ACCT3000  Financial Statement Analysis  Credit Hours:  3
An elective dealing with financial statement information in decision making.  Course requirements include both written and oral presentation of an in-depth analysis of the financial reports of a corporation.

Prerequisites:BUAD 2050 FOR LEVEL UG WITH MIN. GRADE OF D-

ACCT3010  Cost Accounting For Nonaccounting Majors  Credit Hours:  3
Introduction to concepts and applications of cost accounting for manufacturing and service organizations.  Covers cost management, activity costs, job costing, overhead analysis and uses of cost information in decision-making.

Prerequisites:BUAD 2050 FOR LEVEL UG WITH MIN. GRADE OF D-

ACCT3030  Tax Accounting For Nonaccounting Majors  Credit Hours:  3
An introduction to federal income taxes for individuals.  This course covers the concepts of income, deductions, taxes and credits.  Students gain practical experience in preparing form 1040 for individuals.

Prerequisites:BUAD 2050 FOR LEVEL UG WITH MIN. GRADE OF D-

ACCT3100  Financial Accounting And Systems  Credit Hours:  3
This class focuses on the general purpose financial statements and the accounting information system that develops information included in those financial statements.

Prerequisites:(BUAD 2040 FOR LEVEL UG WITH MIN. GRADE OF C AND BUAD 2050 FOR LEVEL UG WITH MIN. GRADE OF C)

ACCT3110  External Financial Reporting I  Credit Hours:  3
This course covers accounting topics applicable to asset valuation, income measurement and financial statement disclosure.  It concentrates on accounting for corporations and emphasizes the accounting cycle and the asset side of the balance sheet.

Prerequisites:ACCT 3100 FOR LEVEL UG WITH MIN. GRADE OF C

ACCT3210  Individual Taxation  Credit Hours:  3
This class focuses on the concepts and principles applicable to the taxation of individuals.

Prerequisites:ACCT 3100 FOR LEVEL UG WITH MIN. GRADE OF C

ACCT3310  Accounting Information Systems And Controls  Credit Hours:  3
This course provides an introduction to processing and reporting of accounting information.  Major emphasis is placed on basic accounting information processing including accounting applications in an advanced information technology environment.

Prerequisites:ACCT 3100 FOR LEVEL UG WITH MIN. GRADE OF C
ACCT4120  External Financial Reporting II  Credit Hours:  3
This course concentrates on financial accounting for corporations and emphasizes the liability and stockholders' equity sections of the balance sheet, and related income statement issues.

Prerequisites: ACCT 3110 FOR LEVEL UG WITH MIN. GRADE OF C

ACCT4130  External Financial Reporting III  Credit Hours:  3
This is the third course in the external financial reporting sequence. This course covers topics such as foreign exchange, partnerships, business consolidations and mergers.

Prerequisites: ACCT 3120 FOR LEVEL UG WITH MIN. GRADE OF C OR ACCT 4120 FOR LEVEL UG WITH MIN. GRADE OF C

ACCT4310  Internal Reporting  Credit Hours:  3
Internal Reporting focuses on budgeting, product and service costing and the ability to recognize and provide management with relevant information for strategic cost management and performance evaluation.

Prerequisites: ACCT 3100 FOR LEVEL UG WITH MIN. GRADE OF C

ACCT4410  Governmental And Not-For-profit Accounting  Credit Hours:  3
Principles, procedures and ethics of financial reporting for not-for-profit organizations, including state and local government. Includes the use of funds, budgets, appropriations and encumbrances as means of control.

Prerequisites: ACCT 3110 FOR LEVEL UG WITH MIN. GRADE OF C

ACCT4420  Auditing  Credit Hours:  3
Auditing integrates financial and cost accounting, ethics, accounting theory, information systems and control structure concepts into a systematic process of obtaining, evaluating and reporting on economic events and activities.

Prerequisites: (ACCT 3110 FOR LEVEL UG WITH MIN. GRADE OF C AND ACCT 3310 FOR LEVEL UG WITH MIN. GRADE OF C)

ACCT4940  Accounting Internship  Credit Hours:  1-3
The accounting internship allows superior accounting students to obtain practical training through a rigorous learning experience. This program enables students to secure a broad exposure to business operations and problems.

Prerequisites: ACCT 3100 FOR LEVEL UG WITH MIN. GRADE OF D-

ACCT4990  Independent Study: Readings And Research  Credit Hours:  1-3
The student will write a research report on an accounting topic of interest to both student and faculty adviser. The topic must not be covered in another undergraduate accounting course.

Prerequisites: ACCT 3120 FOR LEVEL UG WITH MIN. GRADE OF D-
ACCT5000  Financial And Managerial Accounting  
Credit Hours: 3
The study of the principles of Financial and Managerial accounting. The financial accounting segment of the course will focus on the preparation, interpretation and analysis of financial statements and the use of the financial information. The managerial

ACCT5120  External Financial Reporting II  
Credit Hours: 3
This class concentrates on financial accounting for corporations and emphasizes the liability and owner's equity sections of the balance sheet and related income statement issues.
Prerequisites: ACCT 5110 FOR LEVEL GR WITH MIN. GRADE OF D-

ACCT5320  Internal Reporting  
Credit Hours: 3
This course focuses on budgeting, product and service costing, and the ability to recognize and provide management with relevant information for strategic cost management and performance evaluation. This class will include a project for additional analysis.
Prerequisites: ACCT 5100 FOR LEVEL GR WITH MIN. GRADE OF D-

ACCT5940  Internship  
Credit Hours: 1-3
A combination of practical experience at a business concern with discussion to be held at the University with others in the program. An oral and written report is required.

ACCT6130  External Financial Reporting III  
Credit Hours: 3
This is the third course in the external financial reporting sequence. This course covers topics such as foreign exchange, partnerships, business consolidations and mergers.
Prerequisites: ACCT 4120 FOR LEVEL UG WITH MIN. GRADE OF D-

ACCT6150  International Accounting And Taxation  
Credit Hours: 3
Analysis of accounting issues crucial to multinational companies. Issues to be addressed include: comparing accounting across countries, effects of harmonization of financial reporting requirements and the translation of foreign currency financial statements.
Prerequisites: ACCT 6210 FOR LEVEL GR WITH MIN. GRADE OF D-

ACCT6190  Contemporary Accounting Problems  
Credit Hours: 3
An overview of current topics and issues concerning the profession. The course includes, but is not limited to, problems and opportunities related to the practice of public accounting.
Prerequisites: (ACCT 6210 FOR LEVEL GR WITH MIN. GRADE OF D- AND ACCT 6130 FOR LEVEL GR WITH MIN. GRADE OF D-)
ACCT6210  Research In Accounting And Taxation  Credit Hours:  3
Provides the methodology necessary for accountants to perform effective, efficient and ethical accounting and tax research and the means of communicating those results.

Prerequisites:(ACCT 3120 FOR LEVEL UG WITH MIN. GRADE OF D- AND ACCT 4210 FOR LEVEL UG WITH MIN. GRADE OF D-)

ACCT6220  Corporate Taxation  Credit Hours:  3
This course covers the taxation of corporations and their shareholders. Topics include the formation of a corporation, taxation of corporate income and the tax treatment of distributions.

Corequisite:ACCT 6210

ACCT6310  Advanced Managerial Accounting  Credit Hours:  3
Use of accounting information in planning and controlling an organization, including case studies in cost-volume-profit, budgeting, transfer pricing and performance evaluation.

Prerequisites:ACCT 4310 FOR LEVEL UG WITH MIN. GRADE OF D-

ACCT6320  Cost Analysis And Control  Credit Hours:  3
Criteria and techniques for designing and using cost systems. Theory and techniques of analyzing organizations and processes in manufacturing and service organizations. Uses case studies to evaluate cost management systems.

Prerequisites:ACCT 4310 FOR LEVEL UG WITH MIN. GRADE OF D-

ACCT6330  Advanced Topics In Accounting Information Systems  Credit Hours:  3
Additional analysis of processing and reporting accounting information. Major emphasis is placed on accounting information processing including accounting applications in an advanced technology environment.

Prerequisites:ACCT 3310 FOR LEVEL UG WITH MIN. GRADE OF D-

ACCT6410  Governmental And Not-For-profit Accounting  Credit Hours:  3
Principles, procedures and ethics of financial reporting for not-for-profit organizations, including state and local government. Includes the use of funds, budgets, appropriations and encumbrances as a means of control.

Prerequisites:ACCT 3110 FOR LEVEL UG WITH MIN. GRADE OF C

ACCT6420  Auditing  Credit Hours:  3
Auditing integrates financial and cost accounting, ethics, accounting theory, information systems and control structure concepts into a systematic process of obtaining, evaluating and reporting on economic events and activities.

Prerequisites:(ACCT 3110 FOR LEVEL UG WITH MIN. GRADE OF C AND ACCT 3310 FOR LEVEL UG WITH MIN. GRADE OF C)
Course Descriptions 2009-2010

ACCT6430  Business Valuation And Analysis  Credit Hours:  3
Analyzes business analysis and valuation techniques with major emphasis placed on how a firm's financial reporting decisions affect fundamental analysis.

Prerequisites: ACCT 6130 FOR LEVEL GR WITH MIN. GRADE OF D-

ACCT6960  Independent Study In Accounting  Credit Hours:  1-3
Independent research report on an accounting topic of interest to both the student and the faculty member. Research related to a topic not covered in the listed graduate accounting courses.

ACTG1040  Principles Of Financial Accounting  Credit Hours:  3
The course covers basic financial accounting principles for a business enterprise. Topics include transaction analysis, measurement, summarization, preparation, interpretation and use of financial reports.

ACTG1050  Principles Of Management Accounting  Credit Hours:  3
Management uses of accounting data for analysis, decision making, financial planning and control. Topics include understanding cost behavior, activity-based costing, cost-volume-profit analysis and budgeting.

Prerequisites: ACTG 1040 FOR LEVEL UG WITH MIN. GRADE OF D- OR BUAD 2040 FOR LEVEL UG WITH MIN. GRADE OF D-

ACTG1060  Technical Financial Accounting For Accounting Majors  Credit Hours:  2
Extensive work on accounting cycle including preparation of financial statements, and development and use of account information in business application areas.

Prerequisites: ACTG 1040 FOR LEVEL UG WITH MIN. GRADE OF D- OR BUAD 2040 FOR LEVEL UG WITH MIN. GRADE OF D-

ACTG1200  Accounting Software  Credit Hours:  3
Students will become familiar with a variety of accounting software such as QuickBooks, Peachtree, and Microsoft Office Accounting.

Prerequisites: ACTG 1040 FOR LEVEL UG WITH MIN. GRADE OF D- OR BUAD 2040 FOR LEVEL UG WITH MIN. GRADE OF D-

ACTG1220  Computerized Accounting with QuickBooks  Credit Hours:  3
A course designed to familiarize the student with QuickBooks, a popular accounting software.

Prerequisites: ACTG 1040 FOR LEVEL UG WITH MIN. GRADE OF D- AND BUAD 2040 FOR LEVEL UG WITH MIN. GRADE OF D-
Course Descriptions 2009-2010

ACTG1250  Spreadsheet Applications In Accounting  Credit Hours: 2
Spreadsheet programs will be used in budgeting, financial management, preparation of financial statements, creation of business documents and other financial applications.

Prerequisites:ACTG 1040 FOR LEVEL UG WITH MIN. GRADE OF D- OR BUAD 2040 FOR LEVEL UG WITH MIN. GRADE OF D-

ACTG2100  Intermediate Accounting I  Credit Hours: 3
In-depth expansion of financial accounting principles and financial statement presentation. Emphasis on balance sheet accounts with particular attention applied to working capital (cash, receivables, inventory, current liabilities, also long-term assets).

Prerequisites:ACTG 1040 FOR LEVEL UG WITH MIN. GRADE OF D- OR BUAD 2040 FOR LEVEL UG WITH MIN. GRADE OF D-

ACTG2150  Intermediate Accounting II  Credit Hours: 3
Continuation of advanced financial accounting topics including valuation of long-term liabilities and investments, stockholders' equity and accounting for income taxes, leases, pensions, accounting changes/errors, statement of cash flow.

Prerequisites:ACTG 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

ACTG2300  Cost Accounting  Credit Hours: 3
Practice of cost accounting especially applied to manufacturing business. Includes accounting for materials, labor and overhead under job order and process cost systems and standard costing.

Prerequisites:ACTG 1040 FOR LEVEL UG WITH MIN. GRADE OF D- OR BUAD 2040 FOR LEVEL UG WITH MIN. GRADE OF D-

ACTG2310  Cost Accounting In Health Care  Credit Hours: 3
Cost accounting has become an essential part of health care management. The spread of managed care has heightened this need. Traditional cost courses focus primarily on manufacturing. This course provides thorough coverage of the essentials of cost account.

ACTG2350  Managerial Accounting  Credit Hours: 3
Emphasis on the use of accounting information internally for decision-making by managers of business entities.

Prerequisites:ACTG 2300 FOR LEVEL UG WITH MIN. GRADE OF D-

ACTG2400  Fundamentals Of Taxation  Credit Hours: 3
Consideration of the basic features of the federal income tax system. Emphasis is placed on the determination of taxable income of individuals and corporations. Also covered will be the preparation of the form 1040 both manually and using a commercial com
Course Descriptions 2009-2010

ACTG2450 Advanced Tax Accounting
A study of S corporations, C corporations, partnerships and estate and gift tax.

Prerequisites: ACTG 1040 FOR LEVEL UG WITH MIN. GRADE OF D- OR BUAD 2040 FOR LEVEL UG WITH MIN. GRADE OF D-

ACTG2500 Auditing And Internal Control
A study of auditing standards, concepts and procedures. This course includes examination of the auditor's approach to study and evaluation of the internal control structure as well as substantive testing of the revenue cycle.

Prerequisites: ACTG 1060 FOR LEVEL UG WITH MIN. GRADE OF D-

ACTG2510 Forensic Accounting
Topics will cover gathering and presenting financial information that will be accepted by a court of jurisprudence against perpetrators of economic crime.

ACTG2610 Public Administration And Non-Profit Accounting
This course is designed for students in the accounting program and employees of non-profit organizations. The course deals with the principles and applications of fund accounting as it relates to government, health care, colleges and universities and other...

ACTG2630 Payroll Accounting
This course will teach students the development and maintenance of appropriate reports, retention periods and tax filings.

ACTG2710 Certified Bookkeeper Exam Review
Will prepare students for National Certified Bookkeeper Exam. Course covers all five required skill areas: merchandise inventory, payroll, depreciation, correcting and adjusting entries.

ACTG2940 Cooperative Education In Accounting
Cooperative education in accounting is the integration of classroom theory with practical work experience in the related field. Work related jobs must be investigated and approved by the co-op instructor. Instructor permission required.

Prerequisites: ACTG 1200 FOR LEVEL UG WITH MIN. GRADE OF D-
ACTG2980  Special Topics In Accounting  Credit Hours:  1-3
Current developments in accounting research and theory and literature discussed in seminar manner. Topics selected from all areas of accounting.
Prerequisites:ACTG 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

ACTG2990  Independent Study- Accounting  Credit Hours:  1-4
Students will study an appropriate subject mutually agreed upon between the student and instructor. The format may include lecture, computer lab and/or practical experience.

ADOT1010  Pc Keyboarding I  Credit Hours:  3
Provides a basic understanding of the personal computer, word processing software and the development of keyboarding skills. Learn to format business letters, memos, reports and tables.

ADOT1080  Administrative Office Skills  Credit Hours:  3
This course develops the competence of students in applying proofreading, editing, telephone, filing and vocabulary skills to office situations to enhance their effectiveness as administrative support personnel.
Prerequisites:ADOT 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

ADOT1110  Pc Keyboarding II  Credit Hours:  3
Focuses on the improvement of typewriting production and speed building. Course coverage includes production work on professional reports, business correspondence, office forms and frequent special practice to develop maximum typing skills.

ADOT1200  Secretarial Office Procedures  Credit Hours:  3
This course explores the information processing and administrative support responsibilities and services necessary for the secretary to perform effectively at the operational level in the business office.
Prerequisites:ADOT 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

ADOT2140  Machine Transcription  Credit Hours:  3
This course provides intensive practice in transcribing business correspondence from machine sources. The course will emphasize efficient use of equipment, preparation of quality correspondence, command of language skills and achieving an employable tran
Prerequisites:ADOT 2180 FOR LEVEL UG WITH MIN. GRADE OF D-
ADOT2180  Word Processing  Credit Hours:  3
This course emphasizes the mastery of basic and advanced word processing functions of WordPerfect for Windows to enable the student to function effectively and efficiently in a business environment.

Prerequisites: ADOT 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

ADOT2200  Office Management  Credit Hours:  3
Students study various organizational forms, the functions of business departments and relate past office situations to current office conditions in an effort to ensure future effectiveness in office operations.

Prerequisites: ADOT 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

ADOT2270  Pc Keyboarding III  Credit Hours:  3
Advanced instruction with emphasis on setting priorities, following directions, evaluating document formats and mailability, composing administrative business correspondence, demonstrating quality and efficiency in document production using industry stand

Prerequisites: ADOT 1110 FOR LEVEL UG WITH MIN. GRADE OF D-

ADOT2940  Administrative Office Internship  Credit Hours:  3
Students will work in an office environment in the local business community and demonstrate the technical and communication skills required for successful performance in an administrative support position.

