7400)

7400:241. Introduction to Family and Consumer Sciences Education. (3 Credits)
Introduction to the teaching of Family and Consumer Sciences in the secondary schools. Emphasis on state standards, current trends and societal factors affecting career-technical programs.

7400:407. FCB Occupational Employment Experience. (4 Credits)
Provides student with knowledge of current business and industrial practices at level minimally commensurate with employment expectations of graduates of vocational job training programs in Family and Consumer Sciences.

7400:421. Special Problems in Family & Consumer Sciences. (1-3 Credits)
Additional study or apprentice experience in specialized field or preparation; group and individual experimentation.

7400:431. Professional Presentation Skills in Family and Consumer Sciences. (3 Credits)
Prerequisites: 7760:141 or 7760:250. Emphasis on development of abilities and strengths in coordination of equipment, materials, motion, speech, and presentation delivery relating to education and industry in Family and Consumer Sciences.

7400:447. Senior Seminar: Critical Issues in FCS Professional Develop. (1 Credit)
Prerequisites: FCS major & senior standing. Consideration of family and consumer sciences as a profession and its impact on the quality of life of individuals, families and their environments. Analysis of challenges facing the profession and all home economists.

7400:450. Families, Individuals & Environments. (3 Credits)
Prerequisites: Family Consumer Sciences major and senior standing or completion of 90 credits. Integrative exploration of issues affecting the well-being of individuals, families, and communities in the multiple environments in which they function.

7400:485. Seminar in Family & Consumer Sciences. (1-3 Credits)
Exploration and evaluation of current developments in selected areas.

7400:491. Career-Technical FCS Instructional Strategies. (3 Credits)
Prerequisites: 7400:241, 5100:200, and 5100:220. Organization of Career-Technical Family and Consumer Sciences programs in schools grades 4-12. Emphasis on strategies, compliance with state career-technical directives, student organizations, program planning, workplace replication and classroom observations.

7400:494. Internship: Family and Consumer Sciences. (1-6 Credits)
Prerequisite: Permission of the instructor. In depth field experience in business, industry, or community agencies relating to the student's area of specialization.

7400:497. Internship: Family & Consumer Sciences. (2-6 Credits)
Prerequisite: Permission of instructor. In-depth field experience in business, industry or community agencies related to student's area of specialization.

7400:498. Student Teaching Seminar. (1 Credit)
Corequisite: 5300:495. Seminar for students currently enrolled in Family and Consumer Sciences student teaching. Emphasis on block and lesson plan development, licensure, portfolio development, Praxis III, professional development, and student teaching reflections.

7400:499. Senior Honors Project in Family & Consumer Sciences. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and approval of honors preceptor. Individual study supervised by adviser. Student and preceptor develop goals, objectives and methodology.

Fashion Merchandising (7350)

7350:123. Fundamentals of Construction. (3 Credits)
Basic theory and application of construction fundamentals, including experiences with patterns and specialty fabrics.

7350:125. Principles of Apparel Design. (3 Credits)
The study of contemporary apparel design and the relationship of design elements and principles to personal characteristics and social/professional orientation.

7350:139. The Fashion & Furnishings Industries. (3 Credits)
Overview of fashion and furnishings industries including production, distribution, promotion, and the impact of cultural influences. Discussion of career opportunities.

7350:219. Dress and Culture. (3 Credits)
Study of cultural, social, psychological and economic aspects of clothing. Emphasis on expression and use of clothing in relation to self, society and culture. Lecture/discussion.

7350:225. Textiles. (3 Credits)
Basic study of natural and manufactured fibers. Emphasis on physical properties, selection and care. Attention given to design and manufacture of textiles. Lecture/Laboratory.

7350:226. Textile Evaluation. (3 Credits)
Prerequisite: 7300:225 or 7350:225. Evaluating method, quality, and necessity of dyes, finishes, other coloration techniques and designs.

7350:305. Advanced Construction & Tailoring. (3 Credits)
Prerequisite: 7350:123. Advanced theory and principles in construction of couture garment. Construction of coat or suit jacket utilizing custom tailoring techniques. Two hours lecture, four hours laboratory.

7350:311. Seminar in Fiber Arts. (3 Credits)
Exploration of a specific fiber arts technique such as needle arts, weaving, surface design, wearable art, or machine stitchery. (May be repeated for a total of nine credits).

7350:352. Strategic Merchandise Planning. (3 Credits)
Prerequisite: General Math Requirement. The fashion buyer's role in merchandise management and decision making with spreadsheets and merchandise mathematics incorporated into computer simulations.

7350:402. Advanced Fiber Arts. (3 Credits)
Prerequisite: 7350:311 or permission of the instructor. An advanced course that builds on the skills learned in 7350:311, with the intention of reaching a caliber suitable for one of the many professions in this field, including business aspects such as market analysis and product development.

7350:418. History of Interior Design I. (4 Credits)
The study of furnishings, interiors, and architecture from antiquity through the eighteenth century, with emphasis on the social-cultural influences shaping their development.

7350:419. History of Interior Design II. (4 Credits)
The study of nineteenth- and twentieth-century furnishings, interiors, and architecture, with emphasis on the social-cultural influences shaping their development.

7350:421. Special Problems in Family & Consumer Sciences. (1-3 Credits)
Additional study or apprentice experience in specialized field or preparation; group and individual experimentation.

7350:422. Textiles for Interiors. (3 Credits)
Prerequisite: 7300:225 or 7350:225. Evaluation of physical, aesthetic, comfort, care and durability properties of textile products and testing procedures to determine suitability for interiors.

7350:425. Textiles for Apparel. (3 Credits)
Prerequisites: [7300:225 or 7350:225] and 7350:226. Evaluation of physical, aesthetic, comfort, care, and durability properties of textile products and testing procedures to determine suitability for desired end uses.

7350:427. Global Issues in Textiles & Apparel. (3 Credits)
Prerequisite: 7350:139. Examines the global structure and scope of the textile and apparel industries emphasizing an economic perspective.

7350:436. Textile Conservation. (3 Credits)
Prerequisites: 7350:123 and [7300:225 or 7350:225]. Principles and practices of textile conservation with emphasis on procedures appropriate for collectors and small historical agencies.

7350:437. Historic Costume. (3 Credits)
Study of costume and textiles from antiquity through the 18th century, with emphasis on social/cultural influences.

7350:438. History of Fashion. (3 Credits)
Study of western fashions, textiles, and designers with emphasis on social-cultural influences.

7350:439. Fashion Analysis. (3 Credits)
Prerequisites: 7350:125, 7350:139 and senior status. In-depth study of resources and processes for the analysis and forecasting of fashion trends. Emphasis on current designers and environmental forces that influence fashion.

7350:447. Senior Seminar: Critical Issues in FCS Professional Develop. (1 Credit)
Prerequisites: FCS major & senior standing. Consideration of family and consumer sciences as a profession and its impact on the quality of life of individuals, families and their environments. Analysis of challenges facing the profession and all home economists.

7350:449. Flat Pattern Design. (3 Credits)
Prerequisite: 7350:123. Theory and experience in clothing design using flat pattern techniques.

7350:450. Families, Individuals & Environments. (3 Credits)
Prerequisites: Family Consumer Sciences major and senior standing or completion of 90 credits. Integrative exploration of issues affecting the well-being of individuals, families, and communities in the multiple environments in which they function.

7350:485. Seminar in Family & Consumer Sciences. (1-3 Credits)
Exploration and evaluation of current developments in selected areas.

7350:494. Internship: Family and Consumer Sciences. (1-6 Credits)
Prerequisite: Permission of the instructor. In depth field experience in business, industry, or community agencies relating to the student's area of specialization.

7350:497. Internship: Family & Consumer Sciences. (2-6 Credits)
Prerequisite: Permission of instructor. In-depth field experience in business, industry or community agencies related to student's area of specialization.

7350:499. Senior Honors Project in Family & Consumer Sciences. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and approval of honors preceptor. Individual study supervised by adviser. Student and preceptor develop goals, objectives and methodology.

Finance (6400)

6400:200. Foundations of Personal Finance. (3 Credits)
Explores application of finance concepts in personal finance with emphasis on the personal financial planning process.

6400:220. Legal & Social Environment of Business. (3 Credits)
Prerequisite: A minimum academic standing of a Sophomore or greater. Explores the legal and social environment in which modern business must function. The legal system, public and private law, and contemporary social and ethical issues are addressed.

6400:300. Introduction to Finance. (3 Credits)
Prerequisites: 3450:145 and 3250:200 or 3250:244. Studies the sources and uses of funds for business. Students cannot get credit for this class and 6400:301. (For non-College of Business Administration students).

6400:301. Principles of Finance. (3 Credits)
Prerequisites: 3250:200 or 3250:244, 3450:145, 6200:201, and completed one of the following: 6200:250 or admitted to the College of Engineering with 48 credit hours completed. An overview of the financial system and the major decision areas of the financial manager such as capital budgeting, financing, and working capital management.

6400:302. Intermediate Corporate Finance. (3 Credits)
Prerequisite: 6400:301. This second course in corporate finance builds upon 6400:301 to provide students with an analytic foundation for careers in business.

6400:321. Business Law I. (3 Credits)
Prerequisite: completion of 64 credits. Discussions designed to develop legal reasoning within substantive areas of contractual obligation, agency relationships, partnerships, corporations, accountant's legal responsibility, federal securities regulation and antitrust law.

6400:322. Business Law II. (3 Credits)
Prerequisite: 6400:321 and completion of 60 credits. Applications of Uniform Commercial Code in sales, commercial paper and secured transactions. Additional discussions include property, wills, estates, trusts, bailments, insurance, suretyship, bankruptcy, and labor law.

6400:323. International Business Law. (3 Credits)
The law and international commercial transactions. Among the subjects covered are sovereignty; treaties; agreements; antitrust practices; property rights; international arbitration.

6400:338. Financial Markets & Institutions. (3 Credits)
Prerequisites: 6400:301 or 6400:300, or permission of instructor. Studies the flows of funds. Analyzes major financial intermediaries. Money and capital markets reviewed with emphasis on interest rates and their impact upon administration of specific financial intermediaries.

6400:341. Contemporary Investments. (3 Credits)
Prerequisite: 6400:300 or 6400:301. Fundamentals of investing for the individual investor. Students cannot get credit for this class and 6400:343. (For non-College of Business Administration students.)

6400:343. Investments. (3 Credits)
Prerequisites: 6400:300 or 6400:301, 3250:426 or 6500:304 or permission of instructor. Range of security investment media explored, alternative investment programs considered and role of securities markets through which goals can be achieved studied.

6400:390. Real Estate Principles: Value Approach. (3 Credits)
A study of real estate: the profession, the process, and the product. Emphasis is on real estate as a product and the valuation process. The measurement of value requires tool abilities in accounting, statistics and finance.

6400:402. Income Property Appraisal. (3 Credits)
Prerequisites: at a minimum must have been admitted to a major in a four-year degree granting college; 6400:301 or 6140:300; or permission of instructor. Advanced course in real property appraisal and valuation. Techniques and concepts will be covered along with the theory underlying such techniques.

6400:403. Real Estate Finance. (3 Credits)
Prerequisites: at a minimum must have been admitted to a major in a four-year degree granting college, [6400:301 or 6140:300]. Advanced course in real estate covering financing of and investment in real property. Included are investment techniques, methods, institutions, instruments, valuation, appraisal and policy issues.

6400:414. Risk Managment: Property and Casualty. (3 Credits)
Prerequisites: Admission to a major in a four-year degree granting college, [6400:300 or 6400:301]. Addresses tools for managing risk, legal concepts of insurance contracts, personal insurance and commercial property and casualty insurance policies as well as other risk issues.

6400:415. Risk Management: Life and Health Insurance. (3 Credits)
Prerequisites: Admission to a major in a four-year degree granting college, [6400:300 or 6400:301]. Concepts of life and health insurance and risk management are addressed.

6400:417. Retirement Planning. (3 Credits)
Prerequisites: Admission to a major in a four-year degree granting college, [6400:300 or 6400:301]. An in-depth examination of retirement and estate planning objectives, methods, and strategies including the study of employee benefits plans, public and private pension funds, and lifetime strategies for maximization of estate assets.

6400:418. Insurance Operations. (3 Credits)
Prerequisites: 6400:414 or 6400:415 or permission. This course provides a detailed examination of the composition, financial structure, and operation o the property-casualty insurance industry.

6400:424. Legal Concepts of Real Estate. (3 Credits)
Prerequisite: at a minimum must have been admitted to a major in a four-year degree granting college. Study of concepts of law governing the many interests in real estate including acquisition, encumbrance, transfer, rights and obligations of parties, and the various state and federal regulations. The legal concepts of the business of real estate are likewise examined. Emphasis is on a managerial approach utilizing the case method.

6400:432. Seminar in Financial Planning. (3 Credits)
Prerequisites: must have been admitted to a major in a four-year degree granting college, 6200:330, 6200:410, 6400:417, [6400:300 or 6400:301], [6400:341 or 6400:343]. Corequisites: 6400:415. Explores financial planning function, including contact, data acquisition, plan development and implementation; addressing planning techniques and financial planning ethical issues.

6400:436. Commercial Bank Management. (3 Credits)
Prerequisites: Admission to a major in a four-year degree granting college, 6200:250, [6400:300 or 6400:301], and 6400:338. Study of administrative policy determination and decision making within the commercial bank. Analysis of policy making in areas of liquidity, loan and security investment and sources of funds.

6400:437. International Business Finance. (3 Credits)
Prerequisites: Admission to a major in a four-year degree granting college, and [6400:300 or 6400:301]. Theory and practice of financial wealth maximization in the international business enterprise.

6400:438. International Banking. (3 Credits)
Prerequisites: admission to a major in a four-year degree granting college, 6400:437, and [6400:300 or 6400:301]. Examination of recent trends in the expansion of international banking activities and associated revenue maximizing strategies.

6400:448. Advanced Portfolio Management. (3 Credits)
Prerequisites: 6400:343 and [3250:325 or 6500:305]. Advanced Portfolio Management is a semester long case course. The case is the management of the UA Student-Managed Investment Fund. This course's primary activity will be the active management of the Fund. Current and selected topics relating to investments and financial markets will be discussed as needed in the rapidly changing world economy. The course will give the student practical experience in portfolio construction, management and evaluation by managing real money on a real time basis.

6400:461. Enterprise Risk Management. (3 Credits)
Prerequisites: admission to a major in a four-year degree granting college, 6400:414, 6400:415, and 6400:418. Explores risk issues at the firm level with emphasis upon identification and management of risk to enhance firm value.

6400:473. Financial Statement Analysis. (3 Credits)
Prerequisites: admitted to a major in a four-year degree granting college, 6200:201, and [6400:301 or 6400:300 or 6140:300]. Analysis and interpretation of the financial position and performance of the business firm from the perspective of the credit and financial analyst. Emphasizes mechanics and art of financial analysis.

6400:485. Financial Strategy. (3 Credits)
Prerequisites: 6400:302, 6400:343, [3250:380 or 6400:338], and admittance to a major in a four-year degree granting college. Corequisite: 6400:473. Case study based course with applications of financial management theories and tools to make decisions in capital budgeting, capital structure, and working capital management.

6400:489. Advanced Financial Analytics. (3 Credits)
Prerequisites: Senior standing, 6400:302, 6400:338, 6400:343 and [6500:305 or 3250:426]. Capstone course with analysis of financial models using advanced spreadsheet techniques. Models from personal finance, corporate finance and investments are incorporated, with applications in financial planning, forecasting, portfolio theory and security valuation, option valuation, capital investment and cost of capital .

6400:490. Selected Topics in Finance. (1-3 Credits)
Prerequisites: admitted to a major in a four-year degree granting college, 6200:250, and 6400:301. Provides opportunity for study of special topics not covered in current finance courses.

6400:492. Internship in Financial Management. (3 Credits)
Prerequisite: Permission of designated faculty member. On the job experience with public or private sector organizations in the financial services field. Individual assignments are approved and supervised by the designated member of the faculty in the student's major field. Periodic reports and term papers required.

6400:493. Internship in Financial Planning. (3 Credits)
Prerequisite: Permission of designated faculty member. On the job experience with public or private sector organizations in the financial services field. Individual assignments are approved and supervised by the designated member of the faculty in the student's major field. Periodic reports and term papers required.

6400:494. Internship in Risk Management and Insurance. (3 Credits)
Prerequisite: Permission of designated faculty member. On the job experience with public or private sector organizations in the financial services field. Individual assignments are approved and supervised by the designated member of the faculty in the student's major field. Periodic reports and term. papers required.

6400:495. Research Project in Finance. (1-3 Credits)
Prerequisites: 6400:302, 6400:338, 6400:343, 6400:473 and (6500:305 or 3250:426). Corequisites: 6400:414 or 6400:415 or 6400:416 or 6400:432 or 6400:436 or 6400:438 or 6400:448 or 6400:481 or 6400:485 or 6400:489. Taken concurrently with or following a 400-level field Finance course. Involves independent out-of-class work on a project designed in consultation with the designated 400-level course instructor.

6400:499. Independent Study: Finance. (1-3 Credits)
Prerequisite: Permission of department head. Provides means for individualized in-depth study of finance problem or problems from which student can derive significant benefit.

Fire Protection Technology (2230)

2230:100. Introduction to Fire Protection. (4 Credits)
History and philosophy of fire protection; introduction to agencies involved; current legislative developments; discussion of current related problems, expanding future of fire protection and career orientation.

2230:102. Fire Safety in Building Design & Construction. (3 Credits)
Exploration of building construction and design with emphasis on fire protection concerns; review of related statutory and suggested guidelines local, state and national scope.

2230:104. Fire Investigation Methods. (4 Credits)
History of fire investigation; gathering of evidence and development of technical reports; fundamentals of arson investigation; processing of criminal evidence and procedures related to local and state statutes.

2230:202. Incident Management for Emergency Responders. (4 Credits)
Efficient and effective use of human resources, equipment and systems. Emphasis on preplanning, incident management, problem solving related to emergency preparation and response.

2230:204. Fire and Life Safety Education. (3 Credits)
Application and analysis necessary for the implementation of the Life Safety Code Handbook.

2230:205. Fire Detection & Suppression Systems. (3 Credits)
Design, installation, maintenance and utilization of portable fire extinguishing appliances and pre-engineered automatic systems; fire detection and alarm signaling systems operational capabilities, requirements.

2230:206. Fire Sprinkler System Design. (3 Credits)
Design, installation and operation of automatic fire suppression systems. Includes sprinkler, foam, carbon dioxide, dry chemical, halogenated agent systems.

2230:250. Hazardous Materials. (4 Credits)
Prerequisite: 2230:100. Study of chemical characteristics and reactions related to storage, transportation and handling of hazardous materials. Emphasis on emergency situations, firefighting and control.

2230:254. Fire Prevention. (3 Credits)
Prerequisite: 2230:100. Fire codes and standards relative to fire prevention, inspection, and code enforcement.

2230:257. Fire & Safety Issues for Business & Industry. (3 Credits)
Industrial fire and safety issues related to specialized hazards, federal and state regulations. Emphasis on emergency response team preparedness, confined space entry, and rescue.

2230:280. Fire Service Administration. (4 Credits)
Prerequisite: 2230:100. Fire officer professional qualifications; federal, state regulations governing department operations-OSHA, EPA; emergency and non-emergency operations procedures-ICS, IMS, Emergency Operations Center are presented.

2230:290. Special Topics: Fire Science Technology. (1-4 Credits)
(May be repeated for a total of four credits) Prerequisite: Permission. Selected topics or subject areas of interest in fire protection technology.

2230:294. Advanced Fire Investigation Methods. (3 Credits)
Prerequisites: 2230:100, 2230:104, 2230:205, and 2230:206. Designed to meet student and in service fire investigators need to understand new/updated technology and methodology in managing fire investigations.

2230:295. Field Experience I. (2 Credits)
Prerequisites: 30 credit hours of successfully completed course work in the Fire Protection Technology program which includes 2230:100, 2230:102, 2230:104, 2230:204, 2230:205, and 2230:280 and permission. Course designed to measure the knowledge, skills and abilities required to become a graduate of The University of Akron, Fire Protection Program.

2230:296. Field Experience II. (2 Credits)
Prerequisites: 30 credit hours of successfully completed course work in the Fire Protection Technology program which includes 2230:100, 2230:102, 2230:104, 2230:204, 2230:205, and 2230:280. If not currently an active fire fighter, you must take 2230:295 first. Course designed to measure the knowledge, skills and abilities required to become a front line supervisor, work in hazmat bureau or beginning arson investigator,.

2230:297. Independent Study: Fire Protection. (1-3 Credits)
Prerequisite: 2230:100 and permission. Selected topics and special areas of study in fire protection technology under the supervision and evaluation of a selected faculty who assigns specific arrangements.

French (3520)

3520:101. Beginning French I. (4 Credits)
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.

3520:102. Beginning French II. (4 Credits)
Sequential. Prerequisite: 3520:101 or placement test. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.

3520:201. Intermediate French I. (3 Credits)
Sequential. Prerequisite: 3520:102 or placement test. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.

3520:202. Intermediate French II. (3 Credits)
Sequential. Prerequisite: 3520:201 or placement test. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.

3520:300. Contemporary French and Francophone Cultures. (3 Credits)
Prerequisite: 3520: 202. Introduction to contemporary lives and cultures in France and other Francophone countries as portrayed in recent documents, literary works and films.

3520:301. French Conversation. (3 Credits)
Sequential. Prerequisite: 3520:202 or placement test. Development of speaking skills beyond the intermediate level. Practice of listening comprehension, correct pronunciation, extended and grammatically sound discourse. May be repeated for a total of six credits.

3520:302. French Composition. (3 Credits)
Sequential. Prerequisite: 3520:202. Development of writing skills beyond intermediate level.

3520:303. French Culture & Civilization I. (3 Credits)
Prerequisite: 3520:202 or equivalent. History of France and French cultural heritage from its origins to mid-20th century.

3520:304. French Culture & Civilization II. (3 Credits)
Prerequisite: 3520:202 or equivalent. Modern history of France. Focus on political and social trends since 1960.

3520:305. Introduction to French Literature I. (3 Credits)
Prerequisite: 3520:202. Survey of French literature from its origins to present, with lectures, reading and class discussion of representative works.

3520:306. Introduction to French Literature II. (3 Credits)
Prerequisite: 3520:202. Survey of French literature from its origins to present, with lectures, reading and class discussion of representative works.

3520:308. Internship in France. (1-3 Credits)
Permission of the French section advisor. (May be taken for a total of six credits. No more than three credits may be applied toward a 3520 major.) Student's internship which results in portfolio on career applications of the discipline of French.

3520:311. Contemporary French Society. (3 Credits)
Prerequisite: 3520:202. A study of contemporary French society, including customs and political and social issues. Conducted in France. Counts toward Culture and Civilization requirement for major.

3520:312. French/Francophone Cultural Experience Abroad. (1-3 Credits)
Prerequisite: Permission of the French section advisor. May be taken for a total of six credits. No more than three credits may be applied toward a 3520 major. Student's residence and independent study/project in French-speaking country which results in demonstrable understanding of the country's culture.

3520:315. French Phonetics. (3 Credits)
Prerequisite or corequisite: 3520:202 or equivalent. Intensive drill in pronunciation with correction and improvement of student's accent, emphasis on articulation, intonation and rhythm.

3520:350. Themes in French Literature in Translation. (3 Credits)
Prerequisite: 3400:210 or 3400:221. (May not be taken for credit toward the French major) Readings, discussion of novels and plays relating to selected themes of French literature. Texts and discussion in English.

3520:351. Translation: French. (3 Credits)
Prerequisite: 3520:202. Study of translation techniques, both French to English and English to French. Emphasis on stylistics and interpretation of idioms.

3520:352. Translation: Business French. (3 Credits)
Prerequisite: 3520:351 or equivalent. Application of translation techniques with particular stress on business styles, formats, and vocabulary. Especially recommended for students interested in international business.

3520:402. Advanced French Grammar. (3 Credits)
Prerequisite: 3520:302. Advanced study of normative French grammar with emphasis on syntax, morphology, grammatical structure and phonetic principles.

3520:403. Advanced French: Written and Oral Communication. (3 Credits)
Prerequisite: [3520:301 & 3520:302] or permission. Development of writing and speaking skills beyond that achieved in 301 and 302 through intensive practice and grammar review.

3520:407. French Literature of the Middle Ages & the Renaissance. (4 Credits)
Prerequisite: 3520:305 or 3520:306. Reading and discussion of selected Medieval and Renaissance literary works. Conducted in French.

3520:413. French Cinema. (3 Credits)
Prerequisites: 3520:301 or 3520:302 or permission from instructor. Study and discussion of various aspects of French culture and civilization as characterized in movies.

3520:419. 19th Century French Literature. (4 Credits)
Prerequisite: 3520:305 or 3520:306. Reading and discussion of selected works pertaining to romantic, realistic and naturalistic movements. Conducted in French.

3520:422. French: Special Topics in Advanced Language Skills, Culture or Literature. (1-4 Credits)
Prerequisite: 3520:202. (May be repeated) Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.

3520:427. 20th Century French Literature. (4 Credits)
Prerequisite: 3520:305 or 3520:306 or equivalent. Reading and discussion of the most representative works of period. Conducted in French.

3520:430. Contemporary Quebec. (3 Credits)
Prerequisite: 3520:301 or 3520:302 or permission. Historical, political, sociological and cultural overviews of Québec, offering an in-depth examination of questions of identity through the study of literature and popular culture.

3520:431. Francophone Literature. (3 Credits)
Prerequisite: 3520:300 or 3520:301 or 3520:302 or permission. The problematics of identity (race, class) in postcolonial context, studied through literary texts by authors from Africa, Caribbean, and Québec.

3520:460. Selected Themes in French Literature. (3 Credits)
(May be repeated.) Conducted in French. Prerequisite: 3520:305 and 3520:306. Reading and discussion of literary works selected according to an important theme.

3520:497. Individual Reading in French. (1-3 Credits)
Prerequisite: 3520:202 and permission of department chair.

3520:498. Individual Reading in French. (1-3 Credits)
Prerequisite: 3520:202 and permission of department chair.

General Engineering (4100)

4100:101. Tools for Engineering. (3 Credits)
Corequisite: 3450:221. Introduction to engineering. Free hand, engineering, and CAD drawing. Introduction to computer programming, computer applications including word processing, spreadsheets, data base. Introduction to engineering economics. Required for Chemical, Civil, and Electrical Engineering majors.

4100:110. Women in Engineering Seminar & Peer Group. (1 Credit)
Beginning women students may elect this one-credit course that provides an overview of the career opportunities for women in engineering. The course utilizes dynamic speakers to reinforce the student's educational and career choices. Small groups meet weekly, led by an upper-class engineering student. This interactive peer environment fosters personal development for first-year students.

4100:120. IDEA Engineering Seminar. (1 Credit)
Explore career opportunities/personal development in all fields of engineering, assist with transition from high school to engineering studies. Of particular interest to underrepresented groups.

4100:180. Engineering Design. (1 Credit)
See department for course description.

4100:200. Freshman Internship. (0 Credits)
Elective for cooperative education student who has completed freshman year. Mandatory for students in the Aerospace Systems Engineering Program, with possibility of waiver if transferring into Program after first year or if student needed to begin mathematics sequence with Precalculus Mathematics in freshman year . Practice in industry and comprehensive written reports of this experience.

4100:201. Energy & Environment. (2 Credits)
Interactions between energy production, consumption and environment. Case studies. Not for engineering, chemistry or physics major.

4100:202. Atmospheric Pollution. (2 Credits)
Causes of atmospheric pollution and technical economic and social problems. Technical solutions. Case studies. Not for engineering, chemistry or physics majors.

4100:203. Environmental Science & Engineering. (3 Credits)
Science and engineering fundamentals required to understand environmental issues and alternative solutions. Not for engineering, chemistry, or physics majors.

4100:300. Cooperative Education Work Period. (0 Credits)
Prerequisite: Admission to the College of Engineering and completion of sophomore year. Elective for cooperative education student who has completed sophomore year. Practice in industry and comprehensive written reports of this experience.

4100:301. Cooperative Education Work Period. (0 Credits)
Prerequisite: Admission to the College of Engineering. Required for cooperative education student only. Practice in industry and comprehensive written reports of this experience. Offered spring semester of third year.

4100:302. Cooperative Education Work Period. (0 Credits)
Prerequisite: Admission to the College of Engineering. Required for cooperative education student only. Practice in industry and comprehensive written reports of this experience. Offered fall semester of fourth year.

4100:400. Engineering Management and Leadership. (3 Credits)
This is a case and discussion oriented course that examines the role of the engineering manager as a leader, problem solver, strategic planner, and a well-rounded business minded individual.

4100:403. Cooperative Education Work Period. (0 Credits)
Prerequisite: Admission to the College of Engineering. Required for cooperative education student only. Practice in industry and comprehensive written reports of this experience. Offered summer after fourth year.

General Studies-Physical Education (5540)

5540:120. Archery. (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:121. Badminton. (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:122. Basketball. (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:123. Bowling. (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:126. Fitness and Wellness. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:127. Golf. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:128. Gymnastics (Apparatus). (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:129. Gymnastics (Tumbling). (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:130. Handball. (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:131. Indoor Soccer. (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:132. Karate. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:133. Lifeguard Training. (2 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:134. Modern Dance. (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:135. Racquetball. (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:136. Rugby. (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:138. Scuba. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:139. Self Defense. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:140. Skiing (Cross-Country). (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:141. Skiing (Downhill). (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:142. Soccer. (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:143. Social Dance. (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:145. Squash Rackets. (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:146. Swimming (Beginning). (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:147. Swimming (Intermediate). (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:149. Team Handball. (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:150. Tennis (Beginning). (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:151. Volleyball. (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:152. Water Polo. (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:153. Water Safety. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:154. Wrestling. (0.5 Credits)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:155. Basic Kayaking. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life.

5540:170. Varsity Baseball. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.

5540:171. Varsity Basketball. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.

5540:172. Varsity Cross Country. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.

5540:173. Varsity Football. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.

5540:174. Varsity Golf. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.

5540:175. Varsity Soccer. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.

5540:176. Varsity Softball. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.

5540:177. Varsity Swimming. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.

5540:178. Varsity Tennis. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.

5540:179. Varsity Track. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.

5540:180. Varsity Wrestling. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. Permission of coach necessary for enrollment in varsity sports(170-181).** Varsity sports are one credit each.

5540:181. Varsity Volleyball. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.

5540:182. Varsity Riflery. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.

5540:183. Varsity Cheerleading. (1 Credit)
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.

5540:190. Special Topics: General Studies Physical Education. (0.5-2 Credits)
Weight training, self-defense for the blind, water safety instruction, beginning yoga, tai chi, billiards, intermediate and advanced bowling, intermediate and advanced golf, advanced self-defense.

5540:199. Special Topics: General Studies Physical Education. (0.5-2 Credits)
See department for course description.

5540:200. Lifeguard Instructor. (2 Credits)
This course is designed to train students to teach the American Red Cross lifeguard training courses.

5540:201. Water Safety Instructor. (2 Credits)
This course is designed to train students to teach swimming and water safety courses from Pre-K to adult.

5540:207. Introduction to Rock Climbing. (1 Credit)
This course teaches basic rock-climbing skills. No previous experience in necessary.

General Technology (2820)

2820:100. Introduction to Engineering Technology. (2 Credits)
This introductory course stresses skills needed for academic success. Discussion of fields in engineering technology, job searches, calculators, and data measurement and analysis are included.

2820:105. Basic Chemistry. (3 Credits)
Prerequisites: 2010:052 with a grade of C or better, or math placement test. Elementary treatment of facts and principles of chemistry emphasizing biological application. Elements and compounds important in everyday life, biological processes and medicine. Introduction to laboratory techniques. Primarily for medical assistant, criminal justice and allied health students. Laboratory.

2820:110. Physical Science for Technicians. (3 Credits)
Elementary presentation of theory and facts of general chemistry and physics (excluding electricity). Includes atomic structure, chemical reactions, energy, electromagnetic radiation, sound and mechanics.

2820:111. Introductory Chemistry. (3 Credits)
Corequisite: 2030:152. Facts and theories of general chemistry. Elements and compounds and their uses. Elementary treatment of atomic structure, gaseous state, periodic table, water, solutions. Laboratory.

2820:112. Introductory & Analytical Chemistry. (3 Credits)
Prerequisite: 2820:111 or permission. Chemical equilibria, ionization, radioactivity. Properties of selected metals and nonmetals. Introduction to organic chemistry. Basic concepts of qualitative analysis. Identifications of cations and anions. Laboratory.

2820:131. Software Applications for Technology. (1 Credit)
Prerequisite: 2030:151. Word processing, spreadsheets, databases, and internet applications in engineering technology. Computer basics also. Limited to students in Engineering & Science Technology Department programs. Laboratory.

2820:150. Manufacturing Physics. (4 Credits)
Prerequisite: Admission to the Manufacturing Engineering Technology program. Corequisite: 2030:154. Applications of physics to manufacturing including two dimensional motion, vectors, forces, statics, torque and simple electronic circuits. Laboratory.

2820:160. Technical Physics: Mechanics. (4 Credits)
Corequisite: 2030:154. Applications of mechanics which include one and two dimensional motion, vectors, forces, equilibrium, work, power, conservation of energy, rotational motion & torque. Laboratory.

2820:161. Technical Physics: Mechanics I. (2 Credits)
Corequisite: 2030:153. Principles of mechanics that include motion, vectors, forces, equilibrium; also significant figures and unit conversions. Laboratory.

2820:162. Technical Physics: Mechanics II. (2 Credits)
Prerequisites: 2820:161 and 2030:153. Principles of mechanics that include work, power, conservation of energy, rotational motion, torque. Laboratory.

2820:163. Technical Physics: Electricity & Magnetism. (2 Credits)
Prerequisites: 2820:160 & 2030:154 (C- or better in both). Principles and applications of electricity and magnetism. Electrostatics, DC circuits, magnetism, electromagnetism, and AC circuits. Laboratory.

2820:164. Technical Physics: Heat & Light. (2 Credits)
Prerequisites: 2820:160 and 2030:154 with a C- or better in 160. Principles and applications of heat and light: heat energy, thermodynamics, electromagnetic waves, geometric and physical optics, introduction to quantum mechanic, and radiation.

2820:290. Special Topics: General Technology. (1-4 Credits)
Prerequisite: Permission. Selected topics of subject areas of interest in General Technology. (May be repeated for a total of eight credits.)

2820:310. Programming for Technologists. (2 Credits)
Prerequisites: 2820:131 and 2030:255. A study of a technical programming language with applications in engineering technology. Limited to students in Engineering & Science Technology Department programs.

Geographic & Land Info System (2985)

2985:101. Introduction to Geographic & Land Information Systems. (3 Credits)
Introduction to the principles and concepts of Geographic and Land Information Systems used in surveying and mapping applications. Laboratory.

2985:151. GIS Essential Skills. (3 Credits)
Prerequisite: 2985:101. Continued instruction and hands-on emphasis on common skills used in the GIS industry. Skills: Creating reference maps, geocoding, digitizing, reports and mapbooks. Laboratory.

2985:201. Intermediate Geographic and Land Information Systems. (3 Credits)
Prerequisite: 2985:101. Continued instruction in the hands-on technical applications of Geographic and Land Information Systems. Laboratory.

2985:205. Building Geodatabases. (3 Credits)
Prerequisite: 2985:101 or equivalent. Introduction and application of spatial geodatabases. The student will create, use, and manage geodatabases. Geodatabases are used for storing spatial and attribute data. Laboratory.

2985:210. Geographic and Land Information Systems Project. (3 Credits)
Prerequisites: 2985:101. Practical application and presentation techniques using the principles and concepts of cartography and geographic information systems. Laboratory.

2985:280. Topics in Professional Practice. (2 Credits)
Topics in applicational areas of Geographic and Land Information Systems (GIS/LIS) from the point of view of the practitioner and the consumer.

2985:290. Special Topics in Geographic and Land Information Systems. (1-3 Credits)
Special lecture/laboratory courses offered once or only occasionally in areas where no formal course exists.

2985:291. Geographic and Land Information Systems Internship. (3 Credits)
Prerequisite: Permission of Program Director. Supervised professional experience in GIS/LIS agencies or related setting.

2985:295. Workshop in Geographic and Land Information Systems. (1-3 Credits)
Group studies of special topics in GIS/LIS. May be used for elective credit only to a maximum of three credits.

2985:299. Independent Study. (1-3 Credits)
Directed study in a special field of interest chosen by the student in consultation with the instructor.

2985:301. Exploring ArcGIS Extensions. (3 Credits)
Prerequisite: 2985:101. Specialized instruction and laboratory exercises in working with the ArcGIS extensions, Spatial Analyst, 3-D Analyst and Network Analysis. Laboratory.

Geography & Planning (3350)

3350:100. Introduction to Geography. (3 Credits)
Analysis of world patterns of population characteristics, economic activities, settlement features, landforms, climate as interrelated factors.

3350:250. World Regional Geography. (3 Credits)
Survey of world regions with focus on both physical and human landscapes; emphasis on world patterns and issues from a regional perspective.

3350:275. Geography of Cultural Diversity. (2 Credits)
Prerequisites: 32 credit hours including English Composition I and II (3300:111, 112) or equivalent. Evaluation of cultural elements unique to various geographical regions to explain why different people utilize resources differently, and how cultural diversity affects regional conflicts.

3350:305. Maps & Map Reading. (3 Credits)
Introduction to use and interpretation of maps. Study of basic map types, elements, symbolism, and historical and cultural context of maps. (Laboratory.)

3350:310. Physical & Environmental Geography. (3 Credits)
Landforms, weather and climate, soils and vegetation and natural hazards. Nature and distribution of these environmental elements and their significance to society. Laboratory.

3350:314. Climatology. (3 Credits)
Prerequisite: 3350:310 or permission. Analysis and classification of climates, with emphasis on regional distribution. Basic techniques in handling climate data.

3350:320. Economic Geography. (3 Credits)
Geographical basis for production, exchange, consumption of goods. Effect of economic patterns on culture and politics.

3350:350. Geography of the United States & Canada. (3 Credits)
Regional and topical study of United States and Canada, with emphasis on environmental, economic and cultural patterns and their interrelationships.

3350:351. Ohio: Environment & Society. (3 Credits)
Regional and topical analysis of cultural, economic and environmental patterns; also in comparison with other states.

3350:353. Latin America. (3 Credits)
Analysis of relationship of cultural and economic patterns to physical environment in Mexico, Central America, the Caribbean and South America.

3350:356. Europe. (3 Credits)
Regional and topical analysis of cultural, economic and environmental patterns.

3350:360. Asia. (3 Credits)
Environmental, cultural and economic geography of East, Southeast, South Asia and Middle East with emphasis on the contemporary.

3350:363. Africa South of the Sahara. (3 Credits)
Environmental and human bases of regional contrasts. Emphasis on tropical environmental systems and changing patterns of resource utilization.

3350:397. Special Problems in Geography and Planning. (1-3 Credits)
(May be repeated for a total of five credits) Prerequisite: Permission of instructor. Directed reading and research in special field of interest.

3350:405. Geographic Information Systems. (3 Credits)
Prerequisites: 3350:305. Introduction to the principles and concepts underlying geographic information systems (GIS) and their application in professional practice and academic research. Laboratory.

3350:407. Advanced Geographic Information Systems. (3 Credits)
Prerequisite: 3350:405. Advanced instruction in the theory and application of geographic information systems (GIS) including hands-on experience with both raster and vector GIS. Laboratory.

3350:409. Archaeogeophysical Survey. (3 Credits)
Prerequisites: 3240:250 or 3370:101 or 3350:310. Advanced instruction in subsurface geophysical survey techniques in archaeology. Emphasis on magnetic gradiometry and electrical resistivity techniques, image processing and geological and archaeological interpretation.

3350:415. Environmental Planning. (3 Credits)
Scientific and technical principles for decision-making in planning, with emphasis on soils, land use, and water quality issues. Data sources and methods of site evaluation.

3350:420. Urban Geography. (3 Credits)
Spatial structure of urban systems; interaction between cities; internal structure of cities. Perspectives on urban change; contemporary urban geographic problems; urban and regional planning issues.

3350:422. Transportation Systems Planning. (3 Credits)
Study and analysis of transportation systems from a geographic perspective. Emphasis on transportation problems and issues, elements of transportation planning.

3350:424. Military Geography. (3 Credits)
Influence of physical and human geography on military operations and military history. Role played by geography in international conflicts.

3350:432. Land Use Planning Law. (3 Credits)
Acquaint student with past and present approaches to land use control in the United States and examine the political, economic, social and legal forces that have shaped existing land-use legislation.

3350:433. Practical Approaches to Planning. (3 Credits)
Introduction to the history, theories and forms of urban planning.

3350:437. Planning Analysis & Projection Methods. (3 Credits)
Introduction to the primary analytic techniques for small-area demographic and economic analysis and projection.

3350:438. Land Use Planning Methods. (3 Credits)
Application of GIS and other computer-based tools to the preparation, implementation and evaluation of comprehensive land use plans.

3350:439. History of Urban Design & Planning. (3 Credits)
Origins of human settlements and planning from the perspective of urban design and related societal trends. Comparison of world regional and historical urban forms. Experience in "reading" settlements as visual landscapes.

3350:440. Cartography. (3 Credits)
Use of graphic/cartographic principles and techniques as a means of presenting geographical information on maps and producing maps. Laboratory.

3350:441. Global Positioning Systems (GPS). (1 Credit)
Fundamentals of Global Positioning System (GPS), with emphasis on geographic and planning activities. Includes hands-on exercises.

3350:442. Cartographic Theory and Design. (3 Credits)
Prerequisite: 3350:440 or permission of instructor. Principles and techniques of thematic mapping. Stresses maps as communications tools. Examines principle thematic mapping techniques and means of presenting qualitative and quantitative data. Laboratory.

3350:443. Urban Applications in GIS. (3 Credits)
Prerequisite: 3350:405 or permission of instructor. Applications of GIS in the urban context, including methods used for analysis of population density gradients, migration, and accessibility.

3350:444. Applications In Cartography & Geographic Information Systems. (3 Credits)
Prerequisite: 3350:340 and 3350:405. Application of analytic and presentation techniques from cartography and geographic information systems to practical problems in geography and planning. Laboratory.

3350:445. GIS Database Design. (3 Credits)
Prerequisite: 3350:405. Introduction to theory and concepts of geographic data modeling, geodatabase design, and topology. Emphasis on current practices and methodologies in geography and planning.

3350:446. GIS Programming and Customization. (3 Credits)
Prerequisite: 3350:405. Introduction to use of scripting languages for customizing the interface and extending the functionality of desktop GIS software.

3350:447. Remote Sensing. (3 Credits)
Prerequisite: 3350:305. Concepts, systems, and methods of applying aerial photography, satellite imagery, and other remote-sensing data for analyzing geographic, geological, and other earth phenomena.

3350:449. Advanced Remote Sensing. (3 Credits)
Prerequisite: 3350:447. Current research in remote sensing. Applications in study of human cultural and biophysical environment. Practice in planning, design, execution and interpretation of remote sensing studies. (Laboratory.)

3350:450. Development Planning. (3 Credits)
A study of planning concepts and techniques for developing countries, including growth and development, planning agencies, regional inequities and alternative approaches.

3350:460. Political Geography. (3 Credits)
Principles and theory in contemporary domestic and international political geographies. Emphasis on the changing local and global patterns of electoral politics, security, and diplomacy.

3350:481. Research Methods in Geography & Planning. (3 Credits)
Prerequisites: Completed a minimum of 12 credits in Geography and Planning. Investigation of library and archive resources. Emphasis on development of professional writing skills.

3350:483. Spatial Analysis. (3 Credits)
Prerequisite: Completed a minimum of 12 credits in Geography and Planning. Analysis of mapped statistical surfaces. Principles for use of map as model for statistical evidence, prediction, hypothesis testing.

3350:485. Internship in Geography & Planning. (1-3 Credits)
Prerequisite: Permission. (May be repeated for a total of six credits.) Supervised professional experience in planning agencies or related settings. Only three credits can be used toward a degree in Geography and Planning.

3350:489. Special Topics in Geography. (1-3 Credits)
(May be repeated) Selected topics of interest in geography.

3350:490. Workshop in Geography. (1-3 Credits)
(May be repeated for a total of six credits) Group studies of special topics in geography.

3350:495. Soil & Water Field Studies. (3 Credits)
Properties, origins and uses of major soil and water regime landscapes. Stresses relationships between soil and the hydrological cycle, urbanization, suburbanization and agriculture. Field trips required.

3350:496. Field Research Methods. (3 Credits)
Prerequisite: Completed a minimum of 12 credits in Geography and Planning. Field work enabling student to become competent in collecting, organizing and analysis of data while carrying out field research projects.

3350:497. Regional Field Studies. (1-3 Credits)
Off-campus intensive study of geographic features of a region or regions through direct observations and travel using appropriate field study methods. (repeatable up to 6 credits)

3350:498. Honors Research in Geography. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisite: permission of department honors preceptor, honors student only. Exploration of research topics and issues in contemporary geography. Selection of research topic and writing of research paper in proper scholarly form under direction of faculty member.

3350:499. Career Assessment Seminar. (2 Credits)
Prerequisites: 24 credits in department or permission. Students demonstrate knowledge and skills acquired as geography majors through assessment testing and semester project, evaluate career options, and prepare resume and portfolio.

Geology (3370)

3370:100. Earth Science. (3 Credits)
Introduction to earth science for non-science majors. Survey of earth in relation to its physical composition, structure, history, atmosphere, oceans; and relation to solar system and universe.

3370:101. Introductory Physical Geology. (4 Credits)
A study of the nature of earth, its materials, and the processes which continue to change it. Laboratory, field trips.

3370:102. Introductory Historical Geology. (4 Credits)
Prerequisite: 3370:101. Geologic history of earth, succession of major groups of plants and animals interpreted from rocks, fossils. Laboratory, field trips.

3370:103. Natural Science: Geology. (3 Credits)
Study of basic principles and investigative techniques in various fields of geology with emphasis on relationship of geologic processes to society.

3370:104. Exercises in Physical Geology. (1 Credit)
Prerequisites: 3370:100 or 3370:103 or 3370:200 or permission of geology adviser. Laboratory exercises on the identification of earth materials and the utilization and interpretation of geologic data and maps.

3370:105. Geology for Engineers. (3 Credits)
Introduction of physical geology to engineers, including mechanics, hydraulics and case studies that illustrate interactions between geology and engineering. Laboratory, field trips.

3370:121. Dinosaurs. (1 Credit)
Introductory course exploring the geological occurrence, mode of fossilization, evolutionary development, habits, and sudden extinction of the largest known land vertebrates.

3370:122. Mass Extinctions & Geology. (1 Credit)
Catastrophic changes in plants and animals have occurred throughout earth history. The causes of these extinctions have sparked debate which has enlivened the scientific world.

3370:125. Earthquakes: Why, Where, When?. (1 Credit)
Causes and effects of earthquakes, geological settings for earthquakes, seismic measurements, mechanical response of rock to stress, earthquake prediction and precautionary measures.

3370:126. Natural Disasters & Geology. (1 Credit)
A study of the earth's natural hazards including earthquakes, landslides, meteorites and tsunamis.

3370:127. The Ice Age & Ohio. (1 Credit)
Introductory course covering the effects of the ice age on the geology, vegetation, fauna and economy of Ohio.

3370:128. Geology of Ohio. (1 Credit)
Survey of Ohio's geologic setting and history, natural resources, landforms, and their significance in terms of human activity, from early settlement to future economy.

3370:129. Medical Geology. (1 Credit)
Abundance and distribution of trace elements in surface and groundwater, soils and rocks. The effects of trace elements to health through dose-response relationships.

3370:130. Geologic Record of Climate Change. (1 Credit)
Examines evidence for natural climate changes in geologic past and evaluates the role of modern society in influencing future climate.

3370:132. Gemstones & Precious Metals. (1 Credit)
Introduction to minerals which form gemstones and precious metals. Topics to be covered include physical properties, geologic occurrences, and geographic locations of major deposits.

3370:133. Caves. (1 Credit)
Topics include: karst processes and the origin of caverns; carbonate depositional environments and the origin of limestones; environmental problems associated with karst landscapes.

3370:134. Hazardous & Nuclear Waste Disposal. (1 Credit)
Disposition of hazardous waste in secured landfill site. Geologic factors which determine the selection of low-level and high-level radioactive waste sites.

3370:135. Geology of Energy Resources. (1 Credit)
Topics include the origin of hydrocarbon and coal deposits, global distribution of energy resources, environmental impact of energy consumption.

3370:137. Earth's Atmosphere & Weather. (1 Credit)
Structure and composition of the atmosphere; earth's radiation budget; atmospheric moisture, clouds and precipitation; weather systems and storms, severe weather, Ohio weather.

3370:139. Current Topics in Geology. (1 Credit)
(May be repeated for up to 2 credits.) Special topics offered once or only occasionally in areas where no formal course exists.

3370:140. Rocky Mountain National Parks. (1 Credit)
Badlands, Yellowstone, Grand Canyon and other Rocky Mountain National Parks will be used to illustrate basic principles of geology.

3370:141. Natural Environment of China. (1 Credit)
Introduction to geographical and geological environments of China. Geography and geology of geoparks will be presented and discussed as examples.

3370:171. Introduction to the Oceans. (3 Credits)
Provides a basic introduction to the oceans. Topics include formation of the oceans, ocean circulation, waves and tides, marine animals, marine communities, and climate change.

3370:200. Environmental Geology. (3 Credits)
Analysis of geologic aspects of the human environment with emphasis on geologic hazards and environmental impact of society's demand for water, minerals and energy.

3370:201. Exercises in Environmental Geology I. (1 Credit)
Prerequisite or corequisite: 3370:200. Recognition, and evaluation of environmental problems related to geology through laboratory exercises and demonstrations which apply concepts discussed in introductory geoscience courses. Laboratory.

3370:203. Exercises in Environmental Geology II. (1 Credit)
Prerequisites: 3370:200 (or corequisite) and 3370:201. Recognition and evaluation of environmental problems related to geology. (Continuation of 201) Laboratory.

3370:211. Introduction to Environmental Science. (3 Credits)
Interdisciplinary analysis of our relationship with nature and dependence upon the environment, with emphasis on evaluation of current environmental problems and rational solutions.

3370:230. Mineral Science. (4 Credits)
Prerequisite: 3370:101. Corequisites: 3150:151 and 3150:152. Crystallography and chemistry of minerals. Topics also covered include physical, chemical and optical properties, occurrences and uses of the common non silicate minerals. Laboratory, field trips.

3370:231. Silicate Mineralogy and Petrology. (4 Credits)
Prerequisite: 3370:101. Corequisites: 3150:151 and 3150:152. Physical and chemical properties, occurrence, and uses of common silicate minerals, followed by megascopic and microscopic identification, classification, and petrogenesis of rocks. Laboratory.

3370:301. Engineering Geology. (3 Credits)
Prerequisites: 3370:101. Presents quantitative analysis of geologic features and processes and is supported by the study of case histories. Lecture, lab, field study, field trips.

3370:310. Geomorphology. (3 Credits)
Prerequisite: 3370:101. Study of landforms as a function of structure, process, and time. Laboratory, field trips.

3370:324. Sedimentation & Stratigraphy. (4 Credits)
Prerequisites: 3370:102 and 3370:231. Introduction to sedimentary processes and environments; stratigraphic principles and techniques. Hand specimens, thin sections, and sedimentary sequences studied. Laboratory, field trips.

3370:350. Structural Geology. (4 Credits)
Prerequisite: 3370:101. Origins and characteristics of folds, faults, joints and rock cleavage. Structural features of sedimentary, igneous and metamorphic rocks. Laboratory, field trips.

3370:355. Contemporary Issues in Environmental Science. (3 Credits)
Prerequisites: 3370:100 and 3370:211. Interdisciplinary analysis of our relationship with nature and dependence upon environment, with emphasis on evaluation of current environmental problems and rational solutions.

3370:360. Paleobiology. (4 Credits)
Prerequisite: 3370:101 or 3100:111. Introductory course emphasizing morphology and evolution of major invertebrate groups with consideration of practical applications of paleontology. Laboratory, field trips.

3370:371. Oceanography. (4 Credits)
Prerequisite: 3370:101. Study of the dominant feature of our planet, the oceans, emphasizing ocean basins evolution, and physical, chemical and biological processes in the various marine environments. Field trips.

3370:405. Archaeological Geology. (3 Credits)
Prerequisite: 3370:101. Provides background in geologic principles and techniques relevant to archaeologists. Topics include stratigraphy, absolute dating, locality assessment, zooarchaeology, taphonomy, and remote sensing. Laboratory, field trips.

3370:407. Archaeogeophysical Survey. (3 Credits)
Prerequisites: 3240:250 or 3370:101 or 3350:310. Advanced instruction in subsurface geophysical survey techniques in archaeology. Emphasis on magnetic gradiometry and electrical resistivity techniques, image processing and geological and archaeological interpretation.

3370:410. Regional Geology of North America. (3 Credits)
Prerequisites: 3370:101 and 3370:102. Examination of physiographic provinces of North America emphasizing structure, tectonic setting, stratigraphy and processes responsible for landforms in each province. Laboratory, field trips.

3370:411. Glacial Geology. (3 Credits)
Causes and effects of Pleistocene expansion of polar ice masses with emphasis on glacial deposits and world climatic changes. Laboratory, field trips.

3370:421. Coastal Geology. (3 Credits)
Prerequisites: 3370:101, 3370:324 or permission of instructor. Study of the origins and evolution of coasts and coastal deposits with particular attention paid to the interaction of waves and currents with sediment, and the development of associated sedimentary features. Field trips.

3370:425. Principles of Sedimentary Basin Analysis. (3 Credits)
Prerequisites: 3370:324 and 3370:360 or permission. Primarily the study of depositional systems, regional and global stratigraphic cycles, and sedimentation and plate tectonics.

3370:432. Optical Mineralogy - Introductory Petrology. (3 Credits)
Prerequisites: 3370:230 and 3370:231. Optical techniques for identification, characterization, and classification of minerals and rocks using the petrographic microscope. Laboratory.

3370:433. Advanced Petrology. (3 Credits)
Prerequisite: 3370:432. Petrogenesis of igneous, metamorphic and sedimentary rocks as determined by microscopic studies of textures and mineral assemblages using thin sections. Laboratory.

3370:435. Petroleum Geology. (3 Credits)
Prerequisite: 3370:350. Natural occurrences of petroleum. Characteristics, origin, entrapment and exploration methods. Laboratory, field trips.

3370:436. Coal Geology. (3 Credits)
Prerequisites: 3370:101 and 3370:102. Origin, composition and occurrence of coal with emphasis on depositional environments, coalification processes, exploration, evaluation and exploitation. Laboratory, field trips.

3370:437. Economic Geology. (3 Credits)
Prerequisites: 3370:231 and 3370:350. Study of metallic and nonmetallic mineral deposits emphasizing paragenesis and exploration. Laboratory, field trips.

3370:441. Fundamentals of Geophysics. (3 Credits)
Prerequisites: 3450:223 or permission and 3650:292. Fundamental concepts in solid earth geophysics, planetary physics, geodesy, and geomagnetism. Contributions of geophysics to recent major developments in geoscience.

3370:444. Environmental Magnetism. (3 Credits)
Prerequisite: 3370:101 or permission. Introduction to the theory and methods of environmental magnetism and the application of environmental magnetism to interpreting sedimentary deposits.

3370:445. Environmental and Engineering Geophysics. (3 Credits)
Prerequisite: 3650:261 or 3650:291 or permission of instructor. Corequisite: 3650:262 or 3650:292 or permission of instructor. Basic subsurface exploration using ground penetrating radar and multi-channel electrical resistivity. Applications in environmental assessment, civil engineering and geotechnical engineering. Field trips.

3370:446. Exploration Geophysics. (3 Credits)
Prerequisites: 3450:223 and 3650:292. Basic principles and techniques of geophysical exploration with emphasis on gravimetric, magnetic, seismic and electrical methods and application to geological problems. Laboratory, field trips.

3370:449. Borehole Geophysics. (3 Credits)
Basic principles and techniques of geophysical well logging with emphasis on electrical, radioactive, and sonic measures and their quantitative evaluation. Applications in oil, gas, and groundwater exploration. Laboratory.

3370:450. Advanced Structural Geology. (3 Credits)
Prerequisite: 3370:350. Fundamental and advanced concepts of structural geology with emphasis on current and developing concepts. Laboratory, field trips.

3370:451. Field/Lab Studies in Environmental Science. (3 Credits)
Field/Laboratory inquiry into a specific interdisciplinary, environmental science topic. Students complete a research project involving collecting, analyzing and interpreting real world data. (May be repeated once.)

3370:452. Geology and Environmental Science Service Learning. (1-3 Credits)
Prerequisite: Permission of instructor. Team service-learning project that involves collection, organization, analysis, and presentation of data. Field trips. (May be repeated for a maximum of four credits.)

3370:453. Geology Field Camp I. (3 Credits)
Prerequisite: 3370:101 and 3370:102. Introduction to collection and interpretation of field data and construction of geologic maps. Student will bear trip expenses.

3370:454. Geology Field Camp II. (3 Credits)
Prerequisites: 3370:231, 3370:350, and 3370:453. Advanced techniques and methods of field geology necessary for detailed geological maps and interpretation. Student will bear trip expenses.

3370:455. Field Studies in Geology. (1-3 Credits)
Field trip course emphasizing aspects of geology not readily studied in Ohio. Includes pre-trip preparation and post-trip examination. Student will bear trip expenses. (May be repeated for a total of four credits.)

3370:462. Macroevolution. (3 Credits)
Prerequisites: 3370:360 or 3100:111. Provides a comprehensive treatment of macroevolutionary theory, focusing on evidence from the fossil record. Topics include genetics, speciation, development, and fossil lineages. Laboratory.

3370:463. Environmental Micropaleontology. (3 Credits)
Prerequisite: 3370:360. Introduction to techniques of micropaleontology as proxy indicators for environmental and climate change. Laboratory. Field trips.

3370:465. Geomicrobiology. (3 Credits)
Prerequisites: 3150:151 and 3150:153. A course addressing the physiology, ecology, and activities of microorganisms that mediate important biogeochemical processes, and the interdisciplinary approaches to studying them.

3370:470. Geochemistry. (3 Credits)
Prerequisites: 3370:101, 3370:230, 3370:231, 3150:151, 3150:152 and 3150:153. Application of chemical principles to the study of geologic processes. Laboratory, field trips.

3370:472. Stable Isotope Geochemistry. (3 Credits)
Prerequisite: 3370:101 and 3370:102; 3150:151, 3150:152 and 3150:153; 3450:221. Application of stable isotope geochemistry to the study of hydrologic and carbon cycles, modern sedimentary environments, and the interpretation of sedimentary rocks.

3370:474. Groundwater Hydrology. (3 Credits)
Prerequisite: 3370:101. Origin, occurrence, regimen and utilization of groundwater. Qualitative and quantitative presentation of geological and geochemical aspects of groundwater hydrology. Laboratory, field trips.

3370:480. Seminar in Environmental Studies. (2 Credits)
Discussion of specific environmental topic(s) from an interdisciplinary viewpoint; resource persons are drawn from the University and surrounding community.

3370:481. Analytical Methods in Geology. (2 Credits)
Prerequisite: 3370:230, 3370:231. A survey of analytical methods used to solve geologic problems with emphasis on method selection, proper sample collection, analysis of data quality and data presentation.

3370:484. Geoscience Information Acquisition & Management. (2 Credits)
Prerequisite: Must be a Geology Department graduate student or senior major in Geology, or have permission of instructor. Methods for finding, gathering, managing, and evaluating geoscience information. Emphasis on finding data sources (including electronic), creating valid data sets, visualizing data.

3370:485. Individual Readings in Geology and Environmental Science. (1-3 Credits)
Prerequisite: Permission of instructor. (May be repeated for a total of 4 credits) Independent study and directed readings on a selected topic to fit an individual student's program.

3370:490. Workshop in Geology and Environmental Science. (1-4 Credits)
Group studies of special topics in geology and environmental science. May not be used to meet undergraduate major requirements in the Department. May be used for elective credit only. (May be repeated for up to 4 credits.)

3370:491. Internship in Geology and Environmental Science. (1-3 Credits)
Prerequisite: Permission of Department Chair. Supervised professional experience in geology or environmental science. Only three credits may be applied toward a degree in geology. (May be repeated for a total of six credits.)

3370:497. Honors Project in Geology. (1-3 Credits)
(May be repeated for a total of six credits.) Prerequisite: permission of department honors preceptor, Honors student only. Exploration of research topics and issues in geology. Selection of research topic and writing of research paper in proper scholarly form under direction of faculty member.

3370:498. Special Topics in Geology. (1-3 Credits)
Prerequisite: Permission of instructor. Special lecture courses offered once or only occasionally in areas where no formal course exists.

3370:499. Research Problems in Geology. (1-3 Credits)
(May be repeated for a total of four credits) Prerequisite: Permission. Independent research leading to the completion of a written paper or presentation at a professional meeting.

German (3530)

3530:101. Beginning German I. (4 Credits)
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.

3530:102. Beginning German II. (4 Credits)
Sequential. Prerequisite: 3530:101 or equivalent. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.

3530:201. Intermediate German I. (3 Credits)
Sequential. Prerequisite: 3530:102 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.

3530:202. Intermediate German II. (3 Credits)
Sequential. Prerequisite: 3530:201 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.

3530:301. German Conversation & Composition. (3 Credits)
Prerequisite: 3530:202 or equivalent. Advanced composition using German models, special attention to words and idioms, development of oral expression and conversational ability.

3530:302. Special Topics in German Conversation & Composition. (3 Credits)
Prerequisite: 3530:202 or equivalent or permission of instructor. May be repeated for credit. Special attention to development of oral expression and conversational ability.

3530:310. Sex, Violence, & Terror in German Fairy Tales. (3 Credits)
Exploration of historical context of German fairy tales and interpretation plus modern significance of texts according to Jungian archetypal psychology. Readings and discussions in English.

3530:403. Advanced German Conversation & Composition. (3 Credits)
Prerequisite: 3530:302 or equivalent. Thorough analysis of syntax, morphology, phonetic principles and grammatical structure.

3530:404. Advanced German Conversation & Composition. (3 Credits)
Prerequisite: 3530:302 or equivalent. Thorough analysis of syntax, morphology, phonetic principles and grammatical structure.

3530:406. German Culture & Civilization. (3 Credits)
Prerequisite: 3530:302 or 3530:306 or equivalent. Particular emphasis on customs, traditions, literary trends and artistic tendencies that constitute German's contribution to Western civilization.

3530:407. German Culture & Civilization. (3 Credits)
Prerequisite: 3530:302 or 3530:306 or equivalent. Particular emphasis on customs, traditions, literary trends and artistic tendencies that constitute German's contribution to Western civilization.

3530:422. German: Special Topics in Advanced Language Skills or Culture or Literature. (1-4 Credits)
Prerequisite: 3530:202 or equivalent. (May be repeated) Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.

3530:497. Individual Reading in German. (1-3 Credits)
Prerequisite: 3530:202 and permission of department chair.

3530:498. Individual Reading in German. (1-3 Credits)
Prerequisite: 3530:202 and permission of department chair.

Health Care Office Management (2530)

2530:230. Medical Coding/Billing Internship. (3 Credits)
Prerequisites: 2530:240, 2530:243, and 2530:258. Internship with focus on medical coding/billing. Familiarity with the revenue cycle in health care organization including any of the following processes: patient scheduling and registration, insurance eligibility verification, collection of co-pays, documentation and coding, charge processing, claim submission, payment processing, secondary billing/appeals, accounts receivable follow-up and/or collections.

2530:240. Medical Coding - Diagnostic. (3 Credits)
Corequisite: 2740:120. Designed to instill the fundamental knowledge and practice needed to understand ICD-10-CM coding classification, the course helps develop essential basic-level diagnostic coding skills.

2530:241. Health Information Management. (3 Credits)
This course provides a general understanding of health information management including the effective collection, analysis, and dissemination of quality data to support individual, organization, and social decisions related to disease prevention and patient care.

2530:242. Medical Office Administration. (3 Credits)
Prerequisite: 2740:120. This course focuses on the health care workplace and emphasizes tools (including a computer-simulated office management program) to perform all front office responsibilities.

2530:243. Medical Coding II - Procedural. (3 Credits)
Prerequisites: 2530:240 and 2740:120. This course will cover the statistical classification systems used to describe medical procedures in the health care field including Current Procedural Terminology (CPT), Health Care Procedure Coding System (HCPCS), and International Classification of Disease (ICD).

2530:244. Medical Insurance Billing. (3 Credits)
Prerequisite: 2530:243. Third-party reimbursement and the completion of the standard health insurance claim form. Credit and collection policies and procedures related to the medical facility. Designed primarily to teach billing from an outpatient setting; however, basic hospital (inpatient) billing will also be covered.

2530:255. Health Care Office Management & Medicolegal Issues. (3 Credits)
Prerequisites: Completion of 32 credit hours. This course will assist the student in developing knowledge and skills to manage a medical office practice including the fundamentals of personnel management, revenue management, practice enhancement, health information management, and medical law and ethics.

2530:257. Health Care Office Finance. (3 Credits)
Prerequisites: 2420:211 & 2440:125. The purpose of the course is to help the student attain a sufficient level of understanding of the financial aspects of medical practice management. It will cover basic accounting practices including comparative income statements and balance sheets, revenue cycle management, relative value units, budgeting, ratio analysis, and financial management and reporting.

2530:258. Internship Orientation and Career Development. (3 Credits)
For students planning their first internship in the Health Care office Management or Medical Billing program. Students will complete a self-assessment; demonstrate workplace competencies; develop a resume, letter of introduction, and professional portfolio; and practice job search strategies. Successful completion of the course culminates in a confirmed internship for the following semester.

2530:259. Internship Orientation. (1 Credit)
Prerequisite: Permission. Prepares student for internship in Health Care Office Management and Health Care Administrative Assistant programs. Students will complete a self-assessment, demonstrate workplace competencies, and practice job search strategies.

2530:260. Health Care Office Management Internship. (3 Credits)
Prerequisite: Permission. Health Care Office Management training within an appropriate health care facility for actual work experience and observation.

2530:282. Medical Transcription and Editing. (3 Credits)
Prerequisites: 2540:119, 2540:144, 2740:120. Corequisites: 2740:121, 2740:230. Instruction on interpreting and transcribing medical language and healthcare documentation. Emphasis on medical terminology, pronunciation, punctuation, spelling, word usage, and English grammar skills.

2530:284. Medical Office Techniques. (3 Credits)
Prerequisite: 2740:120. This course provides the students with an understanding of the clinical aspects of a medical practice to ensure safety for both the employee and the patient.

2530:290. Special Topics in Health Care Office Management. (1-4 Credits)
Prerequisite: Permission. Selected topics or subject areas of interest in health care office management.

Health Education (5570)

5570:101. Personal Health. (2 Credits)
This course applies the current principles and facts pertaining to healthful, effective living, personal health problems, and needs of the student. Two hours lecture.

5570:201. Foundations in Health Education. (3 Credits)
Prerequisite: 5570:101. History and philosophy of health education as a discipline; professionalism and administration in health education are considered.

5570:202. Stress Management. (3 Credits)
Prerequisite: Sophomore standing. Course provides knowledge about the relationship between stress, physiological, psychological illness and disease, also how to manage stress in life activities.

5570:322. Current Topics in Health Education. (3 Credits)
Prerequisites: 5570:101, 5570:201, and 5570:420. Skills needed to do research, teach, and present current health education topics in a factual and comfortable manner in schools and community. Three hours lecture. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5570:375. Program Planning and Evaluation. (2 Credits)
Prerequisites: 5570:101 and 5570:201. This course addresses the process of planning and evaluating health education programs within the school and community.

5570:395. Field Experience: Health Education. (1-3 Credits)
Prerequisite: Permission of the advisor. On-site field experience will be conducted in an area related to pre-K-12 health education under the supervision of a faculty member. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5570:400. Environmental Aspects of Health Education. (3 Credits)
Prerequisite: Major or minor in health education and admission to the Sport Science and Wellness Program. A study of the interrelationships of ecosystems and a healthful environment. This course investigates many aspects of the environment and their influences upon the quality of human life. Students must be in the College of Education to take 300/400 level courses.

5570:420. Community and Personal Health. (3 Credits)
Introduction of current public and personal health issues. Organizations and their roles in public and personal health programs. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5570:421. Comprehensive School Health. (3 Credits)
Prerequisites: 5570:101, 5570:201, and 5570:320. This course explains and presents comprehensive school health curricula for pre-k to 12. The three components of a comprehensive school health program are presented.

5570:423. Methods & Materials Teaching Health Education. (3 Credits)
Prerequisites: 5570:101, 5570:201, 5570:420, 5100:210, 5100:211, 5500:310, 5500:311. Planning, organization, use of instructional resources and delivery of health education content and teaching process (pre K-12). Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5570:430. Senior Honors Project: Health Education. (1-6 Credits)
(May be repeated for a total of six credits) Prerequisites: Senior standing in Honors Program. Carefully defined individual study demonstrating originality and sustained inquiry. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5570:460. Practicum in Health Education. (2-6 Credits)
Prerequisite: Permission of the advisor. The practicum in Health Education is an on-site participation in a community health organization, agency or resource. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5570:497. Independent Study: Health Education. (1-2 Credits)
Prerequisite: Permission of the advisor. Analysis of a specific topic related to a current problem in health education. May include investigative procedure, research or concentrated practical experience.

Health Information Technology (2750)

2750:200. Health Record Content. (3 Credits)
Prerequisites: 2740:127 and 2440:105. Introduction to the contents and design of health records (paper and electronic) and discussion of how clinical documentation facilitates the function of the delivery system.

2750:226. Healthcare Statistics and Registries. (3 Credits)
Prerequisites: 2030:130 & 2440:105. This course covers computations of routine healthcare institutional statistics, the presentation and interpretation of healthcare data, and the use of disease and procedural registries.

2750:231. Advanced Coding I. (3 Credits)
Prerequisites: 2740:128 & 2740:129. This course covers complicated integration of procedures and diagnosis coding and introduces facility coding.

2750:236. Legal Concepts of Healthcare. (2 Credits)
Prerequisite: 2740:127. Study of legal principles related to patient care and patient records.

2750:301. Quality Management in Healthcare. (2 Credits)
Prerequisites: 2740:228 and 2750:200. An introduction of the methods used to define, implement, and monitor total quality management in health care.

2750:302. Clinical Information Systems. (3 Credits)
Prerequisite: 2740:127. Discussion of clinical systems including history of EHR and EMR, the theories behind systems, implementation, evaluation pathways, "Meaningful Use" and the architecture in different settings.

2750:303. Advanced Coding II. (3 Credits)
Prerequisites: 2740:128 & 2740:129. Through case studies, the class is intended to prepare the student for either the AAPC CPC or the AHIMA CCS-P certification exam.

2750:304. Healthcare Management Foundations. (3 Credits)
Prerequisite: 2420:300. This course focuses on the circumstances unique to the health care industry management as manifested by patient privacy, outsourcing, and telecommunications.

2750:310. Healthcare Finance. (3 Credits)
Prerequisite: 2420:211, 2420:213, 2740:128, 2740:228. Integration of principles learned in accounting, coding, and insurance prerequisites into an exploration of financial management in the sector of the economy that is healthcare.

2750:350. Coding Practicum. (3 Credits)
Prerequisites: 2740:128, 2740:129, 2750:231 and 2750:303. The coding practicum course provides professional experience in an approved site under the direction of a coding or HIM faculty member and an onsite coordinator.

2750:410. Healthcare Research. (3 Credits)
Prerequisites: 2020:222 & 3470:260. Through review of research, HIM students in this class will learn how to support clinicians' data needs while research is conducted.

2750:412. Current Topics in HIM. (3 Credits)
Prerequisites: 2750:200, 2750:231, 2750:236, 2750:301, 2750:302, 2750:303, 2750:304, and 2750:310. Concepts of HIM are integrated and applied through the analysis of case studies and the completion of a capstone project.

2750:450. HIM Practicum. (3 Credits)
Prerequisites: 2750:200, 2750:231, 2750:236, 2750:301, 2750:302, 2750:303, 2750:304, and 2750:310. The HIM practicum course provides professional experience in an approved site under the direction of a coding or HIM faculty member and an onsite coordinator.

History (3400)

3400:200. Empires of the Ancient World. (3 Credits)
Comparative study of the formation of ancient empires of the Afro-Eurasian world up to the rise of Islam.

3400:210. Humanities in the Western Tradition I. (4 Credits)
Prerequisites: 30 credits and completion of 3300:112 or 3300:114 or 2020:222 (or permission). Introduction to the human condition as manifested in ideas, religions, visual arts and music of Western civilization from the ancient Greeks through the Renaissance. Cannot be used to meet major requirements in History.

3400:211. Humanities in the Western Tradition II. (3 Credits)
Prerequisite: 3400:210. Introduction to the human condition in the past as manifested in the ideas, religions, visual arts and music of Western civilization from the Protestant Reformation to the Present. Cannot be used to meet major requirements in History.

3400:221. Humanities in the World since 1300. (4 Credits)
Prerequisites: 3300:112 or 3300:114 or 2020:222 and sophomore standing. Introduction to the human condition as expressed in the ideas, religions, visual arts, and music of the world since 1300. Cannot be used to meet major requirements in History.

3400:250. U.S. History to 1877. (4 Credits)
Historical survey from the Age of Discovery and North American colonization through the creation of the United States to the Civil War and Reconstruction.

3400:251. U.S. History since 1877. (4 Credits)
Survey of United States history from the end of Federal Reconstruction to the present.

3400:285. World Civilizations: China. (2 Credits)
Prerequisite: Completion of [3300:112, or 3300:114, or 2020:222] or equivalent and a minimum of Sophomore standing or higher. Courses 285 through 291 are designed to provide a basic knowledge of past human experiences and an understanding of current events in key areas of the non-Western world. These courses cannot be used to meet major requirements in History.

3400:286. World Civilizations: Japan. (2 Credits)
Prerequisite: Completion of [3300:112, or 3300:114, or 2020:222] or equivalent and a minimum of Sophomore standing or higher. Courses 285 through 291 are designed to provide a basic knowledge of past human experiences and an understanding or current events in key areas of the non-Western world. These courses cannot be used to meet major requirements in History.

3400:287. World Civilizations: Southeast Asia. (2 Credits)
Prerequisite: Completion of [3300:112, or 3300:114, or 2020:222] or equivalent and a minimum of Sophomore standing or higher. Courses 285 through 291 are designed to provide a basic knowledge of past human experiences and an understanding of current events in key areas of the non-Western world. These courses cannot be used to meet major requirements in History.

3400:288. World Civilizations: India. (2 Credits)
Prerequisite: Completion of [3300:112, or 3300:114, or 2020:222] or equivalent and a minimum of Sophomore standing or higher. Courses 285 through 291 are designed to provide a basic knowledge of past human experiences and an understanding of current events in key areas of the non-Western world. These courses cannot be used to meet major requirements in History.

3400:289. World Civilizations: Middle East. (2 Credits)
Prerequisite: Completion of [3300:112, or 3300:114, or 2020:222] or equivalent and a minimum of Sophomore standing or higher. Courses 285 through 291 are designed to provide a basic knowledge of past human experiences and an understanding of current events in key areas of the non-Western world. These courses cannot be used to meet major requirements in History.

3400:290. World Civilizations: Africa. (2 Credits)
Prerequisite: Completion of [3300:112, or 3300:114, or 2020:222] or equivalent and a minimum of Sophomore standing or higher. Courses 285 through 291 are designed to provide a basic knowledge of past human experiences and an understanding of current events in key areas of the non-Western world. These courses cannot be used to meet major requirements in History.

3400:291. World Civilizations: Latin America. (2 Credits)
Prerequisite: A minimum of Sophomore standing or higher and [3300:112, or 3300:114, or 2020:222 or equivalent]. Courses 285 through 291 are designed to provide a basic knowledge of past human experiences and an understanding of current events in key areas of the non-Western world. These courses cannot be used to meet major requirements in History.

3400:292. Global Societies: Africa. (3 Credits)
Prerequisites: Sophomore standing and no credit in both World Civ: Africa and Global Societies: Africa. This course surveys the major social, economic, political, and cultural transformations in Africa, and explores interconnected global histories in on regional context.

3400:294. Global Societies: India. (3 Credits)
Prerequisites: Sophomore standing and no credit in World Civilization and Global Societies. This course surveys the major social, economic, political, and cultural transformations in India, and explores interconnected global histories in one regional context.

3400:295. Global Societies: Japan. (3 Credits)
Prerequisites: Sophomore standing and no credit in World Civilization: Japan and Global Societies: Japan. This course surveys the major social, economic, political and cultural transformations in Japan, and explores interconnected global histories in one regional context.

3400:296. Global Societies: Latin America. (3 Credits)
Prerequisites: Sophomore standing and no credit in both World Civilizations: Latin America and Global Societies: Latin America. This course surveys the major social, economic, political, and cultural transformations in Latin America, and explores interconnected global histories in on regional context.

3400:297. Global Societies: Middle East. (3 Credits)
Prerequisites: Sophomore standing and no credit in both World Civilizations: Middle East and Global Societies: Middle East. This course surveys the major social, economic, political, and cultural transformations in Africa, and explores interconnected global histories in on regional context.

3400:300. Imperial China. (3 Credits)
Prerequisite: A minimum of Sophomore standing or higher, or permission of the instructor. Selective study of institutional, intellectual, political and artistic developments in Chinese civilization from antiquity to 18th century. Emphasis on general features of traditional Chinese culture.

3400:301. Modern China. (3 Credits)
Prerequisite: A minimum of Sophomore standing or higher, or permission of the instructor. This course examines the domestic and global roots of China's 20th century modernization and their relationship to the challenges China now faces.

3400:303. Modern East Asia. (3 Credits)
Prerequisite: A minimum of Sophomore standing or higher, or permission of the instructor. Exploration of domestic and global factors that shaped modern East Asia (Japan, China, Korea and Vietnam).

3400:307. The Ancient Near East. (3 Credits)
Prerequisite: A minimum of Sophomore standing or higher, or permission of the instructor. Mesopotamia, Egypt; Israel, and neighbors to Persian Empire.

3400:308. Greece. (3 Credits)
Prerequisite: Minimum of 32 credits or permission of the instructor. Minoans and Mycenaeans; classical Greece to triumph of Macedon.

3400:310. Historical Methods. (3 Credits)
Introduction to historical research and writing. Required for history major.

3400:313. Eastern Roman Empire (324-1453). (3 Credits)
Prerequisite: a minimum of 32 credits or permission of the instructor. Byzantine culture and history from 324 to the fall of 1453.

3400:317. Roman Republic. (3 Credits)
Prerequisite: Minimum academic standing of a Sophomore or greater. An intensive survey of the Roman Republic. Attention will be given to the nature of the source material, ancient historiography, text criticism and the like.

3400:318. Roman Empire. (3 Credits)
Prerequisite: Minimum of 32 credits or permission of the instructor. An intensive survey of the Roman Empire. Attention will be given to the nature of the source material, ancient historiography, text criticism and the like.

3400:319. Medieval Europe, 500-1200. (3 Credits)
Prerequisite: a minimum of 32 credits or permission of the instructor. Migration of peoples, Carolingian revival, renewed invasions; social, economic and intellectual stirrings lead to ¿birth of Europe.¿.

3400:320. Medieval Europe, 1200-1500. (3 Credits)
Prerequisite: A minimum academic standing of Sophomore or higher. Middle Ages and the middle class; economic and political change, international wars, social unrest and religious crosscurrents.

3400:321. Europe: Renaissance to Religious Wars, 1350-1610. (3 Credits)
Prerequisite: A minimum academic standing of Sophomore or higher. Survey of the social, political, economic, religious, and intellectual history of Early Modern Europe from the Italian Renaissance to the early 17th century.

3400:322. Europe: Absolutism to Revolution, 1610-1789. (3 Credits)
Prerequisite: A minimum academic standing of Sophomore or higher. Survey of the social, political, economic, religious, and intellectual history of Early Modern Europe from the Thirty Years War to the French Revolution.

3400:323. Europe from Revolution to World War, 1789-1914. (3 Credits)
Prerequisite: a minimum of 32 credits or permission of the instructor. Surveys the political, economic, social, and cultural history of modern Europe from the French Revolution to the First World War.

3400:324. Europe from World War I to the Present. (3 Credits)
Prerequisite: a minimum of 32 credits or permission of the instructor. A survey of European political and social history from World War I to the present.

3400:325. Women in Modern Europe. (3 Credits)
Prerequisite: a minimum of 32 credits or permission of the instructor. A survey of the history of women in Europe since 1500, with emphasis on their roles and the changes attendant on modernization.

3400:330. Modern Africa. (3 Credits)
This course will introduce major themes in modern African history, from the trans-Atlantic, slave trade, through the colonial and post-independence periods.

3400:335. Russia to 1801. (3 Credits)
Prerequisite: a minimum of 32 credits or permission of the instructor. Survey of Russian history from Kievan period to death of Paul I, emphasizing development of autocratic government, Russian culture, reigns of Peter and Catherine.

3400:336. Russia Since 1801. (3 Credits)
Prerequisite: a minimum of 32 credits or permission of the instructor. Survey of 19th and 20th centuries. Special emphasis on problems of modernization, the revolution and development of communism.

3400:337. France from Napoleon to Degaulle. (3 Credits)
Prerequisite: A minimum of Sophomore standing or permission of the instructor. Combines a study of Napoleon and DeGaulle with a survey of the political, economic, social, and cultural/artistic trends of modern French history.

3400:338. England to 1688. (3 Credits)
Prerequisite: a minimum of 32 credits or permission of the instructor. Survey of English history from the Anglo-Saxon conquest to the Revolution of 1688. Medieval and early modern institutions, social and cultural life.

3400:339. England Since 1688. (3 Credits)
Prerequisite: a minimum of 32 credits or permission of the instructor. Survey of English history from 1688 to the present. The reform of English institutions and life, modernization of the economy, the welfare state, society and war.

3400:340. Selected Topics in History. (3 Credits)
Prerequisite: A minimum academic standing of Sophomore or higher. Includes experimental offerings such as those crossing subject of chronological lines, and subjects not listed in this General Bulletin. See departmental office for current subject.

3400:341. Islamic Fundamentalism & Revolution. (3 Credits)
Prerequisite: A minimum academic standing of Sophomore or higher. The political and socio-economic roots of Islamic reformism and militancy in the Middle East and North Africa since the 1960s.

3400:342. The Crusades through Arab Eyes. (3 Credits)
Prerequisite: A minimum academic standing of Sophomore or higher. Political and military struggles, diplomatic practices and intellectual traditions of the Medieval Islamic/Arab world and the Western crusaders.

3400:345. Native North American History. (3 Credits)
Prerequisite: minimum of 32 credits. The histories of Native Americans from Columbus to the present, emphasizing a half-millennium of adaptive responses to the presence of Europeans in North America.

3400:350. U.S. Women's History. (3 Credits)
Prerequisite: a minimum of 32 credits History of American women's experiences and exploration of gender as a changing structure shaping American life from the colonial period through the 20th century.

3400:351. Global History: Encounters and Conflicts. (4 Credits)
Prerequisite: a minimum of 32 credits or permission of the instructor. This course explores historical encounters between societies to explain the development of the integrated economic, political, and cultural systems presently characterizing the modern world.

3400:352. The American West. (3 Credits)
Prerequisite: a minimum of 32 credits. Examination of westward movement from revolution to closing of frontier; types of frontiers; impact of west on nation's development.

3400:354. American Immigration. (3 Credits)
Prerequisite: a minimum of 32 credits. Examination of European migrants to American colonies and United States, their reasons for leaving Europe and coming to America, and their experience after arrival.

3400:355. American Religious History. (3 Credits)
Prerequisite: a minimum of 32 credits. Addresses critical issues and figures in American religious history from the colonial era to present, including ways ideas have influenced political and judicial discourse.

3400:356. Sports in American History Since 1865. (3 Credits)
Prerequisite: a minimum of 32 credits. An examination of the reciprocal relationship between sports and various institutions of society: culture, religion, politics, education, economics, race, ethnicity, diplomacy and gender.

3400:358. Urban America. (3 Credits)
Prerequisite: a minimum of 32 credits. This course looks at the significance of cities and urban development in shaping American society.

3400:360. United States Military History. (3 Credits)
Prerequisite: a minimum of 32 credits or permission of the instructor. Survey of United States military history from the colonial era to the present.

3400:361. African American History, 1492-1877. (3 Credits)
Prerequisite: Sophomore standing. This course focuses on African American history, culture and heritage from 1492 to 1877.

3400:362. African American History, 1877 to Present. (3 Credits)
Prerequisite: Sophomore standing. This course focuses on African American history, culture and heritage from 1877 to present.

3400:363. African American Men's History and Studies. (3 Credits)
Prerequisite: A minimum of Sophomore standing or higher, or permission of the instructor. This course will examine the experiences of African American Men from historical, socio-economic, philosophical, religious/spiritual, and psychological standpoints.

3400:371. Selected Topics: North American History. (3 Credits)
Prerequisite: A minimum academic standing of Sophomore or higher. Selected topics addressing the history of North America (from the Rio Grande to the Arctic). Contact the department office concerning specific topics.

3400:372. Selected Topics: European History. (3 Credits)
Prerequisite: a minimum of 32 credits or permission of the instructor. Selected topics addressing European history from the collapse of the Roman Empire to the present. Contact the department office concerning specific topics.

3400:373. Selected Topics: Other. (3 Credits)
Prerequisite: A minimum of Sophomore standing or higher, or permission of the instructor. Selected historical topics on Africa, Asia, Latin America, the ancient world and world history. Contact the department office concerning specific topics.

3400:377. History of Women in Latin America. (3 Credits)
Prerequisite: A minimum of Sophomore standing or higher, or permission of the instructor. Survey of changes and continuities in the lives of Latin American women since the colonial period; emphasis on gender, race, class in shaping women's experiences.

3400:378. Spanish Conquest and Colonization of the Americas. (3 Credits)
Prerequisites: A minimum of Sophomore standing or higher, or permission of the instructor. Course examines the conquest, colonization, and three-centuries-long Spanish rule in Latin America since 1492. Emphasis on culture, power inequalities, issues of identity, and memory.

3400:379. Modern Latin America. (3 Credits)
Prerequisite: A minimum of Sophomore standing or higher, or permission of the instructor. This course examines the history of Latin America during the national period, ca. 1820s to the present. Focus on politics, economic systems, and nation-state formation.

3400:381. History of Canada. (3 Credits)
Prerequisite: a minimum of Sophomore standing or permission of the instructor. Survey of Canadian history from the age of the explorers to the present. Special emphasis will be placed on the history of French-Canadians, on economic development and on Canadian-American relations.

3400:382. The Vietnam War. (3 Credits)
Prerequisite: A minimum of Sophomore standing or higher, or permission of the instructor. An examination and evaluation of all aspects of the war in Vietnam, political, military, diplomatic and economic, including its impact domestically then and later.

3400:392. Internship in History. (1-3 Credits)
Prerequisites: 64 credits, History major or minor, prior completion of 16 credits in History (not including Humanities in the Western Tradition or World Civilizations), minimum 2.5 history GPA, and permission of instructor. Individual field experience in applied history. May be repeated up to 6 credits; 4 credits to apply to the 32 credit minimum for a history major.

3400:395. Modern Iran. (3 Credits)
Prerequisite: A minimum of 32 credits or permission of the instructor. This course on modern Iran explores the country's history of nationalism, identity, gender, and religion, and its place in world history.

3400:396. Iraq in Historical Perspective. (3 Credits)
Prerequisite: a minimum of 32 credits or permission of the instructor. This course will offer a complex and nuanced look into the history of Iraq and will situate current events firmly in their historical context.

3400:397. Individual Study in History. (1-3 Credits)
(May be repeated for a total of four credits) Prerequisite: Permission. For individual study or research in history, including special projects, summer study tours or specialized training.

3400:400. Gender and Culture in China. (3 Credits)
Prerequisite: A minimum of Sophomore standing or higher, or permission of the instructor. This course examines the dynamic between gender and culture from late imperial to post-socialist China, with connections drawn to public policies in different periods.

3400:401. Japan & the Pacific War, 1895-1945. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. The rise of Japanese militarism, Japan's drive to create an empire in East and Southeast Asia, 1895-1945, and its role in the Pacific War, 1937-45.

3400:404. Studies in Roman History. (3 Credits)
Prerequisite: Minimum of 48 credits or permission of the instructor. Concentrated investigation of selected topics, such as imperialism in middle and late Republic, the age of Augustus, or the fall of western Empire.

3400:409. Imperial Spain, 1469-1700. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. This course examines the rise and fall of Spain as the first world power. It will cover Spanish political, cultural, and social history, 1469-1700.

3400:410. History and Film. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. Repeatable once with permission. Examines films as historical experiences, historical events, and artifacts of history. Themes and foci will vary.

3400:416. Modern India. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. History of the Indian subcontinent from c. 1500 with emphasis on India society and culture, British imperialism, and the emergence of Indian nationalism.

3400:417. Latin America and the United States. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. Inter-American relations viewed from Latin American and U.S. perspectives; U.S. policy, imperialism,. economic and cultural influences.

3400:418. History of Brazil Since 1500. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. Survey of the economic, political, social and cultural history of Brazil since 1500.

3400:424. The Renaissance. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. The age of transition from the Middle Ages to modern times (1350-1600). Special emphasis on intellectual trends, the development of humanism, and the fine arts.

3400:425. The Reformation. (3 Credits)
Prerequisite: Completion of a minimum of 48 credits or higher. Europe in 16th century; its religious, cultural, political and diplomatic development, with special emphasis on Protestant, Anglican and Catholic reformations.

3400:429. Europe in the French Revolutionary Era-1789-1815. (3 Credits)
Prerequisite: a minimum of Junior standing or permission of the instructor. Development of Revolution; Napoleon's regime and satellites.

3400:438. Nazi Germany. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. This course covers the social, economic, and political history of Germany from World War I to 1945 with emphasis on the Third Reich.

3400:440. Tudor & Stuart Britain, 1485-1714. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. An examination of the development of, and increasing links between the British kingdoms in the early modern period, with emphasis on culture, politics, and religion.

3400:443. Churchill's England. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. An examination of the changes that Britain experienced during the life of Winston Churchill, 1874-1965. Emphasis is on cultural, social, and political developments.

3400:451. Colonial American History. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. This course covers the history of colonial America from the first European contact in the Americas in 1492 to the onset of the American Revolution.

3400:452. American Revolutionary Era: Political, Military & Constitutional Aspects. (3 Credits)
Prerequisite: Completion of a minimum of 48 credits or higher. The struggle for the rights of Englishmen and independence; the impact of war on American society and the creation of republican institutions.

3400:453. The Early American Republic. (3 Credits)
Prerequisite: Completion of a minimum of 48 credits or higher. The evolution of the American republic from its early beginnings after the American Revolution to the antebellum era. Emphasis upon political, social, and cultural developments.

3400:454. Civil War & Reconstruction, 1850-1877. (4 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. Sectionalism, slavery and the causes of the Civil War; wartime activities of the Union and Confederacy; leading personalities; problems of reconstruction and the new Union.

3400:455. Origins of Modern America, 1877-1917. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. United States from Reconstruction Era to World War I (1877-1920); emphasis on political responses to rise of an industrialized-urbanized society, the populist and progressive movements.

3400:456. America in World Wars & Depression, 1917-1945. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. World War I and Versailles; the 1920s, the Great Depression and the New Deal; World War II.

3400:457. The United States since 1945. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. Nuclear age, cold war, foreign policy and domestic affairs to present. Social, political, constitutional, diplomatic, cultural and economic changes since 1945.

3400:461. The United States as a World Power. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. The course analyzes the emergence and functioning of the United States as a world power, with particular emphasis on the 20th century.

3400:463. United States Constitutional History Since 1870. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. This course examines the evolution of constitutional government from the drafting of the U.S. Constitution (1787) to present.

3400:465. American Economy Since 1900. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. Survey of economic developments since 1900; topics include agriculture, business and labor. Special emphasis on role of big business and evolution of monetary and fiscal policy.

3400:467. History of American Pop Culture. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. Historical analysis of mass cultural phenomena and the social experiences associated with mass technologies that transformed modern America life in the 19th and 20th centuries.

3400:468. African-American Social & Intellectual History. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. Examination of black thought and activities reflective of African-American culture, conditions facing black people within America and efforts toward coordinated black activity.

3400:469. African-American Women's History. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. Study of black American women's lives from colonial times to the present featuring autobiographical. Fictional and secondary works authored by black women.

3400:470. Ohio History. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. Political, social, economic and intellectual history of Ohio, with special emphasis on Ohio's relationship to Old Northwest and to the nation.

3400:471. American Environmental History. (3 Credits)
Prerequisite: a minimum of 48 credits completed or permission of the instructor. Utilization, conservation of natural resources from beginnings of American society to present; combination of economic, technological history of extensive treatment of public policy, environmental issues.

3400:475. Mexico. (3 Credits)
History of Mexico from Indian civilizations to present with emphasis on relations with United States; social and political ramifications of the 20th Century Mexican revolution.

3400:476. Central America & the Caribbean. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. Selected aspects of the histories of Central American and Caribbean countries with emphasis on populist and peasant movements, political reform, social revolution, economic and under development, and relations with the United States.

3400:483. History in Video Games. (3 Credits)
Prerequisite: Sophomore standing. Examines the presentation of history in video games analyzing them for accuracy, bias, structural limitations, and utility as teaching tools.

3400:484. Museums and Archives. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. This course will focus on the work of history museums, historical societies and historic house museums and archives.

3400:485. History, Communities, and Memory. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. Course examines the interactions between the work of academic historians and the public in areas such as local history, monuments, oral history, film and the Internet.

3400:487. Science and Technology in World History. (3 Credits)
Prerequisite: Completion of a minimum of 48 credits or higher. This course examines the development and diffusion of science and technology in human history, its impact on society, culture, and daily life.

3400:489. Ottoman State and Society. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. Explores political, economic, and social dynamics of one of the world's most enduring and expansive multiethnic empires.

3400:491. Honors Seminar in History. (3 Credits)
Prerequisite: Permission of department head or instructor. Selected readings; writing of research paper. For student seeking to graduate with honors in history and for student in Honors Program.

3400:492. Honors Project in History. (1-3 Credits)
Prerequisite: 64 credits. An individual research project relevant to history, supervised by a member of the Department of History, culminating in an undergraduate thesis.

3400:493. Special Studies: North American History. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. Special studies in the history of North America (Rio Grande to Arctic). See department office for information on particular offerings.

3400:494. Workshop in History. (1-3 Credits)
(May be repeated) Group studies of special subjects pertaining to history. May be used for elective credit only. May not be used to meet undergraduate or graduate major requirements in history.

3400:495. Special Studies: European History. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. Special studies in European history from the fall of the Roman Empire to the present. See department office for information on particular offerings.

3400:496. Special Studies in History: Other. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. Special studies in the history of Latin America, Asia, Africa or the Pacific. See department office for information on particular offerings.

3400:498. Race, Nation, and Class in the Middle East. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. This course analyzes identity politics and the development of the ideas of race, nation, and class in the Middle East from a historical perspective.

3400:499. Women and Gender in Middle Eastern Societies. (3 Credits)
Prerequisite: a minimum of 48 credits or permission of the instructor. This course explores the multi-layered processes and dimensions, including texts, cultural values and practices, institutions, and events, which have shaped women's experiences in the Middle East.

Home Based Intervention Therapy (1820)

1820:403. Home-Based Intervention Theory. (3 Credits)
Prerequisite: Admission to the Certificate Program. Overview of home based intervention to include philosophy and description of this programming as well as assessment of family, their home and community environment.

1820:404. Home-Based Intervention Techniques & Practice. (3 Credits)
Prerequisite: 1820:403. Provides intervention techniques and skill areas required for home-based intervention and learning opportunities for matching techniques with specific family problems.

1820:405. Home-Based Intervention Internship. (3-5 Credits)
Prerequisite: 1820:404. Gives students the opportunity to apply knowledge of home-based intervention in actual delivery process working with families in their homes under direct supervision of trained, experienced home based intervention therapists.

Hospitality Management (2280)

2280:101. Introduction to Hospitality. (3 Credits)
Explores the various segments of the hospitality industry and introduces the knowledge and skills required for success.

2280:120. Safety & Sanitation. (2 Credits)
This course covers an introduction to food service sanitation and safety practices pertinent to hospitality managers.

2280:121. Fundamentals of Food Preparation. (4 Credits)
Prerequisite or Corequisite: 2280:120. Skills and basic knowledge of food preparation procedures in a laboratory situation.

2280:122. A La Carte Cooking. (4 Credits)
Prerequisites: 2280:101, 2280:120, and 2280:121. Continuation of 2280:121. Food preparation techniques presented in laboratory situations for public consumption in a restaurant setting.

2280:160. Wine & Beverage Service. (3 Credits)
Intensive examination of wine as related to hospitality industry. Emphasis on business practices. History and development of viticulture, enology.

2280:230. Advanced Food Preparation. (4 Credits)
Prerequisites: 2280:101 and 2280:122. Lecture and demonstration followed by hands-on experience in the preparation of classical American dishes as well as cuisines and techniques from around the world.

2280:232. Dining Room Service & Training. (3 Credits)
In-depth study of the styles of dining service, development of job descriptions, importance of courtesy, customer relations. Application of service techniques in restaurant environment.

2280:233. Restaurant Operations & Management. (4 Credits)
Prerequisite: 2280:122, 2280:232 and 2280:245 for restaurant management option. Additional prerequisite: 2280:261 for culinary arts majors. Introduction to large quantity food service procedures with emphasis on sound principles of food handling service and sanitation in large quantity operations. Gourmet meals served in simulated restaurant atmosphere.

2280:237. Internship: Hospitality Management. (3 Credits)
Prerequisite: Permission. Internship is an off-campus work experience in which the student applies concurrently learned concepts to practical situations within the hospitality industry.

2280:240. Supervision in the Hospitality Industry. (3 Credits)
Prerequisite: 2280:101. Identifies various components of the hotel and food service operations and the role of managing human resources efficiently and effectively.

2280:243. Food Equipment & Plant Operations. (3 Credits)
Prerequisite: 2280:120. Available food service equipment, its selection, use and care. Field trips taken to wholesale outlets and food service establishments to see food service equipment demonstrated and in operation.

2280:245. Menu, Purchasing & Cost Control. (4 Credits)
Prerequisites: 2030:161 and 2280:101. This course integrates menu design and merchandising integrated with purchasing principles, specifications and receiving, as well as financial controls and procedures within the hospitality environment.

2280:250. Front Office Operations. (3 Credits)
Prerequisite: 2280:101 with a grade of C or better. This course introduces the student to the functioning of the Front Office of a Hotel and expands student's knowledge of Hotel Operations.

2280:256. Hospitality Law: Legal and Ethical Issues. (3 Credits)
Prerequisite: 2280:101. The course will address the critical legal and ethical issues in the hospitality industry.

2280:261. Baking Fundamentals. (3 Credits)
Prerequisite: 2280:121 with a C or better. Techniques and production of quick breads, yeast products, cakes, cookies, specialty desserts and pies. Emphasis on equipment, formulas, ingredient selection and product quality evaluation.

2280:268. Revenue Centers. (3 Credits)
Prerequisite: 2280:101. An in-depth examination of the sales producing divisions of the hotel organization. The rooms, banquet, food and beverage, and special departments as well as their interconnections are studied.

2280:278. Hospitality Industry Marketing. (3 Credits)
Prerequisite: 2280:101. Introduce various concepts of marketing, their application to the hospitality industry, and the key elements of a marketing plan.

2280:280. Special Events Managment. (3 Credits)
Prerequisites: 2280:101 and 2280:232. Defines scope and segmentation of convention and group business markets and develops related marketing strategies.

2280:290. Special Topics: Hospitality Management. (1-3 Credits)
(May be repeated for a total of four credits) Prerequisite: Permission. Selected topics or subject areas of interest in food service management.

Individualized Study (2100)

2100:195. Individualized Study. (1 Credit)
Prerequisite: Admission to the Distinguished Student Program. Focused investigation of a specific topic mutually determined by the student and a supervising faculty member.

Institute for Life Span Development and Gerontology (3006)

3006:450. Interdisciplinary Seminar in Life-Span Development & Gerontology. (2 Credits)
(May be repeated for a total of two credits) Prerequisite: Permission of instructor. Introduction to interdisciplinary study of gerontology including discussion of dimensions of aging, historical framework of aging in America, demographics, service systems, and current issues.

3006:485. Special Topics in Life-Span Development & Gerontology. (1-3 Credits)
Prerequisite: Permission of instructor. Specialized topics and current issues in life-span development or gerontology. Covers content or issues not currently addressed in other academic courses.

3006:486. Retirement Specialist. (2 Credits)
An investigation of issues related to the design and implementation of pre-retirement planning and examination of life-span planning education as employed by labor, business and education.

3006:490. Workshop in Life-Span Development & Gerontology. (1-3 Credits)
(May be repeated) Group studies of special topics in life-span development and gerontology. May not be used to meet certificate requirements. May be used for elective credit only.

3006:495. Practicum in Life-Span Development & Gerontology. (1-3 Credits)
(May be repeated) Prerequisite: permission. Supervised experience in research or community agency work.

Institute for Human Science and Culture (1900)

1900:201. Curating Exhibits and Displays in Museums and Archives. (3 Credits)
Professionals in museums and archives design exhibitions and displays. Doing so requires working knowledge of visitors/researchers, educational initiatives, design approaches, institutional collections, policies and procedures, budgets, and cultural considerations, which this course addresses. Exhibition Curators may have backgrounds in art, anthropology, libraries, history, or other related fields.