Prerequisites: (ADOT 1080 FOR LEVEL UG WITH MIN. GRADE OF D- AND ADOT 2180 FOR LEVEL UG WITH MIN. GRADE OF D- AND ADOT 1200 FOR LEVEL UG WITH MIN. GRADE OF D-)

ADOT2990  Independent Study  Credit Hours:  1-3
Students will study an appropriate subject mutually agreed upon between the student and instructor. The format may include lecture, computer lab and/or practical experience.

AED2940  Field Placements In Special Settings  Credit Hours:  1-4
Independent field work which will allow the undergraduate student to develop a course of study. Optional placement in a school system or in programs for children and youth at The Toledo Museum of Art.

AED3100  Art Education for the Pre-Primary and Primary Child  Credit Hours:  3
Focuses on the supporting the young child's capacity to create, perceive and appreciate the visual arts. Orientation to materials and instructional techniques will be explored through studio and gallery instruction with a young child.
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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>AED3130</td>
<td>Multi-Cultural Approaches For Art Appreciation</td>
<td>3</td>
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<td>An investigation of innovative methods for teaching multi-cultural understanding through art history and art appreciation. The Toledo Museum of Art's collection will be the focus for the course.</td>
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<tr>
<td>AED3300</td>
<td>Crafts In Art</td>
<td>3</td>
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<td>This course is designed to investigate the philosophy and variety of craft processes used to make art. Topics that may be covered include fibers, metal crafts, ceramics, paper making.</td>
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<tr>
<td>AED3500</td>
<td>Innovations In Art Education</td>
<td>3</td>
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<td></td>
<td>An introduction to new directions in secondary art education. Current views of philosophy and psychology are implemented as the rationale for contemporary curricula in art education. Field experience is to be arranged.</td>
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<tr>
<td>AED3940</td>
<td>Art Field Placements In The Elementary School</td>
<td>1-4</td>
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<td>Field placement in an elementary school setting allowing the undergraduate student, with art teacher approval, to develop a course of study that will satisfy the special needs of the student in art education.</td>
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<tr>
<td>AED4140</td>
<td>Art Education For The Special Child</td>
<td>3</td>
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<td></td>
<td>This course introduces and surveys a wide variety of art strategies and instructional adaptations for use with the child with physical, emotional or mental differences.</td>
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<tr>
<td>AED4150</td>
<td>Setting The Stage For Early Childhood Learning: Inspirations From Reggio Emilia</td>
<td>3</td>
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<td></td>
<td>This course will explore Reggio's philosophy of early childhood education and the numerous ways that children explore the &quot;hundred languages.&quot; Reggio uses these languages (art, clay, wire, sculpture, light, shadow, etc.) as a way to help children represent</td>
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<tr>
<td>AED4200</td>
<td>Computer Graphics In Art Education</td>
<td>3</td>
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<td>This course examines the tools, technology and instructional applications of computer graphics in art settings. This course is especially appropriate for art educators interested in integrating art concepts using the Macintosh environment.</td>
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<tr>
<td>Course Code</td>
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<td>Credit Hours</td>
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<tr>
<td>AED4230</td>
<td>Integrating Aesthetic Experiences</td>
<td>3</td>
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<tr>
<td>AED4240</td>
<td>Adaptive Methods In Therapeutic Art For Children</td>
<td>3</td>
</tr>
<tr>
<td>AED4300</td>
<td>Media And Methods In Therapeutic Art</td>
<td>3</td>
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<tr>
<td>AED4450</td>
<td>Curriculum In Art Education</td>
<td>3</td>
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<tr>
<td>AED4560</td>
<td>Introduction To Therapeutic Art</td>
<td>3</td>
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<tr>
<td>AED4900</td>
<td>Seminar In Professional Development</td>
<td>2</td>
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<tr>
<td>AED4930</td>
<td>Student Teaching In Art</td>
<td>6-12</td>
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</tbody>
</table>

**AED4230 Integrating Aesthetic Experiences**

This course will provide students in education an overview of the role of art and music in curriculum development. (Students may enroll in either art or music education sections.)

**AED4240 Adaptive Methods In Therapeutic Art For Children**

This course is designed to study art media and methods that will enhance the development of the child with disabilities as it relates to their physical, emotional, intellectual and social well being.

Prerequisites: AED 4560 FOR LEVEL UG WITH MIN. GRADE OF D-

**AED4300 Media And Methods In Therapeutic Art**

An investigation into group and individual processes as they relate to art media and methods in therapeutic art will be presented. Experiences in art media will be explored.

Prerequisites: AED 4560 FOR LEVEL UG WITH MIN. GRADE OF D-

**AED4450 Curriculum In Art Education**

An exploration of discipline-based art education (DBAE) philosophy in the schools. Field placement in the Toledo Museum of Art's Youth program and the area schools will be used to implement the theoretical base.

**AED4560 Introduction To Therapeutic Art**

This course will introduce students to therapeutic art through investigation of theories in art education and art therapy. Students will explore art media and methods in therapeutic art programming.

**AED4900 Seminar In Professional Development**

This seminar is designed to enhance the student teacher's final preparation for employment. Professional issues, ethical behavior, interview techniques and other processes and concerns involved in entry into the profession will be examined.

Corequisite: AED 4930

**AED4930 Student Teaching In Art**

Planned field experiences in public school classrooms under the direction of experienced art teachers. Gradual acceptance of full responsibility by student teacher. A scheduled time will be included to facilitating professional practices.

Prerequisites: UPDV FOR MIN. SCORE OF 1
AED4950  Innovations In Art Education  
Credit Hours: 3
Students are introduced to a variety of activities and materials based upon children's interests and needs, available materials, and time allotted to art activities in the self-contained classroom.

AED4990  Individual Study In Art Education For The Undergraduate Student  
Credit Hours: 1-4
Individual study is designed to provide the student the opportunity to work individually on professional problems under the direction of the art education staff without formal class meetings.

AED5000  Research In Art Education  
Credit Hours: 4
This course will provide an overview of empirical and historical research structures, application of research to classroom activities and development of research for publication.

AED5140  Art Education For The Special Child  
Credit Hours: 3
This course introduces and surveys a wide variety of art strategies and instructional adaptations for use with the child with physical, emotional or mental differences.

AED5150  Setting The Stage For Early Childhood Learning: Inspirations From Reggio Emilia  
Credit Hours: 3
This course will explore Reggio's philosophy of early childhood education and the numerous ways that children explore the "hundred languages." Reggio uses these languages (art, clay, wire, sculpture, light, shadow, etc.) as a way to help children repre

AED5200  Computer Graphics In Art Education  
Credit Hours: 3
This course examines the tools, technology and instructional application of computer graphics education settings. The course is appropriate for art educators as well as others interested in using graphics and the microcomputer.

AED5220  Issues In Therapeutic Art  
Credit Hours: 3
The study of art processes that provide physical, emotional and intellectual development. Topics covered include art history, art appreciation, aesthetics, making art and art materials.
AED5240  Adaptive Methods In Art Education For Special Populations  Credit Hours: 3  
This course is designed to provide understanding of how art experiences relate to special populations. Students will research and develop strategies and instructional adaptations for use with special populations in a therapeutic or rehabilitative setting.

Prerequisites: AED 5200 FOR LEVEL GR WITH MIN. GRADE OF D-

AED5300  Media And Methods In Therapeutic Art  Credit Hours: 3  
An investigation into group and individual processes as they relate to art media and methods in therapeutic art will be presented. Experiences in art media will be explored.

Prerequisites: AED 5220 FOR LEVEL GR WITH MIN. GRADE OF D-

AED5320  The Art Museum And The Art/Humanities Educator  Credit Hours: 3  
This course will introduce the role of the museum for the art/humanities educator and will examine the installation and design of exhibitions and the implications for teaching. Life center issues, museum education, curriculum issues, interactive gallerie

AED5930  Advanced Seminar In Philosophy Of Art Education  Credit Hours: 1-4  
Guest lecturers from other institutions of higher learning are invited to The Toledo Museum of Art or The University of Toledo Department of Art to present seminars relevant to their endeavors.

AED5950  Workshop In Art Education For The Self-Contained Classroom  Credit Hours: 3  
Students are introduced to a variety of art activities and materials based on children's interests and needs, available materials, and time allotted to art activities in the self-contained classroom.

AED5990  Individual Study Of Art For The Graduate Student  Credit Hours: 1-4  
Individual study is designed to provide a student with the opportunity to work independently on professional problems under the direction of the faculty in the Department of Art.

AED6920  Masters Research Project In Art Education  Credit Hours: 1-4  
This course is open to graduate students who elect the completion of a master's project in fulfilling the research requirement of the master's degree program.
AED6940 Internship 4 Credit Hours:
This course will incorporate advanced recreational therapy program concepts in therapeutic art within an internship environment using expressive techniques.
Prerequisites: RCRT 4940 FOR LEVEL UG WITH MIN. GRADE OF D-

AED6960 Master's Research Thesis in Art Education 4 Credit Hours:
This course is open to graduate students who elect the completion of a master's thesis in fulfilling the research requirement of the master's degree program.

AERO1110 Air Force Organization I 2 Credit Hours:
Organization of the United States Air Force. Focus on missions involving airlift forces, strategic forces, tactical forces as well as overseas forces. Development and employment of weapon systems and logistic support functions. Leadership laboratory activ

AERO1120 Air Force Organization II 2 Credit Hours:
Organization of the United States Air Force. Focus on U.S. Defense policies, military balance between U.S. and eastern European forces as well as capabilities of Army, Navy and Reserve/Guard forces. Officership/Professionalism and introduction to flight.

AERO2110 Air Force History I 2 Credit Hours:
Development of air power from the first lighter-than-air vehicles through the establishment of the Department of the Air Force as an independent military force. Various concepts of employment of air power and factors which have prompted research and techn

AERO2120 Air Force History II 2 Credit Hours:
Development of air power since the establishment of the independent Air Force to the present. Various concepts of employment of air power and factors which have prompted research and technological change. Examples of impact of air power on strategic thoug

AERO3110 Air Force Management I 3 Credit Hours:
Integrated management course emphasizing individual as a leader in the Air Force. Human behavior, individual and in groups, historical development of management thought, discussion of classical leadership theory; oral and written communication, writing an
<table>
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<tr>
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<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>AERO3120</td>
<td>Air Force Management II</td>
<td>3</td>
<td>Air Force leadership, planning, organizing, coordinating, directing and controlling functions of management with emphasis on Air Force application, concept of command and staff, junior as administrative leader, Air Force personnel system, management of en</td>
</tr>
<tr>
<td>AERO4110</td>
<td>American And National Security</td>
<td>3</td>
<td>Role of the President, the Congress and National Security Council in national security making policy; American defense strategy; alliance; regional security; arms control. Leadership laboratory activities.</td>
</tr>
<tr>
<td>AERO4120</td>
<td>Air Force Officership</td>
<td>3</td>
<td>Air Force officer as part of national security force; military law; laws of armed conflict; the military profession; transition to military life; relations with civilian community. Leadership laboratory activities.</td>
</tr>
<tr>
<td>AERO4910</td>
<td>Air Force Issues</td>
<td>3</td>
<td>On demand. In-depth study of selected topics. Offered to individuals in lecture, seminar or independent study depending on student needs and nature of material. May be repeated twice for up to 6 hours.</td>
</tr>
<tr>
<td>AFST1100</td>
<td>Introduction To Africana Studies</td>
<td>3</td>
<td>Introductory survey of basic theoretical concepts to analyze the Black experience, with special focus on the general historical process common to the African Diaspora (Africa, Caribbean and the Americas - South, Central and North, especially the USA.)</td>
</tr>
<tr>
<td>AFST1110</td>
<td>African Civilization</td>
<td>3</td>
<td>General cultural and historical survey of Africa south of the Sahara from earliest times to the 20th century. Includes topics on art, literature, philosophy, religion and society.</td>
</tr>
</tbody>
</table>
AFST2100  Foundations Of Black Intellectual History  Credit Hours:  3

Prerequisites: AFST 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR AFST 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

AFST2200  Foundation Of Culture In The African Diaspora  Credit Hours:  3
Examination of culture in the African Diaspora by focusing on continuities and discontinuities in music and dance, material culture, language and folklore and the cultural practices of everyday life.

Prerequisites: AFST 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR AFST 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

AFST2220  History Of Jazz  Credit Hours:  3
A study of the development of jazz styles including listening skills and historical perspectives. Because the major innovations and stylistic interpretations of jazz are a result of African Americans, the course includes a study of how their culture influ

AFST2300  Black Community Research Methods  Credit Hours:  3
Survey of basic social research methods and studies focusing on the Black community. Class conducts research on Black community of Toledo. Offered as companion to AFST 2400. Topics change each year. Course can be taken twice.

Prerequisites: AFST 1100 FOR LEVEL UG WITH MIN. GRADE OF D-

AFST2400  Social Policy And The Black Community  Credit Hours:  3
Examination of social policy and the Black community of Toledo with a special focus on one major topic. Offered as companion to AFST 2300. Topics change each year. The course can be taken twice.

Prerequisites: AFST 1100 FOR LEVEL UG WITH MIN. GRADE OF D-

AFST2660  Politics In Africa  Credit Hours:  3
The character and development of African political institutions and processes with a special emphasis on patterns in the post-independence period and prospects for the future.

AFST3220  Geography Of Africa  Credit Hours:  3
Course begins with a general overview of Africa's physical environment, its colonial history and its people and cultures. It then examines a variety of themes associated with development, population, urban and political geography.
AFST3250   African-American History To 1865  Credit Hours: 3
An examination of the historical experiences of African-Americans in the United States from 1619 to 1865.

AFST3260   African-American History From 1865  Credit Hours: 3
An examination of the historical experiences of African-Americans in the United States since 1865.

AFST3300   African Art  Credit Hours: 3
African Art is the study of the diversity of African art. The format of the course will be developed with emphasis upon region and style with emphasis upon the collections of African Art found in the Toledo Museum of Art.

AFST4430   Slavery In America  Credit Hours: 3
Stresses the African continuum among slaves within the context of variations in goals and policies of slaveowners, slave trade, slave economics, demographics, slave labor and formation of slave culture.

AFST4530   Civil Rights  Credit Hours: 3
A study of judicial policy-making and administrative implementation of decisions affecting racial issues, freedom of expression, national security and criminal procedures.
Prerequisites: PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

AFST4580   Africa Since 1800  Credit Hours: 3
Africa south of the Sahara from 1800 to the present. Subjects include 19th century, colonial and independent Africa. Specific topics: the rise of South Africa, imperialism, African resistance and nationalism and independent African political, cultural and

AFST4650   African American Writers Before The 20th Century  Credit Hours: 3
A survey of African-American prose, poetry, drama and fiction from 1760 to 1915. Recommended: ENGL 2700, 2800, or 3790.
AFST4660  African American Literature In The 20th Century  Credit Hours:  3
Study of the literary achievement of major African-American writers beginning with DuBois and ending with Gwendolyn Brooks and Ed Bullins. Recommended: ENGL 2700, 2800, or 3790.

AFST4670  African Americans In The United States  Credit Hours:  3
Sociological study of African Americans in the United States, focusing on issues of ethnic identity, educational and economic achievement, continuing sources of discrimination and current movements for change.

AFST4800  Development In Third World Nations  Credit Hours:  3
The new emerging ideological, political, social and economic patterns which repeat themselves in and determine the Third World transition from a traditional to a new society.

AFST4900  Senior Seminar  Credit Hours:  3
General theoretical synthesis of the field focusing on a close reading of a recent biographical work of intellectual history, a recent work of cultural criticism and a recent work of social analysis.

AFST4910  Directed Research  Credit Hours:  1-6
Student selected research topic under the supervision of faculty member and the Director of Africana Studies. Permission to enroll is contingent on a written proposal by the student being accepted by the two sponsoring faculty.

AFST4920  Directed Readings  Credit Hours:  1-6
For advanced students wishing to read a specialized literature in the field. Requires a written proposal approved by faculty and Director of the Program.

Prerequisites: AFST 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR AFST 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

AFST4980  Special Topics In Africana Studies  Credit Hours:  3
Discussion of a substantial issue in scholarly research or public discourse relative to the African Diaspora. May be repeated for different issues. Maximum number of hours for AFST 4980 should not exceed 9 semester hours.
ALS1900  Intro Seminar: Adult Liberal Studies  Credit Hours: 2
Introduction to liberal studies. Library use, writing of a documented paper and the development of critical thinking through classroom discussion. Students in Adult Liberal Studies only.

ALS2500  INTERDISCIPLINARY APPROACHES TO RESEARCH  Credit Hours: 2
Students will focus on critical thinking and interdisciplinary research methods in preparation for upper-level seminars and research courses.

ALS3040  Topical Seminar: Social Sciences  Credit Hours: 4
Focus on topics of general interest to liberal arts students with particular reference to tools, concepts and analytical methods of social scientists. Students in Adult Liberal Studies only except by program director's permission.

ALS3050  Topical Seminar: Humanities  Credit Hours: 4
Topics of general interest in humanities: writing and communication; religious, philosophical and ideological traditions; traditional and performing arts. Adult Liberal Studies students only except by program director's permission.

ALS3060  Topical Seminar: Natural Sciences  Credit Hours: 4
Topics of general interest that consider scientific problem solving in such areas as biology, chemistry, geology, astronomy, physics, mathematics and statistics. Adult Liberal Studies students only except by program director's permission.

ALS4910  Senior Thesis  Credit Hours: 4
Under supervision of a selected instructor, student completes a capstone research thesis as part of the Liberal Studies program area of concentration. Open only to Liberal Studies seniors.

AMST3730  Folklore  Credit Hours: 3
A survey of the field of folklore with an emphasis on folk narrative, folk music and material culture in America. Recommended: Permission of instructor and Composition II.
### AMST4960  Senior Thesis, Parts I & II  
**Credit Hours:** 5  
**Part I** Research and initial organizational design of the senior thesis. Advanced American Studies majors work under an adviser's direction.  
**Part II** Completion of a preliminary and then final draft of the senior thesis. The American Studies Faculty Ste

### ANAT500  Anatomy for Physician Assist  
**Credit Hours:** 5  
Provides students with a working knowledge of the major anatomical regions and structures. Emphasis placed on the relationships of components as well as topographical and functional anatomy. Case studies will be utilized.

### ANAT500M  Anatomy for Physician Asst.  
**Credit Hours:** 5

### ANAT501  Gross Anatomy Physician Assist  
**Credit Hours:** 7

### ANAT501M  Anatomy for Physician Asst.  
**Credit Hours:** 5

### ANAT502  Gross Anatomy  
**Credit Hours:** 3

### ANAT505  Human Structure and Developmnt  
**Credit Hours:** 0-12  
Lecture based course supported by human dissection laboratory, offering integrated topics in gross and microscopic anatomy as well as embryology. This course is two semesters in length.
ANAT508  Medical Embryology
Human development from conception to birth with anatomic and clinical correlations to child and adult.

Credit Hours: 2

ANAT601  Selected Topics Neuroscience

Credit Hours: 2

ANAT625  Selected Topics in Anatomy
Lecture and discussion in detailed review of modern aspects of anatomy. May be repeated for credit.

Credit Hours: 2

ANAT630  Neuroanatomy
Lecture, discussion and laboratory exercises of nervous system structure.

Credit Hours: 3

ANAT633  Advanced Topographic Anatomy
Detailed dissections of specific body regions. May be repeated for credit.

Credit Hours: 3

ANAT650  Seminar in Anatomy
Presentation and discussion of selected topics in the anatomical sciences. May be repeated for credit.

Credit Hours: 1

ANAT672  Current Topics in Anatomy
Lecture and/or seminar course or current interest in the anatomical sciences. May be repeated for credit.

Credit Hours: 0-4
ANAT673    Research in Anatomy    Credit Hours: 0-4
Students will participate in selected on-going research programs of members of the department faculty. May be repeated for credit.

ANAT679    Human Structure and Development    Credit Hours: 0-16
Human Structure & Development (Block 2)

ANAT680    Neuroscience    Credit Hours: 0-6
The content of the medical neuroscience course includes not only the basic science concepts introduced in more traditional neuroanatomy courses, it also incorporates neurohistology, neuroembryology, neurophysiology, neuropathology, and neuroradiology. The

ANAT689    Independent Study in Anatomy    Credit Hours: 0-12
Intensive study in field of interest, including theoretical and experimental work. May be repeated for credit.

ANAT704    Gross Anatomy    Credit Hours: 0-11

ANAT705    Human Structure and Development    Credit Hours: 12
Lecture based course supported by human dissection laboratory, offering integrated topics in gross and microscopic anatomy as well as embryology. This course is two semesters in length.

ANAT707    Microscopic Anatomy    Credit Hours: 6
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ANAT708</td>
<td>Medical Embryology</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Human development from conception to birth with anatomic and clinical correlations to child and adult.</td>
<td></td>
</tr>
<tr>
<td>ANAT710</td>
<td>Clinical Anatomy</td>
<td>0-6</td>
</tr>
<tr>
<td></td>
<td>The elective provides the student an opportunity to review, refine, and consolidate their understanding of the morphologic and physiologic bases of human biology as related to the practice of medicine and surgery in which they are most interested. Each stu</td>
<td></td>
</tr>
<tr>
<td>ANAT711</td>
<td>Clinical Anatomy</td>
<td>0-3</td>
</tr>
<tr>
<td></td>
<td>The elective provides the student an opportunity to review, refine, and consolidate their understanding of the morphologic and physiologic bases of human biology as related to the practice of medicine and surgery in which they are most interested. Each stu</td>
<td></td>
</tr>
<tr>
<td>ANAT750</td>
<td>Anatomy Away Elective</td>
<td>0-6</td>
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<tr>
<td>ANAT751</td>
<td>Anatomy Away Elective</td>
<td>3</td>
</tr>
<tr>
<td>ANAT789</td>
<td>Independent Study in Anatomy</td>
<td>0-6</td>
</tr>
<tr>
<td>ANAT825</td>
<td>Selected Topics in Anatomy</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Lecture and discussion in detailed review of modern aspects of anatomy. May be repeated for credit.</td>
<td></td>
</tr>
</tbody>
</table>
ANAT830 Neuroanatomy
Lecture, discussion and laboratory exercises of nervous system structure.

ANAT833 Advanced Topographic Anatomy
Detailed dissections of specific body regions. May be repeated for credit.

ANAT850 Seminar in Anatomy
Presentation and discussion of selected topics in the anatomical sciences. May be repeated for credit.

ANAT872 Current Topics in Anatomy
Lecture and/or seminar course or current interest in the anatomical sciences. May be repeated for credit.

ANAT873 Research in Anatomy
Students will participate in selected on-going research programs of members of the department faculty. May be repeated for credit.

ANAT889 Independent Study in Anatomy
Intensive study in field of interest, including theoretical and experimental work. May be repeated for credit.

ANES701 Anesthesiology

ANES702  Anesthesiology  Credit Hours: 0-6
This clerkship will offer the student grounding in the medical basis and clinical practice of anesthesiology. They will participate directly in patient care throughout the process of preoperative evaluation, selection of anesthesia plan, implementation o

ANES703  Pain Management  Credit Hours: 6

ANES750  Anesthesiology Away Elective  Credit Hours: 6

ANES751  Anesthesiology Away Elective  Credit Hours: 0-6

ANES789  Ind Study in Anesthesiology  Credit Hours: 0-6

ANTH1020  Introduction To Anthropology  Credit Hours: 3
A survey of the varied aspects of anthropology, including cultural anthropology, prehistory, physical anthropology and linguistics. (not for major credit)

ANTH2000  Proseminar In Anthropology I  Credit Hours: 1
Students are introduced to the academic and professional nature of Anthropology. Topics covered include professional socialization, honor theses, portfolio construction, preparation for graduate studies, and career development.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH2020</td>
<td>Introduction To Archaeology</td>
<td>3</td>
<td>An introduction to the history, methods and techniques of archaeology and how the discipline of archaeology is related to anthropology, ethnohistory, history and geology. (not for major credit)</td>
</tr>
<tr>
<td>ANTH2100</td>
<td>Human Society Through Film</td>
<td>3</td>
<td>An introduction through the use of ethnographic film to various aspects of non-western culture and the development of the use of film in anthropology.</td>
</tr>
<tr>
<td>ANTH2700</td>
<td>Human Evolution</td>
<td>3</td>
<td>A survey of the human species in time, place and culture and the investigation of the factors underlying human biological variation.</td>
</tr>
<tr>
<td>ANTH2750</td>
<td>World Prehistory</td>
<td>3</td>
<td>A survey of the processes of cultural development from the lower Pleistocene to development of writing.</td>
</tr>
<tr>
<td>ANTH2800</td>
<td>Cultural Anthropology</td>
<td>3</td>
<td>Introduction to culture patterns and processes and their relationship to human society and language.</td>
</tr>
<tr>
<td>ANTH2900</td>
<td>African American Culture</td>
<td>3</td>
<td>A survey of the socio-historical and cultural factors of African Americans in the U.S.</td>
</tr>
<tr>
<td>ANTH2980</td>
<td>Topics in Anthropology</td>
<td>3</td>
<td>Examination of Special Topics in Anthropology. May be repeated on different topics.</td>
</tr>
</tbody>
</table>
ANTH3330  Food, Health, Society  Credit Hours: 3
This course deals with multi-cultural dietary patterns through time and space, as well as cross-cultural influences on health and disease.

ANTH3500  Cultural Diversity in Business  Credit Hours: 3
Drawing on ethnographic and case studies to compare and contrast cultural institutions and behavioral patterns of diverse cultures, this course explores the influence of culture on business operations across cultures.

ANTH3510  Field Methods In Archaeology  Credit Hours: 1-6
Methods of excavation and recovery of archaeological data. Field school conducted during excavation of a prehistoric site in the Toledo area.

ANTH3520  QUALITATIVE APPROACHES IN SOCIAL SCIENCE RESEARCH  Credit Hours: 3
This course examines qualitative methods used in social science research. Focusing on ethnographic and qualitative methods, the course provides students the skills necessary to design and conduct qualitative research studies.

ANTH3850  Peoples Of World: An Evolutionary Approach  Credit Hours: 3
An introduction to the socioeconomic activities in societies of varying sociocultural complexity.

ANTH3920  Indians Of North America  Credit Hours: 3
A survey of North America Indians from prehistoric times to the present.
Prerequisites: ANTH 2800 FOR LEVEL UG WITH MIN. GRADE OF D-

ANTH3940  Peoples Of Subsaharan Africa  Credit Hours: 3
The cultures and societies of the Subsaharan peoples of Africa.
Prerequisites: ANTH 2800 FOR LEVEL UG WITH MIN. GRADE OF D-
ANTH4000 Proseminar In Anthropology II
Credit Hours: 2
Discussion among faculty and students devoted to the study of Anthropology with a special focus on the development of a professional portfolio for graduate work or career.
Prerequisites: ANTH 2000 FOR LEVEL UG WITH MIN. GRADE OF D-

ANTH4200 History and Theory in Anthropology-WAC
Credit Hours: 3
This course acquaints students with various schools of anthropological theory, stressing the influence of traditional approaches on contemporary thought and the impact of historical context on the development of theory.
Prerequisites: ANTH 2800 FOR LEVEL UG WITH MIN. GRADE OF D-

ANTH4450 Exploring the City
Credit Hours: 3
This course takes an interdisciplinary approach to life in cities around the world, with emphasis on the ethnographic exploration of how power, cultural difference, and social inequality in cities are produced and experienced.

ANTH4520 Laboratory Methods In Archaeology
Credit Hours: 3
Instruction in the methods and techniques employed by the archaeologist to analyze cultural material recovered in the field.

ANTH4560 Fieldwork In Ethnology
Credit Hours: 1-6
Consists of field work involving the student in meaningful research problems at the community level. Introduces the student to the methods and problems of participant research.

ANTH4730 Biocultural Ecology
Credit Hours: 3
A study of the functional interrelationships of humans and their biophysical environment in cross cultural perspective, with special emphasis on non-western cultures.
Prerequisites: ANTH 2800 FOR LEVEL UG WITH MIN. GRADE OF D-

ANTH4760 Medical Anthropology
Credit Hours: 3
An examination of the biocultural nature of health and illness, with special emphasis on changing patterns of disease in non-western societies.
ANTH4820 Anthropology Of Religion  Credit Hours: 3
A cross-cultural approach to the description and analyses of magical and religious beliefs and practices in Asia, Africa, Latin America and Indigenous North America.
Prerequisites: ANTH 2800 FOR LEVEL UG WITH MIN. GRADE OF D-

ANTH4860 The Irish-American Experience  Credit Hours: 3
A survey of the sociohistorical and cultural factors related to the immigration and adaptation of the Irish in America.

ANTH4890 Peasant Society  Credit Hours: 3
Consideration of the economic and cultural forms of peasant society on a worldwide basis and comparison of these forms to other contemporary communities.
Prerequisites: ANTH 2800 FOR LEVEL UG WITH MIN. GRADE OF D-

ANTH4910 Independent Research In Anthropology  Credit Hours: 1-3
Supervised independent research in anthropology.

ANTH4920 Directed Readings In Anthropology  Credit Hours: 1-3
Designed for those wishing to continue course work in greater depth or seeking contact with unlisted subject areas. Written proposal and consent required.

ANTH4950 Senior Research Project  Credit Hours: 3-6
Supervised opportunity for senior majors to apply the anthropological approach to a theoretical or applied cultural historical/biocultural problem through individual research, an internship, professional participation or a public education experience.

ANTH4960 Honors Thesis  Credit Hours: 3-6
The student completes a thesis under the direction and guidance of their faculty adviser.
ANTH4980  Problems In Anthropology  
**Credit Hours:** 3
Courses on varied anthropological specialties. May be repeated in different specialty areas such as religion, ethnography, ethnic conflict and area courses.

ANTH5200  History and Theory in Anthropology-WAC  
**Credit Hours:** 3
This course acquaints students with various schools of anthropological theory, stressing the influence of traditional approaches on contemporary thought and the impact of historical context on the development of theory.

ANTH5450  Exploring the City  
**Credit Hours:** 3
This course takes an interdisciplinary approach to life in cities around the world, with emphasis on the ethnographic exploration of how power, cultural difference, and social inequality in cities are produced and experienced.

ANTH5560  Fieldwork In Anthropology  
**Credit Hours:** 1-6
Consists of field work involving the student in meaningful research problems at the community level. Introduces the student to the methods and problems of participant research.

ANTH5730  Biocultural Ecology  
**Credit Hours:** 3
A study of the functional interrelationships of humans and their biophysical environment.

Prerequisites: ANTH 2800 FOR LEVEL UG WITH MIN. GRADE OF D-

ANTH5740  Nutritional Anthropo-Logy  
**Credit Hours:** 3
An examination of the historical, social, political and economic factors that influence the production, distribution and consumption of food and the effects on world health and development.

ANTH5760  Medical Anthropology  
**Credit Hours:** 3
An examination of the biocultural nature of health and illness.
ANTH5820  Anthropology Of Religion  Credit Hours:  3
A cross-cultural approach to the description and analyses of magical and religious beliefs and practices.

ANTH5860  The Irish-American Experience  Credit Hours:  3
A survey of the sociohistorical and cultural factors related to the immigration and adaptation of the Irish in America.

ANTH5920  Directed Readings In Anthropology  Credit Hours:  1-3
Designed for those wishing to continue course work in greater depth or seeking contact with unlisted subject areas. Written proposal and consent required.

ANTH5980  Problems In Anthropo-Logy  Credit Hours:  3
Courses on varied anthropological specialties. May be repeated in different specialty areas such as religion, ethnohistory, ethnic conflict and area courses.

ANTH6990  Independent Research In Anthropology  Credit Hours:  1-3
Supervised independent research in anthropology.

ARBC1080  Culture and Commerce in the Arabic-Speaking World  Credit Hours:  3
A study of the culture and society of the Arabic-speaking world with emphasis on business and economics. Taught in English.

ARBC1090  Culture of the Arabic-Speaking World  Credit Hours:  3
An introduction to principal social, artistic, and literary aspect of modern culture in the Arabic-speaking world. Taught in English.
ARBC1110 Elementary Arabic I
An introduction to Arabic Language and culture through listening, speaking, reading and writing. Laboratory practice required.

ARBC1120 Elementary Arabic II
An introduction to Arabic language and culture through listening, speaking, reading and writing. Laboratory practice required.

Prerequisites: ARBC 1110 FOR LEVEL UG WITH MIN. GRADE OF D-

ARBC2140 Intermediate Arabic I
Further practice of the four language skills with grammar building and readings of a literary-cultural nature.

Prerequisites: ARBC 1120 FOR LEVEL UG WITH MIN. GRADE OF D-

ARBC2150 Intermediate Arabic II
Further practice of the four language skills with grammar building and readings of a literary-cultural nature.

Prerequisites: ARBC 2140 FOR LEVEL UG WITH MIN. GRADE OF D-

ARBC3010 Conversation and Composition I
Work on advanced listening, speaking, reading, and writing skills through intensive work with authentic texts that deal contemporary issues relating to the Arabic-speaking world.

Prerequisites: ARBC 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

ARBC3020 Conversation and Composition II
Work on advanced listening, speaking, reading, and writing skills through intensive work with authentic texts that deal contemporary issues relating to the Arabic-speaking world.

ARCT1200 Architectural Cadd
Computer Aided Design and Drafting (CADD) terminologies, concepts, strategies for three-dimensional drawings and presentations. Hands-on computer activities and experiences.