1900:245. ST: Human Science and Culture. (3-6 Credits)
Special project-based courses offered occasionally in areas where no formal course exists.

1900:301. Foundations of Museums and Archives I. (3 Credits)
This course provides students with a basic set of skills that prepares them for work in the museum and archives professions. Topics covered include the role of museums and archives, handling and preservation, museum exhibit design and assessment, organizing and describing materials, policies and procedures, the relations, education and assessment, the research purposes museums and archives, and cultural considerations.

1900:302. Foundations of Museums and Archives II. (3 Credits)
Prerequisite: 1900:301. Provides basic skills for working in museum and archives professions.

Interdis - Poly Science & Engr (9821)

9821:201. Introduction to Polymer Science. (3 Credits)
Prerequisites: 3150:151 and 3450:221. Introduction to the field of polymer science including molecular weight distributions, polymerization, chain statistics, polymer mixtures, rubber elasticity, polymer glasses, semi-crystalline polymers and viscoelasticity.

9821:202. Introduction to Polymer Engineering. (3 Credits)
Prerequisites: 3450:222 and 3650:291. Introduction to the field of polymer engineering including classification of polymer materials, mechanical properties, fundamentals of polymer melt flow, polymer processing operations and compounding.

9821:281. Polymer Science for Engineers. (2 Credits)
Prerequisites: 3150:151 and 3150:152. Chemical bonds and structure of organic molecules, polymer chain structure, amorphous and crystalline morphology and structural characterization, polymerization and copolymerization, experimental demonstrations, typical solid-state and flow properties.

9821:301. Polymer Materials Science and Engineering. (3 Credits)
Corequisites: 3150:313 or 4600:300 or permission. Materials science and engineering of polymers. Topics covered are the phase behavior and morphology of polymer solutions and blends, glassy polymers, polymer crystallization, materials characterization and multi-component polymer materials.

9821:381. Polymer Morphology for Engineers. (3 Credits)
Prerequisites: 9821:281, 3150:151, 3650:292. Fundamental understanding of solid structure, crystallography and morphology, processed polymers, co-polymers and their blends.

Interior Design (7300)

7300:158. Introduction to Interior Design. (3 Credits)
Introduction to interior design studies with emphasis on developing basic skills and competencies required for residential design.

7300:225. Textiles. (3 Credits)
Basic study of natural and manufactured fibers. Emphasis on physical properties, selection and care. Attention given to design and manufacture of textiles. Lecture/Laboratory.

7300:257. Autocad for Interior Design. (3 Credits)
Prerequisite: 7300:158 or permission from instructor. An introductory course in computer drafting as an alternative to conventional drafting for interior design applications.

7300:258. Light in Man-Made Environments. (3 Credits)
Prerequisites: 2940:250. Comprehensive study of the essential principles of light in a three-dimensional context for man-made environments.

7300:259. Family Housing. (3 Credits)
A study of three basic aspects of family housing: physical/design, financial/legal, and sociological.

7300:331. Interior Design Theory. (3 Credits)
Prerequisites: 7300:158 and 7100:144. A comprehensive study of interior design theories and application in the built environment.

7300:333. Programming and Space Planning. (3 Credits)
Prerequisites: 7300:259, 7300:331 and 2940:250. A comprehensive study of space planning principles and the programming phase of the design process.

7300:334. Specifications for Interiors I. (3 Credits)
Prerequisites: [7300:225 or 7350:225] and 7300:258. A comprehensive study of composition, characteristics, manufacture, dimensions and use, bi-products, installation, and specifications of interior construction materials.

7300:335. Specifications for Interiors II. (3 Credits)
Prerequisites: 7300:334. A comprehensive study of interior finish material with emphasis on soft goods and textiles, selection criteria, estimating, and writing specifications.

7300:336. Principles & Practices of Interior Design. (3 Credits)
Prerequisites: 7300:334. Study of the business of interior design to include initiating and maintaining a successful practice in residential or non-residential design.

7300:337. Interior Design Contract Documents. (3 Credits)
Prerequisites: 7100:492. A comprehensive study of contract documents and work drawings required for the design of interior spaces. Emphasis on three-dimensional representation.

7300:338. Introduction to REVIT for Interior Design. (3 Credits)
This is an introductory course in second generation parametric computer drafting as an alternative to conventional or older CAD programs for interior design applications.

7300:418. History of Interior Design I. (4 Credits)
The study of furnishings, interiors, and architecture from antiquity through the eighteenth century, with emphasis on the social-cultural influences shaping their development.

7300:419. History of Interior Design II. (4 Credits)
The study of nineteenth- and twentieth-century furnishings, interiors, and architecture, with emphasis on the social-cultural influences shaping their development.

7300:421. Special Problems in Family & Consumer Sciences. (1-3 Credits)
Additional study or apprentice experience in specialized field or preparation; group and individual experimentation.

7300:422. Textiles for Interiors. (3 Credits)
Prerequisite: 7300:225 or 7350:225. Evaluation of physical, aesthetic, comfort, care and durability properties of textile products and testing procedures to determine suitability for interiors.

7300:433. Senior Design Studio I. (3 Credits)
Prerequisites: 7300:334, 7300:335, 7300:336, 7300:337 and [7300:422 or 7350:422]. A comprehensive study of residential design with emphasis on conceptual, analytical and graphic skills.

7300:434. Senior Design Studio III. (3 Credits)
Prerequisites: 7300:334, 7300:335, 7300:336, 7300:337 and [7300:422 or 7350:422]. Advanced space planning and problem solving experiences for application in nonresidential design.

7300:435. Decorative Elements in Interior Design. (1 Credit)
Prerequisites: 7300:334, 7300:335, 7300:337, [7300:418 or 7350:418], [7300:419 or 7350:419] and [7300:422 or 7350:422]. The selection and application of decorative elements in the built environment.

7300:447. Senior Seminar: Critical Issues in FCS Professional Develop. (1 Credit)
Prerequisites: FCS major & senior standing. Consideration of family and consumer sciences as a profession and its impact on the quality of life of individuals, families and their environments. Analysis of challenges facing the profession and all home economists.

7300:450. Families, Individuals & Environments. (3 Credits)
Prerequisites: Family Consumer Sciences major and senior standing or completion of 90 credits. Integrative exploration of issues affecting the well-being of individuals, families, and communities in the multiple environments in which they function.

7300:458. Senior Design Studio II. (3 Credits)
Prerequisites: 7300:334, 7300:335, 7300:336, 7300:337 and [7300:422 or 7350:422]. A comprehensive study of the nonresidential design with emphasis on conceptual, analytical and graphic skills.

7300:459. Senior Design Studio IV. (3 Credits)
Prerequisites: 7300:334, 7300:335, 7300:336, 7300:337 and [7300:422 or 7350:422]. Advanced space planning and problem solving experiences for application in residential and nonresidential design.

7300:478. Senior Portfolio Review. (1 Credit)
Prerequisite: Permission of instructor. The development of the interior design portfolio.

7300:479. The NCIDQ Examination. (1 Credit)
Prerequisite: Permission of Program Director. The course is designed to help candidates prepare for the National Council for Interior Design Qualification Examination.

7300:485. Seminar in Family & Consumer Sciences. (1-3 Credits)
Exploration and evaluation of current developments in selected areas.

7300:494. Internship: Family and Consumer Sciences. (1-6 Credits)
Prerequisite: Permission of the instructor. In depth field experience in business, industry, or community agencies relating to the student's area of specialization.

7300:497. Internship: Family & Consumer Sciences. (2-6 Credits)
Prerequisite: Permission of instructor. In-depth field experience in business, industry or community agencies related to student's area of specialization.

7300:499. Senior Honors Project in Family & Consumer Sciences. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and approval of honors preceptor. Individual study supervised by adviser. Student and preceptor develop goals, objectives and methodology.

International Business (6800)

6800:305. International Business. (3 Credits)
Prerequisites: 48 hours of college credit. A basic course in international business which can also provide a platform for more specialized business courses.

6800:406. Travel Abroad. (0 Credits)
Prerequisite: Must have been admitted to a major in a four-year degree granting college. Approved travel to a foreign country per the requirements of the International Business major.

6800:421. Foreign Market Entry. (3 Credits)
Prerequisites: Must have been admitted to a major in a four-year degree granting college and 6800:305. A study of the business processes and procedures associated with successful foreign market entry. International Business practices around the world related to successful and unsuccessful entry are compared and contrasted. Letters of Credit, Import/Export Documentation and Global Shipping Standards are examined.

6800:422. Foreign Market Distance Analysis. (3 Credits)
Prerequisites: Must have been admitted to a major in a four-year degree granting college, 6800:305, and 6800:406. The cultural, administrative, geographic, and economic difference between home and host countries can dramatically impact the success of foreign market entry by the home country. Students will learn how to successfully identify and respond to these differences.

6800:492. Internship in International Business. (3 Credits)
Prerequisite: Permission of department chair. On-the-job experience with public or private sector organizations in the field of marketing. On-the-job learning objectives are established by the sponsoring organization and approved by the department chair. Field experiences are augmented by a weekly diary and a term paper, which are supervised and evaluated by the department chair.

6800:496. Special Topics: International Business. (1-3 Credits)
(May be repeated for a total of three credits) Prerequisite: Permission of instructor. Provides the opportunity to study special topics and current issues in international business. Note: Other international business courses are offered under departmental course numbers. They are 6200:408, 6400:323, 6400:481, 6500:457, 6500:459 and 6600:385.

International Development (3004)

3004:201. Introduction to International Development. (3 Credits)
Uses multiple perspectives: economic, geographical, anthropological, political etc. to study relationships between industrialized and developing countries, poverty, productivity, justice and other aspects of development.

3004:401. International Development Project. (3 Credits)
Prerequisites: 21 credits towards International Development Certificate. Research project to be carried out abroad. Students must arrange international experience through channels outside the Certificate program. Project report is capstone requirement of Certificate.

Italian (3550)

3550:101. Beginning Italian I. (4 Credits)
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.

3550:102. Beginning Italian II. (4 Credits)
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.

3550:201. Intermediate Italian I. (3 Credits)
Sequential. Prerequisite: 3550:102 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.

3550:202. Intermediate Italian II. (3 Credits)
Sequential. Prerequisite: 3550:102 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.

3550:301. Italian Composition & Conversation. (3 Credits)
Prerequisite: 3550:202 or equivalent. Italian composition using Italian models, special attention to words and idioms and development of oral expression and conversational ability.

3550:302. Italian Composition & Conversation. (3 Credits)
Prerequisite: 3550:202 or equivalent. Italian composition using Italian models, special attention to words and idioms and development of oral expression and conversational ability.

3550:422. Italian: Special Topics in Advanced Language Skills, or Culture, or Literature. (1-4 Credits)
Prerequisite: 3550:202 or equivalent. (May be repeated) Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.

3550:497. Individual Reading in Italian. (1-3 Credits)
Prerequisite: 3550:202 and permission of the department chair.

Japanese (3560)

3560:101. Beginning Japanese I. (4 Credits)
Sequential. Acquisition of basic reading, speaking, writing, and listening comprehension skills.

3560:102. Beginning Japanese II. (4 Credits)
Sequential. Prerequisite: 3560:101 or equivalent. Acquisition of basic reading, speaking, writing, and listening comprehension skills.

3560:201. Intermediate Japanese I. (3 Credits)
Sequential. Prerequisite: 3560:102 or equivalent. Continuing development of reading, writing, speaking, and listening comprehension skills.

3560:202. Intermediate Japanese II. (3 Credits)
Sequential. Prerequisite: 3560:201 or equivalent. Continuing development of reading, writing, speaking, and listening comprehension skills.

3560:210. Japanese Culture through Film. (3 Credits)
Prerequisites: A minimum of Sophomore standing or higher and completion of English Composition I and II (3300:111 and 3300:112) or equivalent. Exploration of various aspects of Japanese culture through viewing of films. Films are subtitled in English. Readings and discussions in English.

3560:422. Special Topics in Language Skills, or Culture, or Literature. (3 Credits)
Prerequisite: 3560:202 or equivalent. (May be repeated). Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.

3560:497. Individual Reading in Japanese. (1-3 Credits)
Prerequisite: 3560:202 or permission of the department chair. Directed study in an area of individual interest chosen by the student in consultation with the instructor.

Latin (3510)

3510:101. Beginning Latin I. (4 Credits)
Sequential. Reading, writing and translation; oral and written drill; analysis of grammatical structure and English vocabulary building.

3510:102. Beginning Latin II. (4 Credits)
Sequential. Prerequisite: 3510:101 or equivalent. Reading, writing and translation; oral and written drill; analysis of grammatical structure and English vocabulary building.

3510:190. The Making of English Words from Latin and Greek Elements. (3 Credits)
The influence of Latin and Greek on English vocabulary with some attention to the use of these languages in the scientific and legal fields. No foreign language is necessary.

3510:201. Intermediate Latin I. (3 Credits)
Prerequisite: 3510:102 or equivalent. A survey of readings of the less difficult authors such as Pliny, Caesar, Plautus, Cicero's Letters or equivalent material.

3510:202. Intermediate Latin II. (3 Credits)
Prerequisite: 3510:201 or equivalent. A survey of readings of the less difficult authors such as Pliny, Caesar, Plautus, Cicero's Letters or equivalent material.

3510:303. Advanced Latin I. (3 Credits)
Prerequisites: 3510:202 or equivalent. Satirists, dramatists, philosophical, religious writers, lyric and elegiac poets, medieval writers. (May be repeated for credit with change of subject)

3510:304. Advanced Latin II. (3 Credits)
Prerequisites: 3510:202 or equivalent. Satirists, dramatists, philosophical, religious writers, lyric and elegiac poets, medieval writers. (May be repeated for credit with change of subject)

3510:497. Latin Reading & Research. (3 Credits)
Generally Latin epigraphy, prose composition or philology; numismatics or certain other archaeological topics may be offered. (May be repeated for credit with change of subject)

3510:498. Latin Reading & Research. (3 Credits)
Generally Latin epigraphy, prose composition or philology; numismatics or certain other archaeological topics may be offered. (May be repeated for credit with change of subject)

Management (6500)

6500:254. Global Experience. (1-3 Credits)
Prerequisite: 28 credit hours completed. Provides an opportunity for students to learn from faculty expertise in the context of a foreign country. International management practices are examined and aspects of local culture are studied.

6500:301. Management: Principles & Concepts. (3 Credits)
Prerequisites: 48 completed credit hours. An interdisciplinary approach to the study of the basic principles of general management theory and practice.

6500:302. Organizational Behavior & Leadership Skills. (3 Credits)
Prerequisite: 6500:301. Investigation of applications of behavioral and social sciences as they relate to individual, group behavior in organizations.

6500:304. Business Statistics. (3 Credits)
Prerequisites: 3450:145 with a grade of C- or better and 6200:250. Introduces statistical methods to support quantitative decision analysis for solving business problems. Includes probability, sampling, estimation, hypothesis testing, analysis of variance. Utilizes case studies.

6500:305. Business Analytics. (3 Credits)
Prerequisites: 6500:304. Studies core statistical techniques; data retrieval, analysis and mining; and decision modeling to effectively persuade in the project-oriented world of data-driven decisions.

6500:310. Business Information Systems. (3 Credits)
Prerequisites: 48 completed credit hours and 6200:250 or equivalent. Provides a technical and organizational foundation for understanding the use and importance of information systems and information technology in today's business environment.

6500:315. Applications Development for Business Processes. (3 Credits)
Prerequisites: 6200:250 and 48 completed hours. Analysis and automation of business operations and processes. Development of applications based on a simulated enterprise-wide database.

6500:324. Database Management for Information Systems. (3 Credits)
Prerequisites: 6200:250 and 48 completed hours. An introduction to database design and management, including data modeling, relational theory, Structured Query Language, and database applications, development, using database management systems.

6500:325. Systems, Analysis, & Design. (3 Credits)
Prerequisites: 6500:315. An introduction to the techniques of business modeling, systems design, and implementation, including the application of software engineering tools in support of modeling and code generation.

6500:330. Principles of Supply Chain and Operations Management. (3 Credits)
Prerequisites: Completion of 32 credit hours. An overview of the terminology, fundamental concepts and scope of responsibility encountered in the fields of supply chain and operations management.

6500:333. Supply Chain and Operations Analysis. (3 Credits)
Prerequisites: [6500:222 or 6500:304] and 6500:330. Application of quantitative models in the analysis and design of systems in the supply chain and in manufacturing and service operations environments.

6500:334. Service Operations Management. (3 Credits)
Prerequisite: 6500:330. An overview of the fundamental terminology, principles, concepts and problem solving methods encountered in the contemporary field of service operations management.

6500:341. Human Resource Management. (3 Credits)
Prerequisite: one course in psychology or sociology and co-requisite 6500:301. Principles, policies, and practices in administering functions of recruiting, selecting, training, compensating, and appraising human resources of organizations.

6500:342. Employee and Labor Relations. (3 Credits)
Prerequisite: 64 completed credit hours. Co-requisite: 6500:341 if not previously completed. Analysis of management, union and employee objectives, attitudes and strategy, as they affect conduct of business and economy. Stress placed on group assigned readings and reports.

6500:350. Fundamentals of Enterprise Resource Planning. (3 Credits)
Prerequisites: 6200:250 Computer Applications for Business and 48 completed credit hours. The enterprise wide process of decreasing operating costs, rationalizing the supply chain, improving management control, and decreasing cycle time by implementing ERP based solutions.

6500:390. Supply Chain Modeling and Decision Making. (3 Credits)
Prerequisites: 6200:250, [6500:304 or 6500:221], and 6500:330. Spreadsheet based, example-driven approach to develop models and methodologies for supply chain analysis and decision making.

6500:410. Selected Topics in Entrepreneurship. (1-3 Credits)
Prerequisites: Must be admitted to a major in a four-year degree granting college, upper-college or graduate standing, and [6500:301 or 6500:600] or equivalent. Facilitates comparative international study of entrepreneurship, introduction of entrepreneurship to large organizations, or application of student's entrepreneurial skills. Six hour limit.

6500:420. Data Networks and Security. (3 Credits)
Prerequisites: Must be admitted to a major in a four-year degree granting college, 6500:310, and upper level standing. Principles of the design and management of data networks for business communications.

6500:421. Operations Research. (3 Credits)
Prerequisites: Must be admitted to a major in a four-year degree granting college and 6500:330. Examines the use of operations research techniques in managerial decision-making processes; constrained linear optimization, non-linear optimization, network analysis, queuing theory, simulation.

6500:425. Decision Support with Data Warehousing & Data Mining. (3 Credits)
Prerequisites: Must be admitted to a major in a 4-year degree granting college, [6500:324 and 6500:305] or [6500:221 and 6500:222]. Examines managerial and technical aspects of business decision-making based on the use of data warehouses, on-line analytical processing (OLAP) and data mining.

6500:426. E-Business Application Development. (3 Credits)
Prerequisites: Must be admitted to a major in a 4-year degree granting college, 6200:250, and upper level standing. Students will gain an understanding of issues and skills related to web application design and development.

6500:427. Systems Integration. (3 Credits)
Prerequisites: Must be admitted to a major in a 4-year degree granting college and 6500:315. The course provides an understanding of issues and underlying application integration. Topics include coverage of middleware technologies, B2B standards and XML.

6500:428. Systems Development Project. (3 Credits)
Prerequisites: 6500:325 and 6500:342. Corequisite: 6500:427. Implementing business objects and use cases in projects. Object persistence, object collaboration, and controller and UI designs are discussed.

6500:433. Supply Chain Logistics Planning. (3 Credits)
Prerequisites: Upper level standing, admission to a major in a 4-year degree granting college, and 6500:330. Emphasizes the importance of planning in the development of the domestic and global supply chain logistics system that includes transportation, inventory, warehousing and procurement.

6500:434. Production Planning & Control. (3 Credits)
Prerequisites: Must be admitted to a major in a 4-year degree granting college, upper level standing, and 6500:333. Coverage of materials management, production planning, scheduling and control. Integrates material from previous courses, provides overall framework including use of computer and quantitative methods.

6500:435. Quality Management & Control. (3 Credits)
Prerequisites: Must be admitted to a major in a 4-year degree granting college, upper level standing, and 6500:330. Emphasis on statistical techniques essential to controlling product quality for both measurement and attribute data. Includes control chart methods and acceptance sampling plans.

6500:441. Training and Development. (3 Credits)
Prerequisites: Admission to a major in a 4 -year degree granting college and 6500:341. Comprehensive study of employee training and development methods and practices including performance analysis, design, development, implementation and evaluation.

6500:442. Compensation Management and Reward Systems. (3 Credits)
Prerequisites: Admission to a major in a 4-year degree granting college, junior standing and 6500:341. This course focuses on the development, implementation, and assessment of a business firm's compensation and reward system.

6500:443. Human Resources Selection & Staffing. (3 Credits)
Prerequisites: Upper level standing, admission to a major in a 4-year degree granting college, and 6500:341. Advanced study of selection and staffing within business organizations. Emphasis on current research and practice. Activities include projects, case studies, interaction with human resource professionals.

6500:457. International Management. (3 Credits)
Prerequisites: Must be admitted to a major in a 4-year degree granting college; upper level standing and 6500:301 or equivalent. Management practices and techniques of international business organizations. Focus on structure and processes of resource allocation, design and technology, and the impact of culture.

6500:458. Special Topics in Managerial Arbitration, Mediation & Conciliation. (1-3 Credits)
Prerequisites: Must be admitted to a major in a 4-year degree granting college, upper level or graduate standing and [6500:301 or 6500:600 or equivalent]. Study of the various methods and mechanisms by which management can understand and deal with internal and external conflict. Six hour limit.

6500:459. Selected Topics: International Management. (1-3 Credits)
Prerequisites: Must be admitted to a major in a 4-year degree granting college, upper level standing, 6500:301 or equivalent, and 6500:457. Selected topics in international management focus on historical or contemporary managerial, production and organizational issues. Includes international simulation game. Six hour limit.

6500:460. Special Topics in Management. (3 Credits)
Prerequisite: Must be admitted to a major in a 4-year degree granting college. Exploration of advanced topics of interest both to the student and professor. Many special applications, case studies, outside speakers, projects in conjunction with local industries.

6500:471. Management Consulting Project. (3 Credits)
Prerequisites: Admission to College of Business Administration and 6500:302 and 6500:310, Human Resource Management option: 6500:342, 6500:442, 6500:443*; Supply Chain/Operations Management option: 6500:333, 6500:390, 6500:433; Information Systems Management option; 6500:325, 6500:420, 6500:425, 6500:427 and one from 6500:333, 6500:341, 6500:426, 6200:454**. Students develop skills in field-based management problem solving, project management, and requirements analysis under conditions of uncertainty in a collaborative interdisciplinary team environment.

6500:475. Supply Chain Operations Strategy. (3 Credits)
Prerequisites: 6500:302, 6500:310, 6500:333, and 6500:390. Corequisites: 6500:433 and 6500:476. Capstone course integrating supply chain concepts to solve real world supply chain problems primarily using a case study approach.

6500:476. Supply Chain Sourcing. (3 Credits)
Prerequisites: Must be admitted to a major in a 4-year degree granting college and 6500:330. Introduces the student to fundamental sourcing concepts as well as the scope of responsibility and critical roles of the sourcing function within the principal organization in a supply chain network.

6500:477. Management Simulation. (1 Credit)
Prerequisite: 6500:301. Simulation of management practices through computerized game or experiential exercise.

6500:478. Human Resource Simulation. (1 Credit)
Prerequisite: 6500:341. Simulation of human resource practices through computerized or experiential exercises.

6500:479. Operations Simulation. (1 Credit)
Prerequisites: Must be admitted to a major in a 4-year degree granting college and 6500:333. Simulation of operations management practices through computerized or experiential exercises.

6500:480. Introduction to Health-Care Management. (3 Credits)
Prerequisites: Must be admitted to a 4-year degree granting college and hold at minimum a junior standing or higher (Students who are required to take 6500:301 or have completed 6500:301 or equivalent are ineligible to take this course for credit). Introductory course for health professionals covering principles and concepts of management applied to health services organizations. For those registered for graduate credit, a major paper is required.

6500:482. Health Services Operations Management. (3 Credits)
Prerequisites: Must be admitted to a major in a 4-year degree granting college, [upper level standing and 6500:301 or 6500:480 or equivalents], or [graduate standing and 6500:580 or equivalent]. (Students who have completed 6500:330 are ineligible to take this course for credit). Application of production and operations management concepts and techniques in health services organizations.

6500:485. Special Topics: Health Services Administration. (1-3 Credits)
Prerequisite: Must be admitted to a major in a 4-year degree granting college. Special topics in health services administration (e.g., management) focusing on historical and/or contemporary managerial organizational and/or policy/strategy issues as related to health-care organizations and health-care systems. Separate topics may be repeated for a maximum of six credits. For those registered for graduate credit, a major research paper is required.

6500:486. Internship in Supply Chain/Ops. (3 Credits)
Prerequisite: Permission of department chair or designated faculty member. On the job experiences with public or private sector organizations.

6500:487. Internship in Human Resources. (3 Credits)
Prerequisite: Permission of department chair or designated faculty member. On the job experiences with public or private sector organizations.

6500:488. Internship in Information Systems. (3 Credits)
Prerequisite: Permission of department chair or designated faculty member. On the job experience with public or private sector organizations.

6500:490. Strategic Management. (3 Credits)
Prerequisites: Admission to a major in the College of Business Administration, 97 credits in which 15 credit hrs, or half of major coursework must be completed, along with the CORE; and 6200:202, 6200:250, 6400:220, 6400:301, [6400:321 or 6600:205], 6500:301, 6500:305, 6500:330, and 6800:305. Capstone course. Integrates the core business disciplines (accounting, economics, finance, management, marketing) through the use of case analysis. Objective and strategy formulation from an administrative viewpoint and international dimension. Emphasis on oral and written communications.

6500:491. Workshop in Management. (1-3 Credits)
Prerequisite: Must be admitted to a major in a 4-year degree granting college. (May be repeated with permission of instructor or department) Group studies of special topics in management. May not be used to meet undergraduate major requirements in management. May be used for elective credits only.

Manufacturing Eng Tech (2880)

2880:100. Basic Principles of Manufacturing Management. (4 Credits)
A survey of basic concepts of management and their interrelationships to a manufacturing environment. Includes production control, quality control, work measurement, and employee motivation.

2880:101. Introduction to Advanced Manufacturing. (2 Credits)
This course defines advanced manufacturing and provides students with an overview of the knowledge, skills, and abilities necessary to succeed in an advanced manufacturing career.

2880:110. Manufacturing Processes. (3 Credits)
Study of the machines, methods, and processes used in manufacturing.

2880:130. Work Measurement & Cost Estimating. (3 Credits)
Prerequisite: 2030:152. Time and motion study. Development of accurate work methods and production standards, and their relationship to manufacturing cost estimates.

2880:140. Computer Aided Drawing. (3 Credits)
Drafting procedures and techniques used for creating drawings using AutoCAD software. Topics include basic components, drawing, editing, dimensioning, layers, text, blocks, plotting, and hatch.

2880:151. Industrial Safety & Environmental Protection. (2 Credits)
A contemporary overview of the science and management of occupational health and safety programs, policies, and procedures in an industrial and business type environment.

2880:201. Robotics & Automated Manufacturing. (3 Credits)
Prerequisite: 2880:100 or permission of instructor. Study of manufacturing automation and the computer-based products and processes available for this task. Robots, machine controllers, and machine/process interfaces are investigated.

2880:211. Manufacturing Operations. (3 Credits)
A study of all functions involved in a manufacturing production system. Areas covered include product design, forecasting, capacity planning, scheduling, materials management, and project management.

2880:225. Computer Aided Tool Design. (3 Credits)
Prerequisites: 2880:140 or 2920:121. The study of standard tool design practices and procedures utilizing industry-standard computer-aided design software.

2880:230. 3-D Modeling & Design. (3 Credits)
Prerequisite: 2940:210. This course covers advanced topics in the use of AutoCAD. These topics include 3-D modeling. Laboratory.

2880:232. Labor Management Relations. (3 Credits)
Prerequisite: 2880:100. Study of historical background of labor movement, management viewpoints, legal framework for modern labor organizations and collective bargaining process.

2880:241. Introduction to Quality Assurance. (3 Credits)
Prerequisite: 2030:152. Theory and practice of inspection and sampling techniques for measurement of quality, QC charts, sampling plans, mill specs, checking machine capabilities, and setting tolerances.

2880:248. Introduction to CNC and Additive Manufacturing. (3 Credits)
Prerequisites: 2030:153 and [2880:140 or 2920:121] or permission. This course provides an overview of CNC manual programming utilizing the G-code programming language along with an introduction to additive manufacturing processes.

2880:290. Special Topics: Industrial Technology. (1-2 Credits)
(May be repeated for a total of four credits) Prerequisite: Permission. Selected topics or subject areas of interest in industrial technology.

Marketing (6600)

6600:205. Marketing Principles. (3 Credits)
Prerequisite: 24 hours of college credit. Corequisite: 3250:200. A general survey of marketing activities including analysis of markets, competition, consumer behavior, information systems, and the assessment of product, price, distribution, and promotion strategies.

6600:275. Professional Selling. (3 Credits)
Prerequisite: 25 credits or permission from instructor. Builds communication skills while learning about buyer needs, persuasion and social influence, prospecting, making sales presentations, persuading, overcoming sales resistance, closing sales and building relationships.

6600:335. Marketing Research. (3 Credits)
Prerequisites: [6500:221 or 6500:304] and 6600:205. Corequisite: 6600:336. Student will gain hands-on experience in the understanding and use of appropriate tools and techniques for analyzing and presenting information derived from marketing databases. Includes problem definition and solution approach to marketing research decisions.

6600:336. Marketing Research Lab. (1 Credit)
Prerequisites: 6500:304 and 6600:205. Corequisite: 6600:335. Students will gain hands-on experience in the understanding and use of appropriate tools and techniques for analyzing and presenting information derived from marketing databases. Includes problem definition and solution approach to marketing research decisions.

6600:355. Buyer Behavior. (3 Credits)
Prerequisite: 6600:205. Interdisciplinary approach to the analysis of the nature of consumer buying behavior. Economical, social, and psychological influences on consumers' decision-making processes are examined.

6600:375. Marketing & Sales Analytics. (3 Credits)
Prerequisite: 6600:335. Develop the skills to provide clients with actionable marketing intelligence gleaned from the customer, sales force, channel, promotion and competitor databases that are now pervasive in the business world.

6600:432. Integrated Marketing Communications. (3 Credits)
Prerequisites: Must be admitted to a major in a four-year degree granting college, 6600:205, and 6600:355. This course stresses the need for marketers to create consistent coordinated communication programs using all elements of the promotion mix including advertising, public relations, sales promotion, social media and personal selling.

6600:434. Digital Marketing. (3 Credits)
Prerequisites: Must be admitted to a major in a four-year, degree granting college,6600:205, and 6600:432. Focuses on the planning and execution of the promotion mix in the digital environment through online and mobile advertising, sales promotion, social media, blogging, website design and SEO.

6600:436. e-Commerce. (3 Credits)
Prerequisites: Admission to a major in a four-year degree granting college and 6600:205. This course explores the growing role of E-commerce in firm's marketing mix and the complementary roles that customer relationship management and direct marketing play in this new environment.

6600:438. Media Strategy. (3 Credits)
Prerequisites: Must be admitted to a major in a four-year, degree granting college, 6600:205, and 6600:432. A message delivery course that teaches students to develop, schedule and budget effective media plans that integrate different type of media (television, radio, print, direct mail, social media and the Internet) to maximize IMC effectiveness.

6600:440. Brand Management. (3 Credits)
Prerequisites: Must be admitted to a major in a four-year degree granting college, 6600:205, and 6600:355. This course studies the process of building and evolving successful brands. It focuses on brand equity development by creating a distinct brand identity, impeccable brand integrity and emotional resonance. It also emphasizes brand evolution through incremental and radical innovation.

6600:446. Social Media Marketing. (3 Credits)
Prerequisites: Must be admitted to a four-years degree granting college, 6600:205, 6600:355, and 6600:432. Examines strategies used for marketing within social media. Topics include analytics and tactics to design, manage and optimize consumer engagement and commerce.

6600:460. B2B Marketing. (3 Credits)
Prerequisites: Must be admitted to a major in a four-year degree granting college and 6600:205. This course provides a thorough grounding in industrial and business-to-business marketing. While many of the concepts are similar to those used in consumer marketing, there are major differences. This course will explore both the similarities and the differences.

6600:475. Business Negotiations. (3 Credits)
Prerequisites: Must be admitted to a major in a four-year degree granting college, 25 credits, and 6600:275. Examines business negotiation principles and practices, and builds skills in the process of negotiating business agreements within a global environment.

6600:478. Advanced Professional Selling. (3 Credits)
Prerequisites: Must be admitted to a major in a four-year degree granting college and 6600:275. Broadens students understanding of the sales process looking at complex sales and solutions selling. Intense lab work focusing on communication skills, asking the right questions to fully understand needs, helping client turn implicit needs into explicit needs, conducting B2B and complex negotiations, and understanding how to create win-win solutions.

6600:480. Sales Management. (3 Credits)
Prerequisites: Must be admitted to a major in a four-year degree granting college and [2520:101 or 6600:205]. Develops analytical and managerial skills through case studies and other learning activities relating to the organization, selection, training, motivation, and control of a domestic or global sales force.

6600:486. Internship in Marketing Management. (3 Credits)
Prerequisite: Permission of department chair. On-the-job experience with public or private sector organizations in the field of marketing. On-the-job learning objectives are established by the sponsoring organization and approved by the department chair. Field experiences are augmented by a weekly diary and a term paper, which are supervised and evaluated by the department chair.

6600:487. Internship in Sales Management. (3 Credits)
Prerequisite: Permission of department chair. On-the-job experience with public or private sector organizations in the field of marketing. On-the-job learning objectives are established by the sponsoring organization and approved by the department chair. Field experiences are augmented by a weekly diary and a term paper, which are supervised and evaluated by the department chair.

6600:488. Internship in Integrated Marketing Communications. (3 Credits)
Prerequisite: Permission of department chair. On the job experience with public or private sector organizations in the field of marketing. On the job learning objectives are established by the sponsoring organization and approved by the department chair. Field experiences are augmented by the weekly diary and term paper, which are supervised and evaluated by the department chair.

6600:491. Professional Workshops in Marketing. (1-3 Credits)
Prerequisites: Junior status and be admitted to a 4 year degree granting college. Special topics in marketing taught primarily by professionals with the objective of adding depth and an applied perspective to marketing concepts, issues, software & databases, problem solving and career planning. (May be repeated for up to six credits.)

6600:493. Professional Insights: Sales Management. (1 Credit)
Prerequisites: Senior status and be admitted into the College of Business Administration. Sales Management is designed to link sales management majors' academic learning to professional practice. Guest speakers, recognized experts in their field, share important lessons in professional selling and sales management and challenge students to address key issues in their profession.

6600:494. Professional Insights: Marketing Management. (1 Credit)
Prerequisites: Senior status and be admitted into the College of Business Administration. Marketing Management is designed to link marketing management majors' academic learning to professional practice. Guest speakers, recognized experts in their field, share important lessons in marketing management and challenge students to address key issues in their profession.

6600:495. Professional Insights: IMC. (1 Credit)
Prerequisites: Senior status and be admitted into the College of Business Administration. IMC is designed to link Integrated Marketing Communication majors' academic learning to professional practice. Guest speakers, recognized experts in their field, share important lessons in IMC and challenge students to address key issues in their profession.

6600:496. Special Topics: Marketing. (1-3 Credits)
Prerequisites: Must be admitted to a major in a four-year degree granting college and 6600:205. (May be repeated for a total of three credits) Provides an opportunity to examine special topics and/or current issues in the fields of marketing, sales retailing or advertising.

6600:499. Marketing Capstone Project. (3 Credits)
Prerequisites: Must be admitted to a major in a four-year, degree granting college and for all Marketing majors: 6600:275, 6600:335, 6600:355, 6600:375. PLUS for Sales Management majors: 6600:475, 6600:480; For IMC majors: 6600:432, 6600:438; For Marketing Management majors: 6600:440, 6600:460. Student teams comprised of members from each marketing major will refine a live Client marketing strategy (product, price, distribution and promotion) and develop complementary integrated marketing communication and sales force plans.

Marketing and Sales Technology (2520)

2520:101. Essentials of Marketing Technology. (3 Credits)
Survey of marketing including its environment, buyer behavior, target market selection, product decision, distribution decisions, promotion decisions, pricing decisions and marketing management.

2520:202. Retailing Fundamentals. (3 Credits)
Presents basic principles and practices of retailing operations, including site selection, buying, pricing and promotion practices. Use is made of extensive projects and investigations and actual retail operations.

2520:203. Principles of Advertising. (3 Credits)
Prerequisite: 2520:101 or 6600:205. Focuses on principles and functions of advertising, creation and evaluation of advertisements, research of target market, message selection strategy, and media placement options.

2520:204. Services Marketing. (3 Credits)
Prerequisites:2520:203 and 2520:212. Corequisites: 2520:202. Focuses on quality customer service and its role in marketing. Evaluation of customers' needs and expectations, interpretation of customer data and creation of service strategies.

2520:206. Retail Promotion & Advertising. (3 Credits)
Prerequisite: 2520:202 or permission. Studio course in retail display and promotion techniques. Window, interior and point of purchase categories; principles of design as applied to commercial art; function in visual design, elements of design, color theory, lettering, printing process, layout to camera-ready art.

2520:212. Principles of Sales. (3 Credits)
Prerequisite: 2520:101 or permission. Study of basic principles of selling, emphasizing individual demonstrations and sales projects. Includes review of sales function as integral part of marketing process.

2520:221. Marketing Projects. (3 Credits)
Prerequisite: 2520:203. Students will prepare marketing projects by applying knowledge and skills learned in previous marketing courses.

2520:240. Marketing Internship. (3 Credits)
Prerequisites: 2520:101, 2520:203, 2520:202 and 2520:212. On-the-job work experience in a marketing environment in which students apply learned skills and concepts to practical business situations. Periodic reports and projects required as appropriate.

2520:254. Sales Management Technology. (3 Credits)
Prerequisite: 2520:212. Process relating to the formulation, implementation, and control of a strategic sales program. Students will learn how to select, evaluate, and motivate a sales force.

2520:290. Special Topics: Marketing & Sales. (1-3 Credits)
(May be repeated for a total of four credits) Prerequisite: Permission. Selected topics or subject areas of interest in sales and merchandising.

Math - Associate Studies (2030)

2030:130. Mathematics for Allied Health. (3 Credits)
Prerequisite: Placement test or completion of 2010:052, 2030:054, 2030:057, or 2030:084 with a grade of C or better. The real number system, systems of measurement, conversions, linear equations, factoring, quadratic equations, graphing, linear systems, organizing data, averages, standard deviation, the normal distribution.

2030:151. Technical Mathematics I. (2 Credits)
Prerequisite: Placement test or completion of 2010:052, 2030:054, 2030:057 or 2030:084 with a grade of C or better. Fundamental concepts and operations, functions, graphs, factoring and algebraic fractions, and quadratic equations.

2030:152. Technical Mathematics II. (2 Credits)
Prerequisite: 2030:151 with a grade of C- or better, or placement test. Variation, equations of lines, Cramer's rule, right triangle trigonometry, oblique triangles, radian measure, and complex numbers.

2030:153. Technical Mathematics III. (2 Credits)
Prerequisite: 2030:152 with a grade of C- or better, or placement test. Factoring, algebraic fractions, exponents and radicals, equations with radicals, equations in quadratic form, functions, their properties and graphs, exponential and logarithmic functions.

2030:154. Technical Mathematics IV. (3 Credits)
Prerequisite: 2030:153 or equivalent with a grade of C- or better, or placement test. Functions and their graphs, polynomial and rational functions, polynomial equations, graphs of trigonometric functions, trigonometric identities and equations, analytic geometry, complex numbers in polar form.

2030:161. Mathematics for Modern Technology. (4 Credits)
Prerequisite: Placement test or completion of 2010:052, 2030:054, 2030:057, or 2030:084 with a grade of C or better. Lines, linear regression, sets, counting, basic probability, basic statistics, binomial and normal distributions, mathematics of finance, symbolic logic, arguments, logic circuits.

2030:216. Applied Finite Mathematics. (3 Credits)
Prerequisite: 2030:153 with a grade of C- or better, or placement test. Number systems, integer rings, finite fields, number theory algorithms, prime numbers and primality tests, factoring, and random number.

2030:255. Technical Calculus I. (3 Credits)
Prerequisite: 2030:154 or equivalent with a grade of C- or better, or placement test. The derivative, applications of the derivative, derivatives of the trigonometric, logarithmic and exponential functions. Integration by antidifferentiation.

2030:260. Advanced Trigonometry. (2 Credits)
Prerequisite: 2030:153 or equivalent with a grade of C- or better, or placement test. Horizontal circular curves, vertical curves, and spherical triangles.

2030:290. Special Topics: Associate Studies Mathematics. (1-4 Credits)
(May be repeated with a change in topic) Prerequisite: Permission. Selected topics on subject areas of interest in associate studies.

2030:345. Technical Data Analysis. (2 Credits)
Prerequisite: 2030:154 or equivalent with a grade of C- or better, or placement test. Data summarization including graphic representation, numerical measures, introduction to probability, confidence intervals and hypothesis testing.

2030:356. Technical Calculus II. (3 Credits)
Prerequisite: 2030:255 or equivalent with a grade of C- or better, or placement test. Methods and applications of integration, first and second order differential equations and applications, series expansion, Laplace transform, partial derivatives, and double integrals.

2030:361. Applied Cryptography. (3 Credits)
Prerequisite: A grade of C- or better in either 2030:154 or 2030:216. Symmetric cryptography, modular arithmetic, stream and block ciphers, random numbers, Advanced Encryption Standard, public-key cryptography, key exchange, digital signatures, hash functions, message authentication.

2030:461. Applied Cryptanalysis. (3 Credits)
Prerequisite: 2030:361 with a grade of C- or better. Cryptanalysis concepts; cryptanalysis of symmetric and public key cryptosystems, key exchange systems, and digital signatures; hash function collision resistance; cryptanalysis with quantum computer.

2030:480. Advanced Topics in Technical Mathematics. (2 Credits)
Prerequisite: 2030:255 or equivalent with a grade of C- or better, or placement test. Matrices, introduction to series, partial derivatives, least squares adjustments, topics in astronomy, and coordinate systems.

Mathematics (3450)

3450:135. Mathematics for Everyday Life. (3 Credits)
Prerequisites: Completion of 2010:052 or 2010:057 or 2010:084 with a grade of C- or better or placement test. Contemporary applications of mathematics for the non-science major to develop skills in logical thinking and reading technical material. Topics include voting, apportionment, scheduling, patterns, networks.

3450:140. Fundamentals of Mathematics for Primary Educators. (3 Credits)
Prerequisites: Placement, or completion of 3470:250 with a grade of C- or better, or permission. Corequisite: 5100:200. A problem-solving and inquiry-based approach to number systems; bases; operations, properties, relationships, algorithms of Real Numbers; patterns and algebra.

3450:145. Algebra for Calculus. (4 Credits)
Prerequisite: Placement, 2010:85 with a grade of C or better, or permission. Real numbers, equations and inequalities, linear and quadratic functions. Exponential and logarithmic functions. Systems of equations, matrices, determinants. Permutations and combinations.

3450:149. Precalculus Mathematics. (4 Credits)
Prerequisite: Completion of 3450:145 with a grade of C- or better or placement. Functions, polynomial functions, complex numbers, exponential and logarithmic functions, systems of equations, trigonometric functions, mathematical inductions, sequences, and binomial theorem.

3450:208. Introduction to Discrete Mathematics. (4 Credits)
Prerequisites: Completion of 3450:145 or 3450:149 with a grade of C- or better or placement. A foundation course in discrete mathematics with applications. Topics include sets, number systems, Boolean Algebra, logic, relations, functions, recursion, matrices, induction, graphs, and trees.

3450:209. Discrete Mathematics for Educators. (4 Credits)
Prerequisite: Completion of 3450:140 with a grade of C- or better. Corequisite: 3450:231. Introduction to discrete mathematics topics for middle school instruction: sets, counting, probability, recurrence relations, graph theory, logic and elementary proof techniques.

3450:210. Calculus with Business Applications. (3 Credits)
Prerequisites: 3450:145 with a grade of C- or better. Review of functions, derivatives of functions, extrema and concavity, optimization, logarithmic and exponential functions, extrema for multivariate functions. Graphing calculator required. For business or economics majors only.

3450:215. Concepts of Calculus. (4 Credits)
Prerequisite: Completion of 3450:145 or 3450:149 with a grade of C- or better or placement. Functions; limits and continuity; differentiation and applications of differentiation; logarithmic and exponential functions; integration and applications of integration; partial differentiation.

3450:221. Analytic Geometry-Calculus I. (4 Credits)
Prerequisite: 3450:149 with a grade of C- or better, or placement. Limits; continuity; rates of change; derivatives and applications algebraic, trigonometric, transcendental functions; curve sketching, antiderivatives and integration, areas.

3450:222. Analytic Geometry-Calculus II. (4 Credits)
Prerequisite: Completion of 3450:221 with a grade of C- or better. Methods and applications of integration; sequences, series and power series; Taylor polynomials and Taylor series; parametric and polar coordinates.

3450:223. Analytic Geometry-Calculus III. (4 Credits)
Prerequisite: Completion of 3450:222 with a grade of C- or better. Vector algebra, cylindrical, spherical coordinates, vector-valued functions, curvature; functions of several variables, limit, continuity, partial derivatives, differentials, directional derivatives, maxima and minima, multiple integrals, Divergence Theorem.

3450:231. Modeling with Algebraic and Transcendental Functions. (4 Credits)
Prerequisites: Completion of 3450:140 with a grade of C- or better or placement test or permission. Modeling and regression with algebraic, exponential, logarithmic, and trigonometric functions; systems of equations and matrices. These topics will be enhanced by the use of CAS.

3450:240. Mathematical Foundations for Early Childhood Educators. (3 Credits)
Prerequisite: Completion of 3450:140 with a grade of C- or better. A problem-solving and inquiry-based approach to functions and algebra, coordinate and Euclidean geometry, and elementary data analysis.

3450:289. Selected Topics in Mathematics. (1-3 Credits)
Prerequisite: Permission. Selected topics of interest in mathematics.

3450:307. Fundamentals of Advanced Mathematics. (3 Credits)
Prerequisite: Completion of 3450:222 with a grade of C- or better. Logic, solving problems, and doing proofs in mathematics. Sets, extended set operations, and indexed family sets, induction. Binary relations. Functions, cardinality. Introductory concepts of algebra and analysis.

3450:312. Linear Algebra. (3 Credits)
Prerequisite: Completion of 3450:223 with a grade of C- or better. Study of vector spaces, linear transformations, matrices, determinants, inner products, the eigenvalue problem, quadratic forms and canonical forms.

3450:331. Modeling with Calculus. (4 Credits)
Prerequisite: Completion of 3450:231 with a grade of C- or better. Introduction to limits, continuity, differentiation with applications, integration with applications, sequences and series. These topics will be enhanced by the use of CAS.

3450:335. Introduction to Ordinary Differential Equations. (3 Credits)
Prerequisite: Completion of 3450:223 with a grade of C- or better or permission of instructor. Basic techniques for solving ODEs and systems of ODEs. Analysis of models involving differential equations of first order and simple equations of second order.

3450:341. Geometry and Measurement. (3 Credits)
Prerequisites: Completion of 3450:209 with a grade of C- or better, or 3450:307 with a grade of C- or better and be admitted to the College of Education. Basic Constructions, Polygons, Similarity, Pythagorean Theorem, Circles, Congruence, Perimeters and Areas of Plane Figures, Surface and Volume of Solids, Rigid Motions and Symmetry, Coordinate geometry.

3450:401. History of Mathematics. (3 Credits)
Prerequisite : Completion of 3450:307 with a grade of "C-" or better. Origin and development of mathematical ideas.

3450:410. Advanced Linear Algebra. (3 Credits)
Prerequisite: Completion of 3450:312 with a grade of C- or better. Study of vector spaces, linear transformation, canonical and quadratic forms, inner product spaces.

3450:411. Abstract Algebra I. (3 Credits)
Prerequisite: Completion of 3450:307 with a grade of C- or better or permission of instructor. Study of groups, rings, fields, integral domains.

3450:412. Abstract Algebra II. (3 Credits)
Prerequisite: Completion of 3450:411 with a grade of C- or better or permission of instructor. Study of groups, rings, fields, integral domains, vector spaces, field extensions, Galois theory.

3450:413. Theory of Numbers. (3 Credits)
Prerequisite: Completion of 3450:222 with a grade of C- or better or permission. Euclidean algorithm, unique factorization theorem, congruences, primitive roots, indices, quadratic residues, number-theoretic functions, Gaussian integers and continued fractions.

3450:415. Combinatorics & Graph Theory. (3 Credits)
Prerequisite: Completion of 3450:222 with a grade of C- or better or permission. Introduction to basic ideas and techniques of mathematical counting; properties of structure of systems.

3450:420. Mathematical Technology and Communication. (3 Credits)
Prerequisites: Completion of 3450:222 and 3450:312 with grades of C- or better, or permission. Graphical, numerical, and algebraic computation with applications using a variety of mathematical hardware and software: symbolic manipulators, dynamic geometry software, programs, scripts and web-browsers.

3450:421. Advanced Calculus I. (3 Credits)
Sequential. Prerequisite: Completion of 3450:223 with a grade of C- or better; 3450:307 is highly recommended. Real number system, sequences, series, set theory, continuity, differentiation, integration, partial derivatives, multiple integration, maxima and minima, convergence and uniform convergence, power series, improper integrals, transformations, line and surface integrals.

3450:422. Advanced Calculus II. (3 Credits)
Sequential. Prerequisite: Completion of 3450:421 with a grade of C- or better or permission of instructor. Real number system, sequences, series, set theory, continuity, differentiation, integration, partial derivatives, multiple integration, maxima and minima, convergence and uniform convergence, power series, improper integrals, transformations, line and surface integrals.

3450:425. Complex Variables. (3 Credits)
Prerequisite: Completion of 3450:223 with a grade of C- or better. Complex variables; elementary functions, differentiation and analytic functions; integration and Cauchy's theorem; power series and Laurent series; residue theorem; applications such as conformal mappings, inversion of integral transform.

3450:427. Applied Numerical Methods I. (3 Credits)
Prerequisites: Completion of 3450:222 and 3460:209 with grades of C- or better or permission. Numerical methods in polynomial interpolation, rootfinding, numerical integration, and numerical linear algebra.

3450:428. Applied Numerical Methods II. (3 Credits)
Prerequisites: Completion of 3450:335 and 3450:427 with grades of C- or better or permission. Numerical methods in the solution of ordinary and partial differential equations. Numerical differentiation, Runge-Kutta methods, and iterative methods for ODEs, finite differences for PDEs.