Prerequisites: CET 1100 FOR LEVEL UG WITH MIN. GRADE OF D-
ARCT1250  Building Codes  Credit Hours:  3
An introduction to various codes regulating the construction of a building, code history, their purpose and how organized zoning and other codes are studied.
Prerequisites:(CET 1100 FOR LEVEL UG WITH MIN. GRADE OF D- AND CET 1150 FOR LEVEL UG WITH MIN. GRADE OF D-)

ARCT1260  Construction Estimating  Credit Hours:  3
Fundamentals, concepts and strategies used in the process of construction cost estimating. Organization of materials, labor and construction methods are experienced; other information is collected, organized and utilized.
Prerequisites:(CET 1100 FOR LEVEL UG WITH MIN. GRADE OF D- AND CET 1150 FOR LEVEL UG WITH MIN. GRADE OF D-)

ARCT2100  Advanced Architectural Documents  Credit Hours:  4
Strategies, planning, preparation of working drawings of a construction project. Research and organization required to produce complete contract documents. Code searching, preliminary construction specifications and cost estimating; drafting board metho
Prerequisites:(CET 1100 FOR LEVEL UG WITH MIN. GRADE OF D- AND CET 1150 FOR LEVEL UG WITH MIN. GRADE OF D-)

ARCT2160  Contracts And Specifications  Credit Hours:  3
Prerequisites:(CET 1100 FOR LEVEL UG WITH MIN. GRADE OF D- AND CET 1150 FOR LEVEL UG WITH MIN. GRADE OF D-)

ARCT2210  Advanced Cadd  Credit Hours:  4
Fundamental computer concepts and operating systems, applications of computer generated graphics, Computer Aided Design and Drafting (CADD) systems, CADD terminologies, concepts, strategies for two-dimensional drawings, hands-on computer activities and ex
Prerequisites:ARCT 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

ARCT2220  Architectural Design Techniques  Credit Hours:  4
The techniques employed in the development of the design and presentation phases of architectural projects, client involvement, including project programs, space requirements and relationships, drafting board and CADD techniques are available.

ARCT2250  Building Systems  Credit Hours:  3
An introduction to building systems and equipment technologies and their capabilities. Fundamentals of designing and sizing the building systems.
Prerequisites:(CET 1100 FOR LEVEL UG WITH MIN. GRADE OF D- AND CET 1150 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 1320 FOR LEVEL UG WITH MIN. GRADE OF D-)

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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ARCT2980</td>
<td>Special Topics</td>
<td>1-4</td>
</tr>
<tr>
<td>ARS1000</td>
<td>Orientation</td>
<td>1</td>
</tr>
<tr>
<td>ARS2980</td>
<td>Issues in Research and Scholarship</td>
<td>1</td>
</tr>
<tr>
<td>ART1080</td>
<td>Foundations Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ART1990</td>
<td>Special Topics in Art</td>
<td>3</td>
</tr>
<tr>
<td>ART1ELC</td>
<td>Art Elective-Ceramics</td>
<td>0-5</td>
</tr>
<tr>
<td>ART1ELD</td>
<td>Art Elective-Drawing</td>
<td>0-5</td>
</tr>
</tbody>
</table>

Student performs work on a specialized project of an advanced nature under the supervision of an Architectural Technology faculty member.

Course will introduce new students to the University and college, provide information on requirements, regulations, campus resources and career exploration and help students develop academic skills.

Seminar series addressing various issues that can arise in research, scholarship, and creative activities, including: safe laboratory practices, regulatory compliance issues, and ethics issues.

Various approaches to drawing and disciplines intended to develop skills, perception, visual acuity and awareness. Introduction to a broad range of objective subject matter and a variety of graphic media.

Group study in studio topics by various instructors.
<table>
<thead>
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<tbody>
<tr>
<td>ART1ELM</td>
<td>Art Elective-Metals</td>
<td>0-5</td>
</tr>
<tr>
<td>ART1ELN</td>
<td>Art Elective-New Media</td>
<td>0-5</td>
</tr>
<tr>
<td>ART1ELP</td>
<td>Art Elective-Painting</td>
<td>0-5</td>
</tr>
<tr>
<td>ART1ELS</td>
<td>Art Elective-Sculpture</td>
<td>0-5</td>
</tr>
<tr>
<td>ART1ELT</td>
<td>Art Elective-Print Making</td>
<td>0-5</td>
</tr>
<tr>
<td>ART1ELX</td>
<td>Art Elective-Other Studio</td>
<td>0-5</td>
</tr>
<tr>
<td>ART2050</td>
<td>Foundations 2d Design</td>
<td>3</td>
</tr>
</tbody>
</table>

This course develops the understanding of basic studio art principles, critiquing skills and media manipulation. Topics addressed include color theory and formal and conceptual elements of manipulating two dimensional space. May be taken concurrently with
ART2060  Foundations 3D Design  Credit Hours: 3
This course develops the understanding of basic studio art principles, critiquing skills and media manipulation in the context of studying the formal and conceptual elements of manipulating three dimensional space. May be taken concurrently with ART 2050

ART2080  Drawing II  Credit Hours: 3
Dimensional, perspective and volumetric drawing applied to natural, man-made forms, environment and the figure. Emphasis on rendering techniques, skills and exploration of media integrated with design elements and formal compositional.

Prerequisites: ART 1080 FOR LEVEL UG WITH MIN. GRADE OF D-

ART2150  Digital Art I: Print Media  Credit Hours: 3
This course covers basic computer operations in an art context, utilizing bitmap, vector and page layout programs.

Prerequisites: (ART 2050 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2060 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART2160  Art II: Interactive Media  Credit Hours: 3
Survey of interactive computer operations in an art context utilizing web, 2D animation and sound applications.

Prerequisites: ART 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

ART2230  Aspects Of Printmaking  Credit Hours: 3
Study of basic print materials and media, including relief, monoprint, Planographic and intaglio process and development of sound general print shop skills and safe practices. This course will impart an understanding of the language of the prints as a ba

Prerequisites: (ART 2050 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2080 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 1080 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART2330  Oil Painting  Credit Hours: 3
Introduction to painting materials and their functions, emphasis oil color. The construction and design of paintings and investigations into the character and actions of paint upon a variety of surfaces.

Prerequisites: (ART 2050 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2060 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2080 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART2430  Foundations Of Sculpture  Credit Hours: 3
An exploration of the application of traditional methods of sculpture making to additive, subtractive, Constructive and replicative processes with clay, plaster, wood, stone and metal. Formal and expressive content addressed.

Prerequisites: (ART 2050 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2060 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2080 FOR LEVEL UG WITH MIN. GRADE OF D-)
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ART2530</td>
<td>Ceramics I</td>
<td>3</td>
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<tr>
<td></td>
<td>Basic ceramic techniques explored. Introduction to hand-building, simple mold techniques and the potter's wheel. Basic glaze and clay body formulation and firing procedures.</td>
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<td>Prerequisites: (ART 2050 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2060 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
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<tr>
<td>ART2730</td>
<td>Metalsmithing I</td>
<td>3</td>
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<tr>
<td></td>
<td>Introduction to basic metalsmithing with emphasis on the technique of fabrication, soldering, casting and simple raising and the use of appropriate tools.</td>
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<td>Prerequisites: (ART 2050 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2060 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
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<tr>
<td>ART2810</td>
<td>Art Photography</td>
<td>3</td>
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<tr>
<td></td>
<td>An introduction to photography as a fine art medium; includes camera operations, the use and handling of color films, film processing, printing, presentation techniques, historic and contemporary photographers.</td>
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<td>Prerequisites: (ART 2050 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2060 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
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<tr>
<td>ART2990</td>
<td>Special Topics in Art</td>
<td>3</td>
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<tr>
<td></td>
<td>Group study in studio topics by various instructors. Prerequisite: Varies, permission of instructor.</td>
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<tr>
<td>ART2ELC</td>
<td>Art Elective-Ceramics</td>
<td>0-5</td>
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<tr>
<td>ART2ELD</td>
<td>Art Elective-Drawing</td>
<td>0-5</td>
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<tr>
<td>ART2ELM</td>
<td>Art Elective-Metals</td>
<td>0-5</td>
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<tr>
<th>Course Code</th>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>ART2ELN</td>
<td>Art Elective-New Media</td>
<td>0-5</td>
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<tr>
<td>ART2ELP</td>
<td>Art Elective-Painting</td>
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<tr>
<td>ART2ELS</td>
<td>Art Elective-Sculpture</td>
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<tr>
<td>ART2ELT</td>
<td>Art Elective-Print Making</td>
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<tr>
<td>ART2ELX</td>
<td>Art Elective-Other Studio</td>
<td>0-5</td>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ART3060</td>
<td>Installation: Art Of Place</td>
<td>3</td>
<td>Study of altering a defined physical and psychological space as an art medium. Includes a study of the history of installations. Prerequisites:(ART 1080 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2050 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2060 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2080 FOR LEVEL UG WITH MIN. GRADE OF D- AND ARTH 2080 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
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<tr>
<td>ART3070</td>
<td>Mixed Media</td>
<td>3</td>
<td>Traditional mixed media approaches as well as experimental and environmental art forms, light and motion, happenings and events. Prerequisites:(ART 1080 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2050 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2060 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
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</tbody>
</table>
ART3080  Drawing III: Life Drawing/Anatomy  Credit Hours:  4
Intensive study of the undraped human figure with emphasis on internal anatomical structure, dynamics and design; form rendering in linear media interpretation of old master and contemporary figurative drawing.
Prerequisites:(ART 2050 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2060 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2080 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART3090  Drawing IV: Life Drawing  Credit Hours:  3
Continued study of the structural human figure integrated into situational light and environment. Instrumentation of varied media; construction and articulation of form with emphasis on space, pictorial elements and design.
Prerequisites:ART 3080 FOR LEVEL UG WITH MIN. GRADE OF D-

ART3150  Digital Photography  Credit Hours:  3
Exploration of digitally created and manipulated photographic imagery from conception to print.
Prerequisites:(ART 2150 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2810 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART3160  Digital Drawing  Credit Hours:  3
Advanced studies in drawing and painting on the computer and the exploration of traditional and experimental output methods.
Prerequisites:(ART 1080 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2150 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART3170  Web-Based Art  Credit Hours:  3
The creation of web pages as artworks. In addition to conceptual development and building a visual vocabulary, students learn technical skills, including HTML, JavaScript and the use of web authoring software.
Prerequisites:ART 2160 FOR LEVEL UG WITH MIN. GRADE OF D-

ART3260  Etching  Credit Hours:  3
Approaches to an understanding of etching and intaglio processes. Study a wide range of materials and methods, including color printing. Critiques of content and technical skills will be essential.
Prerequisites:(ART 1080 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2050 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2080 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2230 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART3270  Lithography  Credit Hours:  3
Study of lithography and Planographic processes as they relate to fine art. Study of stone, plate and photo-lithography. Critiques of content and technical skills will be essential.
Prerequisites:(ART 1080 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2050 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2080 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2230 FOR LEVEL UG WITH MIN. GRADE OF D-)
ART3380 Acrylic Painting  
Introduction to painting materials and their functions, emphasis acrylic color. The construction and design of paintings and investigations into character and actions of paint in a variety of pictorial problems.
Prerequisites:(ART 2050 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2060 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2080 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART3460 Additive Sculpture  
The application of additive processes using clay, plaster, wax to manipulate form and space using human, natural and built form as reference. Formal and expressive content addressed in historical context.
Prerequisites:(ART 1080 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2060 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2430 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART3470 Subtractive Sculpture  
The application of subtractive processes using natural and laminated wood and cast and natural stone to manipulate form and space. Formal and expressive content in historical context is addressed.
Prerequisites:(ART 1080 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2060 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2430 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART3570 Ceramics II  
Discipline problems relating to the wheel and handbuilding techniques. Individual responsibility involving the whole ceramic process. Introduction to ceramic materials and how they function in glazes and clay. Suggested readings.
Prerequisites:(ART 1080 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2530 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART3710 Visual Language  
WAC studio/lecture course utilizing The Toledo Museum of Art collection. Emphasizes aspects of visual language, writing origins, letterforms, artists' books, medieval manuscripts, collaborations, journals, sketchbooks, writing about visual art, concrete p

ART3760 Metalsmithing II  
Continued exploration of basic techniques and new problems in forging. (ferrous and non-ferrous metals), fabrication and surface decoration to advance technical skills and creative problem solving.
Prerequisites:(ART 1080 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2730 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART3770 Metalsmithing III  
Introduction to basic iron working, making tools, building forges and unit construction for larger pieces, techniques in enameling/continued study with alternative techniques and materials.
Prerequisites:ART 3760 FOR LEVEL UG WITH MIN. GRADE OF D-
ART3860 Intermediate Photography  Credit Hours: 3
Black and white photography for fine art applications, intermediate camera and darkroom techniques, exposure and lighting for b&w, film processing and printing, historic and contemporary photographers.

Prerequisites: (ART 1080 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2810 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART3870 Advanced Photography  Credit Hours: 3
Use of large format cameras, studio lighting and advanced darkroom techniques for fine art applications.

Prerequisites: ART 3860 FOR LEVEL UG WITH MIN. GRADE OF D-

ART3990 Special Topics in Art  Credit Hours: 3
Group study in studio topics by various instructors. Prerequisite: Varies, permission of instructor.

ART3ELC Art Elective-Ceramics  Credit Hours: 0-5

ART3ELD Art Elective-Drawing  Credit Hours: 0-5

ART3ELM Art Elective-Metals  Credit Hours: 0-5

ART3ELN Art Elective-New Media  Credit Hours: 0-5
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<th>Course Code</th>
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<td>ART3ELP</td>
<td>Art Elective-Painting</td>
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<td>ART3ELS</td>
<td>Art Elective-Sculpture</td>
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<td>Art Elective-Print Making</td>
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<td>ART3ELX</td>
<td>Art Elective-Other Studio</td>
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<tr>
<td>ART4080</td>
<td>Drawing V</td>
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<td></td>
<td>Interpretive and analytical</td>
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<td>drawing. Experimentation with</td>
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<td>a broad range of materials</td>
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<td>and techniques and in</td>
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<td>reconceptualizing form and</td>
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<td>composition. Assimilated</td>
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<td>form, abstraction, fantasy</td>
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<td>and memory drawing</td>
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<tbody>
<tr>
<td>ART4090</td>
<td>Drawing Vi</td>
<td>3</td>
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<td>Advanced drawing, emphasizing</td>
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<td>interpretive and conceptual</td>
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<td>approaches. Refinement of</td>
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<td>discoveries and transformation</td>
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<td>into more personal imagery.</td>
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<td>Further expansion of visual</td>
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<td>vocabulary, cumulative skills</td>
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<td>and control of media.</td>
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<tbody>
<tr>
<td>ART4240</td>
<td>Screenprinting</td>
<td>3</td>
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<tr>
<td></td>
<td>Study of screenprinting</td>
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<td>(serigraphy) as a fine arts</td>
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<td>process, including digital</td>
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<td>imaging. Critiques of content</td>
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<td>and technical skills will be</td>
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<td>essential.</td>
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<td>D- AND ART 2050 FOR LEVEL UG</td>
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</tbody>
</table>
ART4310  3d Rendering And Modeling  
Credit Hours:  3
Creation and animation of 3D imagery on the computer.

Prerequisites:(ART 1080 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2150 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2160 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART4320  Interactive Multi-Media  
Credit Hours:  3
Study of combining still imagery, animation, video and sound in an interactive computer format.

Prerequisites:(ART 2160 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 3150 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART4330  Intermediate Painting  
Credit Hours:  3
Continued focus on the development of technical skills and the solution of pictorial problems, with attention to individual creative solutions.

Prerequisites:(ART 2330 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 3380 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART4340  Time-Based Digital Media  
Credit Hours:  3

Prerequisites:(ART 2160 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 3150 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART4350  Mixed Media  
Credit Hours:  3
Contemporary painting approaches, emphasis on guided experimentation with a wide range of mixed materials. Advancing from technical proficiency toward the development of individual conceptual goals relative to painting.

Prerequisites:(ART 2330 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 3380 FOR LEVEL UG WITH MIN. GRADE OF D-)

ART4410  Advanced Topics In Digital Art  
Credit Hours:  3
Special topics in Cyber art. May be repeated when topic varies.

ART4430  Sculpture Casting & Fabrication  
Credit Hours:  3
An exploration of the application of metal casting and welding producing traditional and non-traditional sculpture. Formal and expressive content in sculpture is addressed.

Prerequisites:(ART 2050 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2060 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 1080 FOR LEVEL UG WITH MIN. GRADE OF D- AND ART 2430 FOR LEVEL UG WITH MIN. GRADE OF D-)
ART4540 Ceramics III  Credit Hours: 3
Larger wheel forms explored from the cylinder. Special hand building projects explored. Special firing techniques explored. Active student involvement in all phases of studio function and operation.

Prerequisites: ART 3570 FOR LEVEL UG WITH MIN. GRADE OF D-

ART4550 Ceramics IV  Credit Hours: 3
Student concentration into special studio problems. Development of style and direction. The bottle form explored on the potter's wheel. Slip casting techniques explored. Active student involvement in all phases of studio function and operation.

Prerequisites: ART 4540 FOR LEVEL UG WITH MIN. GRADE OF D-

ART4730 Metalsmithing IV  Credit Hours: 3
Problems with advanced hollowware, Masonite die process and T Stake raising. Fabrication of hollowware surface treatment, i.e., sandblasting, reticulation, coloring.

Prerequisites: ART 3770 FOR LEVEL UG WITH MIN. GRADE OF D-

ART4810 Photo Topics  Credit Hours: 3
Varying studio topics in fine art photography including documentary photography, alternative processes, advanced projects, the body and the lens, studio lighting. May be repeated under differing course titles. Advanced Projects may be repeated.

Prerequisites: ART 3860 FOR LEVEL UG WITH MIN. GRADE OF D-

ART4850 Professional Practices  Credit Hours: 3
Professional skills course for advanced art. Topics include portfolios, resumes, taxes, contracts shipping, documenting artwork, artists' statements, exhibitions/competitions, galleries, artists' talks and more.