3450:430. Numerical Solutions for Partial Differential Equations. (3 Credits)
Prerequisite: Completion of 3450:428 with a grade of C- or better or equivalent. For advanced undergraduate and graduate students. The study of finite difference and finite element methods for partial differential equations consistency, stability, convergence and computer implementation.

3450:432. Partial Differential Equations. (3 Credits)
Prerequisite: Completion of 3450:335 with a grade of C- or better. The classical initial value and boundary value problems of mathematical physics developed and solved using Fourier series and integral transforms.

3450:435. Systems of Ordinary Differential Equations. (3 Credits)
Prerequisites: Completion of 3450:335 and either 3450:312 or 3450:428 with grades of C- or better or permission. Analysis, solution of systems of equations, linear, nonlinear. Topics: stability theory, perturbation methods, asymptotic methods, applications from physical, social sciences.

3450:436. Mathematical Models. (3 Credits)
Prerequisite: Completion of 3450:335 with a grade of C- or better, and a six-hour sequence in an approved applied area, or permission. Formulation and analysis of mathematical models in social and physical sciences. Analysis of deterministic and stochastic models. Topics may include stochastic processes, linear programming, graph theory, theory of measurement.

3450:438. Advanced Engineering Mathematics I. (3 Credits)
Prerequisites: Completion of 3450:335 and 3450:312 with grades of C- or better or permission. Matrices, eigenvalue problems, systems of ODEs, vector analysis, complex variables.

3450:439. Advanced Engineering Mathematics II. (3 Credits)
Prerequisites: Completion of 3450:335 and 3450:312 with grades of C- or better or permission. Special functions, Fourier series and transforms, PDEs.

3450:441. Concepts in Geometry. (4 Credits)
Prerequisite: 3450:307 with a grade of C- or better or permission of instructor. Axiomatic treatment of both Euclidean and non-Euclidean geometries. Other concepts included are finite geometry, transformations, constructions and inversions.

3450:445. Introduction to Topology. (3 Credits)
Prerequisite: Completion of 3450:307 with a grade of C- or better or permission of instructor. Introduction to topological spaces and topologies, mappings, cardinality, homeomorphisms, connected spaces, metric spaces.

3450:489. Topics in Mathematics. (1-4 Credits)
(May be repeated for a total of 12 credits) Prerequisite: Permission of instructor. Selected topics in mathematics and applied mathematics at an advanced level.

3450:491. Workshop in Mathematics. (1-4 Credits)
(May be repeated) Group studies of special topics in mathematics and applied mathematics. May not be used to meet undergraduate or graduate major requirements. May be used for elective credit.

3450:497. Individual Reading: Mathematics. (1-2 Credits)
Prerequisites: senior standing and permission. Mathematics or applied mathematics majors only. Directed studies designed as an introduction to research problems, under guidance of selected faculty member.

3450:498. Senior Honors Project: Mathematics. (1-3 Credits)
Prerequisite: Permission of Instructor. Directed study for senior student in the Honors Program. An introduction to research problems in mathematics and applied mathematics under the guidance of selected faculty. May be repeated for up to six credits.

Mech Poly Enginr (4700)

4700:281. Polymer Science for Engineers. (2 Credits)
Prerequisites: 3150:151 and 3150:152. Chemical bonds and structure of organic molecules, polymer chain structure, amorphous and crystalline morphology and structural characterization, polymerization and copolymerization, experimental demonstrations, typical solid-state and flow properties.

4700:321. Polymer Fluid Mechanics. (3 Credits)
Prerequisite: 4600:310 or equivalent. Rheological properties and flow characteristics of polymer fluid systems; non-Newtonian viscosity, viscoelasticity.

4700:381. Polymer Morphology for Engineers. (3 Credits)
Prerequisites: 3150:151, 3650:292, 4600:380 or permission. Fundamental understanding of solid structure, crystallography and morphology, processed polymers, co-polymers and their blends.

4700:422. Polymer Processing. (3 Credits)
Prerequisites: 4700:321 and 4600:315 or equivalent. Polymer processing technology. Basic studies of flow in extrusion, molding, and other processing methods.

4700:425. Introduction to Blending & Compounding of Polymers. (3 Credits)
Prerequisites: [4200:321 or 4300:341 or 4600:310] or permission. Nature of polymer blends and compounds and their applications. Preparation and technology using batch and continuous mixers, mixing mechanisms.

4700:427. Mold Design. (3 Credits)
Prerequisites: 4700:422 or permission. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.

4700:450. Engineering Properties of Polymers. (3 Credits)
Prerequisites: 4700:281, 4700:381 and 4600:336 or equivalent. Introductory course to engineering properties and processing of polymers. Analysis of mechanical tests of polymers in the glassy, rubbery, and fluid states. Product design. Concepts of rheology, rheometry and polymer processing.

4700:451. Polymer Engineering Laboratory. (2 Credits)
Prerequisite: 4700:321 and 4600:483. Corequisite: 4700:422 or permission. Laboratory experiments on the rheological characterization of polymer melts, fabrication of engineering products, structural investigation of polymeric parts.

4700:497. Honors Project. (2 Credits)
Prerequisite: Senior standing in the Honors Program. Individual creative project in mechanical polymer engineering, supervised by faculty member of the department. This course must be designed oriented if used in place of 4700:499.

4700:499. Polymer Engineering Design Project. (2 Credits)
Prerequisite: Senior standing and permission. Corequisite: 4600:400. Analysis and design of mechanical polymer systems.

Mechanical Engineering (4600)

4600:165. Tools for Mechanical Engineering. (3 Credits)
Corequisite: 3450:149. Personal computer DOS system, word processing, spreadsheet, computer-aided drafting, math calculating package, mechanical graphics, and introduction to mechanical engineering program and curriculum.

4600:203. Dynamics. (3 Credits)
Prerequisite: 3450:222, 3650:291, 4300:201. Corequisite: 3450:223. Kinematics and kinetics of particles and rigid bodies. Principles of work, energy, momentum and impulse.

4600:260. Engineering Analysis I. (2 Credits)
Prerequisite: 3450:222; corequisite: 3450:223. Introduction to numerical methods in mechanical engineering; applications of computer tools (MatLab).

4600:300. Thermodynamics I. (3 Credits)
Prerequisites: 3450:223 and admission to the College of Engineering. Corequisite: 3650:292. Basic concepts of thermodynamics. Pure substances, closed and open systems, the first and second laws of thermodynamics. Entropy, vapor power cycles and vapor compression refrigeration.

4600:301. Thermodynamics II. (2 Credits)
Prerequisites: 3450:335, 4600:300 and admission to the College of Engineering. Absorption refrigeration. Gas cycles. Thermodynamics of state, gas mixtures and gas-vapor mixtures. Combustion.

4600:305. Thermal Science. (2 Credits)
Prerequisite: 3450:223 and admission to the College of Engineering. Corequisite: 3650:292. Credit not allowed for both 300 and 305. Introduction to first and second laws of thermodynamics, perfect gas relationships, equations of state, cycle analysis. Introduction to conduction, convection and radiation heat transfer.

4600:310. Fluid Mechanics I. (2 Credits)
Prerequisites: 3450:223, 4600:203 and admission to the College of Engineering. Properties and behavior of gases and liquids at rest and in motion. Energy equation. Flow in conduits. Forces on body submerged in moving fluid. Dimensional analysis and similitude.

4600:311. Fluid Mechanics II. (3 Credits)
Prerequisite: 4600:310 and admission to the College of Engineering. Navier-Stokes equations. The boundary layer. External viscous flows and potential flow. Fundamentals of compressible flow. Concepts of computational fluid dynamics.

4600:315. Heat Transfer. (3 Credits)
Prerequisites: 4600:300, [4600:310 or 4800:360], [4600:360 or 4800:220] and admission to the College of Engineering. Fundamentals of heat transfer by conduction, convection and radiation.

4600:321. Kinematics of Machines. (2 Credits)
Prerequisites: 4600:165, 4600:203 and admission to the College of Engineering. Displacements, velocities, accelerations and introduction to plan motion mechanisms. Introduction to design of gears, gear trains and cams.

4600:336. Analysis of Mechanical Components. (3 Credits)
Prerequisite: 4300:202 and admission to the College of Engineering. Corequisite: 3450:335. Analysis of stress and strain at a point. Mohr's circles, shear centers, elastic instability. Stresses in thick and thin cylinders. Fatigue analysis.

4600:337. Design of Mechanical Components. (3 Credits)
Prerequisites: [4600:336 or 4900:336] and admission to the College of Engineering. Application of stress analysis to design of fasteners, welds, springs, ball bearings and gears. Introduction to journal bearings and lubrication. Component design projects.

4600:340. Systems Dynamics & Response. (3 Credits)
Prerequisites: 3450:335, 4600:203 and admission to the College of Engineering. A unified approach to modeling, analysis, response and stability of engineering systems: analog, digital and hybrid computer simulation of interdisciplinary engineering problems are included.

4600:360. Engineering Analysis II. (2 Credits)
Prerequisites: 3450:335, 4600:260 and admission to the College of Engineering. Numerical methods of solution of mechanical engineering problems.

4600:380. Introduction to Materials Science and Engineering. (2 Credits)
Prerequisites: 3150:153 and admission to the College of Engineering. Corequisite: 4300:202. Introduction to metallurgy and advanced engineering materials including polymers, composites and ceramics. Topics include structure of materials, macroscopic mechanical behavior, phase change and heat treatment of metals, and theories of failure.

4600:400. Thermal System Components. (3 Credits)
Prerequisites: 4600:301, 4600:311, 4600:315 and admission to the College of Engineering. Performance analysis and design of basic components of thermal energy exchange and conversion systems. Components studied include heat exchangers, pumps, compressors, turbines and expansion engines.

4600:402. Senior Seminar. (1 Credit)
Prerequisite: Admission to the College of Engineering. Corequisites: 4600:400, 4600:441, 4600:460 and [4600:401 or 4600:461 or 4700:499]. Students need further education in ethics, codes and standards, intellectual property, product liability, safety issues, technical writing, diversity, and job opportunities.

4600:410. Heating & Air Conditioning. (3 Credits)
Prerequisites: 4600:301 or permission. Corequisite: 4600:315 or permission. Thermodynamics of gas mixtures. Design and selection of air conditioning equipment. Control of gas mixtures, heating, cooling and humidity.

4600:411. Compressible Fluid Mechanics. (3 Credits)
Prerequisites: 4600:301, 4600:311 and admission to the College of Engineering. Subsonic and supersonic flow in nozzles, diffusers and ducts. One-dimensional reactive gas dynamics. Prandtl-Myer theory. Applications to design and analysis of compressors, turbines and propulsion devices.

4600:412. Fundamentals of Flight. (3 Credits)
Prerequisites: 4600:311 and admission to the College of Engineering. Introduction to basic aerodynamics, airplane performance, stability and control, astronautics and propulsion. Design considerations are emphasized.

4600:413. Introduction to Aerodynamics. (3 Credits)
Prerequisites: 4600:311 and admission to the College of Engineering. Introduction of aerodynamic concepts; includes conformal transformations, theory of thin airfoils, two-dimensional airfoil theory, wings of finite span, lifting line theories, lumped vortex, vortex lattice, and panel methods.

4600:414. Introduction to Aerospace Propulsion. (3 Credits)
Prerequisites: 4600:311 and admission to the College of Engineering. Introduction to propulsion systems currently used in aerospace fields; propulsion principles for turbojets, turbofans, ramjets, chemical rockets, and electrical rocket propulsion.

4600:415. Energy Conversion. (3 Credits)
Prerequisites: 4600:301 or permission. Corequisite: 4600:315 or permission. Topics from fields of internal combustion engines, cycle analysis, modern conversion devices.

4600:416. Heat Transfer Processes. (3 Credits)
Prerequisite: 4600:315 or permission. Analysis, design of extended surfaces. Natural convection and mixed convection, combined modes of heat transfer and heat transfer with phase changes.

4600:420. Introduction to Finite Element Method. (3 Credits)
Prerequisites: 4300:202, 4600:315 and admission to the College of Engineering. Introduction to matrix and finite element methods. Stiffness and flexibility formulations in solid mechanics and thermal sciences. Basic finite element methods and its implementation.

4600:422. Experimental Stress Analysis I. (3 Credits)
Prerequisite: 4600:336 or permission. Experimental methods of determining stress or strain: brittle lacquer, strain gages, photoelasticity, full field techniques.

4600:430. Machine Dynamics. (3 Credits)
Prerequisite: 4600:321 or permission. Static and dynamic forces in machines, products of inertia, dynamic equivalence, flywheels. Balancing of rotating, reciprocating, cyclic plane motion. Computer simulation of transient mechanism dynamics, other topics in advanced dynamics.

4600:431. Fundamentals of Mechanical Vibrations. (3 Credits)
Prerequisites: 3450:335, 4600:203 and admission to the College of Engineering or permission. Undamped and forced vibrations of systems having one or two degrees of freedom.

4600:432. Vehicle Dynamics. (3 Credits)
Prerequisites: 4600:203 or permission and 3450:335 or permission. Application of dynamic systems analysis techniques to road vehicles. Newtonian and Lagrangian methods. Tire/road interface. Ride characteristics, handling and stability. Digital simulation.

4600:440. System Dynamics & Control. (4 Credits)
See department for course description.

4600:441. Control Systems Design. (3 Credits)
Prerequisites: 4600:340 and admission to the College of Engineering or permission. Methods of feedback control design such as minimized error, root-locus, frequency domain. Compensation techniques. Multivariable and nonlinear design methods and computer-aided control design.

4600:442. Industrial Automatic Control. (3 Credits)
Prerequisite: 4600:441 or permission. Operation of basic control mechanisms. Study of mechanical, hydraulic, pneumatic, fluidic control systems, including application areas. Tuning of control devices for optimum performance of system. Case studies on control applications from industry, e.g. boilers, furnaces, process heaters.

4600:443. Optimization Methods in Mechanical Engineering. (3 Credits)
Prerequisite: 4600:360 or permission. Development and method of solution of optimization problems in mechanical engineering. The use of dynamic programming and operational research methods for optimization including computer utilization and applications.

4600:444. Robot Design, Control & Application. (3 Credits)
Prerequisites: [4600:321 or 4600:441] or permission. Robot design and control. Kinematic transformations, velocities and accelerations, path trajectories and dynamics, control and sensing in robotics. The automated factory with robot applications.

4600:450. Introduction to Computational Fluid Flow & Convection. (3 Credits)
Prerequisites: 4600:315 or permission, 4600:360 or permission. Numerical modeling of fluid/thermal systems; numerical solution of the momentum and thermal boundary layer equations; flow simulation using advanced heat transfer/fluid/graphics packages.

4600:460. Concepts of Design. (3 Credits)
Prerequisite: 4600:337 and admission to the College of Engineering. Design process. Creativity and inventiveness. Tools of decision making, engineering economics, reliability, optimization. Case studies.

4600:461. ME Senior Design Project I. (2 Credits)
Prerequisite: Admission to the College of Engineering. Corequisites: 4600:400, 4600:441 and 4600:460. Detailed senior design project. Design, feasibility, and cost analysis.

4600:462. Pressure Vessel Design. (3 Credits)
Prerequisite: 4600:336 or permission. Introduction to modern pressure vessel technology. Topics include basic structural considerations, materials and their environment and design-construction features.

4600:463. Computer Aided Design & Manufacturing. (3 Credits)
Prerequisites: 4600:165 or permission, 4600:360 or permission. The use of computer systems to assist in the creation, modification, analysis, or optimization of engineering designs, and to plan, manage, and control manufacturing plants.

4600:471. ME Senior Design Project II. (2 Credits)
Prerequisites: 4600:461 and admission to the College of Engineering. Detailed senior design project. Final design and implementation.

4600:483. Measurements Laboratory. (2 Credits)
Prerequisites: 4600:300, 4600:310 and admission to the College of Engineering. Corequisite: 4600:340. Development of methods to measure temperature, pressure, flow rate, viscosity and motion. Includes both lecture and laboratory experience and emphasizes calibration and accuracy of appropriate instruments.

4600:484. Mechanical Engineering Laboratory. (2 Credits)
Prerequisite: 4600:301, 4600:311, 4600:315, 4600:380, 4600:431, 4600:483 and admission to the College of Engineering. Corequisite: 4600:441. Laboratory experiments in area of dynamics, vibrations, thermodynamics, fluids, heat transfer and controls.

4600:486. Special Topics: Mechanical Engineering. (1-3 Credits)
Prerequisite: Permission. Brief description of current content to be announced in schedule of classes.

4600:497. Honors Project in Mechanical Engineering. (4 Credits)
Prerequisite: senior standing in Honors Program. Individual creative project in thermal science, mechanics or design relevant to mechanical engineering, supervised by faculty member of the department.

4600:498. Experimental Investigation in Mechanical Engineering. (1-2 Credits)
Individual independent laboratory investigations in areas relevant to mechanical engineering. Student suggests a project and makes appropriate arrangements with faculty for supervision.

Mechanical Engineering Technology (2920)

2920:100. Survey of Mechanical Engineering Technology. (2 Credits)
Corequisite: 2030:154. Overview of the Mechanical Engineering Technology degree programs; pre-testing; career opportunities; professional societies & certification; standards; and useful tools of the MET field.

2920:101. Introduction to Mechanical Design. (3 Credits)
Prerequisite: 2880:140 or 2920:121. Corequisite: [2880:230 or 2920:100] and 2030:154. Topics in engineering drawing: conventions, sections, dimensioning and tolerancing. Detail drawings, subassembly and assembly drawings. Introduction to various mechanical components and mechanical design tools.

2920:121. Fundamentals of Engineering Drawing. (3 Credits)
Fundamentals of engineering drawing using freehand sketching and CAD; orthographic and isometric projections, sectioning, assemblies, and introduction to geometric dimensioning and tolerancing. Laboratory.

2920:130. Introduction to Hydraulics and Pneumatics. (3 Credits)
Principles of hydrostatic forces, pressure, density, viscosity, incompressible and compressible fluids. Principles of hydraulic and pneumatic devices and systems.

2920:142. Introduction to Material Technology. (3 Credits)
Fundamental properties of materials. Material testing. Applications of methods to control material properties.

2920:243. Kinematics. (3 Credits)
Prerequisite: 2990:125; Corequisite: 2920:101. Study of rigid-body motions of simple linkages, cams, gears, and gear trains. Vector solutions emphasized. Industrial applications presented and computers used to analyze mechanisms.

2920:245. Mechanical Design II. (5 Credits)
Prerequisites: 2920:101, 2920:243 and 2990:225. Corequisite: 2920:142. Advanced stress and fatigue analysis, theories of failure. Design of machine elements: gears, keys and keyways. Experimental stress analysis and design projects.

2920:249. Applied Thermal Energy I. (2 Credits)
Prerequisites: 2030:255, 2820:164. Thermodynamic principles. Study of power cycles. Applications in I.C. engines, compressors, steam power cycles, refrigeration.

2920:251. Fluid Power. (2 Credits)
Prerequisites: 2820:160 and 2820:164. Statics and dynamics of fluids. Viscosity, energy and momentum relationships. Fluid machinery and measurements.

2920:252. Thermo-Fluids Laboratory. (1 Credit)
Prerequisite: 2920:251; corequisite: 2920:249. Laboratory experiments in applied thermal energy and fluid power.

2920:290. Special Topics: Mechanical Engineering Technology. (1-3 Credits)
(May be repeated for a total of four credits) Prerequisite: Permission. Selected topics or subject areas of interest in Mechanical Engineering Technology.

2920:310. Economics of Technology. (3 Credits)
Prerequisite: 64 credits or permission. Economic principles as they pertain to technology. Equivalence, alternatives, costs, depreciation, valuation. Project studies.

2920:344. Dynamics. (3 Credits)
Prerequisites: 2920:243; 2030:255; 2990:125. Introduces particle dynamics, displacement, velocity, and acceleration of constrained rigid bodies in plane motion. Kinetics of particles and rigid bodies, work and energy, mechanical vibration.

2920:346. Mechanical Design III. (4 Credits)
Prerequisites: 2920:245 and 2920:344. Continuation of design of mechanical components: gears, bearings, shafts, springs, and fasteners. Special topics presented will be coordinated with assigned design projects.

2920:347. Production Machinery & Processes. (3 Credits)
Prerequisites: 2030:255 & [2880:110 or 2920:142] or permission. Study of manufacturing processes (casting, forging, welding, forming sheet metal), integrating material technology, mechanical design, and mechanics of materials.

2920:365. Applied Thermal Energy II. (3 Credits)
Prerequisites: 2920:249, 2920:251, 2030:255. Review and application of basic thermodynamic principles used in designing automotive engines and refrigeration equipment. Introduction to heat transfer, heating, ventilation, and air conditioning.

2920:370. Plastics Design & Process. (3 Credits)
Prerequisites: 2820:111 or higher. Introduction to structure and properties of polymers, selection based on properties and cost, design of products and tools, basic principles of the major processes.

2920:402. Mechanical Projects. (1 Credit)
Prerequisites: 2920:310, 2920:365, 2920:370, 2920:490, and [2870:301 or 2920:405]. Individual projects emphasizing creative technical design.

2920:405. Introduction to Industrial Machine Control. (3 Credits)
Prerequisite: 2860:370 (previously 2920:270). Principles and design of industrial machine control systems. Application oriented study of typical control devices. Utilization of programmable controllers as the system logic controllers.

2920:470. Plastics Processing & Testing. (2 Credits)
Prerequisites: 2920:370 or permission. Use of basic polymer testing methods. Setup and operation of modern molding and extrusion equipment. Basic troubleshooting procedures. Study of processing effects on final properties.

2920:490. Mechanical Engineering Technology Senior Seminar. (1 Credit)
Prerequisites: 2920:346 and 2920:347. An opportunity for post-testing of all MET students and the presentation of social and professional responsibilities, diversity, professional certification, life-long learning, and career opportunities.

2920:497. Senior Honors Project in Mechanical Engineering Technology. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program, permission of area honors preceptor and major in mechanical technology. Independent research leading to completion of senior honors thesis or other original work.

2920:498. Independent Study in Mechanical Engineering Technology. (1-4 Credits)
Prerequisite: Department permission. Directed study in a special field of interest chosen by the student in consultation with the instructor (may be repeated for a total of six credits).

Medical Assisting (2740)

2740:120. Medical Terminology. (3 Credits)
Medical Terminology includes the study of medical prefixes, suffixes, word roots, combining forms, and with an emphasis on pronunciation, spelling, and abbreviations. Medical Terminology related to the body systems will be emphasized. The purpose of the course is to equip the student with a basic understanding of the tools needed to learn medical terminology as it relates to the body systems with an emphasis on spelling and pronunciation.

2740:121. Study of Disease Processes. (3 Credits)
Prerequisite: 2740:120. This course studies human disease and the disease process including treatments, causes, incidence, signs and symptoms, and diagnosis.

2740:122. Emergency Responder I. (1 Credit)
Theory and practice in recognition and response to emergencies by the medical professional including but not limited to: breathing difficulty, cardiac arrest, heart attack, stroke, bleeding, wound care, musculoskeletal injuries, burns. poisonings, heat and cold exposure, and diabetic care.

2740:126. Administrative Medical Assisting I. (3 Credits)
Theory and practice in administrative medical assisting competencies such as legal and ethical concepts, medical front office responsibilities, and financial administration.

2740:127. Administrative Medical Assisting II. (3 Credits)
Theory and practice in administrative medical assisting. Simulating a medical office,competencies include utilizing computerized practice management software, medical office management, medical financing and insurance.

2740:128. Basic Procedural Coding. (3 Credits)
Class focuses on converting the procedural language into industry standard character strings for purposes of reimbursement CPT and HCPCS codes; learning how to convert procedural statements into CPT and HCPCS codes; learning how to apply carrier rules for reimbursement.

2740:129. Basic Diagnostic Coding. (3 Credits)
This class focuses on converting the diagnostic language into industry standard character strings ICD-10-CM for purposes of reporting, research, and reimbursement.

2740:135. Clinical Medical Assisting I. (4 Credits)
Prerequisites: 2740:120, 2740:230, 2780:106, and 2780:107. First clinical course covering medical laboratory, PE, vital signs, EKGs, microbiology, procedural asepsis, suture removal, basic PT, eye and ear treatments, and basic nutrition.

2740:228. Medical Insurance. (3 Credits)
Prerequisites: 2740:120, 2740:128 and 2470:129. This course examines the nature of medical insurance reimbursement for medical services. Students will be equipped with an understanding of insurance and reimbursement methodologies.

2740:230. Basic Pharmacology. (3 Credits)
This course is an introduction to pharmacology, organized and presented by therapeutic classification. Topics will include oharmacokinetics, factors which influence drug actions, routes or administration, and adverse effects.

2740:235. Clinical Medical Assisting II. (4 Credits)
Prerequisites: 2740:120, 2740:135, 2740:230, 2780:106, and 2780:107. The second medical assisting clinical course covers theory and practice of POL laboratory tests, medication administration, minor office surgery, venipuncture, emergent services, and radiography principles.

2740:242. Medical Transcription II. (3 Credits)
Prerequisites: 2540:119, 2740:151; 2740:120, 2740:240. This course is an advanced medical transcription course. Emphasis will be placed on development of accuracy, speed, and medical knowledge for transcription of medical documents.

2740:245. Medical Billing Externship. (4 Credits)
Prerequisites: 2740:120, 2740:121, 2740:127, 2740:128, 2740:129, 2740:228, 2740:230, 2740:245, 2780:106 and 2780:107 (thus completing all other Medical Billing Certificate course work), a 2.0 cumulative GPA, and permission from the Medical Assisting program director. This externship is a minimum 160 hour medical billing work experience, required seminar hours and preparation for the optional CPC and CCSP exams.

2740:246. Medical Assisting Practicum. (4 Credits)
Prerequisites: 2740:126, 2740:127, 2740:135, 2740:230, 2740:235, 2780:106 and 2780:107 (thus completing all other Associate of Applied Science in Medical Assisting Technology course work, with a 2.0 cumulative GPA), and permission from the program director. The practicum work experience of a minimum of 160 hours; seminar hours will also be required. This class prepares students for their national certification exam.

2740:290. Special Topics: Medical Assisting. (1-2 Credits)
Prerequisite: Permission. Selected topics or workshops of interest in medical assisting technology.

Medical Studies (1880)

1880:201. Medical Seminar & Practicum I. (3 Credits)
Prerequisites: 3100:191. Provides field experiences in health-care delivery in geographic area served by Northeastern Ohio Universities College of Medicine and The University of Akron. Student directed in supervised roles of professional and paraprofessional in meeting health-care needs of community. Open to first-year student in Phase 1 of B.S./M.D. program.

Middle Level Education (5250)

5250:100. Orientation to Middle Level Education. (0 Credits)
Prerequisite: Admission to Middle Level Education Program. Corequisite: 5100:200. Orientation to the information and strategies necessary for a student to be successful in the program, including portfolio development.

5250:300. Middle Level Education. (3 Credits)
Prerequisite or corequisite: 5500:308. Reviews nature/needs of early adolescents; developmentally appropriate middle schooling; philosophy of school organizations; curriculum, pedagogy, and assessment; cultural and community contexts. 15 field hours.

5250:333. Teaching Science to Middle Level Learners. (4 Credits)
Prerequisite: 5500:308. A methods course for the prospective teacher to develop a point of view toward science teaching and strategies for effective standards-based science teaching. (15 field hours)

5250:338. Teaching Social Studies to Middle Childhood. (3 Credits)
Prerequisite: 5500:308. A methods course to examine the school social studies curriculum and strategies for effective teaching. (15 field hours)

5250:342. Teaching Math to Middle Level Learners. (3 Credits)
Prerequisite: 5500:308. Modern strategies of psychology and methodology in middle childhood mathematics on exploratory, structural and mastery levels of learning. (15 field hours)

5250:350. Teaching Language Arts & Media to Middle Level Learners. (3 Credits)
Prerequisites: 5500:240, 5500:241, and 5500:308. This course provides preservice middle grade teachers with strategies for integrating the language arts in the areas of reading, writing, speaking, listening, media and drama. (15 Field Hours)

5250:351. Modes of Writing for the Middle Grades. (3 Credits)
Prerequisite: Admission to College of Education's Teacher Education Program. This course will provide middle school languages arts teachers the understandings and skills necessary to teach writing in varieties of forms and modes including newswriting.

5250:430. Honors Research Project: Middle Level Education. (1-6 Credits)
(May be repeated for a total of six credits.) Prerequisites: Permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.

5250:480. Special Topics: Middle School. (1-3 Credits)
Prerequisite: Permission of instructor. (May be repeated with change of topic) Group study of special topics in middle childhood of critical contemporary concern in professional education.

5250:490. Workshop: Middle Level. (1-3 Credits)
Elective workshop for Middle Childhood majors who would like to pursue further refinement of teaching skills. Emphasis in demonstrations of teaching techniques and development.

5250:495. Student Teaching: Grades 4-6. (5 Credits)
Planned teaching experience in schools selected and supervised by the Office of Field Experience.

5250:496. Student Teaching: Grades 7-9. (6 Credits)
Prerequisites: Approval of the Student Teaching Committee, considered based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio; senior status. Corequisite: 498. Planned teaching experience in schools selected and supervised by the Office of Field Experiences.

5250:497. Independent Study. (1-3 Credits)
Prerequisites: Permission of advisor and department head. Specific area of curriculum investigation pertinent to middle level education as determined by student's academic needs.

5250:498. Student Teaching Colloquium: Middle Grades. (1 Credit)
Corequisite: 5250:499. Prepares learner for final phase of becoming a decision maker. Explores problems encountered in the classroom, initiates reflective practice and concepts of other research.

5250:499. Student Teaching: Middle Level Education. (11 Credits)
Corequisite: 5250:498. 322 Field Hours. Planned teaching experience in schools selected and supervised by the Office of Field Experiences.

Military Science (1600)

1600:100. Introduction to the Army and Critical Thinking. (1 Credit)
Study of the mission of the Army, the principles of basic military leadership and management, land navigation, and opportunities in the Army. A geographical and cultural examination of the countries where U.S. soldiers are located. Leadership laboratory required. No military obligation incurred.

1600:102. Introduction to the Profession of Arms. (1 Credit)
Study of the principles and techniques of military leadership and human resource management. Introduction to drill and ceremony, small unit tactics, briefing techniques, and public speaking. Leadership laboratory required. No military obligation incurred.

1600:110. Leadership and Personal Development Laboratory. (1 Credit)
Students will participate in labs as a member of a cadet squad, learning to work with new people and gaining confidence through engaging in new and challenging situations that reinforce classroom instruction.

1600:111. Introduction to Tactical Leadership Laboratory. (1 Credit)
Students will participate in labs as a member of a cadet squad, learning to work with new people and gaining confidence through engaging in new and challenging situations that reinforce classroom instruction. This Laboratory session will focus more on tactical training.

1600:200. Innovative Team Leadership. (2 Credits)
Study of the principles of war and the art of leadership. Basic military skills taught through practical applications in marksmanship, map reading, first aid, and drill and ceremony. Leadership laboratory required. No military obligation incurred.

1600:201. Foundations of Tactical Leadership. (2 Credits)
Study and application of the Leadership Development Program (LDP). Introduction to tactics, patrolling, and basic military skills. Leadership laboratory required. No military obligation incurred.

1600:210. Innovative Team Leadership Laboratory. (1 Credit)
In their second year of military Science, students will begin to have a bigger leadership role within the ROTC organization and will participate in labs as a team leader. They will be responsible for the readiness and accountability of the first year cadets and are expected to begin to show confidence in leading others.

1600:211. Foundations of Tactical Leadership Laboratory. (1 Credit)
Students will have a bigger leadership role within the ROTC organization and will participate in labs as a team leader. They will be responsible for the readiness and accountability of the first year cadets and are expected to begin to show confidence in leading others and in conducting tactical exercises.

1600:300. Adaptive Team Leadership. (3 Credits)
Prerequisites: 1600:100, 1600:102, 1600:200, 1600:201 and/or permission. Study in the application of military tactics, military history, military briefing techniques and equipment. Practical work with operations orders and planning, organizing, and executing training. Leadership laboratory required.

1600:301. Leadership Under Fire. (3 Credits)
Prerequisite: 1600:300 or permission. Study of leadership, leadership counseling and tactics at the small-unit level. Practical work with land navigation, marksmanship training, squad and platoon movement, and battlefield survival. Leadership laboratory required.

1600:310. Adaptive Team Leadership Laboratory. (1 Credit)
Prerequisite: 1600:211. Corequisite: 1600:300. In their third year, as students enter the ROTC Advanced course, students will take on a much larger leadership role; responsible for squads and platoons of cadets as well as training them on the subject matter of each lab. They learn to motivate, instill confidence, and take responsibility for the quality of the training and activities of the labs.

1600:311. Leadership Under Fire Laboratory. (1 Credit)
Prerequisite: 1600:310. Corequisite: 1600:301. In their third year, as students enter the ROTC Advanced course, students will take on a much larger leadership role; responsible for squads and platoons of cadets as well as training them on the subject matter of each lab. They learn to motivate, instill confidence, and take responsibility for the quality of the training and activities of the labs.

1600:400. Developing Adaptive Leaders. (3 Credits)
Prerequisites: 1600:300 and 1600:301, or permission. Intensive investigation of the leadership process to include applicatory work emphasizing officer ethics, duties, and responsibilities. Management and supervisory skills. Practical experience with the Leadership Development Program (LDP). Leadership laboratory required.

1600:401. Leadership in a Complex World. (3 Credits)
Prerequisites: 1600:300 and 1600:301, or permission. Study of officer leadership and managerial responsibilities. Study of Army command organization and procedures, training management, personnel system, Uniform Code of Military Justice, and continued emphasis on counseling and human relations. Leadership laboratory required.

1600:410. Developing Adaptive Leaders Laboratory. (1 Credit)
Prerequisite: 1600:311. Corequisite: 1600:400. Senior ROTC students are responsible for planning, managing, and supervising leadership labs for the entire cadet Battalion, as well as acquiring the necessary resources and equipment required for training.

1600:411. Leadership in a Complex World Laboratory. (1 Credit)
Prerequisite: 1600:410. Corequisite: 1600:401. Senior ROTC students are responsible for planning, managing, and supervising leadership labs for the entire cadet Battalion, as well as acquiring the necessary resources and equipment required for training. They will later utilize the experience gained in leading cadets to aid them in leading United States Army Soldiers.

1600:490. Special Topics in Military Science. (1-3 Credits)
Prerequisite: Permission. (May be repeated for a maximum of six credits) Content varies with special topics. Texts to be selected according to topic and will use relevant library periodicals and journals. Existing library resources are adequate to support the course. Basic Camp, Advanced Camp, Airborne, and other specialty schools qualify for course credit.

Modern Languages (3500)

3500:101. Beginning Modern Language I. (4 Credits)
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.

3500:102. Beginning Modern Language II. (4 Credits)
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.

3500:201. Intermediate Modern Language I. (3 Credits)
Sequential. Prerequisite: 3500:102 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.

3500:202. Intermediate Modern Language II. (3 Credits)
Sequential. Prerequisite: 102 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.

3500:422. Modern Languages: Special Topics in Advanced Language Skills, or Culture, or Literature. (1-4 Credits)
Prerequisite: Modern Languages 3500:202 or equivalent. Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.

3500:490. Workshop in Modern Languages. (1-4 Credits)
Prerequisite: Permission of instructor. (May be repeated for a total of 8 credits) Group studies of special topics in modern languages.

3500:497. Individual Readings in Modern Languages. (1-3 Credits)
Prerequisites: 3500:202 and permission of department chair.

3500:498. Senior Honors Project. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and permission. Open only to language major enrolled in Honors Program. Independent study leading to completion of senior honors thesis or other original work.

Music - School of (7500)

7500:100. Fundamentals of Music. (2 Credits)
Introduction of basic notation and development of functional music reading and keyboard skills. Conducted in electronic keyboard laboratory with computer-assisted instruction available. For non-music majors only, with little or no previous musical training.

7500:101. Introduction to Music Theory. (2 Credits)
Prerequisite: Undergraduate Theory Placement Examination. Designed for prospective music major to correct deficiencies in theory background as determined through department placement testing. Includes classroom instruction and computer assisted instruction in basic notation, scales, meter, key signatures, ear training and basic familiarity with the keyboard. Credit not applicable toward music degree.

7500:102. Introduction to Music Education. (2 Credits)
Prerequisites: 7500:121 and 7500:154. Overview of the music teaching profession and its processes. Screening of degree candidates is built into the course with clinical field experience.

7500:103. Trends in Jazz. (2 Credits)
An overview of the first 100 years of jazz music with emphasis on major figures and styles central to the development of jazz. This course is specifically designed for the non-music major.

7500:104. Class Piano I. (2 Credits)
Prerequisite: 7500:101. Designed for student with no previous keyboard experience to learn rudimentary keyboard skills such as playing scales, chords, arpeggios and melodic patterns as well as simple music.

7500:105. Class Piano II. (2 Credits)
Prerequisite: 7500:104. Continuation of work begun in 104.

7500:107. Class Voice I. (2 Credits)
Prerequisite: 7500:101. Minimum memorization and solo singing requirement: seven songs. Voice literature emphasis; folk songs, ballads, spirituals, sacred songs and easy art songs in English.

7500:108. Class Voice II. (2 Credits)
Prerequisite: 7500:107. Minimum memorization and solo singing requirement: eight songs. Vocal literature emphasis: old Italian and English songs, art songs in English or foreign language if student is conversant with the language.

7500:110. Class Guitar. (1 Credit)
Introduction to the guitar, its repertoire and techniques. Basic classical techniques and music reading, strums, finger-picking, accompaniment patterns, blues styles will be covered.

7500:121. Theory and Musicianship I. (4 Credits)
Sequential, Prerequisite: Grade of C- or higher in 7500:101 or placement. Analysis, aural/oral skills; Diatonic pitch materials, three clefs; simple-compound meters, rhythmic divisions and subdivisions.

7500:122. Theory and Musicianship II. (4 Credits)
Sequential, Prerequisite: Grade of C- or higher in 7500:121. Theory, analysis, aural/oral skills: Seventh chords, secondary function, four-part dictation; asymmetric meters, borrowed subdivision.

7500:141. Ear Training/Sight Reading I. (1 Credit)
Prerequisite: Placement in Theory I. Corequisite: 7500:151. Major and minor keys; intervals, triads and inversions; diatonic progressions; three clefs; simple and compound meters; subdivision through sixteenth notes.

7500:142. Ear Training/Sight Reading II. (1 Credit)
Prerequisites: 7500:141 and 7500:151. Corequisite: 7500:152. Seventh chords; melodic chromaticism; secondary function; four-part dictation; asymmetric meters; borrowed subdivision.

7500:151. Theory I. (3 Credits)
Sequential, Prerequisite: Theory Placement Examination (with a score of 65% or higher) or the grade of C- or higher in 7500:101. Study/creative use of elements of music; investigation of music of major composers of classic/romantic eras; introduction to earlier musical practices and contemporary music.

7500:152. Theory II. (3 Credits)
Sequential, Prerequisite: grade of C- or higher in 7500:151. Study/creative use of elements of music; investigation of music of major composers of classic/romantic eras; introduction to earlier musical practices and contemporary music.

7500:154. Music Literature I. (2 Credits)
Sequential. Familiarization with large body of musical material from all branches of music writing; vocal, instrumental, symphonic and choral music literature. Special attention given to style, form and structural procedures of principal composers.

7500:155. Music Literature II. (2 Credits)
Sequential. Familiarization with large body of musical material from all branches of music writing; vocal, instrumental, symphonic and choral music literature. Special attention given to style, form and structural procedures of principal composers.

7500:157. Student Recital. (0 Credits)
Required of all music majors until minimum requirement is met. Forum for student and faculty members providing lectures, recitals and opportunity for practice of various skills necessary for successful music performance.

7500:200. Seminar in Music. (1-3 Credits)
Exploration of special topics in music for the non-music major (may be repeated for a total of 9 credits)

7500:201. Exploring Music: Bach to Rock. (3 Credits)
Prerequisite: 3400:210 or 3400:221. This course provides non-music majors with the skills to evaluate a wide range of music.

7500:210. Jazz Improvisation I. (2 Credits)
Prerequisites: 7500:262 and permission of instructor. Study and application of principles of jazz improvisation as they relate the chord-scale structures, motif development and style.

7500:211. Jazz Improvisation II. (2 Credits)
Prerequisite: 7500:210. Advanced study in principles of jazz composition.

7500:212. Music Industry: A Survey of Practices & Opportunities. (2 Credits)
A study of current practices affecting the professional musician and a survey of career opportunities relating to the music industry.

7500:221. Theory and Musicianship III. (4 Credits)
Sequential, Prerequisite: 7500:122. Theory, analysis, and aural/oral skills: Chromatic harmony, dictation of mixed and irregular meters, syncopation, dotted rhythms, and ties.

7500:222. Theory and Musicianship IV. (4 Credits)
Sequential, Prerequisite: 7500:221. Theory, analysis, and aural/oral skills: Advanced chromaticism and rhythm, extended tonality, form, serial and non-serial atonality.

7500:241. Ear Training/Sight Reading III. (1 Credit)
Prerequisites: 7500:142 and 7500:152. Corequisite: 7500:251. Modulation; chromatic harmony; mixed meters.

7500:242. Ear Training/Sight Reading IV. (1 Credit)
Prerequisites: 7500:241 and 7500:251. Corequisite: 7500:252. Twentieth-century materials: modes; whole-tone and octatonic scales; secundal and quartal/quintal harmony; classical, jazz, and non-western examples; polyrhythm; total and atonal contexts.

7500:251. Theory III. (3 Credits)
Sequential, Prerequisite: The grade of C- or higher in 7500:152. Renaissance vocal counterpoint; Baroque instrumental counterpoint; form and analysis of music of all eras.

7500:252. Theory IV. (3 Credits)
Sequential, Prerequisite: The grade of C- (70%) or higher in 7500:251. Renaissance vocal counterpoint; Baroque instrumental counterpoint; form and analysis of music of all eras.

7500:254. String Methods I. (1 Credit)
Prerequisites: 7500:102, 7500:155, 7500:222, 7500:262, 7500:276, and 7500:277. Fundamentals of technique, tone production, methods, and materials pertaining to teaching violin, viola, cello and string bass in the public schools.

7500:255. String Methods II. (1 Credit)
Prerequisites: 102, 155, 222, 254, 262, 276, 277. Continuation of the fundamentals of technique, tone production, methods, and materials pertaining to teaching violin, viola, cello and string bass in the public schools.

7500:259. Fretboard Harmony. (2 Credits)
Prerequisite: 7500:261 or permission of instructor. Essentials of basic theory and harmony as applied to the guitar fretboard: accompaniment, improvisation, transposition, modulation, figures bass, sight reading.

7500:261. Keyboard Harmony I. (2 Credits)
Sequential. Prerequisites: 7500:105 or equivalency and 7500:122. Essentials of basic theory and harmony practically applied at keyboard; accompaniment, improvisation, transposition, modulation and sight-reading.

7500:262. Keyboard Harmony II. (2 Credits)
Sequential. Prerequisites: 7500:105 or equivalency and 7500:122. Essentials of basic theory and harmony practically applied at keyboard; accompaniment, improvisation, transposition, modulation and sight-reading.

7500:265. Diction for Singers I. (2 Credits)
Sequential. Prerequisite: Permission. Study of diction of the four most used languages (Italian, German, French and English) in vocal performance and international phonetic alphabet. Designed for student who expects to function as vocal performers and/or choral and studio voice teachers.

7500:266. Diction for Singers II. (2 Credits)
Sequential. Prerequisite: 7500:265. Study of diction of the four most used languages (Italian, German, French and English) in vocal performance and international phonetic alphabet. Designed for student who expects to function as vocal performers and/or choral and studio voice teachers.

7500:268. Group Vocal Techniques for Choral Music Education. (2 Credits)
Prerequisites: [7510:120 or 7510:121], and 7520:124. Corequisite: 7500:265. Foundational concepts of group vocal techniques. Designed for choral educators to learn physiology of the voice, basics of vocal production, and applications for the Pre-K-12 choral classroom.

7500:271. Piano Pedagogy & Literature I. (2 Credits)
Prerequisite: Permission of instructor. Examination of musical content and pedagogical orientation of beginning piano material to include appropriate teaching works, methods and ensemble pieces from a variety of historical periods.

7500:272. Piano Pedagogy & Literature II. (2 Credits)
Prerequisite: 7520:125 or permission of the instructor. A survey of piano literature at all levels of difficulty, with practical emphasis on its use for teaching.

7500:276. Trumpet & French Horn Methods. (1 Credit)
Prerequisite: 7500:102. A comprehensive approach to the performance and pedagogy of the trumpet and French horn for the instrumental music education major in preparation for teaching music.

7500:277. Clarinet & Saxophone Methods. (1 Credit)
Prerequisite: 7500:276. A comprehensive approach to the performance and pedagogy of the clarinet and saxophone for the instrumental music education major in preparation for teaching music.

7500:289. Music Education Departmnt Jury. (0 Credits)
Prerequisites: minimum 2.5 accum, C or higher in all freshman/sophomore music education coursework, and minimum 200 jury level. Sophomore exam for music education majors.

7500:298. Technologies of Music Education. (2 Credits)
Introductory hands-on experiences with a wide range of technology applications and strategies to integrate technology into the music curriculum.

7500:305. Marching Band Organization & Techniques. (1-2 Credits)
Prerequisite: 7500:289, two semesters 7510:126. A discussion of the marching band. Students learn to write complete half-time show, administer marching band program. Required for instrumental music education majors.

7500:307. Techniques of Jazz Ensemble Performance & Direction. (1-2 Credits)
Prerequisite: 7500:102, 7500:155, 7500:222, 7500:262, 7500:276, 7500:277, and 7500:305; permission of instructor. Basic experiences relating to conducting, rehearsal techniques, improvisation, performance, repertoire and other matters related to organization and direction of stage bands. Required for instrumental majors.

7500:308. History & Literature of Jazz. (3 Credits)
Prerequisite: Permission of instructor. Study of origins of jazz music, its development and influence on today's culture. Investigates evolution of musical instruments as they pertain to jazz music, the artists who perform on them, and their music through live and recorded listening experiences.

7500:309. Jazz Keyboard Techniques. (2 Credits)
Prerequisite: 7500:262. Study of and familiarization with basic jazz keyboard techniques as they relate to contemporary jazz harmony and theory.

7500:310. Jazz Improvisation III. (2 Credits)
Prerequisite: 7500:211. Advanced study in the principles of jazz improvisation.

7500:311. Jazz Improvisation IV. (2 Credits)
Prerequisite: 7500:310. Advanced study in the principles of jazz improvisation.

7500:315. Equity and Excellence in Music Education. (3 Credits)
Prerequisite: 7500:289. Inquiry-based seminars and service learning field experiences for the music education major to develop competence implementing equity and excellence in a culturally pluralistic society.

7500:325. Research in Music. (2 Credits)
Prerequisites: 7500:155, 7500:222, and 7500:262. Techniques of basic research methods; examination of selected music materials; field trips to specialized collections.

7500:339. Teaching General Music I. (2 Credits)
Prerequisites: 7500:222, 7500:262, and 7500:289. Methods and materials for teaching general music in pre-K to 12th grade classrooms.

7500:340. Teaching General Music II. (2 Credits)
Prerequisites: 7500:289, and 7500:339. Advanced methods and materials for teaching general music with emphasis on Orff, Kodaly and Dalcroze methodologies.

7500:341. Junior High/Middle School Choral Methods. (2 Credits)
Prerequisites: 7500:289, and 7500:340. Methods and materials for teaching choral music at the JH/MS level. Develops competencies in literature selection, rehearsal techniques and assessment of the adolescent voice.

7500:344. Secondary Choral Music Methods/Materials. (2 Credits)
Prerequisites: 7500:351, and 7500:361. Methods, techniques, and materials for teaching secondary choral music. Develops competencies in literature, selection, rehearsal techniques, and programming methodology.

7500:345. Low Brass Methods. (1 Credit)
Prerequisites: 7500:222, 7500:262, 7500:277, and 7500:289. A comprehensive approach to the pedagogy and performance of the low brass for the instrumental music education major in preparation for teaching music.

7500:346. Flute & Double Reed Methods. (1 Credit)
Prerequisites: 7500:345, 7500:340, and 7500:351. A comprehensive approach to the pedagogy and performance of the flute and double reeds for the instrumental music education major in preparation for teaching music.

7500:351. Music History I. (3 Credits)
Sequential. Prerequisites: 7500:122 and 7500:155. Development of music from ancient to modern times; scores, recordings and live performances as illustrative material.

7500:352. Music History II. (3 Credits)
Sequential. Prerequisites: 7500:351. Development of music from ancient to modern times; scores, recordings and live performances as illustrative material.

7500:353. Electronic Music. (3 Credits)
Theory of electronically generated sound and practice of electronic music composition. Emphasis is on understanding digital and analog synthesizers in a MIDI recording studio.

7500:361. Conducting. (2 Credits)
Prerequisites: All Majors 7500:155, 7500:222, and 7500:262; Vocal 7500:289, 7500:351, or permission; Instrumental 7500:254, 7500:346, 7500:352, 7500:454 or permission. Study and practice of conducting techniques; patterns, fermatas, tempo and dynamic change, attacks and releases, score reading, aural skills. One hour lab required.

7500:363. Intermediate Conducting: Choral. (2 Credits)
Prerequisite: 7500:361 or instructor permission. Introduction to choral conducting with emphasis on manual techniques, vocal skills, aural skills, and gaining conducting experience.

7500:366. Song Literature I. (2 Credits)
Prerequisite: 7500:222 or permission. Systematic study of French and German song literature presented chronologically. Includes study of stylistic compositional characteristics and repertoire of major composers of song literature.

7500:367. Song Literature II. (2 Credits)
Prerequisite: 7500:222 or permission. Systematic study of American, British and Italian song literature presented chronologically. Includes study of stylistic compositional characteristics and repertoire of major composers of song literature.

7500:368. Guitar Styles. (2 Credits)
Prerequisite: 200 performance level or permission of instructor. Techniques involved in performing musical styles other than those in classical guitar. Included are plectrum styles such as bluegrass, country and rock, as well as flamenco, folk, popular and jazz.

7500:371. Analytical Techniques. (2 Credits)
Prerequisite: 7500:222. Techniques for analysis of musical score from all eras of Western music history, with major emphasis on works of Baroque, Classical and Romantic periods.

7500:372. Post-Tonal Analytic Techniques. (2 Credits)
Prerequisite: 7500:222. Techniques for the analysis of musical scores from the 20th and 21st Centuries. Required of a composition major.

7500:407. Jazz Arranging & Scoring. (2 Credits)
Prerequisites: 7500:309 and 7500:454. Study of jazz instrumentation from small groups to large ensembles.

7500:415. Teaching and Literature: Brass Instruments. (2 Credits)
Prerequisite: Permission of instructor. Research in current trends and issues in brass teaching techniques and appropriate literature.

7500:416. Teaching and Literature: Woodwind Instruments. (2 Credits)
Prerequisite: Permission of instructor. Research in current trends and issues in woodwind teaching techniques and appropriate literature.

7500:432. Teaching & Literature: Percussion Instruments. (2 Credits)
To train undergraduate and graduate percussion students in techniques of percussion education. Emphasis on research, literature, performance, and techniques from elementary through secondary levels.

7500:442. Instrumental Methods. (2 Credits)
Prerequisites: 7500:254, 7500:346, 7500:352, and 7500:454. Procedures for teaching instrumental music at all levels. Special emphasis will be placed on classroom management, recruitment, assessment, literature selection, scheduling, and rehearsal organization. Clinical and field experience.

7500:443. Instrumental Practicum. (2 Credits)
Prerequisite: 7500:442. Procedures for teaching instrumental music at all levels. Special emphasis will be placed on classroom management, recruitment, assessment, literature selection, scheduling, and rehearsal organization. Clinical and field experience.

7500:451. Introduction to Musicology. (2 Credits)
Prerequisite: 7500:352. Comparative musicology; acoustics; psychology and physiology of music; aesthetics; theory of music theory; historical musicology.

7500:453. Music Software Survey and Use. (2 Credits)
Prerequisite: 7500:122 or permission of instructor. A survey and evaluation of available software in the various forms of musical instruction. Students will design a course suitable for submission to a programmer.

7500:454. Orchestration. (2 Credits)
Prerequisite: 7500:222. Theory of instrumentation ranging from small ensembles to full band and orchestras.

7500:455. Advanced Conducting: Instrumental. (2 Credits)
Prerequisite: 7500:361 and 7500:442 or permission. Baton techniques and problems relating to practice, reading and preparation of scores; organization of ensembles; programming; conducting large instrumental ensembles. One hour lab required.

7500:456. Advanced Conducting: Choral. (2 Credits)
Prerequisite: 7500:363. Conducting techniques to the choral ensemble, including leadership, error detection, tonal development, stylistic accuracy and analysis. One hour lab required.

7500:457. Senior Recital. (0 Credits)
Permission of applied instructor is required for this course, which is taken only during the semester of the Senior Recital.

7500:458. Percussion Methods. (1 Credit)
Prerequisites: 7500:346, 7500:352 and admission into a Music Education Program. A comprehensive approach to the pedagogy and performance of the percussion instruments for the instrumental education major in preparation for teaching music.

7500:463. Repertoire & Pedagogy: String Instruments. (3 Credits)
Prerequisite: Permission of instructor. Study in depth of the four bowed string instruments, their teaching and close relationship. Despite obvious difference in physical application of cello and bass from violin and viola, methods of bowing, sound production and coloring are closely related. Application of the instruments to solo, chamber and orchestral playing.

7500:465. Vocal Pedagogy. (2 Credits)
Prerequisite: 300 or above with permission of instructor. In depth study of subjects dealing with teaching voice: physiology of the vocal instrument, principles governing vocal production and application of vocal pedagogy.

7500:467. Guitar Pedagogy. (2 Credits)
Prerequisite: Permission of instructor. A systematic analysis of prevailing schools of guitar pedagogy. Sound production physiology, method books and special problems in teaching addressed.

7500:468. Guitar Arranging. (2 Credits)
Prerequisite: Permission of instructor. After comparative analysis of selected examples, students make original solo guitar arrangements of works written for other solo instruments and ensembles.

7500:469. History & Literature: Guitar & Lute. (2 Credits)
Prerequisite: Permission of instructor. Study of plucked, fretted, string instruments from the 14th Century to the present: construction, notation, literature and performance practices. Modern editions and recordings evaluated.

7500:471. Counterpoint. (2 Credits)
Prerequisite: Permission of instructor. Designed to give student of theory-composition necessary knowledge and skills for understanding contrapuntal practices and procedures; emphasis on 20th-Century techniques.

7500:472. Advanced Orchestration. (2 Credits)
Prerequisite: 7500:454. Study of techniques of orchestral style as found in major works from classical orchestra of Haydn and Mozart through modern orchestra of Stravinsky, Bartok, Berg and Schoenberg.

7500:490. Workshop in Music. (1-3 Credits)
Prerequisite: Permission of instructor. Investigation of topics not offered in regular curriculum. Graduate student must fulfill additional requirements.

7500:492. Student Teaching Colloquium. (1 Credit)
Prerequisite: restricted to students enrolled in Student Teaching in Music. For music education majors; certification, contracts, benefits, job market prospects and student teaching experience sharing.

7500:497. Independent Study in Music. (1-2 Credits)
(May be repeated for a total of four credits) Prerequisites: A minimum academic standing of Senior, a Music major and permission of department head. Independent study under supervision of specially selected faculty members in subject area bearing on student's own goals.

7500:498. Senior Honors Project: Music. (1-3 Credits)
(May be repeated for a total of six credits) Individually designed project demonstrating scholarship, analysis, advanced musicianship, research and/or creativity according to student interest. Restricted to University honors music student.

Music Organizations (7510)

7510:101. University Symphony Youth Orchestra. (1 Credit)
This ensemble is designed for the post-secondary student who wishes to participate in a select group performing orchestral literature. By audition only.

7510:102. Akron Symphony Chorus. (1 Credit)
Open to University and community members by audition. Prospective members should contact School of Music two weeks before semester begins. Performs with Akron Symphony Orchestra.

7510:103. University Symphony: Orchestra. (1 Credit)
Membership by audition. Organization devoted to study of orchestral literature. Full-length concerts as well as special University appearances. Major conducted ensemble.

7510:104. Symphonic Band. (1 Credit)
Membership by audition. The University Symphonic Band is the most select band at the University and performs the most demanding and challenging music available. Major conducted ensemble.

7510:105. Vocal Choral Ensemble. (1 Credit)
Membership open to those enrolled in applied voice study. Coaching and rehearsal of solo and ensemble literature for voices from operatic, oratorio and lieder repertories.

7510:106. Brass Ensemble. (1 Credit)
Membership by audition. Study and performance of literature for brass ensemble from all periods of music history. Frequent public concerts. For advanced brass players.

7510:107. String Ensemble. (1 Credit)
Membership by audition. In-depth study of performance of chamber music literature with special emphasis on string quartet and piano trio.

7510:108. Opera/Lyric Theater Workshop. (1 Credit)
Membership by audition. Musical and dramatic group study of excerpts from operatic repertoire. Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.

7510:109. Percussion Ensemble. (1 Credit)
Membership by audition. Study and performance of literature for various percussion groups; develops skill in ensemble performance.

7510:110. Woodwind Ensemble. (1 Credit)
Membership by audition. Study, reading, and performance of major orchestral and serenade repertoire for wind instruments.

7510:114. Keyboard Ensemble. (1 Credit)
In-depth study of ensemble playing. Eight semesters required for Keyboard majors, six semesters for Keyboard Mus. Ed. majors, and each semester for keyboard scholarship recipients.

7510:115. Jazz Ensemble. (1 Credit)
Membership by audition. Provides experience in jazz ensemble performance. Student is assumed to have knowledge of rudiments of music and some experience in jazz performance.

7510:116. Guitar Ensemble. (1 Credit)
Membership by audition. Provides experience in conducted ensemble performance for guitarists. Major conducted ensemble.

7510:118. Small Ensemble-Mixed. (1 Credit)
Chamber Ensemble, Baroque Ensemble and Contemporary Music Ensemble. Each is a group of diverse instruments which rehearses and performs a selected body of music.

7510:120. Concert Choir. (1 Credit)
Membership by audition. Highly select mixed choir. Performs classical literature from all periods. Campus, regional, and tour performances. "Major conducted ensemble" for vocal majors.

7510:121. University Singers. (1 Credit)
Membership by audition. Mixed ensemble devoted to performance of a wide variety of choral literature from classical to popular. "Major conducted ensemble" for vocal majors.

7510:125. Concert Band. (1 Credit)
Membership by audition. This ensemble performs the finest literature available for concert bands today. Major conducted ensemble.

7510:126. Marching Band. (1 Credit)
Enrollment is open to all members of the University student body. This organization is noted for its high energy performances at University football games.

7510:127. Blue & Gold Brass. (1 Credit)
Membership by audition. The official band for Akron home men's basketball games.

7510:128. University Band. (1 Credit)
The University Band is open to all members of the University community and performs excellent standard band literature. Major conducted ensemble.

7510:129. Blue & Gold Brass II. (1 Credit)
Membership by audition. The official band for Akron home ladies basketball games.

7510:130. Summer Concert Band. (1 Credit)
University of Akron Summer Concert Band is open to all wind and percussion musicians, and performs the finest in band literature.

7510:150. Chamber Choir. (1 Credit)
Membership by audition. Premiere and flagship choral ensemble. Highest level of musicianship, vocal technique, and professionalism required. Performs classical literature of all periods and genres.

7510:421. Guitar Chamber Music. (1 Credit)
Prerequisite: Open to all upper class instrumentalists and vocalists. Guitarists must have taken Guitar Ensemble, 7510:116. Study, coaching, and performance of major works for guitar with other instruments or voice. Major conducted ensemble for guitar majors.

7510:431. Summer Drum Corps Experience. (1 Credit)
Prerequisite: Permission of instructor. Summer Drum Corps Experience provides one credit for participation in a Junior Level - Division I, II, or III Drum and Bugle Corps as part of the Drum Corps International Summer Music Games.

New Media (7000)

7000:100. Introduction to New Media: Creative Mind. (3 Credits)
In addition to an introduction to the history and theory of New Media, students will enhance their creative mind through seminar and simple practices. No prior art or digital media experience is required.

7000:300. New Media II: Creative Practice. (3 Credits)
Prerequisite or Corequisite: 7000:100. Students practice various New Media technologies. No prior art or digital media experience is required.

7000:400. New Media III: Creative Projects. (3 Credits)
Prerequisite: 7000:300. Students create their original New Media Art projects through research, proposals, productions and a show.

7000:401. History of Performance and New Media. (3 Credits)
Prerequisite: 7100:101 or permission. A survey of performance art and "new media," including video art and sound art, this course takes an historical overview of its subjects from the emergence of performance art in the late 19th century (including dance, theater, and music) and video and sound art in the 1960s, through the present moment.

Nursing (8200)

8200:100. Introduction to Nursing. (1 Credit)
Introduces students to influences of past, present, and future political, legal, social, and cultural processes on the nursing profession and the roles of nurses.

8200:101. Introduction to Baccalaureate Nursing. (1 Credit)
Prerequisite: Licensed Practical Nurse. Introduces L.P.N./B.S.N. students to the purposes of baccalaureate nursing education. Explores philosophy, nursing theories, research, emerging roles, decision making, and the health care system.

8200:106. Pre-Nursing Capstone College Tech Prep. (1 Credit)
The Pre-Nursing Capstone prepares students to define, explain and demonstrate the role of the Nursing Assistant in the long-term care facility, in-home care, and the hospital setting.

8200:211. Foundations of Nursing Practice I. (5 Credits)
Prerequisite: Admission to the School of Nursing. This course focuses on basic concepts and skills needed by novice nursing students in order to care for clients. This course will focus on nurse-client relationships, communication, nursing process, psychomotor skills, and beginning pharmacology. Clinical experiences will reflect these concepts and skills.

8200:212. Foundations of Nursng Practice II. (5 Credits)
Prerequisite: 8200:211. Builds on Foundations of Nursing Practice I focusing on promoting holistic well being across the lifespan. Clinicals are with children and adults, acute and non-acute settings.

8200:216. Transition to Baccalaureate Nursing. (3 Credits)
Prerequisite: Admission to School of Nursing. This course emphasizes the transition from Licensed Practical Nurse to professional nurse. The LPN is introduced to the discipline of nursing from the baccalaureate perspective.

8200:217. Pathophysiology for Nurses. (3 Credits)
Prerequisite: Admission to the School of Nursing. Develop understanding of basic concepts related to pathophysiologic mechanisms of health, illness as applied to nursing. Emphasis on application to nursing using the nursing process.

8200:225. Health Assessment. (3 Credits)
Prerequisite: Admission to the School of Nursing. The skills of taking health histories and performance of basic physical assessment. Supervised practice in the Learning Resource Center.

8200:230. Nursing Pharmacology. (3 Credits)
Prerequisite: Admission to the School of Nursing. Emphasis on fundamental concepts of pharmacology as applied to major drug classes, actions and effects. Application of nursing process to drug therapy across the lifespan.

8200:336. Concepts of Professional Nursing - RN Only. (3 Credits)
Prerequisite: Admission to the RN/BSN sequence. Focuses on the relationship of concepts and theories to the role of the professional nurse.

8200:337. Health Assessment/RN - RN Only. (3 Credits)
Prerequisite: Admission to RN program. This three hour health assessment course is designed for the registered nurse. The course consists of both theory and supervised clinical laboratory practice.

8200:341. Professional Role Development. (3 Credits)
Prerequisites: Admission to the School of Nursing and all sophomore level courses in the program of study. A professional engagement course designed to expose students to the essentials of the professional role of the baccalaureate generalist nurse.

8200:350. Nursing of the Childbearing Family. (5 Credits)
Prerequisite: Satisfactory completion of Sophomore level nursing courses. A theoretical and clinical basis for care of the childbearing family in varying degrees of health and in a variety of settings.

8200:360. Nursing Care of Adults. (5 Credits)
Prerequisite: Satisfactory completion of Sophomore level nursing courses. Acute nursing care of adults with nutrition, elimination, metabolic, sexual, reproductive, and immunological concerns. Includes theory and practice at the advanced beginner level.

8200:370. Nursing Care of Older Adults. (5 Credits)
Prerequisite: Satisfactory completion of Sophomore level nursing courses. Acute nursing care of older adults with mobility, perception, circulation, and oxygenation concerns. Includes theory and practice at the advanced beginner level.

8200:380. Mental Health Nursing. (5 Credits)
Prerequisite: Satisfactory completion of Sophomore level nursing courses. Assists students in developing knowledge and skills for providing care to individuals with mental health needs in a variety of settings.

8200:401. RN Transition. (1 Credit)
Prerequisites: 8200:350, 8200:360, 8200:370, 8200:380 and 8200:341. Corequisites: any two, including 8200:410, 8200:430, 8200:435, 8200:440 and 8200:450. Prepares the Senior nursing student of the professional role by developing a resume, test taking strategies for the NCLEX RN exam and a resume.

8200:405. Nursing Care of Healthy Individuals/Families - RN Only. (3 Credits)
Prerequisite or Corequisite: 8200:336. Health care concepts across the lifespan with emphasis on health promotion and illness prevention for individuals, families, and groups are discussed.

8200:406. Palliative Nursing Care - RN Only. (3 Credits)
Prerequisite or Corequisite: 8200:336. Dimensions of end of life nursing care, including family dynamics, grief and loss, ethical considerations, physiologic changes and community resources are examined.

8200:409. International Health. (2-3 Credits)
Prerequisite: Junior standing. Study in an international location. Focuses on comparisons of education, ethics, government, demography and geography on health care and nursing roles and responsibilities.

8200:410. Nursing of Families with Children. (5 Credits)
Prerequisites: A grade of C or better 8200:341, 8200:350, 8200:360, 8200:370, and 8200:380. Theoretical and clinical nursing course focused on the child within a family context. Health problems of both acute and chronic nature are explored.

8200:412. Global Perspectives of Health and Health Care. (2-3 Credits)
Prerequisite: senior status. Cultural, political, educational, and economical perspectives of different regions of the world and the impact of these factors on health will be compared and examined.

8200:415. Complex Care of Aging Families/RN only. (3 Credits)
Prerequisite or Corequisite: 8200:336. Complex nursing issues related to care of aging individuals and families are explored. The nurse's role in physiological, emotional and psychosocial care is discussed.

8200:430. Nursing in Complex & Critical Situations. (5 Credits)
Prerequisites: 8200:341, 8200:350, 8200:360, 8200:370, 8200:380. Introduces advanced beginners to the complexity of nursing care in acute complex and critical situations of patients with multi-system failures.

8200:435. Nursing Research. (2 Credits)
Prerequisite: Completion of 8200:341, 8200:350, 8200:360, 8200:370, 8200:380. Exploration of the effects of nursing research on the profession, become a knowledgeable consumer of research.

8200:436. Nursing Research/RN Only. (3 Credits)
Prerequisite or Corequisite: 8200:336. Exploration of the effects of nursing research on the profession and becoming a knowledgeable consumer of research.

8200:440. Nursing of Communities. (5 Credits)
Prerequisite: Completion of 8200:341, 8200:350, 8200:360, 8200:370, 8200:380. A synthesis of nursing skills applied among various community populations. Health and illness care strategies within diverse population groups.

8200:444. Nursing of Communities Practicum - RN Only. (2 Credits)
Corequisite: 8200:445. Prerequisite or Corequisite: 8200:336. This clinical practicum provides experiences related to community health nursing in a variety of traditional and nontraditional community environments.

8200:445. Nursing of Communities/ - RN Only. (3 Credits)
Corequisite: 8200:444. Prerequisite or Corequisite: 8200:336. This course provides a theoretical foundation for community, including public health nursing, to individuals and families in a variety of settings to diverse populations.

8200:446. Professional Nursing Leadership - RN Only. (3 Credits)
Corequisite: 8200:447. Prerequisite or Corequisite: 8200:336. Issues related to nursing leadership, management, policy, and economic issues within the healthcare system that influence nursing practice are discussed.

8200:447. Professional Nursing Leadership Practicum - RN Only. (2 Credits)
Corequisite: 8200:446. Prerequisite or Corequisite: 8200:336. This clinical course offers the opportunity to implement leadership and management skills in a health care setting.

8200:448. Professional Nursing Capstone - RN Only. (3 Credits)
Prerequisite: 8200:336. Prerequisites or Corequisites: 8200:337, 8200:405, 8200:406, 8200:415, 8200:436, 8200:444, 8200:445, 8200:446, and 8200:447. Opportunities to synthesize information and reflect on ethical, legal, cultural, and political dimensions of employment and patient care within the health care system are provided.

8200:450. Senior Practicum and Nursing Leadership. (5 Credits)
Prerequisites: 8200:341, 8200:350, 8200:360, 8200:370, and 8200:380. This course focuses on the application of leadership and management principles to the practice of nursing. Political, social, cultural, legal and ethical issues are explored.

8200:453. School Nurse Practicum I. (5 Credits)
Prerequisites: 5570:421/521 and 5570:423/523. Prerequisite or corequisite: 8200:225/650. Emphasis on clinical primary health care nursing to enhance positive health behavior outcomes of well children and adolescents with minor conditions on family, community, school contexts.

8200:454. School Nurse Practicum II. (5 Credits)
Prerequisite: 5570:421/521, 5570:423/523, 225 or 650, 453/553 or waiver. Emphasis on primary health care nursing to enhance positive health behavior outcomes of children/adolescents with minor common health or behavioral problems and chronic illnesses.

8200:480. Senior Honors Project. (1-4 Credits)
Prerequisites: Honors Program Student, 8200:435 (Honor's Designated Section) Completion and presentation of an original investigation of a significant topic or creative work which must meet high standards of scholarship.

8200:489. Special Topics: Nursing. (1-4 Credits)
(May be repeated as new topics are presented) Group studies of special topics in nursing. May not be used to meet requirements for the major in nursing. May be used for elective credit.

8200:493. Workshop. (1-4 Credits)
(May be repeated as new topics are presented) Selected topics in nursing. May be used to meet undergraduate or graduate major requirements at the discretion of the college.

8200:497. Independent Study: Nursing. (1-3 Credits)
Prerequisite: Permission of Director of Nursing Education, and good academic standing. Provides opportunity to develop greater depth in an area of nursing through methodology specific to discipline of nursing.

Nursing: Cooperative Education (8000)

8000:301. Cooperative Education. (0 Credits)
(May be repeated). For cooperative education students only. Work experience in business, industry, or governmental agency. Comprehensive performance evaluation and written report required.

Nutrition and Dietetics (7760)

7760:120. Career Decisions in Nutrition. (1 Credit)
Exploration of the nutrition/dietetics profession, including academic/internship routes, career opportunities, professional concepts and attributes. Self-assessment and goal setting with beginning portfolio development.

7760:132. Early Childhood Nutrition. (3 Credits)
Emphasis on nutrition as component of Early Childhood programs. Nutrition principles discussed in relation to self and young children. Prenatal and infant nutrition studied. Food as learning experience, menu planning, purchasing, sanitation, food labeling, storage and parent involvement included. For Family and Child Development Option, and an educational technology student.

7760:133. Nutrition Fundamentals. (3 Credits)
Study of basic nutrition concepts, contemporary issues, controversies; emphasis on macro/micro nutrient requirements for healthy individuals; analysis of a student's dietary intake. Online section available.

7760:141. Food for the Family. (3 Credits)
Prerequisite: Permission of instructor. Application of nutrition to meal planning; problems in selecting, budgeting and preparing food; meal service.

7760:228. Introduction to Medical Nutrition Therapy. (3 Credits)
Prerequisites: 7760:133, 3150:110, 3150:111, 3150:112, and 3150:113. Introduction to Medical Nutrition Therapy will review basic metabolic and pathological conditions with emphasis on medical nutrition therapy strategies.

7760:250. Food Science Lecture. (3 Credits)
Prerequisites: 7760:133, 7760:320, 3150:110, 3150:111, 3150:112, and 3150:113. Study of the chemical and physical structure of food. Scientific and aesthetic principles involved in the selection, storage and preparation of foods.

7760:251. Food Science Lab. (1 Credit)
Prerequisites: 7760:133, 3150:110, 3150:111, 3150:112, and 3150:113. Corequisite 7760:250. Application of the scientific and sensory principles involved in the selection, storage and preparation of foods.

7760:310. Food Systems Management I. (4 Credits)
Prerequisites: 7760:250 and [6200:201 or 2420:211]. Corequisite: 7760:315. Basic theoretical concepts in the management of dietetic food service systems and the practical application of principles and procedures in quantity food production and service.

7760:314. Food Systems I Field Experience. (2 Credits)
Development of quantity food preparation in community and health care agencies; identification of functions and resources involved in the food service systems.

7760:315. Food Systems Management I Clinical. (2 Credits)
Prerequisite: 7760:250. Corequisite: 7760:310. Development of quantity food preparation and supervisory skills in community agencies; identification of functions and resources involved in the management of food service systems.

7760:316. Science of Nutrition. (4 Credits)
In-depth characterization of composition, metabolism, physiological functions and interrelationships of nutrients. Analysis and interpretation of current literature; assessment of nutrition counseling techniques.

7760:321. Experimental Foods. (3 Credits)
Prerequisites: 7760:250, 3150:110, 3150:111, 3150:112, and 3150:113. Theory and methods in the experimental study of foods. Sensory evaluation and instrumental analysis of food quality. Individual research emphasized. Lecture/Laboratory.

7760:328. Medical Nutrition Therapy I. (3 Credits)
Prerequisites: [7760:133 or 7760:316], 7760:426, and 7760:443. Analysis of health care concepts and the medical nutrition therapy relationship. Consideration of nutritional implications of pathological conditions and alterations to diet for specific health issues or disorders.

7760:329. Medical Nutrition Therapy I Clinical. (2 Credits)
Prerequisites: [7760:133 or 7760:316], 7760:426, and 7760:443. Corequisite: 7760:328. Analysis of therapeutic health-care concepts. Consideration of nutritional implications of pathological conditions; construction of diets for specific disorders.

7760:340. Meal Management. (3 Credits)
Prerequisites: 7760:250 or 7760:141. Emphasis is on meal design, etiquette, nutritional adequacy, and application of management principles. Resource management is applied to all course activities, including restricted financial and special diet situations.

7760:400. Nutrition Communication & Education Skills. (4 Credits)
Prerequisites: 7760:228 and [7760:133 or 7760:316]. Theory and development of communication and education skills essential to dietetics practice; interpersonal communication; interviewing; nutrition counseling; education techniques, media, and current technology.

7760:403. Advanced Food Preparation. (3 Credits)
Prerequisite: 7760:141 or 7760:250. Study of advanced techniques of food preparation. Introduction to and interpretation of classic and foreign cuisines. Emphasis on individualized experiences, skill development and evaluation of procedures and results.

7760:412. Introduction to Regulatory Affairs. (3 Credits)
Organization and management in administration of food service systems; problems in administration of food service systems; problems in control of labor, time and cost. Field experience in food production. Study of regulations affecting the food industry, such as food labeling, nutrition labeling, food safety, and adulteration. Course includes discussion of regulatory agencies and their impact on the food industry.

7760:413. Food Systems Management II. (3 Credits)
Prerequisite: 7760:310. Advanced concepts in management of dietetic service systems relating to achievement of nutritional care goals.

7760:421. Special Problems in Nutrition and Dietetics. (1-3 Credits)
Additional study or apprentice experience in specialized field or preparation; group and individual experimentation.

7760:424. Nutrition in Life Cycle. (3 Credits)
Prerequisite: 7760:316 or 7760:426. Study of the physiological basis for nutritional requirements; interrelating factors which affect growth, development, maturation and nutritional status from conception through the elderly years.

7760:426. Human Nutrition. (3 Credits)
Prerequisites: 7760:133, 7760:228, 3100:202, 3100:203, 3150:112, and 3150:113. Application of principles nutrition, metabolism and assessment. Analyses and interpretation of current literature. Open to dietetics majors only.

7760:428. Medical Nutrition Therapy II. (3 Credits)
Prerequisite: 7760:328. Continuation of 328. Medical Nutrition Therapy I with emphasis on more complex metabolic and pathological conditions with nutrition therapy strategies.

7760:429. Medical Nutrition Therapy II Clinical. (3 Credits)
Prerequisites: 7760:329, CP students only. Corequisite: 7760:428. Supervised practice experience in health care facilities with application of principles of medical nutrition therapy learned in 7760:328, 428.

7760:430. Computer Assisted Food Service Management. (3 Credits)
Use of computer programs in application of management concepts for food service systems.

7760:443. Nutrition Assessment. (3 Credits)
Prerequisites: 7760:133, 7760:228, 3100:202, 3100:203, 3150:112,and 3150:113. Application of principles of nutrition and assessment. Analysis and interpretation of current literature. Open to dietetics majors only.

7760:444. Medical Nutrition Therapy in Long Term Care. (2 Credits)
Prerequisite: CP students only, 7760:328 and 7760:329. Clinical experiences in long term care facilities for application of principles of nutritional care learned in 7760:328.

7760:447. Senior Seminar. (1 Credit)
Prerequisite: Senior standing. Consideration of the nutrition/dietetic professions and the impact on the health and wellness of individuals, families, and the environment. Analysis of challenges facing the profession.

7760:470. Food Industry: Analysis & Field Study. (3 Credits)
Prerequisite: 7760:250. Role of technology in extending the food supply. Chemical, physical and biological effects of processing and storage, on-site tours of processing plants.

7760:474. Cultural Dimensions of Food. (3 Credits)
Prerequisite: 7760:250. An examination of cultural, geographical and historical influences on development of food habits. Emphasis on evolution of diets; effects of religion, education, gender roles, media.

7760:476. Developments in Food Science. (3 Credits)
Prerequisite: 7760:250. Advanced study of the chemistry and physics of food components affecting characteristics of food. Critical evaluation of current basic and applied research emphasized.

7760:480. Community Nutrition I. (3 Credits)
Prerequisites: 7760:316 or 7760:426. Corequisite: 7760:481 for CP students only. Major food and nutrition related problems in the community. Emphasis on community assessment, program implementation and evaluation, and rationales for nutrition services.

7760:481. Community Nutrition I-Clinical. (1 Credit)
Prerequisite: CP students only; 7760:428. Corequisite: 7760:480. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care.

7760:482. Community Nutrition II. (3 Credits)
Prerequisite: 7760:480. Corequisite: 7760:483 for CP students only. Activities engaged in by community nutritionist. Emphasis on controversies, cultural differences, educational approaches, grantsmanship, marketing, and working with the media.

7760:483. Community Nutrition II-Clinical. (1 Credit)
Prerequisite: CP students only; 7760:481. Corequisite: 7760:482. A second field placement in an area agency offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care.

7760:484. Health and Wellness Clinical. (4 Credits)
Prerequisite: (CP Students only) 7760:481. Corequisites: 7760:413 and 7760:482. A field placement in agencies or facilities offering health and wellness services as they related to nutrition. Credit/Noncredit.

7760:485. Seminar in Health Professions. (1-3 Credits)
Prerequisite: Permission of instructor. Exploration and evaluation of current developments in selected areas.

7760:486. Staff Relief: Dietetics. (2 Credits)
Prerequisites: 7760:414, CP senior only. Opportunity to function as an entry-level dietitian in area of administrative, therapeutic or community dietetics. The graduating senior CUP student spends three 40-hour weeks in a mutually agreeable agency primarily under direction of staff dietitians or coordinators.

7760:487. Sports Nutrition. (3 Credits)
Prerequisites: 7760:133, 7760:426, 3100:202, 3100:203, 3150:112, and [3150:113 or 3150:203]. In-depth study of energy metabolism and utilization before, during, and after exercise. Factors affecting nutrient needs and peak performance of different athletic populations are emphasized.

7760:488. Practicum in Dietetics. (1-3 Credits)
Prerequisite: Approval of advisor/instructor. Practical experience in application of the principles of nutrition.

7760:489. Professional Preparation for Dietetics. (1 Credit)
Historical aspects of dietetics and where the profession is going. Specialty areas of dietetic practice are explored. Students prepare the application for dietetic internship.

7760:493. Nutrition for Athletes. (3 Credits)
Study of metabolism before, during, and after exercise. Factors affecting nutrient needs and peak performance of different athletic populations are emphasized.

7760:499. Senior Honors Project in Nutrition and Dietetics. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisites: Senior standing in Honors Program and approval of honors preceptor. Individual study supervised by adviser. Student and preceptor develop goals, objectives and methodology.

Office Administration (2540)

2540:119. Business English. (3 Credits)
Prerequisite: Placement test. Fundamentals of English language with emphasis on grammatical correctness, acceptable usage, spelling and punctuation. Limited writing primarily involves choice of precise words and effective sentence structure with some attention to paragraph development.

2540:121. Introduction to Office Procedures. (3 Credits)
Introduction to concepts regarding role of office worker, human relations, communications, productivity, reference materials, technological advances in processing information and employment opportunities.

2540:123. Microsoft Outlook. (2 Credits)
Prerequisite: Placement by adviser. An introduction to Microsoft Outlook software. Students will learn how to use Outlook for email, contacts, calendaring, making appointments, and instant messaging.

2540:136. Speech Recognition Technology. (2 Credits)
Prerequisite: Placement by adviser. Course will present the features of speech-recognition software to assist students to increase their productivity at computer tasks while improving their communication skills.

2540:138. Project Managment. (2 Credits)
Prerequisite: Placement by adviser. Introductory course that examines elements of projects and project management terminology. Also provides an understanding of Microsoft Project software for managing and evaluating projects.

2540:143. Microsoft Word-Beginning. (2 Credits)
Introduction to word processing software and personal computers as a tool for personal and business communications using Microsoft Word software.

2540:144. Microsoft Word - Advanced. (2 Credits)
Prerequisite: 2540:143. Intermediate and advanced skills of Microsoft Word to include tables, importation of spreadsheets, outlines, advanced file management, macros, merges, labels and graphics.

2540:243. Internship: Office Administration. (2-3 Credits)
Prerequisites: 2540:119, 2540:121, 2540:129, 2540:253, 2540:263, 2540:270, and 2540:281. Work experience in an office environment related to the student's degree major. Application of office administration skills/knowledge.

2540:253. Advanced Word Processing. (3 Credits)
Prerequisite: 2540:151; Wayne College students: 2540:151 or 2540:144. To increase student's ability to produce office documents on computers. Minimum requirement: 50 wpm with maximum of 5 errors for 5 minutes.

2540:256. Medical Office Procedures. (3 Credits)
Prerequisite: 2740:120. Simulates a professional medical office which "employs" the student to perform office administration duties and manage office information and finances on specialized computer software.

2540:279. Legal Office Procedures. (4 Credits)
Prerequisites: 2540:121 and 2540:144. Provides an understanding of various facets of the law, when and how to use documents, important legal procedures and typical office routine.

2540:282. Medical Machine Transcription. (3 Credits)
Prerequisite: 2540:256. Introduction to medical terminology. Emphasis on meaning, pronunciation, spelling and application of common medical terms, abbreviations, stems and suffixes as related to the human body in computerized transcription. Speed, accuracy, and proofreading skills emphasized.

2540:284. Office Nursing Techniques I. (2 Credits)
Prerequisite or corequisite: 2740:120. Provides theory and practice in nursing duties most often performed in a physician's and dentist's office. These include temperature, pulse and respiration reading; and taking blood pressure.

2540:289. Career Development for Business Professionals. (3 Credits)
Fundamentals of job search technique, professional image development and personal and interpersonal dynamics within the business environment.

2540:290. Special Topics: Secretarial Science. (0.5-3 Credits)
(May be repeated for a total of four credits) Prerequisite: Permission. Selected topics or subject areas of interest in office administration.

Outdoor Education (5560)

5560:430. Senior Honors Project: Outdoor Education. (1-6 Credits)
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.

5560:450. Application of Outdoor Education to the School Curriculum. (4 Credits)
Provides knowledge, skills and techniques useful in application of outdoor education to school curriculum.

5560:452. Resources & Resource Management for Teaching Outdoor Education. (4 Credits)
Methodologies unique to outdoor education which incorporate a multisensory approach to learning. Instructional materials and resources which permit expansion of curriculum beyond the school building.

5560:454. Resident Outdoor Education. (2 Credits)
Skills, program considerations, and organizational techniques unique to an extended, overnight, resident outdoor education program. Off-campus location for four days and three nights.

5560:456. Outdoor Pursuits. (4 Credits)
Investigation and participation in practical experiences in outdoor pursuits.

5560:460. Outdoor Education Practicum. (2 Credits)
Prerequisites: 5560:452 and 5560:454. Closely supervised practical experience in conjunction with regularly scheduled classroom meetings. Laboratory experience consists of active participation with an established outdoor education program.

5560:464. Wilderness Education Association Outdoor Leadership. (3 Credits)
This is the Wilderness Education Association Standard Program for Outdoor Leadership Certification.

5560:497. Independent Study. (1-3 Credits)
Prerequisites: Permission of adviser and supervisor of independent study. Provides varied opportunities for a student to gain first-hand knowledge and experience with existing outdoor education programs.

Pan African Studies (3002)

3002:201. Introduction to Pan-African Studies. (3 Credits)
Prerequisites: 3300:112 or 2020:121. An interdisciplinary study from an Afrocentric perspective of African and African diaspora experiences. The course will focus on central issues related to the discipline.

3002:301. Civil Rights Movement in America: 1945-1974. (3 Credits)
Social and political actions, events and environment which produces civil rights movement in America. Legal, political and organizational strategies; philosophical arguments; prominent civil rights activists.

3002:401. Seminar in Afro-American Studies. (3 Credits)
Prerequisite: 3400:361. Exploration and intensive examination of variety of issues related to role and minority group relations which normally stand outside the compass of any one subject matter area.

3002:405. African American Men's History and Studies. (3 Credits)
This course will examine the experiences of the African American Men from a historical, socio-economic, philosophical, religious/spiritual, psychological standpoint.

3002:410. African American Religious Experience. (3 Credits)
This course explores the diversity of African American religious beliefs, experiences, and expressions from the colonial era to the present.

3002:420. Special Topics in Afro-American Studies. (1-3 Credits)
(May be repeated for a maximum of three semester credits). Prerequisite: Permission of instructor.

3002:498. Independent Study: Pan-African. (1-3 Credits)
(May be repeated for a maximum of three semester credits). Prerequisites: [3002:201 and 3400:260] or 3400:361 and permission of director. Directed study in a special field of interest chosen by student in consultation with instructor.

Paralegal Studies (2290)

2290:101. Introduction to Paralegal Studies. (3 Credits)
Covers the basics of paralegal studies emphasizing the fundamental concepts of the legal system. Includes overview of paralegal studies career and ethical considerations relative thereto.

2290:104. Basic Legal Research & Writing. (3 Credits)
Prerequisite: 2290:101. Will provide the student with basic research abilities necessary in law offices. Includes the use of law library tools (reporter systems, legal encyclopedias, codes, and computer).

2290:105. Law Office Technology. (3 Credits)
Prerequisite: 2290:101. Overview of software utilized in today's law office; including case management/trial litigations software. Stresses law-related internet applications and electronic case filings.

2290:106. Business Associations. (3 Credits)
Prerequisite: 2290:101. Instructs students in different types of business entities, from sole proprietorships to corporations. Preparation of forms and necessary governmental filings will be stressed.

2290:108. Real Estate Transactions. (3 Credits)
Prerequisite: 2290:101. Acquaints students with basic real property law, including different types of deeds, ownerships, easements, and mortgages. Problems arising from sales agreements will be covered.

2290:110. Tort Law. (3 Credits)
Prerequisite: 2290:101. Covers the traditional civil wrongs, from the plaintiff's and defendant's standpoints. Actual cases will be briefed and discussed. Stresses importance of preparation prior to trial.

2290:112. Family Law. (3 Credits)
Prerequisite: 2290:101. Covers antenuptial agreements, marriage, divorce, dissolutions, annulments, adoptions, juvenile law, artificial insemination, and paternity.

2290:118. Probate Administration. (4 Credits)
Prerequisite: 2290:101. Covers law necessary to draft and interpret wills, trusts. Includes administration of a typical estate within Probate Court. Touches on guardianship, commitment of mentally ill.

2290:204. Advanced Legal Research. (3 Credits)
Prerequisite: 2290:101 and 2290:104. Continuation of 104. Will especially stress importance of clear, concise legal writing. Students will write briefs, motions, and complaints as part of their endeavor.

2290:214. Civil Procedure. (3 Credits)
Prerequisite: 2290:101. Covers aspects of legal assisting in different types of civil litigation. Includes Ohio Rules of Civil Procedure, preparation of complaints, answers, motions, basic trial preparation.

2290:216. Debtor-Creditor Relations. (3 Credits)
Prerequisite: 2290:101. Covers bankruptcy primarily, as well as collection methods and state law remedies.

2290:218. Advanced Probate Administration. (3 Credits)
Prerequisites: 2290:101 and 2290:118. Covers guardianships, marriage licenses, living wills and advanced directives, adoptions, name changes, and the probate and tax issues of intestate and testate estates.

2290:220. Paralegal Internship. (4 Credits)
Prerequisites: 2290:101 and 2290:104. Must have completed first-year courses. Students are provided experience in law-related environment. Students work at placement and meet with the course instructor.

2290:290. Special Topics: Legal Assisting Technology. (1-3 Credits)
Prerequisites: [2290:101 and 2290:104] or permission. (May be repeated for a maximum of six credits.) Selected topics on subject areas of interest in Legal Assisting Technology.

2290:297. Independent Study: Legal Assisting. (3-5 Credits)
Prerequisite: 2290:101. (May be repeated for a maximum of six credits.) Selected topics and special areas of study in Legal Assisting Technology.

Paraprofessional Education (2650)

2650:210. Autism. (2 Credits)
Corequisite: 5610:225 or permission. Study of school-age children with autism spectrum disorders. Instructional strategies, accommodations, modifications, data collection techniques, and interventions discussed and practiced through class activities and projects.

2650:290. Special Topics: Paraprofessional Education. (1-3 Credits)
Special topics in subject area of interest for paraprofessional education (may be repeated for a total of six credits).

2650:295. Field Experience for Education Paraprofessionals. (1-3 Credits)
Prerequisite: Permission of program coordinator. Supervised field experience in school and/or community settings. One hour per week seminar required. May be repeated to acquire minimum of 300 hours.

Philosophy (3600)

3600:101. Introduction to Philosophy. (3 Credits)
Introduction to philosophic problems and attitudes through acquaintance with thoughts on some leading thinkers of Western tradition.

3600:120. Introduction to Ethics. (3 Credits)
Introduction to problems of moral conduct through readings from the tradition and class discussions; nature of "good," "right," "ought" and "freedom".

3600:125. Theory & Evidence. (3 Credits)
An investigation of the concept of evidence and the criteria for the evaluation of theories in various areas of study including the natural sciences, the social sciences and philosophy. The role of scientific information in the formation and justification of value judgments.

3600:150. Critical Thinking. (3 Credits)
Examination of good and bad reasoning patterns. Topics may include rational and persuasive arguments, deductive and inductive inference, causal and basic statistical inference, logical fallacies, and moral arguments.

3600:170. Introduction to Logic. (3 Credits)
Introduction to logic and critical thinking. Includes such topics as meaning, informal fallacies, propositional logic, predicate and syllogistic logic and nature of induction.

3600:211. History of Ancient Philosophy. (3 Credits)
History and development of ancient Greek philosophy including Presocratics, Socrates, Plato, Aristotle, and Hellenistic philosophers. Readings of primary sources in translation.

3600:312. History of Medieval Philosophy. (3 Credits)
History of Western philosophy from end of Roman Empire to Renaissance. Major philosophers studied include St. Augustine, St. Anselm, Peter Abelard, St. Thomas Aquinas, Duns Scotus and William of Ockham. Readings from primary sources.

3600:313. History of Modern Philosophy. (3 Credits)
Analysis of major philosophical issues of 17th and 18th Centuries from Descartes through Kant. Readings of primary sources in translation.

3600:323. Advanced Topics in Ethics. (3 Credits)
(May be repeated with change of topic for a total of nine credits). An examination of selected topics in applied ethics and ethical theory, such as the ethics of cloning, evolutionary ethics, history of ethics and ethical issues from the Human Genome Project. Specific topics will be announced in the course schedule.

3600:324. Social & Political Philosophy. (3 Credits)
An examination of the normative justification of social and political institutions and practices. Analysis of concepts such as rights, justice, equality, and political obligation from historical as well as contemporary points of view. Application to particular social issues covered.

3600:327. Law and Morality. (3 Credits)
Nature of law examined from the perspective of the law's alleged obligation to be ethical and promote justice.

3600:329. Philosophies of International Law. (3 Credits)
Inquiry into the theories of utility of international law and the philosophical controversies surround them, e.g., international legal norms vs. international relations.

3600:331. Philosophy of Religion. (3 Credits)
Discussion and analysis of problems of theology, nature of religious experience, God's nature, existence, immortality, sin, faith, reason, holy revelation, and redemption.

3600:333. Philosophy of Science and Religion. (3 Credits)
Survey of conflict, independence, and integration models of science and religion. Topics include: origin and nature of the universe, life, mind, value, meaning, science, religion.

3600:340. Eastern Philosophy. (3 Credits)
Examination and evaluation of philosophical traditions from India, China and Japan, including Hinduism, Buddhism, Taoism and Confucianism.

3600:350. Philosophy of Art. (3 Credits)
An examination of theories of the nature of art and the grounds of aesthetic evaluation. Analysis of such concepts as representation, form, content, expression, institution, convention, meaning and truth as they apply in the context of the arts.

3600:361. Biomedical Ethics. (3 Credits)
The identification, analysis and evaluation of ethical issues arising most critically in the biomedical setting, e.g., abortion, termination of treatment, definition of death, IVF, AIDS.

3600:362. Business Ethics. (3 Credits)
Basic moral theories, moral principles, and the decision- making process applied to issues in business.

3600:363. Police Ethics. (3 Credits)
Basic moral concepts and their application to the criminal justice system. Concerned with such issues as punishment, the use of force, and conflict resolution.

3600:364. Computer Ethics. (3 Credits)
A critical examination of ethical issues arising in connection with computers and information technology, e.g., computer hacking, electronic privacy, and the regulation of Internet content.

3600:365. Environmental Ethics. (3 Credits)
Examination of the moral relationships among human beings, other species, and their shared environment. Ethical aspects of agriculture, global warming, extinction, and wilderness.

3600:371. Philosophy of Mind. (3 Credits)
Nature of mind and the relationship between mind and body. Specific topics such as the limits of human reason, personal identity, the role of human thought in action and whether machines can think are also considered.

3600:392. Internship in Philosophy. (1-3 Credits)
Prerequisite: Minimum cumulative Grade Point Average of 2.7 or greater. Placement in appropriate public or private sector organization. Written assignments required. May repeat for maximum 6 credits.

3600:411. Plato. (3 Credits)
Prerequisite: 3600:211 with a grade of C or higher. Detailed study of the origin and development of Plato's theory of forms and the related theories of knowledge, ethics and politics.

3600:414. Aquinas. (3 Credits)
Prerequisite: Completion of one course in philosophy with a grade of "C" or higher. An in depth examination of the philosophy of St. Thomas Aquinas covering his contributions in metaphysics, epistemology, ethics, political theory, and philosophical theology.

3600:415. Augustine. (3 Credits)
Prerequisite: Completion of one course in philosophy with a grade of "C" or higher. An in depth examination of the philosophy of St. Augustine covering his contributions in metaphysics, epistemology, ethics, political theory, and philosophical theology.

3600:418. 20th Century Analytic Philosophy. (3 Credits)
Prerequisite: Completion of one course in philosophy with a grade of "C" or higher. Study of ideal and ordinary language movements in 20th century British and American philosophy. Deals with such figures as Russell, Carnap, Ayer, Moore, Wittgenstein, Ryle and Austen.

3600:421. Philosophy of Law. (3 Credits)
Prerequisite: Completion of one course in philosophy with a grade of "C" or higher. Identification and critical evaluation of classic and contemporary theories and assumptions of law, including legal reasoning, justice, natural law, punishment, etc.

3600:424. Existentialism. (3 Credits)
Prerequisite: Completion of one course in philosophy with a grade of C or higher, or permission of instructor. In-depth inquiry into the thought of Kierkegaard, Jaspers, Heidegger, Sartre, Tillich and other existentialists with their concern for the human condition.

3600:426. Phenomenology. (3 Credits)
Prerequisite: Completion of one course in philosophy with a grade of C or higher, or permission. Inquiry into methodology of Husserl and Heidegger and their influence upon Western European and American thought.

3600:432. Aristotle. (3 Credits)
Prerequisites: 3600:211 with a grade of C or higher. Detailed study of Aristotle's metaphysics, philosophy of nature, philosophy of mankind and ethics.

3600:434. Kant. (3 Credits)
Prerequisite: 3600:313 with a grade of C or higher. Study of Kantian system of thought and its relation to history of philosophy. Includes thorough investigation of one or more of Kant's philosophic works.

3600:455. Philosophy of Feminism. (3 Credits)
Prerequisite: One course in philosophy with a grade of C or better, or permission of instructor. Introduction to feminist critiques of, and alternatives to, traditional western philosophy, including topics in ethics, metaphysics, epistemology, and religion.

3600:461. Neuroethics. (3 Credits)
Prerequisites: [3600:120 or 3600:361] with a grade of "C" or higher. Discussion and evaluation of contemporary theories of moral agency arising from developments in neuroscience.

3600:462. Theory of Knowledge. (3 Credits)
Prerequisite: Completion of one course in philosophy with a grade of "C" or higher. Examination of nature of knowledge; theories of perception, conception and truth, problem of induction and relation of language to knowledge.

3600:464. Philosophy of Science. (3 Credits)
Prerequisite: Completion of one course in philosophy with a grade of "C" or higher. Nature of scientific inquiry, types of explanation, laws and causality, theoretical concepts and reality. Also considers critics of hypothetical-deductive view of science, e.g., Hanson and Kuhn.

3600:471. Metaphysics. (3 Credits)
Prerequisite: Completion of one course in philosophy with a grade of "C" or higher. Theories about ultimate nature and ultimate explanation of reality. Uses readings from classical and contemporary sources.

3600:480. Seminar in Philosophy. (3 Credits)
(May be repeated, for additional credit, with change of topic).
Prerequisite: Completion of one course in philosophy with a grade of "C" or higher. Varying philosophical topics not covered in regular course offerings.

3600:481. Philosophy of Language. (3 Credits)
Prerequisite: Completion of one course in philosophy with a grade of C or higher, or permission of instructor. Contemporary philosophies about nature of language and its relation to reality and human thinking. Includes discussion of views of linguists such as Chomsky.

3600:490. Senior Honors Project in Philosophy. (3 Credits)
Prerequisite: Senior standing in Honors Program or senior honors standing as Philosophy major, and permission of Philosophy Department Honors Preceptor. Research leading to completion of senior honors thesis involving original work under faculty supervision.

3600:497. Individual Study in Philosophy. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisites: 3600:101, 3600:120, 3600:170, 3600:211, 3600:312, and 3600:313. Directed independent study of philosopher, philosophy or philosophical problem under guidance of selected faculty member. Subject matter determined by selected faculty member in consultation with student. Graduate credit requires significant additional work which may include additional research paper.

Physical Education (5550)

5550:100. Introduction to Sport Studies. (3 Credits)
Introduction to sport studies explores the history, philosophy, and principles of today's sport industry within a practical, career-oriented framework.

5550:102. Physical Education Activities I: Fitness, Leisure, & Healthy Life Style. (3 Credits)
Introduction to fitness and leisure activities, as well as healthy life style. Knowledge of developing programs that lead to fitness, leisure and healthy life style for individuals as well as groups.

5550:110. Introduction to Athletic Training. (1 Credit)
Provides an overview of the Sports Medicine team and the components of a comprehensive athletic healthcare program. Introduces the student to the profession of athletic training.

5550:125. Introduction to Exercise Science. (1 Credit)
Overview for becoming a fitness professional. Information concerning choosing a career, national certification and professional organizations will be provided.

5550:130. Physical Education Activities for Children. (2 Credits)
For a physical education majors only. Participation in methods, activities and issues relating to pre-K through elementary physical education programs. One lecture and two laboratory periods per week.

5550:150. Concepts in Health & Fitness. (3 Credits)
Introduction to basic health and fitness concepts and related topics. Attention will be given to individual fitness programs emphasizing such topics as aerobic and anaerobic exercises, nutrition, diet, stress, and assessment methods and procedures.

5550:160. Introduction to Coaching. (3 Credits)
An introduction to the coaching profession. Discussion of the important technical and tactical elements of coaching athletes.

5550:193. Orientation to Physical and Health Education. (3 Credits)
Introduction to physical and health education to students who pursuit state license in teaching physical and health education. It's also the required course before the admission to the college of education.

5550:194. Sports Officiating. (2 Credits)
Knowledge of rules for interscholastic sports and officiating techniques.

5550:195. Foundations of Physical Education. (3 Credits)
Concepts analysis of games and play and application of these concepts to the teaching/learning process in physical education at all ages.

5550:200. Aquatic Facility Management. (3 Credits)
This course is designed to explore, acquire, and discuss knowledge and techniques of aquatic facility operation and management.

5550:201. Kinesiology. (3 Credits)
Prerequisites: 3100:200, [3100:201 or 3100:202], 3100:303. Application of basic principles of anatomy and mechanics to human movement. Three hours lecture with practical application and demonstrations.

5550:202. Diagnosis of Motor Skills. (3 Credits)
This course introduces athletic trainers and physical education majors to the sciences of diagnosing motor skills.

5550:203. Measurement & Evaluation in Physical Education. (3 Credits)
Statistical procedures needed for analysis and interpretation of tests. Evaluation procedures, testing instruments, and techniques for administering tests are discussed and practiced. Three hours lecture.