ART4910 Independent Study  Credit Hours: 1-6
Individual study into special studio problems. Weekly critiques. Every semester. Time arranged.

ART4920 Independent Study II  Credit Hours: 1-6
Individual study into special studio problems. Weekly critiques. Every semester. Time arranged.
ART4930  Independent Study III  Credit Hours: 1-6
Individual study into special studio problems. Weekly critiques. Every semester. Time arranged.

ART4940  Internship  Credit Hours: 1-4
Student works in professional venue related to a diversity of art fields or endeavors. May be repeated for a maximum of 8 credit hours.

ART4990  Special Studies  Credit Hours: 1-6
Group study in studio topics by various instructors. May be repeated when the topic varies.

ART4ELC  Art Elective-Ceramics  Credit Hours: 0-5

ART4ELD  Art Elective-Drawing  Credit Hours: 0-5

ART4ELM  Art Elective-Metals  Credit Hours: 0-5

ART4ELN  Art Elective-New Media  Credit Hours: 0-5
ART4ELP  Art Elective-Painting  Credit Hours:  0-5

ART4ELS  Art Elective-Sculpture  Credit Hours:  0-5

ART4ELT  Art Elective-Print Making  Credit Hours:  0-5

ART4ELX  Art Elective-Other Studio  Credit Hours:  0-5

ARTH1500  Art In History  Credit Hours:  3
Introduction to the aesthetic, cultural and social interpretation of works of art and architecture, and to the historical relationships of artists, patrons and audiences in art's production and purposes. (Not for major credit in Art History, Studio Art o

ARTH1510  Issues In Art History  Credit Hours:  1
Optional discussion section with limited and voluntary enrollment; focus on the Museum collections.

Corequisite: ARTH

ARTH2000  Aspects Of Ancient Art  Credit Hours:  3
Study of art and architecture from prehistoric Europe through the Roman Empire; emphasis on the interpretation of representative works from Egypt, Greece and Rome.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>ARTH2001</td>
<td>History of Western Art I</td>
<td>3</td>
<td>Introduces students to major styles of western art from prehistoric to early Renaissance. Students will learn to analyze art in terms of formal, cultural, historical, and iconographic contexts.</td>
</tr>
<tr>
<td>ARTH2003</td>
<td>History of Western Art II</td>
<td>3</td>
<td>Introduces students to major styles of western art from the Renaissance through the modern era. Students will learn to analyze art in terms of formal, cultural, historical, and iconographic contexts.</td>
</tr>
<tr>
<td>ARTH2020</td>
<td>Aspects Of Medieval Art</td>
<td>3</td>
<td>Study of art and architecture from the late Roman Empire through the age of the Gothic Cathedral; emphasis on representative examples of Late Antique, Early Medieval, Romanesque and Gothic art.</td>
</tr>
<tr>
<td>ARTH2030</td>
<td>Issues In Medieval Art</td>
<td>1</td>
<td>Optional discussion section with limited and voluntary enrollment; focus on the Museum collections in medieval art.</td>
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<td>Corequisite: ARTH 2020</td>
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<tr>
<td>ARTH2040</td>
<td>History of Renaissance And Baroque Art</td>
<td>3</td>
<td>An introductory survey emphasizing European painting and sculpture from circa 1300 to 1700.</td>
</tr>
<tr>
<td>ARTH2080</td>
<td>History Of Modern Art</td>
<td>3</td>
<td>European and American art 1700-1940, from the Rococo through Romanticism, Impressionism, Expressionism, Cubism, Dada, and Surrealism.</td>
</tr>
<tr>
<td>ARTH2090</td>
<td>Issues In Modern Art</td>
<td>1</td>
<td>Optional discussion section with limited voluntary enrollment focusing on the collections of The Toledo Museum of Art. Must be taken simultaneously with ARTH 2080, History of Modern Art.</td>
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<td>Corequisite: ARTH 2080</td>
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<tr>
<td>ARTH2100</td>
<td>Asian Art</td>
<td>3</td>
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<td>An introduction to the architecture, painting and sculpture of India, China and Japan and their relationship to the major religions and philosophies of each culture.</td>
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<td>ARTH2200</td>
<td>Ethnographic Art</td>
<td>3</td>
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<td>Contextual exploration of traditional art forms in the principle cultures of the Americas, Africa and Oceania.</td>
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<tr>
<td>ARTH2300</td>
<td>Introduction To Architecture</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Study of architectural design (function, materials, structure, aesthetics and symbolism), with focus on significant historical examples from antiquity through the late 20th century.</td>
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<tr>
<td>ARTH2500</td>
<td>Art Since 1940</td>
<td>3</td>
<td></td>
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<tr>
<td></td>
<td>An introductory survey of art from 1940 till the present, that relates recent art makers and movements to critical, cultural, and social issues.</td>
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<tr>
<td>ARTH2700</td>
<td>Women Artists In History</td>
<td>3</td>
<td></td>
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<tr>
<td></td>
<td>An introductory survey of women artists from the Middle Ages to the present with consideration of their position in the formation of history's canon.</td>
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<tr>
<td>ARTH2980</td>
<td>Special Topics</td>
<td>1-3</td>
<td></td>
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<tr>
<td></td>
<td>Topics in art history selected by instructor; may be repeated when topic varies.</td>
<td></td>
<td></td>
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<tr>
<td>ARTH3110</td>
<td>Topics In Ancient Art</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Special topics in the history of the art or architecture of the ancient world; may be repeated when topic varies.</td>
<td></td>
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</tr>
</tbody>
</table>
### Course Descriptions 2009-2010

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH3130</td>
<td>Topics In Medieval Art</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Special topics in the history of western art or architecture from 200 to 1500 A.D.; may be repeated when topic varies.</td>
<td></td>
</tr>
<tr>
<td>ARTH3150</td>
<td>Topics In Renaissance Art</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Special topics in the history of Renaissance art or architecture; may be repeated when topic varies.</td>
<td></td>
</tr>
<tr>
<td>ARTH3190</td>
<td>Topics In 19th-Century Art</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Special topics in the history of 19th-Century art. May be repeated when topic varies.</td>
<td></td>
</tr>
<tr>
<td>ARTH3210</td>
<td>Topics In 20th-Century Art</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Special topics in the history of 20th-Century art. May be repeated when topic varies.</td>
<td></td>
</tr>
<tr>
<td>ARTH3230</td>
<td>Topics In American Art</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Special topics in the history of American art and architecture. May be repeated when topic varies.</td>
<td></td>
</tr>
<tr>
<td>ARTH3250</td>
<td>Topics In Asian Art</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Special topics in the history of Asian art or architecture; may be repeated when topic varies.</td>
<td></td>
</tr>
<tr>
<td>ARTH3270</td>
<td>Topics In Ethnographic Art</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Special topics in the history of ethnographic art of Africa, Oceania or the Americas; may be repeated when topic varies.</td>
<td></td>
</tr>
</tbody>
</table>
ARTH3290  Topics In Architecture  Credit Hours: 3
Special topics in the history of architecture; may be repeated when topic varies.

ARTH3300  African Art  Credit Hours: 3
Study of the diversity of African art. The course will emphasize region and style with focus upon the collections of African Art in the Toledo Museum of Art.

ARTH3350  Ancient Art Of The Americas  Credit Hours: 3
Ancient Art of the Americas is a course which will focus on the artifacts produced by the indigenous populations of the Americas before the arrival of Columbus in the New World.

ARTH3500  History Of Photography  Credit Hours: 3
An in-depth study of the history of photography.

ARTH3600  History Of New Media  Credit Hours: 3
This course explores the development of technology as an art medium with a focus on significant historical examples from the 19th through the 21st centuries.

Prerequisites: ARTH 2000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ARTH 2020 FOR LEVEL UG WITH MIN. GRADE OF D- OR ARTH 2040 FOR LEVEL UG WITH MIN. GRADE OF D-

ARTH3750  Art and Disease - WAC  Credit Hours: 3
We will consider how objects of material culture (film, photography, painting, sculpture, etc.) have intersected with disease while we engage a series of disease-related texts and histories of contagions (e.g., AIDS).

ARTH3820  Visual Construction Of Gender  Credit Hours: 3
WAC course. This course focuses on how images reflect and shape our understanding of gender. Students learn to analyze visual material to identify and articulate their cultural significance in relation to gender.

Prerequisites: ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1170 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1180 FOR LEVEL UG WITH MIN. GRADE OF D- OR
ARTH3980  Special Studies  Credit Hours:  3-5
Topics in Art History selected by the instructor. May be repeated when topic varies. (Check course schedules for specific subjects.)

ARTH4500  Contemporary Art And Theory  Credit Hours:  3
A WAC course offering study of twentieth-century critical theory in relation to contemporary art makers and social issues, with a consideration of modernist versus postmodernist eras.

ARTH4910  Senior Thesis I  Credit Hours:  2
Directed research in the history of art for the Senior Thesis. May only be taken with consent of instructor; see department for application form. Must be taken consecutively with ARTH 4920, Senior Thesis II.

ARTH4920  Senior Thesis II  Credit Hours:  2
Writing the Senior Thesis. May only be taken after successful completion of ARTH 4910, Senior Thesis I and with instructor's consent. See Department for application form.

Prerequisites: ARTH 4910 FOR LEVEL UG WITH MIN. GRADE OF D-

ARTH4940  Internship  Credit Hours:  1-4
Student works in professional venue related to a diversity of art fields or endeavors. May be repeated for a maximum of 8 credit hours.

ARTH4980  Special Topics  Credit Hours:  1-5
Topics in Art History selected by instructor; may be repeated when topic varies.

ARTH4990  Independent Study In Art History  Credit Hours:  1-4
Independent Study in special problems of art history. May be repeated when topic varies.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR1010</td>
<td>Survey Of Astronomy</td>
<td>3</td>
<td>Not for major credit; not open to science majors; no credit after 2010, 2020. General astronomy, including appearance of the sky and nature and evolution of the Earth, Moon, solar system, stars, galaxies and the Universe.</td>
</tr>
<tr>
<td>ASTR2010</td>
<td>Solar System Astronomy</td>
<td>3</td>
<td>A quantitative introduction to the contents, origin and evolution of the solar system, as revealed by recent advances in space exploration. High school mathematics at the level of graphs, algebra and elementary logarithms is required.</td>
</tr>
<tr>
<td>ASTR2020</td>
<td>Stars, Galaxies, And The Universe</td>
<td>3</td>
<td>A quantitative introduction to the nature and evolution of stars, galaxies and the universe, as revealed by observation and physical theory. High school mathematics at the level of graphs, algebra and elementary logarithms is required.</td>
</tr>
<tr>
<td>ASTR2050</td>
<td>Elementary Astronomy Laboratory</td>
<td>1</td>
<td>Laboratory exercises and observational measurements in elementary astronomy. Two hours laboratory per week. (not for major credit)</td>
</tr>
<tr>
<td>ASTR2310</td>
<td>Mars</td>
<td>3</td>
<td>The history of observations of Mars, information gathered during the space program, potential for human exploration and colonization and related contemporary science fiction. High school algebra and graphs will be used.</td>
</tr>
<tr>
<td>ASTR2320</td>
<td>Life In The Universe</td>
<td>3</td>
<td>The astronomical factors involved in the emergence of life in the universe, the search for extraterrestrial intelligence and the likelihood of advanced civilizations in the Galaxy. May be offered as writing intensive.</td>
</tr>
<tr>
<td>ASTR2330</td>
<td>Black Holes, General Relativity And The Big Bang Theory</td>
<td>3</td>
<td>Descriptive discussion of the theory of general relativity, the final states of stellar evolution, black holes and history of the universe from the big bang through the formation of the solar system. May be offered as writing intensive.</td>
</tr>
</tbody>
</table>
ASTR2340  New Frontiers In Astronomy  Credit Hours:  3
Descriptive treatment of recent developments in astronomy from spacecraft, such as the Hubble Space Telescope, or from the newest, very large ground based telescopes. May be offered as a writing intensive.
Prerequisites: ASTR 1010 FOR LEVEL UG WITH MIN. GRADE OF D- OR ASTR 2010 FOR LEVEL UG WITH MIN. GRADE OF D- OR ASTR 2020 FOR LEVEL UG WITH MIN. GRADE OF D-

ASTR4800  Astronomy In The Planetarium  Credit Hours:  3
Theory and practice of astronomical outreach programming. Sky and calendar, mythology, constellations, astrophysics, buying and using small telescopes, operating and maintaining planetarium projectors, sky simulation software, projects and program product
Prerequisites: ASTR 1010 FOR LEVEL UG WITH MIN. GRADE OF D- OR ASTR 2010 FOR LEVEL UG WITH MIN. GRADE OF D- OR ASTR 2020 FOR LEVEL UG WITH MIN. GRADE OF D-

ASTR4810  Astronomy For Science Majors I  Credit Hours:  3
Spherical coordinate systems, astronomical time, celestial mechanics, the solar system and planetary physics, photometry, radiative transfer, stellar spectra and classification, binary stars and stellar masses.
Prerequisites: PHYS 3070 FOR LEVEL UG WITH MIN. GRADE OF D- OR PHYS 3320 FOR LEVEL UG WITH MIN. GRADE OF D-

ASTR4820  Astronomy For Science Majors II  Credit Hours:  3
Stellar structure and evolution, close binaries, origin of the elements, the sun, variable stars, star clusters, the interstellar medium, the Milky Way Galaxy, stellar statistics, galaxy structure and evolution, cosmology.
Prerequisites: ASTR 4810 FOR LEVEL UG WITH MIN. GRADE OF D-

ASTR4880  Astrophysical Measurements  Credit Hours:  3
Astronomical, optical and electronic principles of operation of a modern astronomical observatory. Observing with the 1 meter telescope of Ritter Observatory, introduction to reduction, analysis and interpretation of astrophysical data. Six hours labora
Prerequisites: (ASTR 2010 FOR LEVEL UG WITH MIN. GRADE OF D- AND ASTR 2020 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 2080 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (ASTR 2010 FOR LEVEL UG WITH MIN. GRADE OF D- AND ASTR 2020 FOR LEVEL UG WITH MIN. GRADE OF D-

BANS3060  Managerial Economics  Credit Hours:  3
Applications of economic concepts and analytical techniques to business decisions and operations, including pricing and product management, market segmentation, technological development and the regulatory environment.
Prerequisites: (ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D-) OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-

BANS3070  Business Fluctuations And Outlooks  Credit Hours:  3
Course focuses on the dynamics of business cycles and economic processes, and how they relate to business. Economic outlooks are examined through key indicators, cases, statistical analyses, and computer applications.
Prerequisites: (ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D-) OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BANS5210</td>
<td>Economics For Business Decisions</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>An examination of the basic economic concepts and techniques used in business decision-making. The course covers micro- and macro-economic theories, history and evolution of economic institutions, ethical questions, and economic applications to business decisions.</td>
<td></td>
</tr>
<tr>
<td>BANS6050</td>
<td>Health Care Economics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Health care national policy, third party payment systems, capital formation, delivery systems, health care budgeting and macro economic health issues are examined.</td>
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<tr>
<td></td>
<td>Prerequisites: ACCT 5000 FOR LEVEL GR WITH MIN. GRADE OF D- OR BANS 5210 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
<td></td>
</tr>
<tr>
<td>BANS6310</td>
<td>Business Forecasting</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Study and use of forecasting models, managing and monitoring the forecasting function and communicating forecasts to management.</td>
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<tr>
<td></td>
<td>Prerequisites: (BANS 5210 FOR LEVEL GR WITH MIN. GRADE OF D- AND OPMT 5510 FOR LEVEL GR WITH MIN. GRADE OF D-)</td>
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</tr>
<tr>
<td>BANS6520</td>
<td>Managerial Economics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Economic concepts and technique applied to company-level decision making. Focus on demand analysis, applied regression analysis and the interface between economies and human resource management, production, marketing and finance.</td>
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<tr>
<td></td>
<td>Prerequisites: (BANS 5210 FOR LEVEL GR WITH MIN. GRADE OF D- AND OPMT 5510 FOR LEVEL GR WITH MIN. GRADE OF D-)</td>
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<tr>
<td>BANS6740</td>
<td>Business Conditions Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Course develops a framework for measuring, tracking and forecasting national, regional and international business conditions. Focus is on how external economic conditions in the world economy influence business decisions.</td>
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<tr>
<td></td>
<td>Prerequisites: (BANS 5210 FOR LEVEL GR WITH MIN. GRADE OF D- AND OPMT 5510 FOR LEVEL GR WITH MIN. GRADE OF D-)</td>
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</tr>
<tr>
<td>BANS7210</td>
<td>Economics For Business Decisions</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>An examination of the basic economic concepts and techniques used in business decision-making. The course covers micro- and macro-economic theories, history and evolution of economic institutions, ethical questions and economic applications to business decisions.</td>
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</tr>
<tr>
<td>BGSU1000</td>
<td>BGSU Concurrent - Undergrad</td>
<td>1-19</td>
</tr>
</tbody>
</table>
BGSU5000  BGSU Concurrent - Grad

BIOC521  Recom DNA Meth

BIOC603  Genes and Biology of Cancer

BIOC611  Mechanisms of Enzyme Action
An introduction to enzymatic catalysis, analysis of initial rate kinetics, presteady state kinetics, cooperativity and allostery and affinity labeling.