5550:204. Individual and Team Sports. (2 Credits)
Intro to individual and team sports that are commonly taught in schools. Course presents knowledge, fundamental skill development, psychomotor skills analysis for the content areas.

5550:205. Team Sports. (2 Credits)
The purpose of this course is to teach students how to teach team sports.

5550:206. Coaching Basketball. (3 Credits)
An introduction to coaching basketball. Discussion of the important technical and tactical elements of coaching basketball.

5550:207. Coaching Track and Field. (3 Credits)
An introduction to coaching track and field. Discussion of the important technical, tactical and psychological elements of coaching track and field.

5550:208. Coaching Football. (3 Credits)
An introduction to coaching football. Discussion of the important technical and tactical elements of coaching football.

5550:209. Coaching Baseball. (3 Credits)
An introduction to coaching baseball. Discussion of the important offensive, defensive, and technical and tactical elements of coaching baseball.

5550:211. First Aid & Cardiopulmonary Resuscitation. (2 Credits)
Based on American Red Cross standards for first aid and cardiopulmonary resuscitation. Instruction and skills practice for sudden illness/emergencies is provided. Two hours lecture.

5550:212. First Aid and CPR for Professional Rescuer. (2 Credits)
Prerequisite: Permission of instructor. First aid and cardiopulmonary resuscitation for health care professionals based upon American Red Cross standards. Instruction and skills practice for sudden illness/emergencies is provided.

5550:220. Health Promotion and Behavior Change. (3 Credits)
Prerequisite: 150 Course will translate theories of behavioral science for health professionals who are involved in planning, developing, implementing or evaluating physical activity programs.

5550:235. Concepts of Motor Learning & Development. (3 Credits)
This course will introduce key motor learning concepts and analysis of developing fundamental motor skills. Three hours lecture.

5550:240. Care & Prevention of Athletic Injuries. (3 Credits)
Prerequisites: 3100:200,201; Corequisite: 3100:202, 203. This course is an introduction to basic athletic training principles and techniques. Includes a laboratory course for practical application of techniques.

5550:241. Care and Prevention of Athletic Injuries Lab. (1 Credit)
Prerequisites: 3100:200 and 3100:201. Corequisites: 3100:202 and 3100:203, 5550:240. This course is designed to allow students to learn, practice, and become competent and proficient in the psychomotor skills associated basic injury prevention, evaluation, management, and treatment of physically active individuals in the practice of athletic training as defined by the NATA.

5550:242. Therapeutic Modalities. (3 Credits)
Prerequisites: Accepted into the ATEP Clinical Education Program. Corequisite: 243. This course will promote student medical and technical aspects of therapeutic modalities and pharmacological agents in the treatment and rehabilitation of injured physically active individuals.

5550:243. Athletic Training Lab I. (1 Credit)
Prerequisites: Accepted into the ATEP Clinical Education Program. Corequisites: 242. This course will meet CAATE standards and allow the students to learn and practice psychomotor skills and clinical proficiencies. Includes clinical rotation.

5550:245. Adapted Physical Education. (3 Credits)
Identification of atypical movement among various exceptional individuals, with adapted physical education programming experience in a laboratory setting. Web-based.

5550:250. Principles of Athletic Training. (3 Credits)
Prerequisites: Students must be accepted into the Clinical Athletic Training Education Program (ATEP). This course will address principles and techniques used in initial evaluation of musculoskeletal injury as defined by CAATE standards and guidelines.

5550:255. Emergency Care for Athletic Training. (3 Credits)
Prerequisite: Accepted into ATEP Clinical Education program. This course will teach knowledge and skills in handling emergency situations or life-threatening sudden illness or injuries which an athletic training may encounter.

5550:275. Advanced Athletic Injury Management: Lower Extremity. (3 Credits)
Prerequisites: 5550:242 and 5550:243. Corequisite: 5550:276. This course is designed to meet CAATE standards and guidelines to display knowledge and psychomotor skills in injury evaluation and recognition lower extremity.

5550:276. Athletic Training Lab II. (1 Credit)
Prerequisites: 5550:242 and 5550:243. Corequisite: 5550:275. This course will meet CAATE standards and allow the students to learn and practice psychomotor skills and clinical proficiencies. Includes clinical rotation.

5550:300. Physiology of Exercise for the Older Adult. (3 Credits)
Prerequisite: 5550:302. Analysis of physiological effects of exercise on the elderly. Exercise programs adaptable for use by persons working with elderly. Three hours lecture.

5550:302. Physiology of Exercise. (3 Credits)
Prerequisites: 3100:200 and 3100:202. A course designed to study the physiological effects of exercise relative to physical education activities, athletics and athletic training. Two hours lecture, two hours laboratory. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:305. Clinical Experience I. (2 Credits)
Prerequisite: Permission. Improves the student's psychomotor skills in the following domains of athletic training: injury prevention, injury recognition/evaluation and management, therapeutic exercise and rehabilitation.

5550:306. PE Act IV: Badminton/Golf. (2 Credits)
Course presents knowledge, fundamental skill development, and psychomotor skill analysis for the content areas of badminton and golf. One hour lecture, two hours lab. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:307. Physical Education Activities V. (2 Credits)
Course presents knowledge, fundamental skill development, and psychomotor skill analysis for the content areas of tennis and volleyball. One hour lecture, two hours lab. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:308. PE Act IV: Dance & Tumbling. (2 Credits)
Course presents knowledge, fundamental skill development, and psychomotor skill analysis for the content areas of dance and tumbling. One hour lecture, two hours lab. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:327. Exercise Leadership. (3 Credits)
Prerequisite: 5550:302. Students learn principles of teaching safe and effective exercises designed to enhance physical fitness. Course will assist students in preparing for a group exercise certification.

5550:330. Exercise and Weight Control. (3 Credits)
Prerequisite: 5550:302. Course will focus on role of exercise in regard to its positive influences on weight control. The hazards and implications of being overweight are studied.

5550:332. Therapeutic Exercise & Rehabilitation I Principles. (3 Credits)
Prerequisites: 5550:342 and 5550:343. Corequisite: 5550:333. This course will address CAATE standards and guidelines for competencies and proficiencies using principles in exercise and rehabilitation techniques.

5550:333. Athletic Training Lab IV. (1 Credit)
Prerequisites: 5550:342 and 5550:343. Corequisite: 5550:332. This course will allow students to learn psychomotor skills associated with therapeutic exercise & rehabilitation techniques. Includes a 250 hour clinical sport rotation.

5550:335. Movement Experiences for Children. (3 Credits)
Prerequisites: 5550:130, 5550:193, and 5550:235. Course focuses on use of fundamental motor skill analysis to structure movement lessons for children from early childhood through elementary years. One hour lecture, two hours lab. (20 clinical hours, 10 field hours.) Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:336. Motor Learning & Development for Early Childhood. (2 Credits)
Physical fitness, fundamental motor skills, motor development and learning for early childhood, birth to age eight. Creating an environment of motor experiences for young children (10 field hours). Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:342. Advanced Athletic Injury Management: Upper Extremity. (3 Credits)
Prerequisites: 5550:275 and 5550:276. Corequisite: 5550:343. This course designed to meet CAATE standards and guidelines to display knowledge and psychomotor skills in injury evaluation and recognition of the upper extremity.

5550:343. Athletic Training Lab III. (1 Credit)
Prerequisites: 5550:275 and 276. Corequisite: 5550:342. This course will meet CAATE standards and allow the students to learn and practice psychomotor skills and clinical proficiencies. Includes clinical rotation.

5550:352. Strength & Conditioning Fundamentals. (3 Credits)
Prerequisite: 3100:200, 3100:201, 3100:202, and 3100:203. This course will address CAAHEP competencies and proficiencies in the area of strength and conditioning of physically active individuals.

5550:355. Exercise in Special Populations. (3 Credits)
Prerequisites: 5550:302 and 5550:403. Advanced course in clinical exercise testing and prescription relative to disease of the cardiovascular, pulmonary, metabolic, musculoskeletal, neuromuscular, and immunologic systems.

5550:360. Practicum I. (1 Credit)
Prerequisites: 3100:200, 3100:201, 3100:202, and 3100:203. This is a senior level athletic training course focusing on the refinement of practical skills and preparation for the NATABOC certification examination.

5550:362. Sport History. (3 Credits)
This course is designed to introduce students to sport in American History. The people, organizations and institutions that shaped the development of sport are examined.

5550:364. Sport Ethics. (3 Credits)
The focus of this course is the ethical behavior of sport participants and sport administrators studied within the context of the sport environment.

5550:366. Sport Communication. (3 Credits)
The focus of this course is on the important knowledge that administrators should have related to the field of sport communication.

5550:368. Sport Facility Management. (3 Credits)
This course has been designed to identify the systems approach for the effective management of the maintenance and operation of sport and recreation facilities.

5550:370. Financial Aspects of Sport. (3 Credits)
The focus of this course is related to the important knowledge that administrators should have related to the field of the financial aspects of sport.

5550:375. Sport Performance Principles. (3 Credits)
An introduction to important elements related to the physical aspects of sport performance. Discussion of the important physical elements of coaching athletes.

5550:395. Field Experience. (1-6 Credits)
Practical experience in an area related to physical education under supervision of faculty member. Student works with current physical education programs or exercise science settings. May be repeated for a maximum of 12 credits. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:400. Musculoskeletal Anatomy I: Upper Extremity. (3 Credits)
Prerequisites: 3100:200 and 3100:202. This course includes lecture/laboratory activities to provide the student a comprehensive learning experience in lower extremity musculoskeletal anatomy.

5550:401. Musculoskeletal Anatomy II: Lower Extremity. (3 Credits)
Prerequisites: 3100:200, 3100:201, 3100:202, 3100:203 and 5550:201. This course includes lecture laboratory activities to provide the student a comprehensive learning experience in lower extremity musculoskeletal anatomy.

5550:403. Exercise Testing. (3 Credits)
Prerequisite: 5550:302. This course will cover basic knowledge of exercise testing and interpretation of results. Cardiovascular and muscular fitness aspects will be measured. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:404. Exercise Prescription. (3 Credits)
Prerequisite: 5550:403. This course focuses on how to appropriately prescribe exercise for various populations (young, middle-aged, elderly, pregnant, diseased-states). Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:405. Clinical Experience I. (2 Credits)
Prerequisite: Accepted into ATEP Clinical education program. Enroll by advisor permission only. This course will allow for athletic training students to master CAATE proficiencies and clinical proficiencies associated with the course.

5550:406. Advanced Strength and Conditioning. (3 Credits)
Prerequisite: 5550:352. Strength and conditioning programs for heterogeneous populations. The course covers high-level sport specific exercise prescriptions that aids injury prevention and performance enhancement.

5550:409. Sport Behavior. (3 Credits)
The focus of this course is the behavior of athletes and sport participants studied within the context of play, games, and sport.

5550:410. Introduction to Sport Sociology. (3 Credits)
Provides information to students about the sociological aspects of sport. Delivered in a totally online format, web-based format, or in a face-to-face format.

5550:412. General Medical Aspects. (3 Credits)
Prerequisites: 3100:200 and 3100:201. Covers various topics related to sports medicine and general medical conditions. Students will gain perspectives and exposure to a variety of allied health care professionals.

5550:415. Seminar in Athletic Training. (2 Credits)
Prerequisites: 3100:200, 3100:201, 3100:202, and 3100:203. To meet CAAHEP standards and guidelines and incorporate an even distribution of competencies and proficiencies throughout all athletic training for sports medicine courses.

5550:418. Cardiorespiratory Function. (3 Credits)
Prerequisite: 5550:302. This course is designed to study the normal structure and function of the respiratory system and how it is affected by different types of disease.

5550:420. Fundamentals of Management Strategies in Sport. (3 Credits)
This course seeks to explore, acquire, and discuss knowledge within the theoretical and applied management practices of sport, fitness, and instructional programs. Delivered in a totally online format, web-based format, or in a face-to-face format. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:422. Sport Planning/Promotion. (3 Credits)
Analysis of marketing/promotions from a sport manager's perspective. Emphasis on marketing strategy, tactics and development in sport delivery systems. Delivered in a totally online format, web-based format, or in a face-to-face format.

5550:424. Sports Leadership. (3 Credits)
Introduces students to current issues related to leadership, management, and supervision. Examines current sport leadership research and governance structure of amateur and professional sport organizations. Delivered in a totally online format, web-based format, or in a face-to-face format.

5550:426. Nutrition for Sports. (3 Credits)
Prerequisite: 7760:133. This course will provide an explanation of the consumption, absorption, and recommendation for diet of athletes and the physically active individual.

5550:428. Nutrition for Teachers and Coaches. (3 Credits)
Covers nutritional basics and topics related to teaching physical education/health and coaching athletes, including basic nutrition, eating disorders, meal preparation, and trends in nutrition.

5550:430. Senior Honors Project:Physical Education. (1-6 Credits)
(May be repeated for a total of six credits) Prerequisites: Senior standing in Honors Program. Carefully defined individual study demonstrating originality and sustained inquiry. *Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:436. Foundations & Elements of Adapted Physical Education. (3 Credits)
Principles, components, and strategies necessary in providing motor activities for handicapped students via application of a neuro-developmental model and alternate methods. Three hours lecture. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:438. Cardiac Rehab Principles. (3 Credits)
Prerequisite: 5550:302. This course will teach students the core competencies for cardiac rehab professionals, based upon the American Association of Cardiovascular and Pulmonary Rehabilitation Specialists (AAVCPR).

5550:440. Injury Management for Teachers & Coaches. (2 Credits)
Prerequisites: 5550:211. This course challenges the student to understand ways to provide and care for the safety of individual they teach or coach.

5550:444. Athletic Training Lab V. (1 Credit)
Prerequisites: 5550:332 and 5550:333. Corequisite: 5550:445. This course will meet CAATE standards and allow the students to learn and practice psychomotor skills and clinical proficiencies. Includes clinical rotation.

5550:445. Therapeutic Exercise & Rehabilitation II Applications. (3 Credits)
Prerequisites: 5550:332 and 5550:333. Corequisite: 5550:444. This course will address CAATE standards and guidelines for competencies and proficiencies using principles in exercise and rehabilitation techniques.

5550:446. Instructional Techniques in Secondary Physical Education & Health. (3 Credits)
Prerequisites: 5550:102, 5550:193, 5550:204, and 5550:205. Instructional strategies for teaching secondary students in physical and health education. A variety of instructional models will be introduced appropriate to the learners' age and development. It is a required course for the physical education licensure. Two hours lecture, two hours lab (30 clinical hours). Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:447. Instructional Techniques for Children in Physical Education & Health Education. (3 Credits)
Prerequisites: 5550:130 and 5550:193. Instructional strategies for teaching children in physical and health education. A variety of instructional models will be introduced appropriate to the learners' age and development. Required for the physical education licensure. (30 clinical hours). Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:449. Organization & Administration for Health Care Professionals. (3 Credits)
Prerequisites: senior level status and permission only. This class is a requirement for Athletic Trainers and Exercise Science majors. This class presents the skills necessary for supervising a health care facility.

5550:450. Organization & Administration of Physical Education, Intramural and Athletics. (3 Credits)
Prerequisite: Admission to the Sport Science and Wellness Program or instructor's permission. Investigation of procedures for conducting physical education, intramural, and athletic programs. Includes tournament designs, supplies and equipment, liability, curriculum, and general administration. Three hours lecture. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:451. Assessment & Evaluation in Adapted Physical Education. (3 Credits)
Investigation, analysis, and selection of appropriate assessment instruments, as well as methodology for determining instructional objectives and activities for handicapped students. Three hours lecture. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:452. Foundations of Sport Science, Physical and Health Education. (3 Credits)
Prerequisite: Admission to the Sport Science and Wellness Program. Overview of the emergence of sport science, physical and health education as a profession and the supporting role of underlying scholarly and scientific disciplines. Three hours lecture. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:453. Principles of Coaching. (3 Credits)
Prerequisite: Admission to the Sport Science and Wellness Program. Basics for becoming a successful coach. Discussion of principles applying to most sports, players and coaches. Delivered in a totally online format, web-based format, or in a face-to-face format. Ten clinical hours required. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:456. Evidence Based Practice and Research Applications. (3 Credits)
Prerequisite: Permission of advisor. This course is designed to provide students an opportunity to review current research, create, implement, and present original research in an allied health related field.

5550:459. Practicum Seminar. (1 Credit)
Prerequisite: Permission of instructor. This course will focus on the professional development process, including practicum preparation, resume development, interview skills and job search strategies.

5550:460. Practicum in Physical Education. (1-6 Credits)
Prerequisites: Senior standing in the Sport Science and Wellness Program. Practical work experience with certified personnel in a discipline or profession related to physical education or sport and exercise science. May be repeated for a maximum of 12 credits. *Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:462. Legal Aspects of Physical Activity. (2 Credits)
Overview legal and ethical elements of greatest concern to specialists in sport and physical activity. Cases used to illustrate specific points. Topics vary. Delivered in a totally online format, web-based format, or in a face-to-face format.

5550:465. Psychology of Injury Rehabilitation. (2 Credits)
Prerequisites: 3100:200, 3100:201, 3100:202, and 3100:203. This course will address the cognitive and affective aspects of injury and rehabilitation of injury. Specifically the stages of rehabilitation and techniques to aid in the rehabilitation process.

5550:467. Practicum II. (1 Credit)
Prerequisites: 3100:200, 3100:201, 3100:202, and 3100:203. This course will allow the students to practice psychomotor skills in the high school setting while being supervised by a certified athletic trainer.

5550:470. Injury Pathology & Therapeutic Interventions. (3 Credits)
Prerequisites: 3100:200, 3100:201, 3100:202, and 3100:203. This course will discuss common musculoskeletal pathology and surgical procedure associated with a physically active population.

5550:480. Special Topics: Physical Education. (1-4 Credits)
(May be repeated with a change in topic) Prerequisite: Permission of instructor. Group study of special topics in physical education. May be repeated with change in topic. Delivered in a totally online format, web-based format, or in a face-to-face format. *Students must be in the College of Education to take 300/400 level courses.

5550:485. Exercise Science Capstone. (2 Credits)
Prerequisites: 5550:302 and 5550:403. Designed to familiarize students with current issues in exercise physiology. Students will be expected to obtain a professional certification during this course.

5550:490. Workshop in Physical Education. (1-3 Credits)
Practical, intensive and concentrated involvement with current curricular practices in areas related to physical education. Students must be in the College of Education to take 300/400 level courses.

5550:494. Student Teaching Colloquium for Physical & Health Education. (2 Credits)
Corequisite: 5550:495. Students meet during student teaching to discuss concerns about student teaching and analyze previous learning as it relates to their future as a professional educator. Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

5550:495. Student Teaching for Physical & Health Education. (11 Credits)
Prerequisites: Approval of the Student Teaching Committee, considered based upon approved application to student teaching, passing OAE subject test, and approved portfolio. Corequisite 5550:494. Planned teaching experience in schools selected and supervised by the Office of Student Teaching.

5550:497. Independent Study: Physical Education. (1-6 Credits)
Prerequisite: Permission of adviser. Analysis of specific topic related to a current problem in physical education or sport and exercise science. May be repeated for a maximum of 12 credits. *Students must be in the Sport Science and Wellness Program to take 300/400 level courses.

Physics (3650)

3650:130. Descriptive Astronomy. (4 Credits)
Qualitative introduction to astronomy, intended primarily as a first science course for non-science majors. Includes laboratory and observational activities.

3650:133. Music, Sound & Physics. (4 Credits)
Qualitative introduction to the physics of sound, its properties, perception and reproduction, including acoustical principles of musical instruments. Laboratory and observational activities included.

3650:137. Light. (4 Credits)
Introductory, qualitative course dealing with the nature of light and the interaction of light with various materials to produce common visual effects. Laboratory activities provide experience in scientific investigation.

3650:261. Physics for Life Sciences I. (4 Credits)
Prerequisites: high school algebra, trigonometry or 3450:149 as corequisite or permission. Introductory course for professional work in biology and health professions and services. Emphasizes life science applications. Mechanics: laws of motion, force, torque, work, energy, power; properties of matter. gases, liquids, solids, fluid mechanics. Includes laboratory activities.

3650:262. Physics for Life Sciences II. (4 Credits)
Prerequisite: 3650:261. Laws of thermodynamics, kinetic theory. Wave phenomena: sound, light, optics; electricity and magnetism; atomic and nuclear physics; radioactivity. Includes laboratory activities.

3650:267. Life Science Physics Computations I. (1 Credit)
Corequisites: 3650:261. Optional companion courses to 3650:261 and 3650:262 provides additional computational experience in applications of physics to life sciences, emphasizing use of algebra and trigonometry. Particularly recommended for student with modest mathematical preparation.

3650:268. Life Science Physics Computations II. (1 Credit)
Corequisites: 3650:262. Optional companion courses to 3650:261 and 3650:262 provides additional computational experience in applications of physics to life sciences, emphasizing use of algebra and trigonometry. Particularly recommended for student with modest mathematical preparation.

3650:291. Elementary Classical Physics I. (4 Credits)
Prerequisite: Completion of 3450:221 with a grade of "C-" or better, or AP Calculus AB, or BC test score of 3 or better. Introductory physics for students of science and engineering. Classical kinematics and dynamics as related to contemporary physics. Oscillations, thermodynamics. Vectors and some calculus introduced as needed. Includes laboratory activities.

3650:292. Elementary Classical Physics II. (4 Credits)
Prerequisite: 3650:291. Fluid mechanics, mechanical and electromagnetic waves and wave phenomena, basic laws of electromagnetism, interference and diffraction, coherence, geometrical and physical optics. Includes laboratory activities.

3650:293. Physics Computations I. (1 Credit)
Corequisite: 3650:291. Optional companion courses to 3650:291 and 3650:292 provides experience in problem solving, and elaborates application of calculus to simple physical phenomena. Particularly recommended for a freshman and for student with modest preparation in mathematics or physical sciences.

3650:294. Physics Computations II. (1 Credit)
Corequisite: 3650:292. Optional companion courses to 3650:291 and 3650:292 provides experience in problem solving, and elaborates application of calculus to simple physical phenomena. Particularly recommended for a freshman and for student with modest preparation in mathematics or physical sciences.

3650:301. Elementary Modern Physics. (3 Credits)
Prerequisite: 3650:292. Special relativity, introduction to quantum physics, hydrogen atom and complex atoms, atomic spectra, topics in nuclear and solid-state physics.

3650:322. Intermediate Laboratory I. (3 Credits)
Prerequisite: 3650:262 or 3650:292. Laboratory course stressing measurement techniques with contemporary laboratory apparatus. Experiment design, instrument calibration and reporting emphasized. Modern physics experiments and measurement of fundamental natural constants.

3650:323. Intermediate Laboratory II. (3 Credits)
Prerequisite: 3650:262 or 3650:292. Laboratory course stressing measurement techniques with contemporary laboratory apparatus. Experiment design, instrument calibration and reporting emphasized. Modern physics experiments and measurement of fundamental natural constants.

3650:340. Thermal Physics. (3 Credits)
Prerequisite: 3650:262 or 3650:292. Basic principles of thermal and statistical physics. Ensembles, laws of thermodynamics, equilibrium, irreversibility, equipartition theorem, canonical distribution, Maxwell distribution, phase changes, cyclic processes, transport processes.

3650:350. Modeling & Simulation. (4 Credits)
Prerequisites: [3650:262 or 3650:292] and [3460:208 or 3460:209]. Interdisciplinary course stressing modeling of natural phenomena using fundamental principles and their simulation. Topics may include growth phenomena, fault propagation, kinetics, chemical reactions, wave phenomena.

3650:399. Undergraduate Research. (1-6 Credits)
(May be repeated) Prerequisite: Permission of instructor. Participation in current research project in department under supervision of faculty member.

3650:401. Everyday Physics. (4 Credits)
Prerequisite: Permission of instructor. College-level physics content for future teachers. Inquiry, discovery, activities, discussion, and experiential learning take place in a laboratory/embedded-lecture environment.

3650:406. Optics. (3 Credits)
Prerequisites: 3650:291, 3650:350 and 3450:335. Propagation, reflection and refraction of electromagnetic waves, superposition, polarization, interference and interferometry, Fresnel and Fraunhofer diffraction, Fourier optics, coherence theory and quantum optics.

3650:431. Mechanics I. (3 Credits)
Prerequisites: 3650:291, and 3650:350, and 3450:335. Mechanics at intermediate level. Newtonian mechanics, motion of a particle in one dimension, central field problem, system of particles, conservation laws, rigid bodies, and gravitation.

3650:432. Mechanics II. (3 Credits)
Prerequisite: 3650:431. Advanced mechanics at the senior or beginning graduate level, moving coordinate systems, mechanics of continuous media, Lagrange's equations, tensor algebra and stress analysis, rotation of rigid bodies, vibration theory.

3650:436. Electromagnetism I. (3 Credits)
Prerequisites: 3650:291, and 3650:350, and 3450:335. Electricity and magnetism at intermediate level. Electrostatics and magnetostatics, electric field, scalar potential, dielectrics, Laplace's and Poisson's equations, currents, magnetic field, vector potential, magnetic materials, inductance.

3650:437. Electromagnetism II. (3 Credits)
Prerequisite: 3650:436. Special relativity, four vectors, Maxwell's equations in covariant form; propagation, reflection and refraction of electromagnetic waves; multipole radiation.

3650:441. Quantum Physics I. (3 Credits)
Prerequisites: 3650:301, and 3650:350, and 3450:335. Introduction to quantum theory, Schrödinger equation, observables, angular momentum, perturbation theory, variational principle, bound states, scattering theory, radiative interactions, spin and the Pauli Principle.

3650:442. Quantum Physics II. (3 Credits)
Prerequisite: 3650:441. Applications of quantum mechanics to atomic, nuclear and solid state physics. Tunneling and alpha decay, periodic potential, hydrogen and helium atoms, interatomic forces, quantum statistics.

3650:451. Advanced Laboratory I. (3 Credits)
Prerequisite: 3650:323. Experimental techniques, applicable to research-type projects in contemporary physics. FT-IR spectroscopy, optical spectroscopy, lasers and thin-film growth and characterization.

3650:452. Advanced Laboratory II. (3 Credits)
Prerequisite: 323 or permission of instructor. Experimental projects applicable to contemporary physics. Diode and dye lasers, NMR, SPM, chaos, electron tunneling and fiber optics.

3650:470. Introduction to Solid-State Physics. (3 Credits)
Prerequisite: 3650:441. Account of basic physical processes occurring in solids, with emphasis on fundamental relation between these processes and periodicity of crystalline lattice.

3650:481. Methods of Mathematical Physics I. (3 Credits)
Prerequisites: 3650:292, 3650:350, 3450:335 and senior or graduate standing in a physical science or engineering. Vectors, generalized coordinates, tensors, calculus of variations, vector spaces, linear transformations, matrices, eigenvalues, Hilbert space, boundary value problems, transcendental functions, complex variables, analytic functions, Green's functions, integral equations.

3650:482. Methods of Mathematical Physics II. (3 Credits)
Prerequisites: 3650:292, 3450:335 and senior or graduate standing in a physical science or engineering. Vectors, generalized coordinates, tensors, calculus of variations, vector spaces, linear transformations, matrices, eigenvalues, Hilbert space, boundary value problems, transcendental functions, complex variables, analytic functions, Green's functions, integral equations.

3650:488. Selected Topics: Physics. (1-4 Credits)
(May be repeated) Prerequisite: Permission. Consideration of selected topics, procedures, techniques, materials or apparatus of current interest in physics.

3650:490. Workshop: Physics. (1-4 Credits)
(May be repeated) Group studies of special topics in physics. May not be used to meet undergraduate or graduate major requirements in physics. May be used for elective credit only.

3650:497. Independent Study: Physics. (1-4 Credits)
(May be repeated) Prerequisite: Permission. Further investigations of various selected topics in physics, under guidance of faculty member.

3650:498. Physics Colloquium. (1 Credit)
Lectures on current research topics in physics by invited speakers. May be repeated but only one credit counts toward the M.S. Degree. Offered on a credit/noncredit basis only.

Political Science (3700)

3700:100. Government & Politics in the United States. (3 Credits)
Examination of American political system with emphasis on fundamental principles, ideas, institutions and processes of modern government. Lecture and discussion sections (day classes only).

3700:150. World Politics & Government. (3 Credits)
Introduction to international politics and an examination of the governments and foreign policies of selected states from a comparative perspective.

3700:210. State & Local Government & Politics. (3 Credits)
Examination of institutions, processes and intergovernmental relations at state and local levels.

3700:300. Comparative Politics. (3 Credits)
Introduction to comparative political analysis; description of political systems of Great Britain, France, Germany and Soviet Union; contrast between democracy and totalitarianism.

3700:301. Introduction to Political Research. (3 Credits)
Introduction to the research process in political science through an introduction to the logic of social science inquiry and contemporary techniques of analysis.

3700:302. American Political Ideas. (3 Credits)
Study of major thinkers and writers of American political thought.

3700:303. Introduction to Political Thought. (3 Credits)
Survey of major ideas and concepts of Western political theory from pre-Socrates through period of Enlightenment.

3700:304. Modern Political Thought. (3 Credits)
Examination of central concepts of political thought from 19th Century to present. Modern liberalism, communism, fascism and totalitarianism emphasized.

3700:310. International Politics & Institutions. (3 Credits)
Relations among nations examined in political context.

3700:311. Developing States in World Politics. (3 Credits)
Examines how developing states are conditioned by the global system and how they attempt to modify it.

3700:313. International Law. (3 Credits)
Prerequisite: 3700:150 or 3700:310. This course explores law at the international level and will focus on diplomacy, treaties, covenants, laws of war, and the legal role of international organizations.

3700:321. European Politics. (3 Credits)
Description and analysis of government and politics of France, Germany, Italy, the United Kingdom, and Russia, with appropriate references to the European Union.

3700:326. Politics of Developing Nations. (3 Credits)
General introduction to concepts and theories of political development and political institutions, elite-recruitment and political processes of selected emerging nations.

3700:328. American Foreign Policy Process. (3 Credits)
Examination of American foreign policy-making process; public opinion and other limitations on policy; specific contemporary problems in selected foreign policy areas.

3700:333. Social Entrepreneurship. (3 Credits)
Scholarly analysis of successful social and political entrepreneur's efforts to address real world problems and an interdisciplinary analysis of the strategies and skills they deploy.

3700:334. Law, Mediation, and Violence. (3 Credits)
A critical analysis of the practical challenges central to learning to better prevent, resolve, or reduce the harms associated with conflict.

3700:335. Law & Society. (3 Credits)
This course will examine how law constructs and constrains political conflict, and how legal institutions mediate, reinforce, and challenge existing power relationships.

3700:336. Homeland Security Policy and Process. (3 Credits)
The course will focus on the topic of homeland security, an area that has received a great deal of attention following the tragic events of September 11, 2001.

3700:337. Terrorism: Perpetrators, Politics and Response. (3 Credits)
Survey of terrorist organizations, political implications of terrorism, and governmental response to terrorism.

3700:339. Terrorism and the Constitution. (3 Credits)
Primary goals include learning about the balance courts try to strike in safeguarding public safety and respect for personal freedom in a constitutional republic.

3700:341. The American Congress. (3 Credits)
Examination of structure and function of Congress, with comparative materials on legislative process on all levels. Presidential and congressional conflict examined.

3700:345. World Politics in Film. (3 Credits)
This course examines the political meaning and content of films. Themes investigated include war, the nuclear age and its consequences, postindustrial society, the future, and unemployment.

3700:346. American Politics in Film. (3 Credits)
Examines the portrayal and representation of American politics through cinema. Emphasis on the positive and negative roles that movies play in educating the public.

3700:350. The American Presidency. (3 Credits)
The presidency as focal point of politics, policy and leadership in American political system.

3700:351. Inside the White House. (3 Credits)
The course looks behind the curtain at the inner-workings of the White House. Topics include: physical structure of the White House, travel, protection, and staff.

3700:352. Weapons of Mass Destruction. (3 Credits)
An exploration of the various weapons of mass destruction available to terrorists and other potential enemies with an emphasis on the challenge America faces in responding to such threats.

3700:353. Future International Threats. (3 Credits)
A study of future threats through the use of scenario construction and future projections.

3700:360. The Judicial Process. (3 Credits)
Role of police, lawyers, courts and judges in context of American political process. Structure and process of judicial policy making and limitations on judicial power.

3700:361. Politics of the Criminal Justice System. (3 Credits)
Examines the impact of the political process and political institutions on criminal law and policy.

3700:363. Crime, Punishment, Politics: A Comparative Perspective. (3 Credits)
Comparative study of the structures, practices, power relationships, and politics in various criminal justice systems.

3700:370. Public Administrtion: Concepts & Practices. (4 Credits)
Examines current administrative theories and their application in public bureaucracies. Emphasis is placed on practices to improve the quality of public sector administration.

3700:375. Women in Politics. (3 Credits)
Course examines the past, present, and future role of women in politics.

3700:381. State Politics. (3 Credits)
Analysis of the state political process in terms of its capacity to deal with a wide range of socioeconomic problems. Special emphasis on legislators, administrators, parties and interest groups.

3700:391. Honors in Political Science. (3 Credits)
Prerequisites: at least 17 credits and a 3.25 average in political science and permission of adviser.

3700:392. Selected Topics in Political Science. (1-3 Credits)
(May be repeated, but no more than three credits can be applied to major in political science) Topics of substantial current importance, specialized topics within political science or experimental courses.

3700:395. Internship in Government & Politics. (2-9 Credits)
(May be taken twice for a total of nine hours. No more than four credits may be applied toward major in political science.) Prerequisite: Completion of 3 courses with a 2.20 GPA in political science. Supervised individual placement with political office holders, party groups, governmental agencies, law firms and other organizations providing professional-level work.

3700:397. Independent Study: Political Science. (1-4 Credits)
(May be repeated for a total of four credits) Prerequisites: Minimum academic standing of a Senior and a 3.00 GPA.

3700:400. Political Extremism & Violence. (3 Credits)
This course examines the causes and consequences of political extremism and political violence in democracies and failed democracies.

3700:401. Advanced Topics in Research Methods. (3-6 Credits)
Prerequisite: 3700:301 or 3850:301. Special advanced topics of interest in research methods. This course can be taken twice if topics are different, for six credits total.

3700:402. Politics and the Media. (3 Credits)
Examination of relationships between the press, the news media and political decision makers.

3700:403. Media, Crime and Public Opinion. (3 Credits)
Examines the social construction of crime in mass media and how it impacts public, including fear of crime, beliefs about crime causation, and crime policy.

3700:405. Politics in the Middle East. (3 Credits)
The rise of the state system in the Middle East after World War I; an analysis of the socio-cultural, ideological forces influencing the political behavior of the people of the Middle East. In-depth study of selected political systems.

3700:406. Comparative Constitutional Law. (3 Credits)
This course will explore the essential principles and theories of law and constitutionalism and then apply them, comparatively, to several different constitutional traditions from various regions of the world.

3700:410. International Security Policy. (3 Credits)
Prerequisite: 3700:310 or 3400:461. Introduction to political uses of military forces. Major focus on methodological, conceptual, and ethical dilemmas confronted in developing and implementing security policy.

3700:413. Global Public Health Threats. (3 Credits)
An introduction to comparative global biological and public health security policy. Topics include: infectious disease outbreaks, bioterrorism, and potential "nano-terrorism.

3700:414. Wealth and Power Among Nations. (3 Credits)
Studies relationship between politics and economy; mesh theoretical perspectives with exploration of key empirical issues. Topics: trade, relations, unions, finance, development, aid, sanctions.

3700:417. Environmental Security: Policy & Politics. (3 Credits)
Prerequisite: 3700:100. Examines the politics, economics, science, security, and policy changes behind global warming/climate change, peak oil (looming energy shortages), and related governmental and resource security.

3700:422. Understanding Racial and Gender Conflicts. (3 Credits)
This is the core course the Certificates in Racial and Gender Conflict, providing students with an opportunity to intensively examine racial and gender conflict.

3700:428. Ohio Politics. (3 Credits)
Prerequisite: 3700:100. This course focuses on factors that make Ohio economically competitive. Material focuses on recent election results, public opinion polling and influence of socioeconomic factors.

3700:437. Government Versus Organized Crime. (3 Credits)
The course gives a history of organized crime and the government's responses to fight it. Newly emerging international crime groups are also discussed.

3700:440. Survey Research Methods. (3 Credits)
Prerequisites: 3700:100. Study of survey research methods as applied to the analysis of public opinion, political behavior, and public policy formation.

3700:441. The Policy Process. (3 Credits)
Prerequisites: eight credits in political science. Intensive study of policy-making process, emphasizing roles of various participants in executive and legislative branches as well as private individuals and groups.

3700:442. Methods of Policy Analysis. (3 Credits)
Prerequisite: 3700:201. Examines variety of methods available for analyzing public policies. Techniques of cost benefit analysis, evaluation research quasi-experimentation are covered as well as consideration of ethical questions in policy analysis, the practical problems facing policy analysts.

3700:443. Political Scandals & Corruption. (3 Credits)
This course will provide information on major political scandals, including media coverage, public opinion, the role of special prosecutors, and the impacts of scandals.

3700:445. Al Qaeda and ISIS. (3 Credits)
This course explores the causes and consequences of Al Qaeda and ISIS ideologies and tactics around the world.

3700:446. National Security Intelligence. (3 Credits)
The aim of this course is to familiarize students with the politics and policy of national security intelligence in the US.

3700:447. Counterterrorism. (3 Credits)
The course introduces students to the federal national security agencies, polices, politics, and methods of containing and defeating terrorism abroad and within the United States.

3700:450. Administering Prisons, Probation, and Parole. (3 Credits)
Prerequisite: 3700:100. Analysis of the administrative, electoral, and community conflicts central to understanding, resolving, and preventing these conflicts in a correctional environment.

3700:461. The Supreme Court & Constitutional Law. (3 Credits)
Prerequisite: 3700:100. Interpretation of the Constitution by the Supreme Court with emphasis on federal judicial, legislative and executive power; separation of powers; and federalism.

3700:462. The Supreme Court & Civil Liberties. (3 Credits)
Prerequisite: 3700:100. Interpretation of the Constitution by the Supreme Court with emphasis on freedom of speech and press, freedom of religion, criminal rights and right to privacy.

3700:463. Human Rights in World Politics. (3 Credits)
An introduction to human rights from a comparative perspective; topics include: definition and development of human rights with attention paid to government interaction and wartime.

3700:470. Campaign Management I. (3 Credits)
Reading, research and practice in campaign management decision making.

3700:471. Campaign Management II. (3 Credits)
Prerequisite: 3700:470. The second course in campaign management. The focus is on timing, coalition building, candidate positioning, event planning, internal organization, and other elements of campaign strategy.

3700:472. Campaign Finance. (3 Credits)
Reading and research in financial decision making in political campaigns.

3700:473. Voter Contact & Elections. (3 Credits)
Theoretical and practical approaches to communication in all types of campaigns.

3700:474. Political Opinion, Behavior & Electorial Politics. (3 Credits)
Prerequisite: 3700:100 or 3700:301. Advanced analysis of psychological, cultural, and group processes of opinion formation and change. Attention given to the effect of opinion change on electoral outcomes.

3700:475. American Interest Groups. (3 Credits)
Prerequisite: Completion of six or more political science credits. Reading and research on the development, structure and function of interest groups in the United States.

3700:476. American Political Parties. (3 Credits)
Prerequisites: Completion of six or more political science credits. Reading and research on the development, structure and function of parties in the United States.

3700:477. Lobbying. (3 Credits)
Examines the lobbying profession in the political process. Topics include theories of lobbying, tools of lobbying, the lobbying process, and types of lobbying.

3700:480. Policy Problems in Political Science. (3 Credits)
(May be repeated for a total of six credits) Intensive study of selected problems in public policy.

3700:481. The Challenges of Police Work. (3 Credits)
Prerequisite: 3700:100. Analysis of the neighborhood, bureaucratic, electoral, and operational conflicts central to police work, with a focus on efforts and obstacles to improving police work.

3700:482. Criminal Justice Topic: Current Issues. (3 Credits)
(May be repeated for a maximum of six credits) Prerequisite: 3700:100. Critical analysis of current issues relating to political science and criminal justice. No more than three credits can be applied to the major.

3700:483. Constitutional Problems in Criminal Justice. (3 Credits)
Prerequisite: 3700:100. Analyzes Supreme Court policy-making regarding problems of criminal justice, including search and seizure, self-incrimination, right to counsel, jury selection, and post-appeal prisoner rights.

3700:492. Selected Topics in Political Science. (3 Credits)
Topics of substantial current importance or specialized topics within political science.

3700:497. Senior Honors Project in Political Science. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and permission. Open only to a political science major in Honors Program. Independent study leading to completion of senior honors thesis or other original work.

Polymer Engineering (9841)

9841:321. Polymer Fluid Mechanics. (3 Credits)
Prerequisite: 4600:310 or equivalent. Rheological properties and flow characteristics of polymer fluid systems; non-Newtonian viscosity, viscoelasticity.

9841:422. Polymer Processing. (3 Credits)
Prerequisites: [4200:321 and 4200:351] or [4600:310 and 4600:315]. Polymer processing technology. Basic studies of flow in extrusion, molding, and other processing methods.

9841:425. Introduction to Blending & Compounding Polymers. (3 Credits)
Prerequisites: 4200:321 or 4600:310 or permission. Nature of polymer blends and compounds and their applications. Preparation and technology using batch and continuous mixers, mixing mechanisms.

9841:427. Mold Design. (3 Credits)
Prerequisites: 4200:321 or 4600:310 or permission. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.

9841:450. Engineering Properties of Polymers. (3 Credits)
Prerequisites: 4200:408 or 4300:202 or 9821:301. Mechanical behavior of solid polymers including elastic and plastic deformation, viscoelasticity, fatigue and failure.

9841:451. Polymer Engineering Laboratory. (2 Credits)
Prerequisite: 4200:408 or 9821:202. Laboratory experiments on the rheological characterization of polymer melts, fabrication of engineering products, structural investigation of polymeric parts.

9841:497. Honors Project. (2 Credits)
Prerequisite: Senior standing in the Honors Program. Individual creative project in mechanical polymer engineering, supervised by faculty member of the department. This course must be designed oriented if used in place of 4700:499.

9841:498. Research Problems in Polymer Engineering. (1-3 Credits)
Prerequisite: Permission of Department Chair. Faculty-supervised undergraduate research problems in polymer engineering culminating in a written report.

9841:499. Polymer Engineering Design Project. (2 Credits)
Corequisite: 4600:400. Analysis and design of mechanical polymer systems.

Polymer Science (9871)

9871:401. Introduction to Elastomers. (3 Credits)
Prerequisites: 3150:314 (or equivalent) or permission. An introduction to the science and technology of elastomeric materials and gels, including hydrogels. Lecture and laboratory.

9871:402. Introduction to Plastics. (3 Credits)
Prerequisite: 3150:314 (or equivalent) or permission. An introduction to the science and technology of plastic materials. Lecture and laboratory.

9871:403. Polymer Chemistry. (3 Credits)
Prerequisites: 3150:263 and 3150:313 or permission. Mechanisms of polymerization reactions of monomers and molecular mass distributions of products; principles of molecular mass determination; relationship of physical properties/applications to structure and composition.

9871:404. Polymer Physics. (3 Credits)
Prerequisites: 4200:408 or 9821:301 or [3150:313 and 3450:223]. Advanced overview of polymer physics including scaling theories, chain dynamics, rubber elasticity, glassy polymers and crystallization.

9871:405. Polymer Science Laboratory. (3 Credits)
Prerequisites: 4200:408 or 9821:301 or 9871:403 or permission. Laboratory course with experiments on the synthesis and characterization or polymers.

9871:407. Polymer Science. (4 Credits)
Prerequisite: 3150:314 or 3650:301 or permission. Principles of polymerization processes and relationships between molecular structures and physical behavior of polymers. Molecular weight distributions of macromolecules discussed and methods of determining molecular weights utilized.

9871:497. Honors Project in Polymer Science. (1-3 Credits)
Prerequisites: Sophomore, junior, or senior standing in Honors College and permission of honors preceptor in the home department. Independent research leading to completion of honors thesis under guidance of project adviser. May be repeated for a total of 10 credits.

9871:499. Research Problems in Polymer Science. (1-3 Credits)
Prerequisite: Permission. Faculty-supervised undergraduate research problems in polymer science, culminating in a written report.

Polymer Technology (2840)

2840:111. Polymer Technology I. (3 Credits)
Introduction to chemical and physical structure, properties and applications of polymers. Interaction between materials properties, product design and processing. Characterization of the major processes.

2840:112. Polymer Technology II. (3 Credits)
Prerequisite: 2840:111. This course emphasizes the processing of thermoplastics and thermosetting plastics. The laboratory introduces students to some of the major processes and equipment operation.

2840:202. Instrumental Methods. (3 Credits)
Prerequisites: 2820:111 and 2840:111. Instrumentation employed in qualitative and quantitative analysis. Theory and practice in chromatographic, spectrophotometric and other instrumental methods. Laboratory.

2840:211. Polymer Technology III. (3 Credits)
Prerequisites: 2820:131, 2840:101 and 2840:112. This course emphasizes the testing and characterization of materials used in polymer product fabrication, and the testing and analysis of finished polymer products.

2840:220. Case Studies in Polymer Design & Processing. (2 Credits)
Prerequisite: 2840:211. Combines study of polymer properties, processing, and design guidelines to analyze complete manufacturing, testing, and quality assurance programs. Examples of significant applications analyzed in detail.

2840:260. Compounding Methods. (2 Credits)
Principles and methods of selecting and compounding rubber for specific end uses. The compounder's art. Processing and testing of basic elastomers and products. Laboratory.

2840:281. Polymer Project. (2 Credits)
Prerequisite: 2840:211. Student teams, choosing their own projects, design a polymeric product, select materials, processes, and simulate design and development of the product. Individual final reports required.

2840:290. Special Topics: Polymer Technology. (1-2 Credits)
(May be repeated for a total of four credits) Prerequisite: Permission. Selected topics or subject areas of interest in polymer technology.

Psychology (3750)

3750:100. Introduction to Psychology. (3 Credits)
Introduction to scientific study of behavior, survey of physiological basis of behavior, sensation and perception, development, learning and cognition, personality, social interaction and other selected topics.

3750:105. Professional & Career Issues in Psychology. (1 Credit)
Corequisite: 3750:100. An overview of the field of psychology including educational requirements, career opportunities and professional issues for students considering a psychology major.

3750:110. Quantitative Methods in Psychology. (4 Credits)
Prerequisite or corequisite: 3750:100. Presentation of data, descriptive statistics, correlation, hypothesis testing and introduction to statistical methodologies in psychology, including computer applications.

3750:220. Introduction to Experimental Psychology. (4 Credits)
Prerequisites: 3750:100 and 3750:110. Lectures and laboratory experience in the scientific bases of psychology such as experimental design, methods and apparatus, collection and analysis of data and interpretation of results.

3750:230. Developmental Psychology. (4 Credits)
Prerequisite: 3750:100. Determinants and nature of behavioral change from conception to death.

3750:320. Biopsychology. (4 Credits)
Prerequisite: 3750:100. Relationship between behavior and its biological/physiological foundations including brain structure and function, sensation, behavior genetics, learning and memory, and other topics.

3750:330. Emotion Across the Lifespan. (4 Credits)
Prerequisites: 3750:100 & 3750:230. We read and discuss primary writings on theoretical and empirical research in emotional development in adulthood. Topics include emotion perception and emotion regulation.

3750:335. Dynamics of Personality. (4 Credits)
Prerequisite: 3750:100. An overview of theory and research involving the development, maintenance and assessment of personality and individual differences.

3750:340. Social Psychology. (4 Credits)
Prerequisite: 3750:100. The examination of an individual's response to social environment and social interaction processes. Social perception, attitude formation and change, affiliation and attraction, altruism, group processes and nonverbal behavior.

3750:345. Cognitive Processes. (4 Credits)
Prerequisite: 3750:100. Survey of the basic phenomena, concepts and theories in the areas of human perception, learning, memory and cognition.

3750:380. Industrial/Organizational Psychology. (4 Credits)
Prerequisite: 3750:100. Survey of the application of psychology to the workplace including an emphasis on organizational (e.g., motivation) and personnel issues (e.g., selection).

3750:400. Personality. (4 Credits)
Prerequisites: 3750:100 and 3750:335. Consideration of current conceptualizations of the normal personality with emphasis on methods of measurement, experimental findings and research techniques.

3750:405. Sensation & Perception. (4 Credits)
Prerequisite: 3750:100. Reviews the basic psychological and neural components of sensation and perception involving visual, auditory, cutaneous, and chemical sensory systems.

3750:410. Psychological Tests & Measurements. (4 Credits)
Prerequisites: 3750:100 and 3750:110. Consideration of the nature, construction and use of tests and measurements in industry, government and education. Includes aptitude and achievement tests, rating scales, attitude and opinion analysis.

3750:415. Cognitive Neuroscience. (4 Credits)
Prerequisite: 3750:100. A review of neuroimaging studies addressing contemporary themes in human behavior, including consciousness, learning and memory, neuropathology, and emotion.

3750:420. Abnormal Psychology. (4 Credits)
Prerequisite: 3750:100. Survey of syndromes, etiology, diagnoses and treatments of major psychological conditions ranging from transient maladjustments to psychoses.

3750:425. Psychology of Hate. (4 Credits)
Prerequisite: 3750:100. The primary objective of this course is to understand the psychology behind hate. Topics include racism, sexism, heterosexism, religious intolerance, classism and ageism.

3750:430. Psychological Disorders of Children. (4 Credits)
Prerequisites: 3750:100 and 3750:230. Survey of syndromes, etiologies and treatments of behavioral disorders in children from the standpoint of developmental psychology. Behavioral data and treatment approaches emphasized.

3750:435. Cross-Cultural Psychology. (4 Credits)
Prerequisites: 3750:100. Influence of culture and ethnicity upon development of individual psychological processes including functioning, identity, social motives, sex roles and values.

3750:440. Personnel Psychology & the Law. (4 Credits)
Prerequisite: 3750:380 or 6500:301. The implications of equal employment law on the practice of personnel psychology.

3750:441. Clinical & Counseling Psychology I. (4 Credits)
Prerequisites: 3750:100 and 3750:335. Overview of the fields of clinical and counseling psychology with a major focus on psychotherapeutic approaches, including cultural considerations, legal/ethical issues, and outcome research.

3750:442. Clinical & Counseling Psychology II. (4 Credits)
Prerequisite: 3750:441. Overview of individual counseling and psychotherapy, group counseling, personality and ability testing, marriage and family counseling, hypnosis, sex therapy, psychopharmacology and related specialties. Specific topics in clinical and counseling practice including professional trends, ethics, various therapeutic and diagnostic procedures, and specialty areas.

3750:443. Human Resource Management. (4 Credits)
Prerequisites: 3750:100 and 3750:380. The application of psychological theory to the effective management of human resources in an organization, including recruitment, selection, training and retention of personnel.