BIOC630  Genes and Biology of Cancer

BIOC651  Seminar in Biochemistry

BIOC655  Jnl Paper Review Biochemistry
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC656</td>
<td>Readings in Biochemistry</td>
<td>0-2</td>
</tr>
<tr>
<td>BIOC673</td>
<td>Research in Biochemistry</td>
<td>0-15</td>
</tr>
<tr>
<td>BIOC689</td>
<td>Independent Study Biochemistry</td>
<td>0-12</td>
</tr>
<tr>
<td>BIOC703</td>
<td>Cellular and MBD Prob Solving</td>
<td>3</td>
</tr>
<tr>
<td>BIOC721</td>
<td>Recom DNA Meth</td>
<td>1</td>
</tr>
<tr>
<td>BIOC811</td>
<td>Mechanisms of Enzyme Action</td>
<td>3</td>
</tr>
<tr>
<td>BIOC830</td>
<td>Genes and Biology of Cancer</td>
<td>1</td>
</tr>
</tbody>
</table>

Students will participate in selected on-going research programs of members of the department faculty. May be repeated for credit.

Intensive study in field of interest, including theoretical and experimental work. May be repeated for credit.

An introduction to enzymatic catalysis, analysis of initial rate kinetics, presteady state kinetics, cooperativity and allostery and affinity labeling.

Group discussion of journal articles on topics on the cutting edge of cancer research.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC851</td>
<td>Seminar in Biochemistry</td>
<td>1</td>
</tr>
<tr>
<td>BIOC855</td>
<td>Jnl Paper Review Biochemistry</td>
<td>1</td>
</tr>
<tr>
<td>BIOC856</td>
<td>Readings in Biochemistry</td>
<td>0-2</td>
</tr>
<tr>
<td>BIOC872</td>
<td>Current Topics in Biochemistry</td>
<td>0-4</td>
</tr>
<tr>
<td>BIOC873</td>
<td>Research in Biochemistry</td>
<td>0-15</td>
</tr>
<tr>
<td>BIOC889</td>
<td>Independent Study Biochemistry</td>
<td>0-12</td>
</tr>
<tr>
<td>BIOE1000</td>
<td>Orientation And Introduction To Bioengineering</td>
<td>3</td>
</tr>
</tbody>
</table>

Students will participate in selected on-going research programs of members of the department faculty. May be repeated for credit.
BIOE1010  Professional Development  Credit Hours: 1
Preparation for co-op and full-time employment in industry. Topics include resume writing, interviewing skills, compensation and benefits, social protocol and corporate ethics, biomedical ethics, design and quality control processes and governmental regul

BIOE1200  Computer Applications For Bioengineering  Credit Hours: 3
Introduction to the use of graphical design and numerical analysis software required for the solution of bioengineering problems.

BIOE2100  Bioengineering Thermodynamics  Credit Hours: 3
Principles of thermodynamics and conservation of mass applied to living systems, biomedical devices and bioprocesses.

Prerequisites: (PHYS 2130 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 2850 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (PHYS 2130 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 2950 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOE2200  Biomaterials  Credit Hours: 3
Physical and chemical properties of materials commonly used in medicine. Inflammatory, immunogenic, carcinogenic and toxicologic responses within host tissues. Testing and evaluation strategies for effective use of materials in medicine and biology.

Prerequisites: PHYS 2130 FOR LEVEL UG WITH MIN. GRADE OF D- AND (MATH 1860 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1930 FOR LEVEL UG WITH MIN. GRADE OF D-) AND CHEM 1240 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE3110  Introduction To Biomechanics  Credit Hours: 3
Mechanics of the human musculoskeletal system and its joints. Basic concepts for deformable body mechanics, including stress and strain analysis, viscoelasticity, and applications to common problems in orthopedic biomechanics.

Prerequisites: (CIVE 1150 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 2170 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOE3300  Biomedical Electronics  Credit Hours: 4
Measurement circuits, signal analysis, and computer design in biological systems and medicine. Electronic devices, digital devices, amplifier design and instrumentation safety. Laboratory applies lecture topics to acquisition of biological signals.

Prerequisites: (EECS 2300 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOE 1200 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOE3400  Biotransport Phenomena  Credit Hours: 3
The quantitative description of momentum transport (viscous flow) and mass transport (convection and diffusion) in living systems. Application of engineering methods to model and quantify aspects of bioengineering systems.

Prerequisites: (BIOE 2100 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (BIOE 2100 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3820 FOR LEVEL UG WITH MIN. GRADE OF D-)

Page 58 of 1056
BIOE3500  Bioprocessing Laboratory  Credit Hours:  3
Introduction to processing techniques used in biotechnology industries. The entire process of product development will be covered, including the creation and culture of recombinant organisms to synthesize a protein product, and the extraction, purification.

Prerequisites: (Biol 3030 for Level UG with MIN. GRADE OF D- and Chem 1240 for Level UG with MIN. GRADE OF D-) AND (Math 1860 for Level UG with MIN. GRADE OF D- OR Math 1930 for Level UG with MIN. GRADE OF D-)

BIOE3940  Co-Op Experience  Credit Hours:  1
Approved co-op experience. Course may be repeated.

Prerequisites: BIOE 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE3950  Co-Op Experience  Credit Hours:  1
 Approved co-op work experience beyond third required co-op experience. Course may be repeated.

Prerequisites: BIOE 3940 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE4100  Physiology For Bioengineers  Credit Hours:  3
Review of general physiological principles followed by a comprehensive study of the human nervous, muscle, circulatory, respiratory, excretory and digestive systems from an engineering perspective.

Prerequisites: Biol 3030 FOR LEVEL UG WITH MIN. GRADE OF D- AND Chem 1240 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 2300 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE4110  Advanced Biomechanics  Credit Hours:  3
Three-dimensional analysis and measurements of human body motions. Applications include gait analysis, physical therapies, and impact analysis. Joint Replacement and Fixation Devices, total hip and total knee replacements, elbow, shoulder, wrist and finger.

Prerequisites: (BIOE 3110 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 2300 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOE4120  Biosignal Processing  Credit Hours:  4
Design and application of analog and digital signal processors to biomedical signals. Covered topics include the Laplace transform, analog filter design, continuous and discrete Fourier transform, and FIR/IIR digital filter design.

Prerequisites: (BIOE 3300 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (BIOE 3300 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3820 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOE4200  Biosystems And Control  Credit Hours:  3
Formulating, implementing and simulating mathematical models of biological and bioengineering systems. Linear feedback control systems are emphasized; other models are introduced.

Prerequisites: BIOE 4100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOE 4120 FOR LEVEL UG WITH MIN. GRADE OF D-
BIOE4300  Analysis Of Bioengineering Systems  Credit Hours:  3
Application of modern computing methods to the numerical and statistical analysis of bioengineering systems.

Prerequisites:(MATH 2850 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 2950 FOR LEVEL UG WITH MIN. GRADE OF D-) AND BIOE 3940 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE4350  Biomedical Optics  Credit Hours:  3
This course introduces the theory and design of optical biomedical instrumentation. Topics covered will include geometrical optics, electromagnetic theory, instrumentation and optical principles applied to biomedical optics.

Prerequisites:BIOE 3300 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE4410  Bioengineering Design Project I  Credit Hours:  3
This course integrates the engineering and life science backgrounds of senior bioengineering students through the presentation of design principles for problems in biomechanical, bioelectrical, biochemical and biological systems. Oral and written commun

Prerequisites:(BIOE 3110 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOE 3300 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOE 3500 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOE4420  Bioengineering Design Project II  Credit Hours:  3
A continuation of BIOE 4410. Teams of senior bioengineering students solve problems in biomechanical, bioelectrical, biochemical and biological systems through a design project. Testing and evaluation of designs, progress reports, oral presentations and

Prerequisites:BIOE 4410 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE4610  Artificial Organs  Credit Hours:  3
The application of engineering principles to the design and analysis of artificial organs and their clinical application.

Prerequisites:BIOE 3400 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE4620  Biochemical Engineering  Credit Hours:  3
The application of engineering principles to the design and analysis of biological processes that employ living organisms or biochemicals.

Prerequisites:BIOE 3500 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE4630  Bioseparations  Credit Hours:  3
Practical and theoretical aspects of processes required to separate and purify cells, proteins and other biological compounds.

Prerequisites:BIOE 3500 FOR LEVEL UG WITH MIN. GRADE OF D-
BIOE4640  Medical Imaging  
An introduction to the physical principles, design and function of medical diagnostic imaging systems.
Prerequisites: BIOE 3300 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE4650  Intelligent Medical Decision Making  
Introduction to expert systems and their characteristics, knowledge representation, inference techniques, dealing with uncertain information in knowledge-based systems and machine learning techniques for rule extraction.

BIOE4660  Object-Oriented Models In Bio  
Object-oriented modeling is an important tool in computational life science. This course utilizes the C++ programming language and the Unified Modeling Language (UML) to develop mechanistic biological models.
Prerequisites: (BIOE 1200 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOE4670  Ultrasound Principles And Medical Applications  
The basic principles and physics of ultrasound will be covered. Students will learn various medical applications of ultrasound and will be exposed to the latest developments in ultrasound technology.
Prerequisites: (MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (MATH 3820 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOE4710  Biomechanics Of Soft And Hard Tissues  
Prerequisites: BIOE 3110 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE4720  Cellular Electrophysiology  
The physiology of electrically excitable tissues, including nerve, muscle and secretory tissues. Action potential generation, neurotransmission and modulatory mechanisms. Methods for constructing and using computational models of excitable membranes.
Prerequisites: (EECS 2300 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOE 4100 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOE4730  Computational Orthopedic Biomechanics  
Introduction to and utilization of computational packages in orthopedic biomechanics. Computer aided design of implants, shape-optimization, finite element analysis of implants performance and failure of musculoskeletal organs, tissues and cells.
Prerequisites: (BIOE 3110 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOE 1200 FOR LEVEL UG WITH MIN. GRADE OF D-)
BIOE4740  Tissue Engineering  Credit Hours: 3
Application of principles from engineering and the life sciences toward the development of biological substitutes that restore, maintain or improve tissue function.

Prerequisites:(BIOE 2200 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOE 4100 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOE4750  Experimental Methods In Orthopedic Biomechanics  Credit Hours: 3
The theory and implementation of techniques used for the measurement of forces and motion within the musculoskeletal system at the system, organ and tissue levels.

Prerequisites:BIOE 3110 FOR LEVEL UG WITH MIN. GRADE OF D- OR CIVE 1160 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE4810  Introduction To Nanotechnology  Credit Hours: 3
Introduction treatment of the theory and operation of physical electronic devices emphasizing electrical transport in metals, semiconductors and various models of BJT's, FET's and MOSFET's and application to bioinstruments.

Prerequisites:EECS 2300 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE4820  Nanotechnology And Microfabrication  Credit Hours: 3
A comprehensive treatment of the theory and techniques associated with Semiconductor nanotechnology and microfabrication of biomedical devices, sensors, MENS and microsystems.

Prerequisites:BIOE 3300 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE4910  Bioengineering Honors Thesis  Credit Hours: 1-3
Thesis research. The student completes and defends a written thesis under the direction and guidance of their faculty research adviser.

BIOE4980  Bioengineering Special Topics  Credit Hours: 1-3
Selected subjects in the field of bioengineering with intensive investigation of the recent literature in a few areas of special interest to the class and the professor.

BIOE4990  Bioengineering Independent Study  Credit Hours: 1-3
The student, under the guidance of their research adviser, explores in-depth specific areas or topics related to their research.
BIOE5110  Bioengineering Principles  Credit Hours:  3
This course provides new bioengineering graduate students with the knowledge base needed to apply engineering concepts to the field of bioengineering. This course will also provide the necessary background needed for additional study in the life sciences.

BIOE5120  Bioengineering Laboratory  Credit Hours:  1
A laboratory course providing the bioengineering graduate student the opportunity to explore and experience fundamental concepts and to use laboratory research tools and equipment.

Corequisite: BIOE 5110

BIOE5200  Physiology And Anatomy For Bioengineers  Credit Hours:  3
Review and study of general physiological principles and bioengineering perspectives of the human circulatory, respiratory, digestive, immune, nervous, muscular and excretory systems.

BIOE5260  Medical Imaging Systems I  Credit Hours:  3
An introduction to the physical principles, design and function of x-ray based diagnostic imaging systems, including radiographic, fluoroscopic and computer tomography (CT) systems.

Prerequisites: EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE5300  Analysis Of Bioengineering Systems  Credit Hours:  3
Application of modern computing methods to the numerical and statistical analysis of bioengineering systems.

BIOE5310  Research Methods In Bioengineering  Credit Hours:  3
The purpose of this course is to introduce new bioengineering graduate students to research. Topics covered include hypothesis testing, biological data collection and analysis, and effective oral and written communication.

BIOE5610  Nonlinear Dynamics In Physiology And Biology  Credit Hours:  3
Properties and applications of systems of nonlinear differential equations. Fixed points, stability analysis, bifurcations, phase plane analysis, limit cycles, attractors and chaos. Applications to physiological and other biological systems are discussed.
BIOE5620  Cellular Electrophysiology  
The generation of electrical impulses by ion channels in excitable tissues. Models of ion channel gating include the Hodgkin-Huxley equations and Markov models. Principles of electrodiffusion applied to ionic flow through open channels.

BIOE5630  Single Neuron Models  
Mathematic modeling of neurons. Cable theory applied to passive neurons. Compartmental modeling and computer simulations to incorporate ion channels. Obtaining experimental data to for creating realistic models of neurons.

BIOE5640  Artificial Organs  
The application of engineering principles to the design and analysis of artificial organs and their clinical application.

BIOE5650  Bioseparations  
Practical and theoretical aspects of processes required to separate and purify cells, proteins and other biological compounds. This course will focus on new and nontraditional methods.

Prerequisites:BIOE 3500 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE5670  Ultrasound Principles And Medical Applications  
The basic principles and physics of ultrasound will be covered. Students will learn various medical applications of ultrasound and will be exposed to the latest developments in ultrasound technology.

Prerequisites:(MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOE5710  Biomechanics of Soft and Hard Materials  
Composite and hierarchical models of bone remodeling models presented. Soft tissue models include linear and nonlinear viscoelasticity, Fung's quasilinear viscoelastic theory. Biphasic and triphasic models and mechano-ionic interactions.

BIOE5720  Introduction To Biomaterials  
This course will address chemical, mechanical and immunological properties of biomaterials and strategies for their effective use in the fields of medicine and dentistry as well as in cell culturing and processing operations. Biomaterials applications in
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BIOE5730</td>
<td>Computer Applications In Orthopedic Biomechanics</td>
<td>3</td>
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<tr>
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<td>Introduction to and utilization of computation packages in orthopedic biomechanics. Computer aided design of implants, shape-optimization, finite element analysis of implant performance and failure of musculoskeletal organs, tissues and cells.</td>
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<td>Tissue Engineering</td>
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<td>Application of principles from engineering and the life sciences toward the development of biological substitutes that restore, maintain, or improve tissue function.</td>
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<td>BIOE5750</td>
<td>Experimental Methods In Orthopedic Biomechanics</td>
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<td>The theory and implementation of techniques used for the measurement of forces and motion within the musculoskeletal system at the system, organ and tissue levels.</td>
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<td>Prerequisites: BIOE 3110 FOR LEVEL UG WITH MIN. GRADE OF D- OR CIVE 1160 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>BIOE5780</td>
<td>Advanced Biomechanics</td>
<td>3</td>
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<td>Three-dimensional analysis and measurement of human body motions. Applications to gait analysis, physical therapies, and impact analysis. Includes total hip and knee replacement: elbow, shoulder, wrist and finger arthroplasty: bone plates, hip fracture</td>
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<tr>
<td>BIOE5930</td>
<td>Bioengineering Seminar</td>
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<td>Presentations of ongoing research in the field of bioengineering. Includes presentations by guest speakers, faculty and graduate students.</td>
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<td>BIOE5950</td>
<td>Bioengineering Seminar</td>
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<td>Prerequisites: BIOE 5930 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>BIOE5980</td>
<td>Special Topics In Bioengineering</td>
<td>1-5</td>
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<td>Selected subjects in the field of bioengineering with intensive investigation of the recent literature in a few areas of special interest to the class and the professor.</td>
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</table>
BIOE5990  Independent Study In Bioengineering  Credit Hours: 1-6

The student, under the guidance of their research adviser, explores in-depth specific areas or topics related to their thesis or dissertation research.

Corequisite: BIOE 5110

BIOE6100  Computational Physiology  Credit Hours: 3

Application of mathematical and computational techniques to physiological systems. Models include conductive cables and compartmental models of nerve fibers, nonlinear differential equation models of electrophysiology, and stochastic models of biomolecules.

Prerequisites: MIME 6000 FOR LEVEL GR WITH MIN. GRADE OF D- AND BIOE 4100 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE6200  Biophotonics  Credit Hours: 3

This course provides a one-semester overview on the interactions of light and biological materials. Practical applications of biophotonics principles to physiological imaging will be emphasized.

BIOE6210  Optical Instrumentation For Bioengineering  Credit Hours: 3

Introduction to the theory and design of topical instruments for bioengineers. Instruments using geometrical, physical and quantum optical principles will be discussed.

BIOE6220  Semiconductor Biosensors  Credit Hours: 3

Introduction to the theory and design of semiconductor sensors for measuring biological parameters. All major aspects of fabrication and characterization will be discussed.

BIOE6230  Bioelectrical Instrumentation  Credit Hours: 3

This course is intended to give students in bioengineering a basic understanding of bioelectrical instrumentation and physiological measurements.

BIOE6240  Bioelectrical Instrumentation Laboratory  Credit Hours: 1

Laboratory introduction to measurement of bioelectrical potentials and use of instruments.
BIOE6250  Advanced Bioelectrical Instrumentation  Credit Hours:  3
Advanced discussion of the theory and design of bioelectrical instrumentation. Computer analysis of data, data conversion and complex sensor systems will be considered.

BIOE6270  Medical Imaging Systems II  Credit Hours:  3
An introduction to the physical principles, design and function of ultrasonic, nuclear medicine and magnetic resonance imaging (MRI) diagnostic imaging systems.
Prerequisites: EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE6280  Advanced Imaging Techniques  Credit Hours:  3
Contemporary techniques for producing and processing images and image data, including remote sensing, industrial inspection and medical diagnosis. Modeling and analysis of spatially invariant image sequences. Image reconstruction from projections.

BIOE6290  Biosignal Processing  Credit Hours:  3
Analog and discrete-data bioelectrical and bioengineering signals and their characteristics, bioengineering signal classification, signal processing and analysis techniques and decision making.

BIOE6310  Biochemical Engineering Principles  Credit Hours:  3
The application of engineering principles to the design and analysis of biological processes that employ living organisms or biochemicals.

BIOE6340  Bioseparations  Credit Hours:  3
Practical and theoretical aspects of various processes required to separate and purify cells, proteins and other biological compounds. Topics covered include various types of chromatography, liquid/liquid separations, solid/liquid separations, membrane p
Prerequisites: BIOE 6310 FOR LEVEL GR WITH MIN. GRADE OF D-

BIOE6410  Biological And Artificial Neural Networks  Credit Hours:  3
BIOE6420  Medical Data Mining  Credit Hours:  3
Fuzzy sets, the extension principle, fuzzy relations, fuzzy logic. Approximate operations on sets, lower and upper approximation, dependency and reduction of attributes. Populations of objects, fitness function, mutation, crossover.

BIOE6430  Intelligent Medical Diagnostic Systems  Credit Hours:  3
Knowledge representation, dealing with uncertainty in knowledge-based systems. Machine learning techniques for rule extraction.

Prerequisites: BIOE 5420 FOR LEVEL GR WITH MIN. GRADE OF D-

BIOE6440  Wavelets & Their Applications  Credit Hours:  3
Fundamentals of series expansion using wavelets, continuous wavelets and frames, and signal compression. Applications of wavelets in signal processing, signal reconstruction, compression and analysis for biomedical applications. Background in signal pro

BIOE6510  Occupational Biomechanics  Credit Hours:  3
Occupational biomechanics deals with the mechanical behavior of musculoskeletal tissues during performance of physical work. It combines knowledge of mechanics and physiology together with industrial work specifications and practice and provides an under

BIOE6520  Orthopaedic Biomechanics  Credit Hours:  3
The course of orthopaedic biomechanics has been designed to fuse the biological and physiological problems with the science and technology of engineering. It focuses on a brief review of the physiology and biology of the human body, introduces the physic

Prerequisites: BIOE 4110 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOE 5780 FOR LEVEL GR WITH MIN. GRADE OF D-

BIOE6700  Artificial Organs  Credit Hours:  3
This course is concerned with the application of engineering principles to the design and analysis of artificial organs and their clinical application.

BIOE6710  Tissue Engineering  Credit Hours:  3
Tissue engineering combines engineering, materials science and cellular biology knowledge to solve the critical problems of tissue loss and organ failure. This course aims to not only teach aspects of engineering and cellular biology in the same course,
BIOE6730 Biological Transport Phenomena  Credit Hours: 3
Application of transport phenomena and reaction engineering in the understanding of signaling, growth processes and the flow of biological fluids in mammalian vessels in living systems.

BIOE6810 Solid State Electronics With Bioengineering Applications  Credit Hours: 3
A comprehensive treatment of the theory and operation of physical electronic devices emphasizing electrical transport in metals and semiconductors, various models of BJT's and FET's and applications to biochemical and biomechanical sensing will be consider

BIOE6820 Microelectronic And Micromechanical Fabrication  Credit Hours: 3
A comprehensive treatment of the theory, principles and techniques associated with microfabrication of electronic circuits and biosensors.

BIOE6830 Computational Methods Of Neural Functions  Credit Hours: 3
The course focuses on the development and analysis of mathematical models of biological processes. Students will use advanced mathematics and computers to implement models from the literature.

BIOE6920 Bioengineering Project  Credit Hours: 1-4
The student performs a special project of an advanced nature in bioengineering. A written report is required.

BIOE6960 Bioengineering Research And Thesis - Master's  Credit Hours: 1-12
Graduate thesis research. The student completes and defends a written thesis under the direction and guidance of their faculty research adviser.

BIOE7120 Bioengineering Laboratory  Credit Hours: 1
A laboratory course providing the bioengineering graduate student the opportunity to explore and experience fundamental concepts and to use laboratory research tools and equipment.

Corequisite: BIOE 5110
BIOE7260 Medical Imaging Systems I
Credit Hours: 3
An introduction to the physical principles, design and function of x-ray based diagnostic imaging systems, including radiographic, fluoroscopic and computer tomography (CT) systems.
Prerequisites: EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE7310 Research Methods In Bioengineering
Credit Hours: 3
The purpose of this course is to introduce new bioengineering graduate students to research. Topics covered include hypothesis testing, biological data collection and analysis, and effective oral and written communication.

BIOE7610 Nonlinear Dynamics In Physiology And Biology
Credit Hours: 3
Properties and applications of systems of nonlinear differential equations. Fixed points, stability analysis, bifurcations, phase plane analysis, limit cycles, attractors and chaos. Applications to physiological and other biological systems are discusse

BIOE7620 Ionic Channels In Excitable Membranes
Credit Hours: 3
The generation of electrical impulses by ion channels in excitable tissues. Models of ion channel gating include the Hodgkin-Huxley equations and Markov models. Principles of electrodiffusion applied to ionic flow through open channels.

BIOE7630 Single Neuron Models
Credit Hours: 3
Mathematic modeling of neurons. Cable theory applied to passive neurons. Compartmental modeling and computer simulations to incorporate ion channels. Obtaining experimental data to for creating realistic models of neurons.

BIOE7720 Introduction To Biomaterials
Credit Hours: 3
This course will address chemical, mechanical and immunological properties of biomaterials and strategies for their effective use in the fields of medicine and dentistry as well as in cell culturing and processing operations. Biomaterials applications in

BIOE7930 Bioengineering Seminar
Credit Hours: 0
Presentations of ongoing research in the field of bioengineering. Includes presentations by guest speakers, faculty and graduate students.
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**BIOE7950  Bioengineering Seminar**  
Credit Hours: 1  
Presentation of ongoing research in the field of bioengineering. Includes presentations by guest speakers, faculty and graduate students.

Prerequisites: BIOE 7930 FOR LEVEL GR WITH MIN. GRADE OF D-

**BIOE7980  Special Topics In Bioengineering**  
Credit Hours: 1-5  
Selected subjects in the field of bioengineering with intensive investigation of the recent literature in a few areas of special interest to the class and the professor.

**BIOE7990  Independent Study In Bioengineering**  
Credit Hours: 1-6  
The student, under the guidance of their research adviser, explores in-depth specific areas or topics related to their thesis or dissertation research.

**BIOE8100  Computational Physiology**  
Credit Hours: 3  
Application of mathematical and computational techniques to physiological systems. Models include conductive cables and compartmental models of nerve fibers, nonlinear differential equation models of electrophysiology, and stochastic models of biomolecules.

Prerequisites: MIME 6000 FOR LEVEL GR WITH MIN. GRADE OF D- AND BIOE 4100 FOR LEVEL UG WITH MIN. GRADE OF D-

**BIOE8200  Biophotonics**  
Credit Hours: 3  
This course provides a one-semester overview on the interactions of light and biological materials. Practical applications of biophotonics principles to physiological imaging will be emphasized.

**BIOE8210  Optical Instrumentation For Bioengineering**  
Credit Hours: 3  
Introduction to the theory and design of topical instruments for bioengineers. Instruments using geometrical, physical and quantum optical principles will be discussed.

**BIOE8220  Semiconductor Biosensors**  
Credit Hours: 3  
Introduction to the theory and design of semiconductor sensors for measuring biological parameters. All major aspects of fabrication and characterization will be discussed.
BIOE8230  Bioelectrical Instrumentation  Credit Hours:  3
This course is intended to give students in bioengineering a basic understanding of bioelectrical instrumentation and physiological measurements.

BIOE8240  Bioelectrical Instrumentation Laboratory  Credit Hours:  1
Laboratory introduction to measurement of bioelectrical potentials and use of instruments.

BIOE8250  Advanced Bioelectrical Instrumentation  Credit Hours:  3
Advanced discussion of the theory and design of bioelectrical instrumentation. Computer analysis of data, data conversion and complex sensor systems will be considered.

BIOE8270  Medical Imaging Systems II  Credit Hours:  3
An introduction to the physical principles, design and function of ultrasonic, nuclear medicine and magnetic resonance imaging (MRI) diagnostic imaging systems.

Prerequisites:EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOE8280  Advanced Imaging Techniques  Credit Hours:  3
Contemporary techniques for producing and processing images and image data, including remote sensing, industrial inspection and medical diagnosis. Modeling and analysis of spatially invariant image sequences. Image reconstruction from projections.

BIOE8290  Biosignal Processing  Credit Hours:  3
Analog and discrete-data bioelectrical and bioengineering signals and their characteristics, bioengineering signal classification, signal processing and analysis techniques and decision making.

BIOE8310  Biochemical Engineering Principles  Credit Hours:  3
The application of engineering principles to the design and analysis of biological processes that employ living organisms or biochemicals.
BIOE8340  Bioseparations  Credit Hours:  3
Practical and theoretical aspects of various processes required to separate and purify cells, proteins and other biological compounds. Topics covered include various types of chromatography, liquid/liquid separations, solid/liquid separations, membrane p

Prerequisites:BIOE 6310 FOR LEVEL GR WITH MIN. GRADE OF D-

BIOE8410  Biological And Artificial Neural Networks  Credit Hours:  3

BIOE8420  Medical Data Mining  Credit Hours:  3
Fuzzy sets, the extension principle, fuzzy relations, fuzzy logic. Approximate operations on sets, lower and upper approximation, dependency and reduction of attributes. Populations of objects, fitness function, mutation, crossover.

BIOE8430  Intelligent Medical Diagnostic Systems  Credit Hours:  3
Knowledge representation, dealing with uncertainty in knowledge-based systems. Machine learning techniques for rule extraction.

Prerequisites:BIOE 5420 FOR LEVEL GR WITH MIN. GRADE OF D-

BIOE8440  Wavelets & Their Applications  Credit Hours:  3
Fundamentals of series expansion using wavelets, continuous wavelets and frames and signal compression. Applications of wavelets in signal processing, signal reconstruction, compression and analysis for biomedical applications. Background in signal proc

BIOE8510  Occupational Biomechanics  Credit Hours:  3
Occupational biomechanics deals with the mechanical behavior of musculoskeletal tissues during performance of physical work. It combines knowledge of mechanics and physiology together with industrial work specifications and practice and provides an under

BIOE8520  Orthopaedic Biomechanics  Credit Hours:  3
The course of orthopaedic biomechanics has been designed to fuse the biological and physiological problems with the science and technology of engineering. It focuses on a brief review of the physiology and biology of the human body, introduces the physic

Prerequisites:BIOE 4110 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOE 5780 FOR LEVEL GR WITH MIN. GRADE OF D-
BIOE8700  Artificial Organs  Credit Hours: 3
This course is concerned with the application of engineering principles to the design and analysis of artificial organs and their clinical application.

BIOE8710  Tissue Engineering  Credit Hours: 3
Tissue engineering combines engineering, materials science and cellular biology knowledge to solve the critical problems of tissue loss and organ failure. This course aims to not only teach aspects of engineering and cellular biology in the same course.

BIOE8730  Biological Transport Phenomena  Credit Hours: 3
Application of transport phenomena and reaction engineering in the understanding of signaling, growth processes and the flow of biological fluids in mammalian vessels in living systems.

BIOE8960  Bioengineering Dissertation  Credit Hours: 1-16
Original investigations of significant bioengineering problems at the graduate level under the guidance of a member of the faculty.

BIOL1120  Survey Of Biology  Credit Hours: 3
A survey of major biological principles and phenomena in various plants and animals with emphasis on man. (not for major credit).

Prerequisites: ENGL 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR HON 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOL1140  Biological Aspects Of Human Consciousness  Credit Hours: 3
Lectures integrating developmental, genetic, neurophysiological, psychological, sociological and philosophical aspects of human consciousness in terms a lay person can understand. (not for major credit)

BIOL1220  Survey Of Biology Laboratory  Credit Hours: 1
(Not for major credit) A series of laboratory exercises that supplement the material discussed in BIOL 1120.

Corequisite: BIOL 1120
BIOL1340  The Nature Of Science  Credit Hours:  3
An interdisciplinary course that discusses major scientific discoveries, the role of hypothesis testing in science, the use of mathematics in science, data presentation and moral and ethical issues that stem from science.

BIOL2020  Mammalian Form And Function  Credit Hours:  4
Structure and operation of organ systems. Lecture and laboratory emphasizing how shapes and properties within tissues and organs enable the whole organism to maintain a living balance. (not for major credit)

Prerequisites: ENGL 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR HON 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOL2100  Basic Microbiology  Credit Hours:  4
Emphasizes the principles of microbiology that are important to the environmental, life science, nursing and health-related fields. (not for major credit)

BIOL2150  Fundamentals Of Life Science I: Diversity Of Life, Evolution And Adaptation  Credit Hours:  4
An introduction to the diversity of multicellular life on earth, evolution and physiological adaptations.

BIOL2160  Fundamentals Of Life Science Laboratory I  Credit Hours:  1
A series of laboratory exercises which supplement the material discussed in BIOL 2150.

Corequisite: BIOL 2150

BIOL2170  Fundamentals Of Life Science II: Cells, Inheritance and Development  Credit Hours:  4
A general introduction to cell structure and function, energy processing in plants and animals, basic genetics, molecular biology and development.

Prerequisites: CHEM 1090 FOR LEVEL UG WITH MIN. GRADE OF D- OR CHEM 1230 FOR LEVEL UG WITH MIN. GRADE OF D- OR BIOL 2150 FOR LEVEL UG WITH MIN. GRADE OF D- OR CHPL FOR MIN. SCORE OF 20

BIOL2180  Fundamentals Of Life Science Laboratory II  Credit Hours:  1
A series of laboratory exercises which supplement the material discussed in BIOL 2170.

Corequisite: BIOL 2170
BIOL2910  Biological Research
A discussion/demonstration of opportunities for undergraduate research in Biology at the University of Toledo and elsewhere.

BIOL2980  Topics In The Life Sciences
Selected topics in Biology for the non-major.

Prerequisites: ENGL 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR HON 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOL3010  Molecular Genetics
The principles of heredity at the molecular level, covering gene and chromosome structure, replication and repair, recombination, control of gene expression, control of cell division.

Prerequisites: (BIOL 2170 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1220 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (BIOL 2170 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1240 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOL3020  Molecular Genetics Laboratory
A laboratory course in experimental molecular biology involving gene cloning, analysis of cloned product and other techniques of modern molecular genetics.

Corequisite: BIOL 3010

BIOL3030  Cell Biology
A study of the internal organization of the eukaryotic cell, organelle and membrane function, cell-cell signaling, cell movement, cell adhesion, the extracellular matrix.

Prerequisites: (BIOL 2170 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1240 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOL3040  Cell Biology Laboratory
Laboratory exercises involving cell culturing, protein analysis, protein localization and other techniques of modern cell biology.

Corequisite: BIOL 3030

BIOL3070  Human Physiology
Detailed structural and functional analysis of the human endocrine, nervous, reproductive, circulatory, respiratory, digestive and excretory systems. An emphasis will be placed on system-system interactions and homeostatic mechanisms.

Prerequisites: BIOL 3030 FOR LEVEL UG WITH MIN. GRADE OF D-
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BIOL3090  Developmental Biology  Credit Hours: 3
Lectures on molecular and cellular interactions in animal and plant embryogenesis and development.

Prerequisites: BIOL 3030 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOL3100  Developmental Biology Laboratory  Credit Hours: 1
An analysis of development by biochemical and biological methods using live materials.

BIOL3210  Human Nutrition  Credit Hours: 3
Lectures covering nutrition and transport in humans, role of nutrition in growth and development, nutritional diseases.

Prerequisites: BIOL 3070 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOL3410  Plant Physiology  Credit Hours: 3
Lectures on the basic concepts of plant physiology. Included will be a review of plant organization, transport systems and biochemistry.

Prerequisites: BIOL 3030 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOL3510  Comparative Vertebrate Anatomy  Credit Hours: 4
A comparative treatment of the evolutionary and developmental history of the major vertebrate organ systems.