3750:444. Organizational Theory. (4 Credits)
Prerequisites: 3750:100 and 3750:380. The application of psychological theory to macro-level processes in organizations including leadership, motivation, task performance, organizational theories and development.

3750:445. Psychology of Small Group Behavior. (4 Credits)
Prerequisites: 3750:100. Intensive investigation of factors affecting behavior and performance in small groups including effects of personality, social structures, task, situational and social-cognitive variables.

3750:450. Cognitive Development. (4 Credits)
Prerequisites: 3750:100 and 3750:345. Theory and research on life-span changes in cognitive processes including concept formation/categorization, information processing and Piagetian assessment tasks.

3750:460. History of Psychology. (3 Credits)
Prerequisite: 3750:100. Psychology in pre-scientific period and details of developmental or systematic viewpoints in 19th and 20th Centuries.

3750:474. Psychology of Women. (4 Credits)
Prerequisites: 3750:100 or 3001:200. Reviews theory and research in the psychology of women and gender and encourages students to use these in their everyday lives.

3750:475. Psychology of Adulthood & Aging. (4 Credits)
Prerequisites: 3750:100 and 3750:230. Psychological aspects of human development from adolescence to older adulthood including age-related changes in socialization, personality, intelligence, sensation, perception, learning, memory and clinical applications.

3750:480. Special Topics in Psychology. (1-4 Credits)
(May be repeated to a maximum of 8 credits) Prerequisite: 3750:100 and 64 credits completed. Junior standing. Comprehensive survey of contemporary status of specialized topics and issues in psychology. Emphasis on original source materials, critical analysis and synthesis of empirical and theoretical aspects.

3750:488. Honors Project in Psychology. (4 Credits)
Prerequisites: Psychology major and departmental permission, and 3750:100, 3750:105, 3750:110, 3750:220, and [3750:320 or 3750:335 or 3750:340 or 3750:345]. Selection of research topic, review of relevant literature, research design, and proposal.

3750:489. Honors Project in Psychology. (4 Credits)
Prerequisites: Psychology major and departmental permission, and 100 and 105 and 110 and 220, and 320 or 335 or 340 or 345. Data collection, analysis, and preparation of the final research report in journal style.

3750:495. Field Experience in Psychology. (1-4 Credits)
(May be repeated to a maximum of 6 credits). Prerequisites: 3750:100, 3750:105, 3750:110 and eight additional credits in psychology. On-site supervised individual placements in appropriate settings. The academic component of the experience will be under the supervisor of a selected faculty member.

3750:497. Independent Reading/Research in Psychology. (1-3 Credits)
(May be repeated to a maximum of 6 credits). Prerequisites: 3750:100, 3750:105, 3750:110, 3750:220 and four additional credits in psychology. Independent reading and/or research in an area of psychology under the supervision and evaluation of a selected faculty member.

3750:498. Honors Research in Psychology. (1-3 Credits)
Prerequisites: Psychology major and approval of honors advisor. Individual research with a faculty advisor leading to the completion of a research project satisfying departmental and university requirements.

Public Administration and Urban Studies (3980)

3980:375. Intro to Public Sector Mgmt. (3 Credits)
Prerequisite: Sophomore standing. Introduces the principles, structures and people in the public sector. Addresses responsibilities and management of public services by government and civic non-profit agencies.

3980:380. Budget Politics. (3 Credits)
Prerequisite: Sophomore standing. Introduces the politics and history of public budgeting for federal, state and local governments. Considers legislative and executive practices and democratic aspects of budgeting.

3980:412. National Urban Policy. (3 Credits)
Prerequisite: Sophomore standing. Examines major federal policies that relate to urban problems in regard to policy-making processes, implementation, and impact on local governments.

3980:416. Personnel Management in the Public Sector. (3 Credits)
Prerequisite: 42 credit hours or Sophomore standing. Fundamental issues and principles of public sector personnel administration, including recruitment, selection, training, motivation, supervision, evaluation, labor relations and affirmative action.

3980:417. Leadership and Decision-Making. (3 Credits)
Prerequisite: 42 credit hours of Sophomore standing. Examines the context of public sector management including relevant organizational theories, strategic management and planning for leading local government and non-profit organizations.

3980:418. Citizen Participation. (3 Credits)
Prerequisite: Sophomore standing. This course considers the fundamental theory background, techniques and issues of citizen participation in urban management and policy making.

3980:419. Community Organizing. (3 Credits)
Prerequisite: 42 credit hours or Sophomore standing. The course examines the evolution and influence of neighborhood, community and "grass-roots" organizations on public policy-making in urban areas.

3980:426. Grantsmanship. (3 Credits)
Prerequisite: Sophomore standing. Considers the process and techniques of the grant-seeking and awarding processes. Emphasizes public funding opportunities for local government and nonprofit agencies.

3980:427. Cultural Competence in the Public Sector. (3 Credits)
Prerequisite: 42 credit hours or Sophomore standing. Considers how public and non-profit managers can effectively communicate and provide services to culturally diverse individuals. Addresses management issues related to social stratification system.

3980:443. Introduction to Public Policy. (3 Credits)
Prerequisite: Sophomore standing. Considers how public managers need to understand models of public policy formulation. Covers major policy issues and the analysis of policy implementation and policy impacts.

3980:451. Introduction to City Management. (3 Credits)
Prerequisite: 42 credit hours or Sophomore standing. Examines the historic role of city management in professionalizing local government operations; examines current responsibilities and trends in the practice of city management and leadership.

3980:462. Fundraising and Resource Management. (3 Credits)
Prerequisites: 3980:463 and sophomore standing. Examines alternative methods of fundraising and unique resource management challenges and opportunities of non profit organizations.

3980:463. Non-profit Management. (3 Credits)
Prerequisite: Sophomore standing. Examines fundamental principles of non-profit organizations. Considers unique concerns of their operation environment, resource development, leadership, and management processes and aspects of volunteerism.

3980:473. Computer Applications in Public Organizations. (3 Credits)
Prerequisite: Sophomore standing. Introduces microcomputer applications used in public organizations and includes data bases, data entry, web pages, report writing, graphical presentation and spreadsheets.

3980:480. Special Topics in Public Management. (3 Credits)
Prerequisite: Sophomore standing. Opportunity to study current issues and specialized topics in public management, non-profit management or public policy analysis. May be repeated with change in topic for a total of 9 credits.

Radiologic Technology (2760)

2760:141. Anatomy & Positioning I. (3 Credits)
Prerequisites: 2780:106, 2780:107, and admission to the program. Radiographic anatomy and positioning of skeletal systems, including introductory cross-sectional anatomy. Identification of correct & incorrect positioning including remedies.

2760:142. Anatomy & Positioning II. (3 Credits)
Prerequisite: 2760:141. Radiographic anatomy and positioning of various body systems in all planes, including cross-sectional anatomy. Identification of correct & incorrect positioning, including remedies.

2760:151. Methods of Patient Care I. (2 Credits)
Prerequisite: Admission to the program. Covers basic radiologic patient care and professionalism issues. Includes surgical aseptic training for performing radiographic images in the operating room.

2760:152. Methods of Patient Care II. (1 Credit)
Prerequisite: 2760:151. Addresses patient care considerations for medical emergencies, patients receiving contrast media, alternative medical treatments. Overview of pharmacology and drug administration.

2760:161. Radiologic Physics and Principles I. (3 Credits)
Prerequisites: 2780:106, 2780:107 and Admission to the program. Orientation to radiologic sciences. Introduction to systems of measurement, physics, electromagnetism, and components of the x-ray tube. Also includes electricity, radiation physics, and radiation protection.

2760:162. Radiologic Physics and Principles II. (3 Credits)
Sequential. Prerequisite: 2760:161. Discussion of radiologic factors involved in producing quality radiographs. Review of various radiographic components and their influences on photographic technique. Includes quality assurance testing.

2760:171. Clinic Class I. (1 Credit)
Prerequisite: Admission to the program. Corequisite: 2760:181. Review of the clinical site-specific radiographic positioning of the skeletal system. Also includes mobile & surgical radiography.

2760:172. Clinic Class II. (1 Credit)
Prerequisite: 2760:171. Corequisite: 2760:182. Review of the clinical site-specific radiographic positioning of various body systems. Includes mobile & surgical radiography.

2760:181. Clinical I. (3 Credits)
Prerequisite: Admission to the program. Hands-on application of didactic anatomy & positioning lessons in learning how to image the skeletal system. Includes mobile & surgical radiography.

2760:182. Clinical II. (3 Credits)
Prerequisite: 2760:181. Hands-on application of didactic anatomy & positioning lessons in learning how to image the various body systems. Includes mobile & surgical radiography.

2760:192. Radiobiology. (2 Credits)
Prerequisite: 2760:161. Corequisite: 2760:162. History and development of federal and state radiation standards. Identifying natural vs. artificial radiation sources. Includes applications of diagnostic imaging and therapeutic radiation modalities.

2760:221. Clinical Experience. (0 Credits)
Prerequisite: Admission to the Radiologic Technology program. Off-campus clinical course. May be repeated as needed.

2760:252. Imaging Obstacles and Solutions. (1-2 Credits)
Prerequisite: 2760:142. Introduction problem solving skills, using case studies and role-playing situations. Includes comprehensive image analysis of proper technique, positioning, & the use of radiation protection principles.

2760:261. Radiologic Physics and Principles III. (3 Credits)
Prerequisite: 2760:162. Review of radiation physics and radiographic principles that are included with advanced imaging concepts, and radiation protection techniques for both the patient and the radiographer.

2760:262. A&P Registry Review. (2 Credits)
Prerequisite: 2760:271. Comprehensive review of anatomical structures and positioning to prepare for the ARRT Registry examination. A global perspective on positioning, using critical thinking skills.

2760:271. Special Imaging I. (3 Credits)
Prerequisite: 2760:142. Review of anatomy and advanced radiologic procedures for the following anatomical systems: Cardiac & Circulatory System, Respiratory & Lymphatic Systems, GI System, & Skeletal Articulations.

2760:272. Special Imaging II. (3 Credits)
Prerequisite: 2760:271. Review of anatomy and advanced procedures for the following anatomical systems: Genitourinary System, Nervous System, Muscular System, and computer based imaging.

2760:281. Clinical III. (4 Credits)
Prerequisite: 2760:182. Competency level skills are refined radiographing the vertebral column, skull, facial bones, surgical & mobile Radiography, special procedures, and other infrequently seen radiologic procedures.

2760:282. Clinical IV. (3-4 Credits)
Prerequisite: 2760:281. Competency level skills are refined in all radiologic areas.

2760:291. Pathophysiology. (2 Credits)
Prerequisite: 2760:142. Review of disease processes of the various body systems related to the effect pathology produces on radiographic images. Extensive discussion of optimum techniques used.

2760:292. Cross Sectional Anatomy. (2 Credits)
Prerequisite: 2760:271. Reorientation of anatomical structures and their relationships to axial, coronal, and sagittal planes. These structures are then identified on cadaver, CT, and MRI images.

Respiratory Care (2790)

2790:100. Concepts in Respiratory Therapy. (3 Credits)
Prerequisites: 2030:152 and 2030:153. Introductory concepts regarding the practice and application of the theories employed in respiratory therapy, including career information, equipment (lecture/discussion)

2790:210. Respiratory Therapy Procedures I. (3 Credits)
Prerequisites: [2790:100, 2740:120, and 2780:106] or [3100:200, and 3100:201]. Application of oxygen and aerosol therapy equipment. Lecture/laboratory.

2790:215. Respiratory Therapy Pharmacology. (3 Credits)
Prerequisites: 2790:100, 3150:110, and 3150:111. Pharmacologic actions and effects of medications delivered by respiratory therapists, and routes of administration.

2790:290. Special Topics: Respiratory Care. (1-3 Credits)
(May be repeated for a maximum of three credits) Prerequisite: Permission. Selected topics or subject areas of interest in respiratory therapy technology.

2790:301. Cardiopulmonary Assessment Techniques. (2 Credits)
Prerequisites: 2780:107 or [3100:202 and 3100:203]. Overall patient assessment, with concentration on the cardiopulmonary systems. Overview of common illness and related clinical manifestations. Lecture/laboratory.

2790:302. Cardiopulmonary Anatomy and Physiology. (3 Credits)
Prerequisites: [2790:210 and 2780:107] or [3100:202 and 3100:203]. Corequisite: 2790:301. Study of normal anatomy and physiology of cardiopulmonary systems.

2790:303. Cardiopulmonary Pathology. (4 Credits)
Prerequisites: 3790:301 and 3790: 302. Discussion of diseases of the heart and lungs, and their relationship to the role of the respiratory therapist.

2790:311. Respiratory Therapy Procedures II. (3 Credits)
Prerequisites: [2790:210 and 2780:107] or [3100:202 and 3100:203]. Airway Care and Lung Inflation Techniques. Lecture/laboratory.

2790:312. Diagnostics I. (3 Credits)
Prerequisite: 2790:210. Corequisites: 2790:301, 2790:302, and 2790:311. Bedside screening studies for the evaluation of cardiopulmonary diseases. Lecture/laboratory.

2790:313. Diagnostics II. (3 Credits)
Prerequisites: 2790:311 and 2790:312. Corequisite: 2790:303. Laboratory diagnostic studies for the evaluation of cardiopulmonary diseases. Lecture/laboratory.

2790:315. Advanced Pharmacology for Respiratory Therapy. (3 Credits)
Prerequisite: 2790:215. Pharmacologic actions and effects of Cardiopulmonary Medications.

2790:320. Neonatal/Pediatrics for Respiratory Therapy I. (3 Credits)
Prerequisite: 2790:301. In depth coverage of neonatal & pediatric respiratory care concepts. Emphasis placed on anatomy and physiology, assessment, and therapeutics.

2790:325. Mechanical Ventilation. (4 Credits)
Prerequisites: 2790:303, 2790:312, 2790:315, 2790:320, and 2790:341. Introduction to mechanical ventilation and equipment. Lecture/lab.

2790:340. Application of Clinical Concepts. (2 Credits)
Prerequisite: 2790:210. Corequisite: 2790:301. Introduction to basic respiratory therapy in a hospital setting, and hands-on practice with respiratory therapy equipment, including CPR for the professional. Lecture/clinical.

2790:341. RT Clinical Experience I. (3 Credits)
Prerequisites: 2790:215, 2790:311, and 2790:340. Application of clinical procedures in a hospital setting, with emphasis on basic therapeutic interventions. Clinical. 225 clinical hours.

2790:342. RT Clinical Experience II. (2 Credits)
Prerequisites: 2790:315, 2790:325, and 2790:341. Application of clinical procedures in a hospital setting, with emphasis on mechanical ventilation techniques. 150 clinical hours.

2790:413. Respiratory Therapy in Alternate Settings. (3 Credits)
Prerequisite: 2790:313. Pulmonary rehabilitation and home care, as well as care in alternate settings. Lecture/lab.

2790:420. Neonatal/Pediatrics for Respiratory Therapy II. (3 Credits)
Prerequisite: 2790:320. Detailed study of airway management, pathophysiology and treatment modalities as they relate to neonatal/pediatrics.

2790:421. ACLS & PALS. (3 Credits)
Prerequisites: 2790:303, 2790:315, 2790:320, and 2790:340. Advanced Cardiac Life Support and Pediatric Advanced Life Support, with mega codes and case studies.

2790:430. Problems in Respiratory Therapy. (4 Credits)
Prerequisites: 2790:313, 2790:420, and 2790:443. Capstone course, applies the concepts from clinical situations, using computer simulations and cases and evaluates research in Respiratory therapy.

2790:443. RT Clinical Experience III. (4 Credits)
Prerequisites: 342. Rotation to a variety of Health care facilities to practice specialty procedures in each institution. 300 clinical hours.

2790:444. RT Clinical Experience IV. (4 Credits)
Prerequisite: 2790:443. Rotation to a variety of health care facilities to practice specialty procedures from each institution. Clinical (total of 300 hours).

Russian (3570)

3570:101. Beginning Russian I. (4 Credits)
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.

3570:102. Beginning Russian II. (4 Credits)
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.

3570:201. Intermediate Russian I. (3 Credits)
Sequential. Prerequisite: 102 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.

3570:202. Intermediate Russian II. (3 Credits)
Sequential. Prerequisite: 3570:102 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.

3570:497. Individual Reading in Russian. (1-3 Credits)
Prerequisite: 3570:202 and permission of the department chair.

School Psychology (5620)

5620:490. Workshop: School Psychology. (1-2 Credits)
Prerequisite: Permission of instructor. Opportune topical experience provided periodically as needed and/or as resources become available.

5620:491. Workshop: School Psychology. (1-3 Credits)
Prerequisite: Permission of instructor. Opportune topical experience provided periodically as needed and/or as resources become available.

5620:492. Workshop: School Psychology. (1-3 Credits)
Prerequisite: Permission of instructor. Opportune topical experience provided periodically as needed and/or as resources become available.

5620:494. School Psychology Institutes. (1-4 Credits)
Prerequisite: Permission of instructor. Specifically designed learning experience for program graduate focusing on critical topics.

Secondary Education (5300)

5300:100. Orientation to the AYA/P-12 Multi-Age Programs. (0 Credits)
Prerequisite: admission to the College of Education's Teacher Education Program. Corequisite: 5100:200. Orientation to the information and strategies necessary for a student to be successful in the program, including portfolio development.

5300:303. Global Education & Technology. (3 Credits)
This course focuses on theories, materials, and methods for teaching global education through e-learning and web-based tools.

5300:316. Methods in Teaching Art. (3 Credits)
Prerequisites: Completion of required course for art teachers and grade-point average of 2.50 in the field. Study of trends and procedures in teaching and supervision; relation of art to home, school and community; observation in selected schools required.

5300:317. Instructional Techniques: Modern Languages-Secondary. (3 Credits)
Focus on theories of language acquisition, models of instruction for teaching foreign languages/cultures and strategies that promote levels of proficiency/competency for adolescent learners.

5300:320. Introduction to Teaching in the Content Area. (3 Credits)
Prerequisite: 5500:308. This course introduces secondary teacher candidates to trends, issues, and challenges as it relates specifically to curriculum and instruction in the content areas in secondary schools.

5300:325. Content Reading in Secondary Schools. (3 Credits)
Instructional principles and practices for helping secondary school youth and adults learn subject matter through application of reading and study skills.

5300:330. Teaching Adolescent/Middle Level Literature. (3 Credits)
Student develops skills for selection of literature that is well-suited for adolescent/middle level children. Student develops, uses, and experiences methods for teaching adolescent/middle level literature in the classroom. (30 clinical experience hours)

5300:335. Language Learning in Secondary Schools. (3 Credits)
Prerequisite: Admission to the Teacher Education program. Introduces English teachers to the issues of language learning and techniques required to teach language skills.

5300:395. Field Experience: Secondary Education. (1-3 Credits)
Supervised work with youngsters, individually and in groups in school and/or community settings.

5300:420. Instructional Techniques in Secondary Education. (3 Credits)
Prerequisite: 5500:308. Corequisite: 5300:421. Open to student who has completed certification requirements in all content fields. Techniques of planning, instruction and evaluation in various secondary teaching fields.

5300:421. Field Experience in Instructional Techniques in Secondary Education. (3 Credits)
Prerequisites: 5300:420 and 5500:430. Corequisite: 5500:431. Continuation of teaching strategy and assessment implementation based on research and theory.

5300:430. Honors Research Project: Secondary Education. (1-6 Credits)
(May be repeated for a total of six credits) Prerequisite: Permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.

5300:480. Special Topics: Secondary Education. (1-4 Credits)
(May be repeated with a change in topic) Prerequisite: Permission of instructor. Group study of special topics of critical, contemporary concern in professional education.

5300:490. Workshop: Secondary Education. (1-3 Credits)
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

5300:491. Workshop: Secondary Education. (1-3 Credits)
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

5300:492. Workshop: Secondary Education. (1-3 Credits)
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

5300:493. Workshop: Secondary Education. (1-3 Credits)
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.

5300:494. Educational Institutes: Secondary Education. (1-4 Credits)
Special courses designed as in-service upgrading programs, frequently provided with the support of national foundations.

5300:495. Student Teaching: Secondary Education. (6-11 Credits)
Prerequisites: Approval of the Student Teaching Committee, considered based upon approved application to student teaching, and passing state licensure exam(s). Planned teaching experience in schools selected and supervised by the Office of Field Experiences. Co-requisite: 5300:496.

5300:496. Student Teaching Colloquium in Secondary Education. (1 Credit)
Concurrent with Student Teaching; emphasis on applied decision making, group problem solving, and commitment to life-long learning.

5300:497. Independent Study. (1-3 Credits)
Specific area of curriculum investigation pertinent to secondary education as determined by student?s academic needs.

Social Sciences - Associate Studies (2040)

2040:230. Technical Career Search Skills. (1 Credit)
Students will develop specific skills in resume writing, interviewing, self-directed job search, networking, researching employers, as well as learning the fundamentals of the job market.

2040:240. Human Relations. (3 Credits)
Examination of principles and methods which aid in understanding the individual's response to society and the relationship between society and individuals.

2040:241. Technology & Human Values. (3 Credits)
Examines impact of scientific and technical change upon individuals and society and associated values. Topics include digital and work life, biomedical technologies and the environment.

2040:242. American Urban Society. (3 Credits)
Multidisciplinary treatment of urban processes and problems. Concerns historical, political, social, economic and other environmental forces which impact the individual in an urban setting.

2040:243. Contemporary Global Issues. (3 Credits)
Multidisciplinary approach to global social problems. Examines cultural, political, and economic issues in developed and developing nations. Emphasizes technology's impact and global interrelationships.

2040:244. Death & Dying. (3 Credits)
Examination of a wide range of topics related to death and dying. Emphasis is placed on understanding and coping with death and dying.

2040:247. Survey of Basic Economics. (3 Credits)
Introduction to economic analysis and issues designed for the student taking only one course in economics. Coverage includes economic systems, exchange, money and banking, national income, employment, fiscal policy and current domestic economic problems.

2040:251. Human Behavior at Work. (3 Credits)
Examination of relationship between human behavior and the work organization. Emphasis on how contemporary organizations are changing and what makes individuals within their organizations more effective.

2040:254. The Black Experience from 1619-1877. (2 Credits)
Prerequisite: 2020:121 or 3300:112. Examination of the black American including origins, historical achievements and striving to achieve first-class citizenship in America from 1619 to 1877.

2040:256. Diversity in American Society. (3 Credits)
Prerequisites: 2020:121 or 3300:112. Survey course covering demographic, social, economic, political, and educational realities of diversity in 21st Century. Focus on diversity and unity, historical overview.

2040:257. The Black Experience 1877 - 1954. (2 Credits)
Prerequisites: 2020:121 or 3300:112. Examines the experiences of Blacks following Reconstruction. Topics to include: Separate but Equal doctrine, segregation, integration, and the achievements of Blacks in American society.

2040:258. The Black Experience 1954 - Present. (2 Credits)
Prerequisites: 2020:121 or 3300:112. Examines the relationship of the civil rights movement, Black nationalism, integration, segregation, and desegregation as strategies to ameliorate discrimination and achieve equal opportunity.

2040:290. Special Topics: Associate Studies Social Sciences. (1-4 Credits)
(May be repeated with a change in topic) Prerequisite: Permission. Selected topics on subject areas of interest in the social sciences.

2040:344. Death & Dying. (3 Credits)
Examination of a wide range of topics related to death and dying. Emphasis is placed on understanding and coping with death and dying.

2040:345. Death and Dying for Health Care Professionals. (3 Credits)
Examination of loss, death, and dying in health care professions. Theory-driven course emphasizing development of practical skills to address death-related issues and experiences.

2040:349. Integrated Human Behavior and Health. (3 Credits)
Examination of the reciprocal nature of physical and mental health factors related to disease course/progression. Emphasis on application of theory-driven conceptualization and interventions.

Social Work - School of (7750)

7750:240. Substance Use and Abuse. (3 Credits)
Introduction to pharmacology of drugs of misuse; physiological factors of alcohol/drug-using behavior; effect of psychoactive drugs on the brain; intervention and treatment measures.

7750:260. Introduction to Addiction. (3 Credits)
An overview of the continuum of use, abuse and dependency; theories of addiction; the impact of addiction on society; and the implications for professional practice.

7750:265. Women & Addiction. (3 Credits)
Exploration of the social, psychological, physical and family aspects of addiction in women.

7750:268. Co-Occurring Disorders. (3 Credits)
Key concepts and evidence-based practices in the provision of services to people suffering from substance abuse as well as mental illness and behavioral disorders.

7750:269. Criminal Justice & Addiction. (3 Credits)
An introduction to the problems that exist with the treatment of the alcohol/drug offenders and issues relating to their transition back to the community.

7750:270. Diversity and Social Work. (3 Credits)
Introductory course explores issues related to poverty and minority issues as they relate to at-risk populations.

7750:271. Behavioral Addictions. (3 Credits)
Introduction to understanding human behavior and physiological responses to compulsive behaviors other than dependencies on psychoactive chemicals. Several behavioral addictions will be explored.

7750:275. Introduction to Social Work Practice. (3 Credits)
Introduces students to concepts, settings, and vulnerable populations related to the field of social work. Emphasis placed on purposes, values, ethics, knowledge, and skills that characterize the professional social worker. Provides an overview of theoretical and practical knowledge about the social work profession needed for entry levels of practice in social work.

7750:276. Introduction to Social Welfare. (3 Credits)
Survey of field of social welfare; place of social work profession within human services institutions of United States. Introduction of basic concepts relating social welfare institutions and social work to society.

7750:286. Addiction Services Internship. (2 Credits)
Prerequisite: Permission of instructor. Integrates counselor assistant experience with fundamental concepts and skills from academic studies. Students are required to complete 200 hours of supervised field experience.

7750:401. Social Work Practice I. (3 Credits)
Prerequisite: Social Work major. Corequisite: 7750:405. Basic concepts and methods of Generalist social work practice, with an emphasis on understanding and working with individuals.

7750:402. Social Work Practice II. (3 Credits)
Prerequisite: 7750:401, 7750:405; or permission of instructor. Concepts and methods of social work practice particularly relating to understanding and working with groups in various settings in our society.

7750:403. Social Work Practice III. (3 Credits)
Prerequisite: 7750:401, 7750:405, or permission of instructor. Development of understanding and practice methods for utilization of community organization and social planning as social work process in assessing problems and developing program to meet needs.

7750:404. Social Work Practice IV. (3 Credits)
Prerequisite: 7750:401 and 7750:405. Professional social work practice with families in social services; the dynamics of family systems, assessment of family function and dysfunction, professional helping processes.

7750:405. Practice I Skills Lab. (3 Credits)
Prerequisites: 7750:270, 7750:276, 7750:427, 3100:103, 3700:100, 3750:100, 3850:100 and 3250:100 or 7750:200 or 2040:247; corequisite: 7750:401. Prepares students for beginning generalist social work practice and proves a context to apply and evaluate generic knowledge base, values, ethics, and skills common to practice with client systems.

7750:411. Women's Issues in Social Work Practice. (3 Credits)
Prerequisite: 7750:401 or permission of instructor. Social work practice, knowledge and skill, social welfare institutions and social policy in relation to women's issues and concerns in the United States.

7750:421. Field Experience Seminar I. (2 Credits)
Prerequisites: 7750:401 and permission of the instructor. Corequisite: 7750:493. The first of two consecutive courses that assists students in making the transition from classroom learning to experiential learning in the field practicum.

7750:422. Field Experience Seminar II. (2 Credits)
Prerequisites: 7750:421 and 7750:493; Corequisite: 7750:494. The second of two consecutive courses, this course assists students in integrating, synthesizing, and applying classroom learning to field experiences and assignments.

7750:425. Social Work Ethics. (3 Credits)
Prerequisite: Social Work major, permission of instructor. Social Worker's code of ethics as applied to practices, problems and issues in social work.

7750:427. Human Behavior & Social Environment I. (3 Credits)
Social work perspective on human development across the life cycle. Human diversity approach consistent with the needs of social work students preparing for practice.

7750:430. Human Behavior & Social Environment II. (3 Credits)
Prerequisites: Social Work major and 7750:427. Examination of larger social systems including families, groups, neighborhoods, and organizations. Focuses on the unique systemic characteristics of each system and its development.

7750:440. Social Work Research I. (3 Credits)
Prerequisite: Social Work major or permission of instructor. Overview of scientific inquiry and the research process as it applies to the field of social work. Emphasis is placed on the various social worker roles in relation to research.

7750:441. Social Work Research II. (3 Credits)
Prerequisite: 7750:440 or permission of instructor. A continuation of Social Work Research I with a focus on applying research concepts. Includes content on the evaluation of practice outcomes and the use of computers in data analysis.

7750:442. Social Work Research. (3 Credits)
Prerequisite: Acceptance into the social work major. Overview of scientific inquiries in the research process as it applies to social work. Emphasis is placed on various social worker roles in relation to research. The focus will be on research concepts including contents on the evaluation of practice outcomes and data analyses.

7750:445. Social Policy Analysis for Social Workers. (3 Credits)
Prerequisite: Social Work major, permission of instructor. Description, analysis and construction of social policy in social services; to understanding forces and processes which establish or change social policies, to predict consequences of social policies and to establish goals for social policy development; integrated into effective social work methodology.

7750:450. Social Needs & Services: Aging. (3 Credits)
Prerequisite: 7750:401 or permission of instructor. Application of knowledge and principles of professional social work practice to understanding, development and provision of social services to meet needs of aging and later mature individuals, families and communities and institutions serving them and their relatives.

7750:451. Social Work in Child Welfare. (3 Credits)
Prerequisite: 7750:401. In-depth exploration of structure and functioning of social services designed to help children, and of practice of social work in child-welfare settings. Consideration of supportive, supplementary and substitutive services.

7750:452. Social Work in Mental Health. (3 Credits)
Prerequisite: 7750:401 or permission of instructor. Issues, organization, development and methodologies of current professional social work practice in mental-health settings.

7750:454. Social Work in Juvenile Justice. (3 Credits)
Prerequisite: 7750:401. The theory and practice of social work in the juvenile justice systems of the United States. Traditional procedures and recent developments, prevention, diversion and community outreach, legal concerns, case management, institutional functioning.

7750:455. Social Work Practice with African American Families. (3 Credits)
Prerequisite: 7750:401 or permission of instructor. Contemporary problems facing African American families; male-female relationships, single parent households, African American teens and elderly, public policy, theoretical models, explaining development of the African American family.

7750:456. Social Work in Health Services. (3 Credits)
Prerequisite: 7750:401. Policies, programs and practice in health-care settings: short-term, intermediate and long-term hospitals, out-patient services, emergency services, clinics, visiting nurse services, nursing homes, pediatric services, self-help organizations.

7750:459. Social Work with People with Developmental Disabilities. (3 Credits)
Prerequisite: Permission of instructor. Application of social work principles in the provision of social services to meet the needs of the mentally retarded and developmentally disabled and their families.

7750:467. Addiction Screening, Assessment and Treatment Planning. (3 Credits)
Prerequisite: 7750:260. Overview of screening, diagnosis and assessment procedures in the addiction field, including review of the most commonly used testing instruments. Implication for treatment planning is explored.

7750:468. Addiction Prevention, Treatment and Recovery. (3 Credits)
Evidence-based practices in addiction prevention, treatment, and recovery management. Treatment approaches include, but are not limited to, motivational interviewing, contingency management, cognitive behavioral therapy, and family approaches.

7750:469. Group and Relationship Counseling in Addictions. (3 Credits)
Models and dynamics of groups and families struggling with substance use disorders. Emphasis on strategies and techniques to improve functioning and interpersonal relationships in the maintenance of recovery.

7750:470. Law for Social Workers. (3 Credits)
Prerequisite: 7750:401. Basic terminology, theories, principles, organization and procedures of law will be explored along with the relationships between social work and law and comparisons of the theoretical bases of the two professions.

7750:471. Crisis Intervention. (3 Credits)
This elective course focuses on knowledge/skills required by social workers dealing with people in crisis. Impact of crises on the human personality will be discussed.

7750:472. Child Welfare II. (3 Credits)
This course is the second in a series of two child welfare courses. Child Welfare II, addresses the developmental and permanence needs of children in the welfare system.

7750:473. Social Work with Adolescence. (3 Credits)
This course provides students with an in-depth knowledge of adolescent development and an understanding of how the biological, psychological, social, cultural, and spiritual aspects of an adolescent impact their overall functioning and quality of life issues.

7750:475. Addiction & Social Work Practice. (3 Credits)
Prerequisite: 7750:401. Provides students with the essential knowledge and skill for successful social work practice with people involved in substance abuse.

7750:480. Special Topics: Social Work & Social Welfare. (1-3 Credits)
Prerequisite: Permission of instructor. Analysis of current social work and social welfare theory and policy, settings, innovative interventions, and trends in delivery systems in relation to selected areas of concern. Topics and credits variable.

7750:493. Field Experience: Social Agency I. (3 Credits)
Prerequisites: 7750:401, 7750:402, 7750:427, and permission of instructor. Corequisite: 7750:421. First of two consecutive courses of supervised internship in a social service setting. Facilitates acquisition of generalist practice skills. Student must receive permission to take the course with the Field Coordinator during early part of semester preceding enrollment. For senior social work majors.

7750:494. Field Experience: Social Agency II. (3 Credits)
Prerequisites: 7750:493, 7750:421 and permission of instructor; corequisite: 7750:422. Second of two consecutive courses of supervised internship in a social service setting. Facilitates the continued acquisition of generalist practice skills. For senior social work majors only.

7750:497. Individual Investigation in Social Work. (1-3 Credits)
Prerequisites: Permission and prearrangement with instructor. Individual readings, research or projects in area of interest in social welfare theory or institutional operations or in social work practice under guidance of social work faculty member. Preparation of report paper appropriate to nature of topic. For social work major.

7750:499. Senior Honors Project in Social Work. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and approval of honors preceptor in department. Open only to social work major enrolled in Honors Program. Independent study leading to completion of senior honors thesis or other original work resulting in writing of research paper in proper scholarly form, supervised by student's honors project adviser within the department.

Sociology (3850)

3850:100. Introduction to Sociology. (3 Credits)
Basic terminology, concepts and approaches in sociology, including introduction to analysis of social groups and application of sociological concepts to the understanding of social systems. Required of majors. Lecture/discussion.

3850:301. Methods of Social Research I. (3 Credits)
Prerequisites: 3850:100 and 3 credits of Mathematics (3450) or Statistics (3470) courses. The basis of this course is learning to apply course material to improve thinking, problem solving, and decisions in conducting research design and data gathering techniques. Required of all majors.

3850:302. Methods of Social Research II. (3 Credits)
Prerequisites: Completion of [3700:301 or 3850:301], and 3850:100, and 3 credits of Mathematics (3450) or Statistics (3470) courses. Essential objectives of this course are developing expression skills in writing and learning fundamental principles in statistics. Other key topics include quantitative techniques and application to sociological data. Required of all majors.

3850:310. Social Problems. (3 Credits)
Prerequisite 3850:100 or permission. Study of selected contemporary problems in society; application of sociological theory and research to understand the social construction of and response to these problems.

3850:315. Sociological Social Psychology. (3 Credits)
Prerequisite: 3850:100. The reciprocal influence of individuals and groups. How interpersonal processes produce and affect group structure. How groups affect the development and behavior of the social person.

3850:320. Social Inequalities. (3 Credits)
Prerequisite: 3850:100 or permission. This course covers local, regional, national, and global dimensions of social inequalities. Structural and interactionist approaches to relations of power in society frame the course.

3850:321. Population. (3 Credits)
Prerequisite: 3850:100 or permission. An introduction to world and national population trends, related demographic and social characteristics. Topics include fertility, mortality, morbidity, migration, abortion, birth control, population policy in relation to societal problems. Lecture.

3850:324. Social Movements. (3 Credits)
Prerequisite: 3850:100. Social movements as distinguished from other forms of collective behavior; analysis of social situations which produce social movements; focus on development of social movements and their role in social change. Lecture.

3850:325. Sociology of Women in Global Society. (3 Credits)
Prerequisite: 3850:100. Examination of research and theories pertaining to women's status in global society, including economic conditions, the relationship between structure and experience, and global/local linkages.

3850:330. Criminology. (3 Credits)
Prerequisite: 3850:100. Major focus on interrelationships and analysis of crimes, criminals, criminal justice systems and society. Lecture.

3850:336. Sociology of Work & Occupations. (3 Credits)
Prerequisite: 3850:100 or permission. Survey of theory and empirical research in areas such as the structure of occupations and professions, occupational attainment, work force characteristics, work values and orientations, the nature of work. Lecture.

3850:340. The Family. (3 Credits)
Prerequisite: 3850:100. Analysis of family as a social system; historical, comparative and contemporary sociological approaches examined in relation to family structure and functions. Lecture.

3850:341. Political Sociology. (3 Credits)
Prerequisite: 3850:100. Survey of theory and empirical research dealing with relationship between political phenomena and the larger network of social processes in human societies. Lecture.

3850:342. Sociology of Health & Illness. (3 Credits)
Prerequisite: 3850:100. General survey of sociological perspectives, concepts and research on health, illness and health-care delivery systems. Lecture.

3850:343. Sociology of Aging. (3 Credits)
Prerequisite: 3850:100. Examination of process of aging from perspective of behavioral and sociological aspects. Lecture.

3850:350. Drugs in Society. (3 Credits)
Prerequisite: 3850:100. This course is a survey, from a sociological perspective, of drug abuse, of the relationship between drugs and crime, and of various treatment strategies.

3850:360. Social Effects of Crime in the Media. (3 Credits)
Prerequisite: 3850:100. Sociological examination of the consequences of images of crime in the media. Focus on issues of stereotypes and discrimination by race, sex and class.

3850:365. Special Topics in Sociology. (1-3 Credits)
(May be repeated) Special topics of interest to sociology major and non-major not covered in regular course offerings.

3850:397. Sociological Readings & Research. (1-3 Credits)
Prerequisite: Permission. Individual study of problem area of specific interest to individual student under guidance of department member. Preparation of a research paper.

3850:401. Advanced Topics in Research Methods. (3-6 Credits)
Prerequisites: 3700:201 or 3850:301. Special topics of interest in advanced methods not covered in regular course offerings.

3850:410. Social Structures & Personality. (3 Credits)
Prerequisite: 3850:100. Interrelationships between position in society, personality characteristics. Personality treated as both result and determinant of social structure and process. Lecture.

3850:411. Social Interaction. (3 Credits)
Prerequisite: 3850:100 or permission. Intensive study of advanced theory and research in social psychology, particularly how social interaction and self-conception affect one another. Lecture.

3850:412. Socialization: Child to Adult. (3 Credits)
Prerequisite: 3850:100 or permission. Theoretical and empirical analysis of process by which infant, child, adolescent and adult learn social and cultural requirements necessary to function in new roles, changing roles and society in general.

3850:415. Women in Prison. (3 Credits)
Prerequisite: 3850:100 or permission of instructor. In depth examination of women's experiences in prison. Includes processes involved in the movement into prison, experiences while in institutions, and transitioning out of prison.

3850:416. Women and Crime. (3 Credits)
Prerequisite: 3850:100 or permission. An overview of women's experiences with crime, including women as offenders, victims, and workers in the criminal justice system.

3850:421. Race & Ethnic Relations. (3 Credits)
Prerequisite: 3850:100. Analysis of structure and dynamics of race and ethnic relations from a variety of perspectives emphasizing both historical and contemporary issues. Lecture.

3850:425. Sociology of Urban Life. (3 Credits)
Prerequisite: 3850:100 or permission. Emergence and development of urban society. Examination of urban social structure from neighborhood to metropolis, the problems and prospects. Emphasis on various life styles of urban subcultures. Lecture/discussion.

3850:428. Victim in Society. (3 Credits)
Prerequisite: 3850:100 or permission. Study of the nature, causes, and consequences of victimization with special focus on crime victimization.

3850:430. Juvenile Delinquency. (3 Credits)
Prerequisite: 3850:100. Analysis of social structure and process from which delinquency develops. Emphasis on current and past research. Lecture/discussion.

3850:431. Corrections. (3 Credits)
Prerequisite: 3850:330 or 3850:430. Theories, beliefs and practices of community and institutional corrections systems, including past and current social research. Course taken prior to 3 credit hour Field Placement in Corrections (3850:471).

3850:433. Sociology of Deviant Behavior. (3 Credits)
Prerequisites: 3850:100 and at least six additional credits of sociology courses or permission. Survey of theories of deviant behavior and relevant empirical research. Special emphasis given to interaction processes and social control. Lecture.

3850:435. Sociology of Love. (3 Credits)
Prerequisite: 3850:100 or permission. Study of the relation of love to the social order. Coverage includes diverse types, such as romantic, familial, religious, and altruistic love.

3850:441. Sociology of Law. (3 Credits)
Prerequisites: Completion of 3850:100 and at least six additional credits of sociology courses. Social origins and consequences of law and legal processes. Emphasis on uses of law, social change and aspects of legal professions. Lecture.

3850:447. Sociology of Sex and Gender. (3 Credits)
Prerequisite: 3850:100. Review of research and theories of sex and gender. Examination of gender as structure, process and experience in society.

3850:450. Sociology of Mental Illness. (3 Credits)
Prerequisite: 3850:100 or permission. The social history of the mental hospital, theories and epidemiology of mental illness, community-based treatment models, the organization of mental health services, the role of personal social networks and mutual support groups.

3850:455. Family Violence. (3 Credits)
Prerequisite: 3850:100. Family violence with a focus on child abuse, courtship violence, spouse/partner abuse, and elder abuse. Theories, methodologies, and strategies to end family violence are explored.

3850:460. Sociological Theory. (3 Credits)
Prerequisite: 3850:100. An overview and examination of theoretical issues in sociology through the study of both classical and contemporary theoretical work.

3850:470. Research Methods for the Social Sciences Pro-seminar. (3 Credits)
Prerequisite: Completion of required coursework for the Research Methods Certificate Program or Permission of Instructor. Application of qualitative and/or quantitative research methods and analysis, and preparation of a scholarly research paper for presentation and/or publication. Seminar.

3850:490. Organizations, Community, and Social Action. (3 Credits)
Survey of organizational and community issues that affect the achievement of shared goals. Emphasis on the evidence-based approaches at both the organizational and community levels.

3850:495. Field Internship. (2-4 Credits)
Prerequisites: permission of a faculty supervisor and a minimum of 64 hours of undergraduate coursework of which 12 hours must be in sociology. Placement in community organization for supervised experience related to degree requirements. Student must submit an application to the intern coordinator during semester prior to enrollment.

3850:496. Senior Honors Project. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisites: enrollment in Honors College, Senior standing, and major in sociology. Thesis or original creative work appropriate to student's area of interest. Requirements and evaluation of project determined by departmental honors preceptor and student's honors project adviser.

Somatics and World Dance (7915)

7915:403. Special Topics in Dance Somatic. (1-3 Credits)
(Repeatable with a change in topic for a total of six credits) Prerequisite: 7900:120 or 7900:125, or higher levels of ballet or modern dance technique. Projects or classes in Somatic Dance not covered by present course offerings.

Spanish (3580)

3580:101. Beginning Spanish I. (4 Credits)
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.

3580:102. Beginning Spanish II. (4 Credits)
Sequential. Prerequisite: 3580:101. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.

3580:103. Intensive First Year Spanish-Hybrid. (4 Credits)
Prerequisites: Permission of Department of Modern Languages. First year elementary Spanish in hybrid format for those who have some experience learning Spanish.

3580:104. Beginning Medical Spanish I. (3 Credits)
Development of basic Spanish medical oral expression by studying health terminology and practicing conversational skills. Development of an awareness of Hispanic cultures. Conducted in Spanish.

3580:105. Beginning Medical Spanish II. (3 Credits)
Prerequisites: Completion of 3580:104 with a C+ or better. Development of basic Spanish medical written expression by studying health terminology and practicing writing. Development of an awareness of Hispanic cultures. Conducted in Spanish.

3580:106. Beginning Medical Spanish III. (3 Credits)
Prerequisites: Completion of 3580:105 with a C+ or better. Development of Spanish medical written expression by studying health terminology and practicing writing. Development of an awareness of Hispanic cultures. Conducted in Spanish.

3580:111. Intensive Beginning Spanish I. (4 Credits)
Sequential. Prerequisite: Minimum of two years of prior study of Spanish at the secondary level or the equivalent, or a satisfactory score on the UA Spanish Placement Examination, or permission of the instructor. Acquisition of basic reading, speaking, writing, and listening comprehension skills, with emphasis on development of self-expression. Sequence covers the entire first year in one semester.

3580:112. Intensive Beginning Spanish II. (4 Credits)
Sequential. Prerequisite: 3580:101 with a grade of B or better, or 3580:111 with a grade of C or better, or a minimum of three years of prior study of Spanish at the secondary level and/or a satisfactory score on the UA Spanish Placement Examination, or permission of the instructor. Acquisition of basic reading, speaking, writing, and listening comprehension skills, with emphasis on development of self-expression. Sequence covers the entire first year in one semester.

3580:201. Intermediate Spanish I. (3 Credits)
Sequential. Prerequisite: 3580:102 or placement test. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.

3580:202. Intermediate Spanish II. (3 Credits)
Sequential. Prerequisite: 3580:201 or placement test. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.

3580:211. Intensive Intermediate Spanish I. (3 Credits)
Prerequisites: 3580:102 with a grade of B or better, or 3580:112 with a grade of C or better, or minimum of three years of prior study of Spanish at the secondary level or the equivalent and/or a satisfactory score on the UA Spanish Placement Examination, or permission of the instructor. Continuing acquisition of reading, speaking, writing, and listening comprehension skills, with emphasis on development of self-expression. Sequence covers entire year in one semester.

3580:212. Intensive Intermediate Spanish II. (3 Credits)
Prerequisites: 3580:201 with a grade of B or better, or completion of 3580:211 with a grade of C or better, or minimum of three years of prior study of Spanish at the secondary level or the equivalent and/or a satisfactory score on the UA Spanish Placement Examination, or permission of the instructor. Continuing acquisition of reading, speaking, writing, and listening comprehension skills, with emphasis on development of self-expression. Sequence covers entire second year in one semester.

3580:250. Hispanic Literature in Translation. (3 Credits)
Prerequisites: 3400:210 or 3400:221. (May not be taken for credit toward the Spanish major or minor.) Reading, discussion of novels, short stories of major Hispanic authors. Texts and discussion in English.

3580:301. Spanish Conversation. (3 Credits)
Prerequisite: 3580:202, or 3580:212, or equivalent, or placement test. Development of oral expression, listening comprehension and conversational ability. May be repeated for a total of six credits.

3580:302. Spanish Composition. (3 Credits)
Prerequisite: 3580:202, or 3580:212, or equivalent, or placement test. Development of writing skills through intensive practice and study of written expression in Spanish. Conducted in Spanish. May be repeated for a total of six credits.

3580:303. Spanish Grammar. (3 Credits)
Prerequisite: 3580:202, or 3580:212, or equivalent, or placement test. Post-intermediate review and study of grammar and basic principles of grammatical analysis. Conducted in Spanish.

3580:307. Spanish Conversation: Health Professions & First Responders. (3 Credits)
Prerequisites: 3580:202. Students will gain intermediate to advanced level oral competency in Spanish in order to conduct interviews and communicate in Spanish with Spanish-speakers.

3580:308. Spanish Composition: Health Professions & First Responders. (3 Credits)
Prerequisites: 3580:202. Students will gain intermediate to advanced level written competency in Spanish, write and translate documents so to communicate with Spanish-speaking patients in the medical setting.

3580:311. Spanish/Spanish-American Cultural Experience. (1-6 Credits)
Student's residence and study in a Spanish-speaking country. Repeatable once with different content, 12 credits maximum. Only 9 credits may be applied to Spanish minor.

3580:322. Special Topics: Spanish. (3 Credits)
Prerequisite: 3580:202. Development of specialized language and/or cultural skills for special purposes. Repeatable for up to 9 credits.

3580:330. Spanish Undergraduate Professional Internship. (1-6 Credits)
Prerequisites: Completion of 3580:202 or equivalent with a minimum 3.0 GPA in Spanish and students will need to notify a faculty advisor in the Spanish section to seek permission and approval for the enrollment in the internship course the semester prior to the experience. Students will participate in cooperating local, regional, national and international professions of community organizations to apply their proficiency in Spanish in a real-world setting.

3580:340. Introduction to Spanish & Spanish-American Literature. (3 Credits)
Prerequisite: Two of the group 3580:301, 3580:302, and 3580:303. Reading and discussion of Spanish and Spanish-American literature of all genres. Introduction to the fundamentals of literary criticism and literary movements. Conducted in Spanish.

3580:351. Spanish for Professionals: Business. (3 Credits)
Prerequisites: 3580:301, 3580:302, and 3580:303. Study of business terminology as well as cultural factors affecting the conduct of business with Hispanic nations and populations. Conducted in Spanish.

3580:360. Hispanic Culture through Film. (3 Credits)
Prerequisite: Completion of two of the following courses: [3580:301 or 3580:302 or 3580:303]. An articulation and analysis of important themes in contemporary Hispanic culture presented through film. An introduction to film criticism. Conducted in Spanish.

3580:401. Advanced Spanish Conversation. (3 Credits)
Prerequisites: 3580:301 and [3580:302 or 3580:303]. Development of speaking skills at a level beyond that achieved in 3580:301. Conducted in Spanish. Repeatable for up to 6 credits.

3580:402. Advanced Spanish Composition. (3 Credits)
Prerequisite: 3580:302 and [3580:301 or 3580:303]. Development of writing skills at a level beyond that achieved in 3580:302. Conducted in Spanish. Repeatable for up to 6 credits.

3580:403. Advanced Grammar. (3 Credits)
Prerequisites: 3580:303 and 3580:301 or 3580:302. Advanced study of Spanish syntax and grammatical analysis. Conducted in Spanish.

3580:404. Introduction to Spanish Linguistics. (4 Credits)
Prerequisites: 3580:401, 3580:402, and 3580:403. This course provides a detailed overview of the structure of Spanish and areas of inquiry within linguistics: phonetics, phonology, morphology, syntax, semantics and applied fields.

3580:405. Spanish Linguistics: Phonology. (4 Credits)
Prerequisite: 3580:401, 3580:402, and 3580:403. Descriptive study of Spanish phonetics and morphology, comparison of Spanish and English sounds, historical aspects, regional accents and sociolinguistic variation. Conducted in Spanish.

3580:406. Spanish Linguistics: Syntax. (4 Credits)
Prerequisite: 3580:401, 3580:402, and 3580:403. Descriptive study of Spanish syntax; introduction to theories of grammar; overview of Spanish semantics and pragmatics. Conducted in Spanish.

3580:407. Survey of Hispanic Literature: Spain. (4 Credits)
Prerequisites: 3580:340 and two of the group [3580:401, 3580:402, 3580:403]. Study of the most representative works and literary movements in Spain from the Middle Ages to the present. Conducted in Spanish.

3580:408. Survey of Hispanic Literature: Spanish-America. (4 Credits)
Prerequisites: 3580:340 and two of the group [3580:401, 3580:402, 3580:403]. Study of the most representative works and literary movements in Spanish-America from the Discovery to the present. Conducted in Spanish.

3580:409. Cultural Manifestations in Medieval & Renaissance Spain. (4 Credits)
Prerequisite: 3580:407 or 3580:408. Comparative study of representative artistic and literary works of the Medieval and Renaissance periods. Conducted in Spanish.

3580:410. Spanish Applied Linguistics. (4 Credits)
Prerequisites: 3580:401, 3580:402, and 3580:403. This course discusses current theories of second language acquisition and their implications for the learning of problematic Spanish structures.

3580:411. Spain During the Baroque Period. (4 Credits)
Prerequisite: 3580:407 or 3580:408. A comparative study of the different cultural manifestations during the 17th century in Spain. Conducted in Spanish.

3580:412. Cervantes: Don Quijote. (4 Credits)
Prerequisite: 3580:407 or 3580:408. Reading and analysis of Don Quijote as the first modern novel in the historical context of Renaissance and Baroque esthetics. Conducted in Spanish.

3580:413. Don Juan Myth in Spanish Culture. (4 Credits)
Prerequisite: 3580:407 or 3580:408. Study of the evolution of the Don Juan myth from its origins to its latest versions in the 20th century.

3580:414. Cultural Politics in the River Plate. (4 Credits)
Prerequisite: [3580:407 or 3580:408] or permission of instructor. This course will examine the military dictatorships of the seventies and eighties in Argentina and Uruguay by looking at how these regimes affected culture.

3580:416. Representing Reality in 19th Century Spain. (4 Credits)
Prerequisite: 3580:407 or 3580:408. A comparative study of the major literary and artistic movements in Spain from Realism to Modernism. Conducted in Spanish.

3580:417. Spanish/Spanish American Study Abroad Experience. (3-6 Credits)
Credit for student's course work at an accredited university in Spain or Latin America.

3580:418. 20th Century Spain: The Avant-Garde in Literature & Art. (4 Credits)
Prerequisite: 3580:407 or 3580:408. A comparative study of the major literary and artistic movements in Spain which illustrate the primary cultural changes of the century. Conducted in Spanish.

3580:419. Spanish Civil War & its Cultural Impact. (4 Credits)
Prerequisite: 3580:407 or 3580:408. Study the impact of the Civil War on Spanish culture.

3580:422. Special Topics in Specialized Language Skills, Culture, Literature. (1-4 Credits)
Prerequisite: 3580:407 or 3580:408. (May be repeated) Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.

3580:425. 20th Century Spanish-American Novel. (4 Credits)
Prerequisite: [3580:407 or 3580:408] or permission of instructor. Reading and discussion of representative contemporary Latin American novels. Conducted in Spanish.

3580:427. Latino Cultures in the USA. (4 Credits)
Prerequisite: [3580:407 or 3580:408] or permission of instructor. Inquiry into the Latino experience of displacement and marginality through the analysis of cultural manifestations in the U.S.A. Conducted in Spanish.

3580:430. Women in 20th Century Hispanic Literature. (4 Credits)
Prerequisite: 3580:407 or 3580:408. Reading and analysis of selected works from the 20th Century that depict women in Hispanic countries. Methodologies of feminist criticism will be studied. Conducted in Spanish.

3580:431. Hispanic Culture: Spain. (4 Credits)
Prerequisite: Two of the group [3580:401, 3580:402, 3580:403]. Study of society, customs, history, art, music, etc. of Spain, from a Hispanic perspective. Conducted in Spanish.

3580:432. Hispanic Culture: Spanish America. (4 Credits)
Prerequisite: Two from the group [3580:401, 3580:402, 3580:403]. Overview and historical survey of Spanish American civilization and culture. Taken as 532, does not count toward the M.A. in Spanish. Conducted in Spanish.

3580:497. Individual Reading in Spanish. (1-3 Credits)
Prerequisite: 3580:407 or 3580:408 and departmental permission.

Special Education (5610)

5610:100. Orientation to Intervention Specialist. (0 Credits)
Prerequisite: admission to Intervention Specialist teacher education program; corequisite: 5100:200. Orientation to the information and strategies necessary for a student to be successful in the program, including portfolio development.

5610:206. Special Problems: Gifted. (1 Credit)

5610:225. Introduction to Exceptionalities. (3 Credits)
Prerequisite: 13-15 sem. hrs. with a 'C' or better in specific GenEd courses; 5100:200 (may be taken as prerequisite or corequisite); FBI/BCI background checks. Survey course covering the identification, developmental characteristics and intervention strategies for children and youth with exceptionalities across educational and community settings.

5610:380. Math Methods: Special Education. (3 Credits)
Prerequisite: Admission to the Teacher Education Program. Ensure the understanding of mathematics and to promote the prospective special education teacher's confidence in his/her own ability to teach mathematics.

5610:395. Field Experience: Special Education. (1-3 Credits)
Supervised work with youngsters, individually and in groups in school and/or community settings.

5610:403. Student Teaching Colloquium: Special Education. (1 Credit)
An examination of problems, issues, and practices encountered during the student teaching experience.

5610:430. Honors Research Project: Special Education. (1-6 Credits)
(May be repeated for a total of six credits) Prerequisite: Permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.

5610:439. Collaboration with Families and Professionals in Early Childhood. (3 Credits)
This course prepares early childhood professionals for engaging in collaborative home/school consultation and teamwork in serving the educational needs of young children.

5610:440. Developmental Characteristics of Exceptional Individuals. (3 Credits)
Prerequisite: Admission to a College of Education Teacher Preparation Program or permission of the instructor. A survey course covering the identification, developmental characteristics, and intervention strategies for exceptional children and youth across education and community settings. (1 field hour)

5610:444. Developmental Characteristics of Intellectually Gifted Individuals. (3 Credits)
See department for course description.

5610:447. Individuals with Mild/Moderate Educational Needs: Characteristics and Implications. (4 Credits)
Prerequisite: 5610:225. Survey of the etiology, identification, classification, developmental characteristics of, and intervention strategies for individuals with mild/moderate educational needs.

5610:448. Individuals with Moderate/Intensive Educational Needs: Characteristics and Implications. (3 Credits)
Prerequisite: 5610:225. Survey of the etiology, identification, classification, and developmental characteristics of individuals with moderate/intensive educational needs.

5610:450. Special Education Programming: Early Childhood. (3 Credits)
Prerequisites: 5610:225, 5610:447 or 5610:448. Developmental patterns of young children with disabilities and developmentally/exceptionally appropriate practices with respect to programming and adaptations. (20 field hours)

5610:451. Special Education Programming: Mild/Moderate I. (3 Credits)
Prerequisites: 5610:225, 5610:447. Educational implications regarding assessment, teaching strategies, and adaptive materials necessary to meet the needs of school age students with mild/moderate educational needs. (20 field hours)

5610:452. Special Education Programming: Secondary/Transition. (3 Credits)
Study of diagnostic prescriptive service delivery systems designed to accommodate developmental patterns of secondary-level students with exceptionalities. (20 field hours)

5610:453. Special Education Programming: Moderate/Intensive I. (3 Credits)
Prerequisite: 5610:448. Development of the programming strategies including assessment, inter/transdisciplinary models, family involvement, IFSP/IEP/IP development, instructional practices based upon legal/ethical principles for individuals with moderate/intensive educational needs.

5610:454. Special Education Programming: Moderate/Intensive II. (3 Credits)
Prerequisites: 5610:448 and 5610:453. Advanced program for providing educational planning and intervention for individuals with moderate to intensive educational needs. Focus is on developing a comprehensive educational program which will facilitate optimum functioning and independence. (20 field hours)

5610:456. Inclusive Field Experience: Moderate/Intensive. (1 Credit)
Corequisite: 5610:454. In this 50-hour inclusive field experience, teacher candidates explore the challenges and best practices in providing quality educational services for all learners.

5610:457. Special Education Programming: Mild/Moderate II. (4 Credits)
Corequisite: 5500:458. Special educational implications regarding assessment, teaching strategies, and adaptive materials necessary to meet the needs of school age students with mild/moderate educational needs.

5610:459. Collaboration & Consultation in Schools & Community. (3 Credits)
Prerequisite: 5610:225. Provides professional educators/intervention specialists with skills in collaboration and consultation for working with parents of exceptional individuals and other professionals within school/community settings.

5610:460. Family Dynamics & Communication in the Educational Process. (3 Credits)
Prerequisite: 5610:225. A study of family theory and structure along with beginning techniques for working with families of students with exceptionalities, in educational and community settings.

5610:461. Special Education Programming: Early Childhood Moderate/Intensive. (3 Credits)
Prerequisites: 5610:440, 5610:448. Developmental patterns of young children with moderate/intensive needs (ages 3-8) and developmentally appropriate practices in programming and adaptations. (20 field hours)

5610:462. Collaboration with Families and Professionals. (3 Credits)
Prerequisite: 5610:225. This course provides pre-service teacher candidates with the knowledge, skills, and dispositions in communication, collaboration and team processes that facilitate a collaborative culture in schools.

5610:463. Assessment in Special Education. (3 Credits)
Prerequisite: 5610:225. Prepares student to select, administer and interpret formal and informal assessment procedures and use resulting data in planning educational programs for exceptional individuals.

5610:464. Assessment & Evaluation in Early Childhood Special Education. (3 Credits)
Prerequisites: 5610:225, 5610:448. The assessment of children three to eight and their environment who are at risk for disabilities or currently in special education.

5610:467. Management Strategies in Special Education. (3 Credits)
Prerequisite: 5610:225. Content emphasizing the development of application strategies with a variety of behavior management models to mediation of behaviors with exceptional individuals.

5610:469. Inclusive Education for English Learners. (2 Credits)
This class prepares teachers to use evidence based strategies, accommodations, and instruction to enhance the curriculum for the English Learners with special education needs.

5610:470. Clinical Practicum in Special Education. (3 Credits)
Prerequisite: Permission; Corequisites: 5610:403 and [5610:486 or 5610:487]. Provides a pre-student teaching experience for students in the areas of assessment, program planning, instructional planning and presentation, classroom management, adaptations, and collaboration with parents and other educational professionals.

5610:479. Seminar: Invitational Studies in Special Education. (1-2 Credits)
(May be repeated for a total of four credits) Topical study with a varied array of disciplinary input. Staffing will be invited members of allied and contributing professions active in management of exceptional children.

5610:485. Student Teaching: Early Childhood Intervention Specialist. (11 Credits)
Prerequisites: Approval of the Student Teaching Committee, based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio. Corequisite: 5610:403. Planned teaching experience in schools selected and supervised by the Office of Field Experience.

5610:486. Student Teaching: Mild/Moderate Educational Needs. (9 Credits)
Prerequisites: Approval of the Student Teaching Committee, considered based upon approved application to student teaching, passing Ohio Assessment For Educators (OAE) subject test, and approved portfolio. Corequisite: 5610:403. Planned teaching experience in schools selected and supervised by the Office of Field Experience.

5610:487. Student Teaching: Moderate/Intensive Educational Needs. (11 Credits)
Prerequisites: Approval of the Student Teaching Committee, considered based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio. Corequisites: 5610:403 and 5610:470. Planning teaching experience in schools selected and supervised by the office of Field Experience.

5610:488. Student Teaching: Early Child/Early Child Interven. Spec. (6 Credits)
Approval of the Student Teaching Committee, based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio. Corequisites: 5200:495, 5610:403, 5610:470. Planned teaching experience in schools selected and supervised by the Office of Field Experience.

5610:490. Workshop: Special Education. (1-3 Credits)
(May be repeated for a total of six credits) Designed to explore special topics in in-service or preservice education on a needs basis.

5610:491. Workshop: Special Education. (1-3 Credits)
(May be repeated for a total of six credits) Designed to explore special topics in in-service or preservice education on a needs basis.

5610:492. Workshop: Special Education. (1-3 Credits)
(May be repeated for a total of six credits) Designed to explore special topics in in-service or preservice education on a needs basis.

5610:493. Workshop: Special Education. (1-3 Credits)
(May be repeated for a total of six credits) Designed to explore special topics in in-service or preservice education on a needs basis.

5610:497. Indpendent Study: Special Education. (1-3 Credits)
Specific area of investigation determined in accordance with student's needs.

Special Educational Programs (5800)

5800:492. Workshop in Reading. (1-3 Credits)
Individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

5800:493. Workshop on Exceptional Children. (1-3 Credits)
Individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

5800:494. International School Study. (3-6 Credits)
On-the-scene study of education in foreign countries, usually by concentrating on the study of schools in one restricted geographical area.

Speech-Language Pathology and Audiology (7700)

7700:101. American Sign Language I. (3 Credits)
Introduction to American Sign Language: vocabulary building, beginning development of fingerspelling skills, receptive/expressive conversational skills.

7700:102. American Sign Language II. (3 Credits)
Prerequisite: 7700:101 or equivalent. Continued development of skills in American Sign Language: vocabulary building, further development of fingerspelling skills, receptive/expressive conversational skills.

7700:110. Introduction to Disorders of Communications. (3 Credits)
Overview of various types of speech disorders; their incidence, etiology and characteristics. Basic concepts and principles underlying speech pathology.

7700:201. American Sign Language III. (3 Credits)
Prerequisite: 7700:102 or equivalent. Continued development of skills in American Sign Language: vocabulary building, fingerspelling skills, receptive/expressive conversational skills, and linguistic features of ASL.

7700:202. American Sign Language IV. (3 Credits)
Prerequisite: 7700:201. Further fluency development of expressive/receptive communication, fingerspelling, and linguistic features of ASL.

7700:210. Introduction to Clinical Phonetics. (4 Credits)
Introduction to International Phonetic Alphabet. Transcription of normal speech. Overview of articulatory and acoustic phonetics. Introduction to distinctive features.

7700:215. Introduction to Hearing and Speech Science. (4 Credits)
Prerequisite: 7700:210. Introductory course covering the human hearing system and acoustics of hearing as well as principles involved in the production, transmission, and reception of the speech signal.

7700:222. Survey of Deaf Culture in America. (2 Credits)
The deaf experience in America including historical, educational, legal, social, and occupational developments.

7700:230. Language Science & Acquisition. (4 Credits)
An introduction to language science and the study of the language acquisition process. The characteristics and explanations of language development will be presented.

7700:245. First Responders to the Deaf Community. (4 Credits)
Prerequisites: Completion of 7700:201 with C or better. This course is required for the HSHS Manual Communication Certificate. It will emphasize ASL skills practical to first responders' needs.

7700:295. Direct Experiences in the Hospital. (3 Credits)
Prerequisite: Permission of advisor. Individual learning experiences for students with patients, their families and the hospital personnel in various hospital settings under the direction of hospital and University staff.

7700:300. The Resilient Child. (3 Credits)
Corequisite: 7700:301. Course content includes typical and atypical development in children affected with health related issues in a variety of clinical settings.

7700:301. The Resilient Child Lab. (1 Credit)
Corequisite: 7700:300. Course content applies typical and atypical development in children affected with health related issues in a lab setting.

7700:302. Assessment, Play and Therapeutic Interventions with Children. (3 Credits)
An overview of the theoretical framework of play and assessment of children's developmental and emotional needs. Therapeutic interventions and activities explored.

7700:303. National Health and Safety Performance Standards in Child Care. (1 Credit)
Course content includes safety and performance standards for health care providers working with children in a clinical setting.

7700:321. Articulatory & Phonologic Disorders. (4 Credits)
Prerequisites: 7700:110, 7700:210. Study of disorders of articulation/phonology, including normal phonological developments, and assessment and remediation of phonological disorders.

7700:330. Language Disorders. (4 Credits)
Prerequisite: 7700:230. Etiology, identification, evaluation, intervention, remediation of symbolic, cognitive, interpersonal language disorders of children. Disorders viewed as correlates or sequelae of central nervous system dysfunction or emotional disturbance.

7700:335. Principles of Audiology. (4 Credits)
Prerequisite: 7700:215. Introduction to basic audiometric tests, principles of speech audiometry, masking, and impedance audiometry, "test battery" approach.

7700:345. Audiologic Treatment. (4 Credits)
Prerequisite: 7700:215. Introduction to philosophy and methods of aural rehabilitation for children and adults. Includes methods of speech reading, auditory training, speech conservation, hearing aid use and combined visual and auditory approaches.

7700:365. Anatomy & Physiology of Speech & Hearing. (3 Credits)
Prerequisites: 3100:200, 3100:201, 3100:202 and 3100:203. Study of the anatomy and physiology of organs directly and indirectly responsible for production of speech and perception of acoustical signals.

7700:366. Anatomy & Physiology Laboratory. (1 Credit)
Corequisites: 7700:365. Laboratory to accompany lecture, includes hands-on experience with a variety of laboratory materials, primarily models and virtual dissection.

7700:401. Professional Practice and Communications in Child Life. (1 Credit)
Provide knowledge in the area of child life professional practice. Exploration of the tenets of the child life profession and identify essential professional concepts and attributes.

7700:403. Professional Practice and Communications in Child Life. (3 Credits)
Provide the knowledge of child life professional practice,standards of clinical practice, competencies and ethics. Skills related to therapeutic communication with patients, families and staff will be explored and practiced.

7700:422. Organic Disorders of Communication. (4 Credits)
Prerequisites: 7700:230 and 7700:365, or permission of instructor. Surveys communication disorders that accompany acquired neurological impairments and neurodevelopmental syndromes. Introduces neurological and genetic models, classification systems, diagnostic and treatment procedures.

7700:430. Aspects of Normal Language Development. (3 Credits)
(Not open to speech-language pathology and audiology majors) Introduction to acquisition and development of comprehension and production of language phonologically, semantically and syntactically. Relates language acquisition to perceptual development of child and looks at function of language in individual, family and school.

7700:445. Multicultural Considerations for Audiologists & Speech-Language Pathologists. (3 Credits)
Prerequisites: 7700:110 or graduate standing. This course introduces the multicultural considerations faced by audiologists and speech-language pathologists providing services to families and individuals with communication disorders.

7700:446. Observation and Clinical Techniques. (4 Credits)
Prerequisites: 7700:110, 700:210, 7700:215, and 7700:230. Introduction to concepts and processes of clinical practice in speech-language pathology and audiology. Includes clinical observation and case study.

7700:452. Child, Illness and Loss. (3 Credits)
Prerequisite: senior level standing. This course examines the phenomena of illness, loss and bereavement in modern society with a special emphasis on children and families.

7700:453. Facilitating Support Groups. (3 Credits)
Prerequisite: senior level standing. Theories, strategies and skills needed to facilitate support groups for children and for adults are studied using a variety of approaches including participation in a support group.

7700:454. Child in the Hospital. (6 Credits)
Prerequisite: 3760:265, comparable course or permission of instructor. Seminar dealing with special needs and problems of hospitalized/ill child and family. Literature related to effects, separation, illness and stress. Examination of strategies for coping.

7700:455. Practicum Experience in Child-Life Program. (3 Credits)
Prerequisite: 7700:454. Field experience in a child-life program and classroom activities including critical analysis of a currently functioning program and program administration.

7700:480. Seminar in Speech-Language Pathology and/or Audiology. (2 Credits)
Prerequisite: senior standing. Provides a vehicle for detailed study and discussion of various communicative disorders.

7700:481. Special Projects: Speech-Language Pathology & Audiology. (1-3 Credits)
(May be repeated for a total of four credits) Prerequisite: Permission of instructor. Individual or group projects related to any of the problems of communicative disorders.

7700:484. Hospital Settings, Children and Families. (5 Credits)
Prerequisite: 3760:265, comparable course or permission of instructor. Focuses on hospital as a major social institution; introduces procedures and functions of the hospital; roles played by various hospital personnel plus cursory knowledge of medical terminology, common childhood diseases, illnesses and injuries.

7700:485. Teaching & Learning Strategies in Speech-Language Pathology. (2 Credits)
Current practice related to clinical intervention designed for individuals with developmental disabilities. Explores the use of the natural environment and the computer as intervention tools.

7700:494. Internship: Guided Experiences in Child Life Program. (8 Credits)
Prerequisite: 7700:455. Field experience in a child-life program at an approved pediatric facility under the supervision of Child Life Specialists.

7700:496. Senior Honors Project: Speech-Language Pathology & Audiology. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisites: enrollment in the Honors Program, senior standing and major in speech-language pathology and audiology.

Statistics (3470)

3470:250. Statistics for Everyday Life. (4 Credits)
Prerequisite: Mathematics Placement Test. Conceptual approach to the basic ideas and reasoning of statistics. Topics include descriptive statistics, probability (uncertainty), statistical inference (estimation and hypothesis testing). Computer applications laboratory.

3470:260. Basic Statistics. (3 Credits)
Prerequisite: Mathematics Placement Test. Applied approach to data description and statistical inference (hypothesis testing, estimation). Analysis of ratios, rates, and proportions. Computer applications. Laboratory.

3470:261. Introductory Statistics I. (2 Credits)
Prerequisite: Mathematics Placement Test. Descriptive statistics, tabular and graphical data displays; probability, probability distributions. Introduction to statistical inference (hypothesis testing, estimation); one-sample parametric and nonparametric methods. Computer applications.

3470:262. Introductory Statistics II. (2 Credits)
Prerequisite: 3470:261 or equivalent. Parametric and nonparametric methods of statistical inference for paired data and two-sample problems; one-way ANOVA, simple linear regression and correlation. Computer applications.

3470:289. Selected Topics in Statistics. (1-3 Credits)
Prerequisite: Permission. Selected topics of interest in statistics.

3470:360. Statistical Investigations. (3 Credits)
Prerequisites: 3470:250 or 3470:260 or 3470:262. This course provides practical statistical methods beyond the introductory course. The topics include design of experiments, data analysis, multiple regression and modern software use.

3470:401. Probability and Statistics for Engineers. (2 Credits)
Prerequisite: 3450:222. Introduction to probability, statistics, random variables, data descriptions, statistical inference, confidence intervals, hypothesis testing, design of experiments, and applications of statistics to engineering.

3470:450. Probability. (3 Credits)
Prerequisite: 3450:221. Introduction to probability, random variables and probability distributions, expected value, sums of random variables, Markov processes.

3470:451. Theoretical Statistics I. (3 Credits)
Sequential. Prerequisite: 3450:223. Elementary combinatorial probability theory, probability distributions, mathematical expectation, functions of random variables, sampling distributions, point and interval estimation, tests of hypotheses, regression and correlation, introduction to experimental designs.

3470:452. Theoretical Statistics II. (3 Credits)
Sequential. Prerequisite: 3470:451. Elementary combinatorial probability theory, probability distributions, mathematical expectation, functions of random variables, sampling distributions, point and interval estimation, tests of hypotheses, regression and correlation, introduction to experimental designs.

3470:461. Applied Statistics. (4 Credits)
Prerequisite: 3450:222. Applications of statistical theory to natural and physical sciences and engineering, including probability distributions, interval estimation, hypotheses testing (parametric and nonparametric), and simple linear regression and correlation.

3470:462. Applied Regression and ANOVA. (4 Credits)
Prerequisites: 3470:461. Applications of the techniques of regression and multifactor analysis of variance.

3470:465. Design of Sample Surveys. (3 Credits)
Prerequisite: 3470:461 or equivalent. Design and analysis of frequently used sample survey techniques.

3470:469. Reliability Models. (3 Credits)
Prerequisite: 3470:461. Selected topics in reliability modeling including parametric and nonparametric models, competing modes of failure, censored data and accelerated life models.

3470:470. Biostatistics and Epidemiology. (3 Credits)
Prerequisite: 3470:261 and 34701:262 or 3470:461, or equivalent. Biostatistics and Epidemiological methods for biological and medical studies, including ANOVA, analysis of repeated measures, disease-related measures, log-linear models, and clinical trials.

3470:471. Actuarial Science I. (3 Credits)
Prerequisite: 3470:451 or 3470:461 or equivalent. Study of various statistical, financial, and mathematical calculations used to determine insurance premiums related to contingent risks based on individual risk model frameworks.

3470:472. Actuarial Science II. (3 Credits)
Prerequisite: 3470:471. Continuation of Actuarial Science I. Study of multiple life functions, multiple decrement models, valuation theory for pension plans, insurance models including expenses, nonforfeiture benefits and dividends.

3470:473. Survival Analysis. (3 Credits)
Prerequisite: 3470:461. Basic concepts in survival analysis, censoring and data truncation, estimation of survival models, nonparametric hazard and survival function estimation, comparing survival times between groups.

3470:475. Foundations of Statistical Quality Control. (3 Credits)
Prerequisite: 3470:461 or equivalent. Course provides a solid foundation in the theory and applications of statistical techniques widely used in industry.

3470:477. Time Series Analysis. (3 Credits)
Prerequisite: 3470:450, or 3470:451, or 3470:561. Stationarity. ARIMA modeling with seasonality. Parameter estimation, model diagnostics and forecasting. Regression with autocorrelated errors. Cointegration and multivariate ARMA models. Heterosecedasticity and long-memory models.

3470:480. Statistical Data Management. (3 Credits)
Prerequisites: 3470:461. Students learn data organization and structures, design of statistical data bases, statistical software analysis, importing and exporting data between software, and missing data analysis.

3470:483. Advanced Statistical Computing. (3 Credits)
Prerequisite: 3470:461 or equivalent. Topics include data management, random number generation, resampling methods, numerical optimization, Markov Chain Monte Carlo, smoothing methods, data mining: clustering and classification.

3470:485. Applied Analytics-Decision Trees. (3 Credits)
Prerequisite: 3470:461. Selected topics in predictive modeling using CHAID, Classification and Regression Trees, Logistic Regression and Neural Networks.

3470:489. Topics in Statistics. (1-3 Credits)
(May be repeated for a total of six credits) Prerequisite: Permission. Selected topics in advanced statistics, including quality control, reliability, sampling techniques, decision theory, advanced inference, stochastic processes and others.

3470:491. Workshop in Statistics. (1-3 Credits)
(May be repeated with change of topic) Group studies of special topics in statistics. May not be used to meet undergraduate or graduate major requirements in mathematics and statistics. May be used for elective credit only.

3470:495. Statistical Consulting. (1-3 Credits)
Prerequisite: 3470:462 or 3470:480 or permission. Students will learn about various aspects of statistical consulting and will work on current projects of the Center for Statistical Consulting. May be repeated for a total of 4 credits.

3470:497. Individual Reading: Statistics. (1-2 Credits)
(May be repeated for a total of four credits) Prerequisites: senior standing and permission. Directed studies in statistics designed as introduction to research problems under guidance of selected faculty member.

3470:498. Senior Honors Project. (1-3 Credits)
Prerequisite: 3470:489 (honors). Directed study for senior student in the University Honors Program who has completed 3450:489 (honors). An introduction to research problems in the mathematical sciences under the guidance of selected faculty.

Surgical Assisting (2770)

2770:100. Introduction to Surgical Technology. (4 Credits)
Prerequisite: admission to the program. Study of basic principles which underlie patient care in the operating room. Role of operating room technician and legal and ethical responsibilities defined.

2770:221. Surgical Technology Procedures I. (4 Credits)
Prerequisite: Admission to the program. Corequisite: 2770:100. Covers principles and practices of surgical asepsis, surgical patients, procedures, maintenance of equipment and materials, immediate postoperative responsibilities and emergency situations in the operating room.

2770:222. Surgical Technology Procedures II. (4 Credits)
Prerequisite: 2770:221. Corequisite: 2770:232. Principles of surgical asepsis, surgical patients, surgical procedures, maintenance of equipment and materials, immediate postoperative responsibilities and emergency situations in the operating room.

2770:231. Clinical Application I. (2 Credits)
Prerequisite: Formal admission to the Surgical Assisting Technology Program. Corequisites: 2770:100 and 2770:121. Student assigned to surgical service of affiliated hospitals. Emphasis on aseptic techniques and skills associated with their implementation.

2770:232. Clinical Application II. (5 Credits)
Prerequisite: 2770:131; Corequisite: 2770:222. Student assigned to surgical service of affiliated hospitals. Emphasis on "scrubbing" on general surgery and gynecology procedures.

2770:233. Clinical Application III. (5 Credits)
Prerequisites: 2770:232 and 2770:222. Student assigned to surgical service of affiliated hospitals. Emphasis on "scrubbing" in the specialty areas.

2770:248. Surgical Anatomy I. (3 Credits)
Prerequisites: 2740:120 and 2780:107. Corequisite: 2770:100. Emphasis on human anatomy and understanding the body in its three dimensions and the relationships of parts to one another in the various surgical specialties.

2770:249. Surgical Anatomy II. (3 Credits)
Prerequisite: 2770:248. Emphasis on human anatomy and understanding the body in its three-dimensions and the relationships of parts to one another in the various surgical specialties.

2770:290. Special Topics: Surgical Assisting. (1-2 Credits)
Prerequisite: Permission. Selected topics or workshops of interest in surgical assisting technology.

Surveying & Mapping (2980)

2980:100. Introduction to Geomatics. (2 Credits)
An introductory course into the field of surveying and mapping technology. Integrated topics include: types of surveys, cartography, and geographic information systems.

2980:101. Basic Surveying. (3 Credits)
Corequisites: 2030:153. Care and use of basic surveying field instruments and the basic computations and adjustments necessary to post process the field survey measurements. Field Practice.

2980:102. Topographic Surveying. (2 Credits)
Prerequisites: 2980:101 and 2030:153. Computations and adjustments of field survey measurements using both conventional and computer methods. Development of maps and plans stressed. Field Practice.

2980:122. Elementary Surveying. (3 Credits)
Elementary surveying for non-surveying and construction majors. Basic tools and computations. Field practice.

2980:123. Surveying Field Practice. (2 Credits)
Prerequisite: 2980:102 or equivalent. Practical experience in use of surveying equipment and methods of surveying. Provides students with responsibility for making decisions and planning and directing complete project.

2980:155. Computer Applications in Surveying. (3 Credits)
Use of current surveying software to solve typical problems/projects in surveying technology.

2980:170. Surveying Drafting. (3 Credits)
Corequisite: 2030:152 or permission. Drafting procedures, techniques, and tools required for the various phases of survey office work. Projects include topographic maps, plan and profile drawings, and cross-section drawings. Laboratory.

2980:222. Construction Surveying. (3 Credits)
Prerequisite: 2980:101. Methods and procedures for establishing line and grade for construction. Circular and parabolic curves. Cross-sectioning methods and earthwork. Communication and plan reading.

2980:223. Geospatial Technologies. (3 Credits)
Introduction to current and emerging geospatial technologies, such as Geographic Information Systems, remote sensing and global positioning systems, and exploring mapping data sources. Laboratory required.

2980:225. Advanced Surveying. (3 Credits)
Prerequisite: 2980:228. Introduction to topographic mapping, flood maps, and ALTA surveys. Advanced topics in control surveys, State Plane Coordinates, and bearings from celestial observations. Field practice.

2980:228. Boundary Surveying. (3 Credits)
Prerequisites: 2980:101 or equivalent. Analysis of evidence and procedures for boundary location; establishing and/or locating points for boundary and mortgage location surveys; plat preparation. Ohio survey minimum standards.

2980:251. CST Seminar. (1 Credit)
Prerequisite: 2980:222. Prepares students for the National Society of Professional Surveyors Certified Surveying Technician (CST) Level I Examination. Examination is given at the end of the review sessions.

2980:310. Survey Computations & Adjustments. (2 Credits)
Prerequisite: 2980:225. Concepts relating to measurement error, probability, and reliability. Computation and adjustment of horizontal and vertical networks.

2980:315. Boundary Control & Legal Principles. (3 Credits)
Prerequisite: 2980:228. Historical development of boundaries, rectangular system of public land surveys, systems to describe property, surveyor's responsibility to understand and properly apply legal principles to boundary.

2980:325. OSHA Safety Requirements for Surveyors. (1 Credit)
To provide OSHA safety training and certification required for surveying companies.

2980:330. Applied Photogrammetry. (3 Credits)
Prerequisite: 2980:155. An introduction to metrical and quantitative photogrammetry using both hard- and soft-copy systems. Laboratory.

2980:335. The Business of Surveying. (2 Credits)
A course focused on the business aspects of surveying, including development of business plan components for a company offering professional surveying and mapping services.

2980:340. Cadastral Surveying. (2 Credits)
Prerequisites: 2980:101. A study of the official surveys of the United States. Cadastral surveys establish or recreate boundaries and /or tracts of land.

2980:415. Legal Aspects of Surveying. (3 Credits)
Prerequisite: 2980:315. A study of statute and common law related to land surveying. Evidence and the surveyor's role in the judicial process. Interpreting and writing land descriptions.

2980:420. Route Surveying. (3 Credits)
Prerequisite: 2980:225. Surveying for long but narrow strips of land such as highways, railroads, and pipe lines. Course includes all requisite calculations and drawings.

2980:421. Subdivision Design. (3 Credits)
Prerequisites: 2980:155, 2980:222, and 2980:315. Site analysis, land use controls, and plotting procedures. Laboratory includes preparation of various types of projects leading to a complete subdivision.

2980:422. Global Positioning System Surveying. (3 Credits)
Prerequisites: 2980:225, 2985:101 or permission. Introduction to the Global Positioning System (GPS). Course includes the planning, data collection, and processing of GPS data.

2980:425. Land Navigation. (3 Credits)
Interpretation and use of topographic maps. Study of basic map elements with emphasis on identification of features and coordinate systems. Map use for land navigation.

2980:426. History of Surveying To 1785. (2 Credits)
A history of land surveying. Emphasis on the development of survey procedures through history. Part I (to 1785) covers the ancient world to the colonial period.

2980:427. Ohio Lands. (2 Credits)
Study of the history of the original Ohio Land Subdivisions.

2980:428. History of Surveying Since 1785. (2 Credits)
A history of land surveying. Emphasis on the development of survey procedures through history. Part II (Since 1785) covers the history of the United States to date.

2980:430. Surveying Project. (3 Credits)
Prerequisite: senior standing and permission. Provides opportunity to research and develop a specific surveying project within chosen area of surveying. Oral, written and graphical presentation of completed project(s).

2980:431. Senior Seminar. (2 Credits)
Prerequisite: Senior standing. Students demonstrate knowledge and skills acquired as surveying majors through assessment testing and review of professional licensure laws. Preparation for national exams.

2980:445. Applications in GIS using GPS. (3 Credits)
Prerequisite: 2985:101. Advanced instruction in GIS applications using GPS as well as other surveying and mapping methods. Laboratory.

2980:450. Topics in Professional Practice. (2 Credits)
Prerequisite: Junior standing. Topics in applicational areas of surveying from the point of view of the practitioner and the consumer of land-related data.

2980:489. Special Topics in Surveying. (1-3 Credits)
Prerequisite: Permission. Special lecture/laboratory courses offered once or only occasionally in areas where no formal course exists. (May be repeated for a maximum of six credits.)

2980:490. Workshop in Surveying. (1-3 Credits)
Prerequisite: Permission. Group study of special topics in surveying. May not be used to meet undergraduate major requirements in surveying. May be used for elective credit only. (May be repeated for a maximum of six credits.)

2980:495. Internship: Surveying and Mapping. (3 Credits)
Prerequisite: 64 hours in program and permission from program director. Supervised work experience in surveying and mapping to increase student understanding of surveying and mapping technology.

2980:497. Surveying Honors Project. (3 Credits)
Prerequisites: Senior Studies as an honor student. Provides opportunities to research and develop a specific surveying project within chosen area of surveying. Oral, written , and geographical presentation of completed projects.

2980:498. Independent Study. (1-3 Credits)
Prerequisites: Permission of instructor. Directed study in a special field of interest chosen by student in consultation with instructor (may be repeated for a total of six credits).

Technical Education (5400)

5400:400. Adult Learning. (3 Credits)
Describes characteristics of the adult learner and examines issues, factors, and strategies pertinent to successful facilitation of learning in a variety of training environments.

5400:401. Learning with Technology. (3 Credits)
Application of learning technologies to situations encountered by academic and professional learners. Addresses foundational concepts of computer literacy, ethics. security, collaboration, and learning design.

5400:413. Instructional Design Profession. (3 Credits)
Examination of the Instructional Design profession, its history, trends, issues and impact on Instruction Design's future. Research on best practice in the field are explored.

5400:415. Talent Development and Training. (3 Credits)
Prerequisites: 5400:401 or permission from instructor. Examine the training function within talent development from a global perspective. Explore best practices for today's workforce. Identify emerging trends and training solutions.

5400:420. eLearning by Design. (3 Credits)
Experiences in using, developing and evaluating learning technologies and media used for instructional design and training.

5400:430. Program Planning. (3 Credits)
Process of program planning and evaluation for instructional design and training for a variety of adult learning organizations.

5400:435. Systematic Instructional Design in Postecondary Education. (3 Credits)
Prerequisites or corequisites: 5400:401, 5400:420, 5400:430, admission to program, or permission of instructor. Examination of instructional design models with particular emphasis of the ADDIE model. Study of applications to Instructional Design Technology.

5400:475. Instructional Delivery. (3 Credits)
Prerequisite: Permission of department. Implementation of instructional design principals in the proposal, design, development, implementation, assessment and evaluation (ADDIE) of eLearning and other delivery of training courses.

5400:480. Globally Diverse Workforce. (3 Credits)
Study of cultural pluralism and disability in the workplace and the best practices, as related to training in adult learning organizations.

5400:481. Special Topics: Technical Education. (1-4 Credits)
See department for course description.

5400:490. Workshop: Technical Education. (1-3 Credits)
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units. Delivered in a totally on-line format and face to face format with web enhancements.

5400:495. Postsecondary Education Practicum. (3 Credits)
Prerequisites: 5400:400, 5400:401, 5400:405, 5400:415, 5400:420, 5400:430, 5400:435, and admission to the Postsecondary Technical Education program with a "C" or better in each 5400 course and a 2.5 or better overall GPA in 5400 courses, and an overall GPA of 2.5 or better. Directed instruction under the supervision of directing instructor and university supervisor, and development of instructional portfolio.

5400:497. Independent Study: Technical Education. (1-3 Credits)
Area of study determined by student's need.

Theatre (7800)

7800:100. Experiencing Theatre. (3 Credits)
Experience the theatre as a live, dynamic art form through an exposure to and participation in University productions.

7800:103. Theatre Orientation. (0 Credits)
Orientation to the information and strategies necessary to aid new theatre students in their understanding of the field of theatre.

7800:108. Introduction to the Visual Arts of World Theatre. (3 Credits)
Introduction to the theories and styles of scenic, costume, and lighting design from around the world, including the application of these principles to various media.

7800:145. Ensemble Theatre Lab. (3 Credits)
An introduction to the techniques of collaborative creation and physical theatre especially space awareness, movement training, and storytelling.

7800:151. Vocal Dynamics. (3 Credits)
This course is concerned with the various techniques and principles of vocal production in their practical application providing a structure to discover your vocal potential.

7800:172. Acting I. (3 Credits)
Introductory fundamentals of acting through the investigation of the body as an instrument for the stage, improvisation and basic scene study.

7800:264. Playscript & Performance Analysis. (3 Credits)
An introduction to various methods of how to read and analyze a play script for theatre production, utilizing theories and tools from Aristotle to today.

7800:265. Basic Stagecraft. (3 Credits)
Basic stagecraft including equipment, construction and handling of two-dimensional scenery and theatrical hardware. Laboratory required.

7800:274. Digital Technology for Theatre. (3 Credits)
Hands-on exploration of theories and methods used in electronic development of promotional and creative materials. Activities include still and motion image capture, editing and distribution.

7800:301. Introduction to Theatre Through Film. (3 Credits)
Prerequisite: 3400:210 or 3400:221. A study of the Theatre with emphasis on its cultural and social influences on our society. Does not meet the Humanities requirement for Theatre majors.

7800:306. Costume Design for the Performing Arts and Media. (3 Credits)
Prerequisites: 7800:108. Costume design and construction techniques, organization and maintenance of wardrobe for stage performance and other types of production. Lab required.

7800:335. History of Theatre and Dramatic Literature: Origins through 18th Century. (3 Credits)
The history and theory of dramatic literature and theatre practices from their origins through the 18th Century, including select non-western theatre traditions.

7800:336. Scenic Design for Performing Arts & Media. (3 Credits)
Prerequisites: 7800:108. The theory, principles, and practice of scene design for the theatre and other media. Lab required.

7800:351. Advanced Ensemble Theatre Lab. (3 Credits)
Prerequisites: 7800:145. Advanced training in the techniques and principles of collaborative creation and physical theatre leading toward performance of a devised solo and/or group performance.

7800:355. Lighting Design and Technology. (3 Credits)
Prerequisites: 7800:108 The art and technique of lighting design for the stage and other media: light plotting, color theory, and special effects. Lab required.

7800:370. Directing I. (3 Credits)
Prerequisites: 7800:100, 7800:172, and 7800:264. Emphasizes fundamentals of play directing, including responsibilities of director, stage nomenclature, play selection, analysis, and rehearsal techniques.

7800:373. Acting II. (3 Credits)
Prerequisite: 7800:172. Continuation of 7800:172. Further emphasis on the psychology of the actor and development of performing techniques through scene study.

7800:374. Acting III. (3 Credits)
Prerequisite: 7800:373. Further in-depth actor training with emphasis on the language and interpretation of classic plays including Shakespeare.

7800:403. Special Topics: Theatre Arts. (1-3 Credits)
Prerequisite: Permission. Traditional and nontraditional topics in theatre arts. (May be repeated, only 3 credits may apply to Theatre major and on 9 credits toward B.A degree).

7800:433. Theatre Organization & Production Management. (3 Credits)
Study of successful methods of theatre organization and production stage management of professional and non-professional performing arts operations.

7800:435. History of Theatre and Dramatic Literature: 1800 to Present. (3 Credits)
The history and theory of dramatic literature and theatre practices from the ninteenth century through the present, including select non-western theatre traditions.

7800:436. Styles of Scenic Design for the Performing Arts and Media. (3 Credits)
Prerequisite: 7800:336. Theatrical and practical exploration of the styles and periods of production design and designers for stage and media. Lab required.

7800:455. Creating Performance. (3 Credits)
(May be repeated for a total of six credits.) This course introduces devising processes, improvisation, ensemble work, and physical theatre techniques appropriate to the preparation of practical performance projects from sources other than a conventional play.

7800:461. Directing II. (3 Credits)
Prerequisite: 7800:370. Emphasizes fundamentals of play directing, including responsibilities of director, stage nomenclature, play selection, analysis, and rehearsal techniques.

7800:467. Multi-Cultural Theatre. (3 Credits)
A detailed examination of contemporary performances, performance texts, and theoretical writings that reference the history and experience of diverse communities of America and the world.

7800:471. Senior Seminar. (1 Credit)
Prerequisites: 7800:274, upper class standing, and permission from the theatre advisor. A forum to develop professional skills to make the transition to a theatre career: artistic, academic, business and professional.

7800:476. Theatre and Community Action. (3 Credits)
This course will explore civic engagement strategies and situations linking theatre and community in which students tackle community issues and concerns utilizing various performative techniques.

7800:480. Independent Study: Theatre. (1-3 Credits)
Practice, study, and/or research in selected elements of theatre arts and production including preparation and presentation of creative and technological projects..

7800:490. Workshop in Theatre Arts. (1-3 Credits)
(May be repeated for a total of 6 credits) Prerequisite: advanced standing or permission. Group study or group projects investigating particular phases of theatre arts not covered by other courses in curriculum.

7800:495. Honors Research Project in Theatre. (1-3 Credits)
Prerequisite: Approval of department preceptor. Creative project or research supervised by theatre preceptor.

Theatre Organizations (7810)

7810:100. Production Laboratory-Design/Technology. (1 Credit)
Prerequisite: Permission of instructor. (May be repeated for a total of 12 credits) Provides student with practical experience in technical aspects of theatre. *Required of all theatre majors. Majors are required to enroll in at least one credit production lab every semester they are in residence.

7810:110. Performance Laboratory. (1 Credit)
(May be repeated for a total of 12 credits) Prerequisites: Permission of instructor. Provides student with practical performance experience theatre productions. *Required of all theatre majors.

7810:200. Production Laboratory-Design/Technology. (1 Credit)
Prerequisite: Permission of instructor. (May be repeated for a total of 12 credits) Provides student with practical experience in technical aspects of theatre. *Required of all theatre majors. Majors are required to enroll in at least one credit production lab every semester they are in residence.

7810:210. Performance Laboratory. (1 Credit)
(May be repeated for a total of 12 credits) Prerequisites: Permission of instructor. Provides student with practical performance experience in theatre productions. *Required of all theatre majors.

7810:300. Production Laboratory-Design/Technology. (1 Credit)
Prerequisite: Permission of instructor. (May be repeated for a total of 12 credits) Provides student with practical experience in technical aspects of theatre. *Required of all theatre majors. Majors are required to enroll in at least one credit production lab every semester they are in residence.

7810:310. Performance Laboratory. (1 Credit)
(May be repeated for a total of 12 credits) Prerequisites: Permission of instructor. Provides student with practical performance experience in theatre productions. *Required of all theatre majors.

7810:400. Production Laboratory-Design/Technology. (1 Credit)
Prerequisite: Permission of instructor. (May be repeated for a total of 12 credits) Provides student with practical experience in technical aspects of theatre. *Required of all theatre majors. Majors are required to enroll in at least one credit production lab every semester they are in residence.

7810:410. Performance Laboratory. (1 Credit)
(May be repeated for a total of 12 credits) Prerequisite: Permission of instructor. Provides student with practical performance experience in theatre productions. *Required of all theatre majors.

Univ Orientation/Gen Ed Spec Topics (1100)

1100:99. Independent Education Abroad. (0 Credits)
Academic study at an unaffiliated institution outside the continental United States.

1100:100. UA Education Abroad. (0 Credits)
Academic study at an affiliated institution outside the continental United States.

1100:101. The Akron Experience: University 101. (2 Credits)
Acquisition of the skills, techniques, information, and strategies necessary to aid new students in their transition from high school or work to the college environment. Delivered in face-to-face format and fully online format.

1100:102. Tutor Training I. (1 Credit)
Prerequisite: Permission from coordinator of tutorial programs based on GPA, letter of recommendation, and interview. Corequisite: Tutoring practicum of 25 hours. Training of peer tutors in several academic areas with topics to meet requirements of the College Reading and Learning Association.

1100:103. Tutor Training II. (1 Credit)
Prerequisite: 1100:102. Summative training of peer tutors emphasizing assertiveness training, leadership skills, administering and interpreting a learning styles inventory, and structuring a learning experience.

1100:104. Tutor Training III. (1 Credit)
Prerequisite: 1100:102. Summative training of peer tutors emphasizing assertiveness training, leadership skills, administering and interpreting a learning styles inventory, and structuring a learning experience.

1100:110. Information Tools for Academic Success. (1 Credit)
Information Tools for Academic Success will allow a student to bring a real world problem or academic assignment to class to use as the framework upon which to build a repertoire of information skills. This class is a project-oriented, process-based course in which the students will: Identify and articulate an information need as it relates to a problem or assignment; effectively and efficiently access appropriate information using a variety of resources; critically evaluate the information; incorporate the information into their existing knowledge base; use the information appropriately and effectively to accomplish an explicit purpose; understand the legal, social, and economic aspects of information ultimately accessing and using information in an ethical manner.

1100:117. Career Planning. (2 Credits)
Learners develop the skills necessary to make effective educational and career decisions. Emphasis upon self-understanding, career exploration, career planning, and decision making. Delivered in face-to-face format and fully online format.

1100:150. Resident Assistant Skills. (2 Credits)
This course is designated for Resident Assistants upon their hire to the Department of Residence Life and Housing. Leadership development and management skills are the core material.

1100:191. Special Topic: General Education. (1-4 Credits)
Special Topics in General Education.

1100:205. Leadership Principles and Practices. (2 Credits)
This course is about being a leader and about leadership. Students will learn leadership principles through case studies and self-assessment with a goal of developing effective leadership skills and abilities. Students complete the course better prepared to lead across a broad spectrum of responsibilities by possessing and communicating an organized perspective of leadership.

Women's Studies (3001)

3001:100. Social & Cultural Diversity in the United States. (3 Credits)
See department for course description.

3001:110. Multicultural Sensitivity Training. (1 Credit)
See department for course description.

3001:200. Introduction to Womens Studies. (3 Credits)
Introduction to the interdisciplinary program in Women's Studies. Explores current scholarship in women's issues and experiences from perspectives of psychology, history, sociology, anthropology, and literary criticism. Feminist orientation and methodology.

3001:480. Feminist Theory. (3 Credits)
Prerequisite: 3001:200. A summary of feminist theory to familiarize students with the main currents in contemporary feminist theory and the origins and evolution of that thought.

3001:485. Special Topics in Women's Studies. (1-3 Credits)
Special topics and current issues in Women's Studies. Covers content not currently addressed in other courses. Fosters a critical approach to knowledge about women. (May not be repeated)

3001:489. Internship in Women's Studies. (1-4 Credits)
Prerequisite: 3001:300, permission of Director of Women's Studies. This class provides supervised experience and on-the-job training in an organization, agency, corporation or group dealing with women's issues.

3001:490. Women's Studies Lecture Series. (1-3 Credits)
Various topics focused on women. Themes and course materials vary each semester. Lecture and discussion.

3001:493. Individual Studies on Women. (1-3 Credits)
Prerequisite: 3001:300, and approval of Director of Women's Studies. Directed study of selected topics related to women. Projects are chosen by student in consultation with instructor.

3001:499. Seminar in Women's Studies. (1 Credit)
See department for course description.

Honors College (1870)

1870:250. Honors Colloquium: Humanities. (2 Credits)
Prerequisite: admission to Williams Honors College. Interdisciplinary colloquium on important issues in humanities.

1870:270. Honors Colloquium: Natural Science. (2 Credits)
Prerequisite: admission to Williams Honors College Interdisciplinary colloquium on important issues in natural sciences.

1870:340. Honors Colloquium: Social Science. (3 Credits)
Prerequisite: admission to Williams Honors College. Interdisciplinary colloquium on important issues in social sciences.

1870:350. Honors Colloquium: Humanities. (3 Credits)
Prerequisite: admission to Williams Honors College. Interdisciplinary colloquium on important issues in humanities.

1870:360. Honors Colloquium: Social Science. (2 Credits)
Prerequisite: admission to Williams Honors College. Interdisciplinary colloquium on important issues in social sciences.

1870:370. Honors Colloquium: Natural Science. (3 Credits)
Prerequisite: admission to Williams Honors College. Interdisciplinary colloquium on important issues in natural sciences.

1870:450. Honors Colloquium: Humanities. (2 Credits)
Prerequisite: admission to Williams Honors College. Interdisciplinary colloquium on important issues in humanities.

1870:460. Honors Colloquium: Social Science. (2 Credits)
Prerequisite: admission to Williams Honors College. Interdisciplinary colloquium on important issues in social sciences.

1870:470. Honors Colloquium: Natural Science. (2 Credits)
Prerequisite: admission to Williams Honors College. Interdisciplinary colloquium on important issues in natural sciences.

ADDENDUMS

No changes to list at the time of publication.

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