Prerequisites: (BIOL 2150 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 2160 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 2170 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 2180 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOL4010  Molecular Biology  Credit Hours: 3
Analysis of the regulatory mechanisms for nucleic acid and protein synthesis; genome structure; recombination; genetic damage and repair.

Prerequisites: BIOL 3030 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOL4030  Microbiology  Credit Hours: 3
Lectures on the principles of modern microbiology and virology, including metabolism, growth, cellular morphology, genetics and host parasite relationships. Bacterial and viral diseases will be illustrated.

Prerequisites: (BIOL 3030 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 2420 FOR LEVEL UG WITH MIN. GRADE OF D-)
# Course Descriptions 2009-2010

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<th>Code</th>
<th>Title</th>
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<td>BIOL4040</td>
<td>Microbiology Laboratory</td>
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<td></td>
<td>Laboratories utilizing basic microbiological techniques and illustrating principles of growth, identification and genetics of microbes.</td>
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<td>Corequisite: BIOL 4030</td>
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| BIOL4050 | Immunology                                  | 3            |
|          | Lectures on the chemical, genetic and cellular basis of the immune response. |              |
|          | Prerequisites: BIOL 3030 FOR LEVEL UG WITH MIN. GRADE OF D- |              |

| BIOL4060 | Immunology Laboratory                       | 1            |
|          | Laboratory studies of the immune response.  |              |
|          | Corequisite: BIOL 4050                      |              |

| BIOL4090 | Cancer Biology                              | 3            |
|          | Introduction to carcinogenesis and the cellular and molecular features of malignancy. Methods to diagnose and treat malignancies will also be presented. |              |
|          | Prerequisites: (BIOL 3030 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 3010 FOR LEVEL UG WITH MIN. GRADE OF D-) |              |

| BIOL4110 | Human Genetics                              | 3            |
|          | A systematic survey of genetic variation in man with emphasis on modern research methodology. |              |
|          | Prerequisites: BIOL 3030 FOR LEVEL UG WITH MIN. GRADE OF D- |              |

| BIOL4170 | Developmental Genetics                      | 3            |
|          | Survey of animal and plant developmental genetics. Basic principles and methods of genetic analysis, model systems, genetic basis of tissue patterning, evolutionary implications and applications in tissue and plant engineering. |              |
|          | Prerequisites: BIOL 3010 FOR LEVEL UG WITH MIN. GRADE OF D- |              |

| BIOL4210 | Molecular Basis of Disease                  | 3            |
|          | Examines the genetic, molecular, and biochemical defects associated with human disease and includes a review of current research related to human disease. |              |
|          | Prerequisites: BIOL 3010 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 3030 FOR LEVEL UG WITH MIN. GRADE OF D- |              |
BIOL4230  Comparative Animal Physiology  Credit Hours:  3
Lectures on the comparative and environmental physiology of vertebrates and invertebrates including metabolism, temperature regulation, respiration, circulation, excretion and osmotic regulation.
Prerequisites: (BIOL 3030 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 3070 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOL4250  Introduction to Neurobiology  Credit Hours:  3
An introduction to the molecular, genetic and cellular aspects of neurobiology in humans and model organisms. Topics include neuronal physiology and signaling, neural development, sensation, muscle control, learning and memory.
Prerequisites: BIOL 3030 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOL4310  Invertebrate Zoology  Credit Hours:  3
Survey of the invertebrates from unicellular protista to protostomes and deuterostomes. Emphasis on adaptations to aquatic, terrestrial, or parasitic habitats.
Prerequisites: BIOL 3030 FOR LEVEL UG WITH MIN. GRADE OF D-

BIOL4320  Invertebrate Zoology Laboratory  Credit Hours:  1
Laboratory exercises and field trips involving observation, collection and dissection of representative invertebrates.
Corequisite: BIOL 4310

BIOL4330  Parasitology  Credit Hours:  3
A study of the host-parasite interaction including aspects of parasite morphology, taxonomy, development and ecology.
Prerequisites: (BIOL 2150 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 2170 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOL4700  Biological Literature And Communication  Credit Hours:  3
A writing intensive course that focuses on reading original literature in biology in a variety of formats. Required of all biology majors.
Prerequisites: (BIOL 3030 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 3070 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (BIOL 3030 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 3410 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOL4790  Biology Field Trip  Credit Hours:  2-4
Faculty directed course that incorporates extensive field experience and individual projects.
BIOL4910  Undergraduate Research  
Faculty directed research. Both oral and written reports of results required.

BIOL4940  Extramural Research  
Prior consent of both the department and the proposed supervisor. Scientist-supervised study of research done in an extramural research institute or scientific laboratory. Written and oral reports to the department required. Maximum of 6 hours may count.
Prerequisites: (BIOL 2150 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 2170 FOR LEVEL UG WITH MIN. GRADE OF D-)

BIOL4950  Internship In Biology  
Supervised practical experience in the field of biology. Maximum of 6 hours may be used as biology elective credit for BS degree.

BIOL4980  Advanced Topics In Biology  
An advanced course for Biology majors in an important area of biology. May be repeated for credit under different specialty numbers (topics).

BIOL4990  Independent Study In Biology  
Faculty directed readings or projects in a specific area of biology.

BIOL5030  Advanced Microbiology  
Lectures on the principles of modern microbiology and virology, including metabolism, growth, cellular morphology, genetics and host parasite relationships. Bacterial and viral diseases will be illustrated.

BIOL5040  Advanced Microbiology Laboratory  
Laboratories utilizing basic microbiological techniques and illustrating principles of growth, identification and genetics of microbes.

Corequisite: BIOL 5030
BIOL5050  Advanced Immunology  
The development, genetics and physiology of the immune response.

BIOL5060  Advanced Immunology Laboratory  
Laboratory studies of the immune response.  
Corequisite: BIOL 5050

BIOL5980  Advanced Topics In The Biological Sciences For Science Educators  
Lecture, seminar or distance learning course on current topics or problems in the biological sciences that are relevant for science educators.

BIOL6000  Introduction To Scientific Thought And Expression  
A writing intensive course for new graduate students that focuses on scientific hypothesis testing and reading the original literature in biology.

BIOL6010  Advanced Molecular Biology  
Analysis of recent developments in prokaryotic and eukaryotic molecular biology through evaluation and discussion of current literature.

BIOL6090  Advanced Cell Biology  
An advanced course that stresses the experimental basis for current concepts of cell structure and function.

BIOL6100  Research Methodology: Cell And Molecular Biology  
An in-depth discussion of techniques used in the study of cell and molecular biology. Examples include chromatography and fractionation, electrophoresis cell and molecular cloning.
Course Descriptions 2009-2010

BIOL6200  Advanced Signal Transduction  Credit Hours:  3
This course will provide an in-depth discussion of signal transduction topics important for cell/molecular biology research, emphasizing the interplay between intracellular signaling molecules needed to regulate physiological responses.

Prerequisites: BIOL 6010 FOR LEVEL GR WITH MIN. GRADE OF D- AND BIOL 6090 FOR LEVEL GR WITH MIN. GRADE OF D- AND CHEM 6500 FOR LEVEL GR WITH MIN. GRADE OF D-

BIOL6260  Topics in Cancer Biology  Credit Hours:  3
The course will cover our current understanding of carcinogenesis and provide in-depth discussion of the important topics and latest advances in cancer research.

Prerequisites: BIOL 6010 FOR LEVEL GR WITH MIN. GRADE OF D- AND BIOL 6090 FOR LEVEL GR WITH MIN. GRADE OF D- AND CHEM 6500 FOR LEVEL GR WITH MIN. GRADE OF D-

BIOL6920  Special Projects In Biology  Credit Hours:  2-4
Introduction to research on a selected problem under the direction of an individual faculty member.

BIOL6930  Seminar In Biology  Credit Hours:  1
Presentation on research or current literature by graduate students, faculty, or guest speakers.

BIOL6960  Masters Thesis Research  Credit Hours:  1-15
Research that normally contributes to the fulfillment of the M.S. thesis requirement.

BIOL6980  Advanced Topics In Biology  Credit Hours:  2-4
Seminar/discussion of significant current topics or problems in biology.

BIOL6990  Advanced Readings In Biology  Credit Hours:  2-4
Faculty directed readings or projects in a specific area of Biology.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BIOL7030</td>
<td>Advanced Microbiology</td>
<td>3</td>
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<tr>
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<td>Lectures on the principles of modern microbiology and virology, including metabolism, growth, cellular morphology, genetics and host parasite relationships. Bacterial and viral diseases will be illustrated.</td>
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<tr>
<td>BIOL7040</td>
<td>Advanced Microbiology Laboratory</td>
<td>1</td>
</tr>
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<td>Laboratories utilizing basic microbiological techniques and illustrating principles of growth, identification and genetics of microbes.</td>
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<tr>
<td></td>
<td>Corequisite: BIOL 7030</td>
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<tr>
<td>BIOL7050</td>
<td>Advanced Immunology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>The development, genetics and physiology of the immune response.</td>
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<tr>
<td>BIOL7060</td>
<td>Advanced Immunology Laboratory</td>
<td>1</td>
</tr>
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<td>Laboratory studies of the immune response.</td>
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<td>Corequisite: BIOL 7050</td>
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<tr>
<td>BIOL8000</td>
<td>Introduction To Scientific Thought And Expression</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>A writing intensive course for new graduate students that focuses on scientific hypothesis testing and reading the original literature in biology.</td>
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<tr>
<td>BIOL8010</td>
<td>Advanced Molecular Biology</td>
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<tr>
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<td>Analysis of recent developments in prokaryotic and eukaryotic molecular biology through evaluation and discussion of current literature.</td>
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<tr>
<td>BIOL8090</td>
<td>Advanced Cell Biology</td>
<td>4</td>
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<tr>
<td></td>
<td>An advanced course that stresses the experimental basis for current concepts of cell structure and function.</td>
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<td>Course Code</td>
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<tr>
<td>BIOL8100</td>
<td>Research Methodology: Cell And Molecular Biology</td>
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<td>An in-depth discussion of techniques used in the study of cell and molecular biology. Examples include chromatography and fractionation, electrophoresis cell and molecular cloning.</td>
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<td>BIOL8200</td>
<td>Advanced Signal Transduction</td>
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<td>This course will provide an in-depth discussion of signal transduction topics important for cell/molecular biology research, emphasizing the interplay between intracellular signaling molecules needed to regulate physiological responses.</td>
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<td>Prerequisites: BIOL 8010 FOR LEVEL GR WITH MIN. GRADE OF D- AND BIOL 8090 FOR LEVEL GR WITH MIN. GRADE OF D- AND CHEM 8500 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>BIOL8260</td>
<td>Topics in Cancer Biology</td>
<td>3</td>
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<td></td>
<td>The course will cover our current understanding of carcinogenesis and provide in-depth discussion of the important topics and latest advances in cancer research.</td>
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<td>Prerequisites: BIOL 8010 FOR LEVEL GR WITH MIN. GRADE OF D- AND BIOL 8090 FOR LEVEL GR WITH MIN. GRADE OF D- AND CHEM 8500 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>BIOL8920</td>
<td>Special Projects In Biology</td>
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<td>BIOL8930</td>
<td>Seminar In Biology</td>
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<td>Presentation on research or current literature by graduate students, faculty, or guest speakers.</td>
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<tr>
<td>BIOL8960</td>
<td>Doctoral Dissertation Research</td>
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<td>Research normally leading to the fulfillment of the Ph.D. dissertation requirement.</td>
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<td>BIOL8980</td>
<td>Advanced Topics In Biology</td>
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</tr>
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<td>Seminar/discussion of significant current topics or problems in biology.</td>
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</tr>
</tbody>
</table>
BIOL8990  Advanced Readings in Biology  Credit Hours:  2-4
Faculty directed readings or projects in a specific area of Biology.

BIPG510  Fund Bioinformatics Proteomics  Credit Hours:  3
Introduction to bioinformatics and computational biology. Both theory and practical methods for evaluating and managing biomedical data will be covered. Topics range from sequence analysis to structure prediction. Includes computer laboratory sessions. M

BIPG511  Practical Bioinformatics  Credit Hours:  3
This course will provide students with practical experience with the most common bioinformatics tasks. Short lectures will be integrated with computer exercises in the Bioinformatics Computer Lab.

BIPG520  Statistical Meth Bioinformatic  Credit Hours:  3
Application of probability and statistics to bioinformatic analysis. Topics include stochastic processes, Markov chains, statistical basis for DNA sequence analysis, evolutionary models, and statistical analysis of functional genomic data. Includes compu

BIPG530  Current Topics in BPG  Credit Hours:  1
In-depth analysis of original scientific papers/seminars in the fields of bioinformatics, proteomics and genomics for the development of critical analysis and scientific communication skills. May be repeated for credit.

BIPG540  Biodatabases  Credit Hours:  1
This course will introduce students to database concepts, design, and implementation, using the most popular database formats utilized in biomedical research. The practicum provides hands-on experience with real-world databases.

BIPG550  Microarray Analysis  Credit Hours:  1
This course aims at providing hands-on training on analysis of microarray data. Students will learn how to handle and analyze microarray data. Topics covered include preprocessing, identifying differentially expressed genes, classification and presentat
### Course Descriptions 2009-2010

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<thead>
<tr>
<th>Course Code</th>
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<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIPG580</td>
<td>Rotations in BPG</td>
<td>0-4</td>
<td>Students will participate in selected on-going research programs with faculty members in the Bioinformatics, Proteomics and Genomics program. May be repeated for credit.</td>
</tr>
<tr>
<td>BIPG590</td>
<td>Scholarly Project in BPG</td>
<td>0-12</td>
<td>Students will develop an in-depth scholarly project to fulfill the research project requirements for the MSBS degree with a concentration in Bioinformatics, Proteomics and Genomics. May be repeated for credit.</td>
</tr>
<tr>
<td>BIPG610</td>
<td>Bioinformatic Computation</td>
<td>3</td>
<td>Use, design, strengths and limitations of bioinformatics programs run on desktop computers. Programming in PERL to acquire and analyze biological sequences. Construction and management of databases. Introduction of LINUX, C++, and Java. Includes compute</td>
</tr>
<tr>
<td>BIPG640</td>
<td>Applications of Bioinformatics</td>
<td>3</td>
<td>Lectures and hands-on activities that demonstrate the application of bioinformatics, proteomic and genomics techniques to solve research problems being studied by selected faculty from MCO, UT, BGSU or another institution.</td>
</tr>
<tr>
<td>BIPG689</td>
<td>Independent Study in BPG</td>
<td>0-4</td>
<td>Intense study in an area of bioinformatics, proteomics and genomics (BPG). Course content, assignments, meeting times and grade requirements are arranged with a BPG faculty member. May be repeated for credit.</td>
</tr>
<tr>
<td>BIPG710</td>
<td>Fund Bioinform and Proteomics</td>
<td>3</td>
<td>Introduction to bioinformatics and computational biology. Both theory and practical methods for evaluating and managing biomedical data will be covered. Topics range from sequence analysis to structure prediction. Includes computer laboratory sessions. M</td>
</tr>
<tr>
<td>BIPG711</td>
<td>Practical Bioinformatics</td>
<td>3</td>
<td>Short lectures integrated with computer tasks in Bioinformatics Computer Lab. The bioinformatics resources will primarily be those freely available on the internet. The course will meet twice a week for 2-hour sessions in the Bioinformatics Computer Lab.</td>
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<td>BIPG720</td>
<td>Statistical Meth Bioinformatic</td>
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<td>Application of probability and statistics to bioinformatic analysis. Topics include stochastic processes, Markov chains, statistical basis for DNA sequence analysis, evolutionary models, and statistical analysis of functional genomic data. Includes compu</td>
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<tr>
<td>BIPG730</td>
<td>Current Topics in BPG</td>
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<tr>
<td>BIPG740</td>
<td>Biodatabases</td>
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<td>This course will introduce students to database concepts, design, and implementation, using the most popular database formats utilized in biomedical research. The practicum provides hands-on experience with real-world databases.</td>
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<tr>
<td>BIPG750</td>
<td>Microarray Analysis</td>
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<tr>
<td>BIPG810</td>
<td>Bioinformatic Computation</td>
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<td>Use, design, strengths and limitations of bioinformatics programs run on desktop computers. Programming in PERL to acquire and analyze biological sequences. Construction and management of databases. Introduction of LINUX, C++, and Java. Includes compute</td>
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<td>BIPG840</td>
<td>Applications of Bioinformatics</td>
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<td>BIPG889</td>
<td>Independent Study in BPG</td>
<td>0-4</td>
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<td></td>
<td>Intense study in an area of bioinformatics, proteomics and genomics (BPG). Course content, assignments, meeting times and grade requirements are arranged with a BPG faculty member. May be repeated for credit.</td>
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</tr>
</tbody>
</table>
BLAW3550 Legal And Safety Compliance Issues In Human Resource Management
Credit Hours: 3
Introduction of the issues and challenges facing human resource specialists, generalists and managers in organizations. Legal, social and political aspects of human resource management, as well as compliance requirements for OSHA and other safety laws, a
Prerequisites: BUAD 3030 FOR LEVEL UG WITH MIN. GRADE OF D-

BLAW3570 The Laws Of Structuring And Operating A Business
Credit Hours: 3
The role of law in structuring and operating business choices of sole proprietorship, agency, partnership, limited partnership, close private corporation, large public corporation, limited liability corporation and negotiable instruments law.

BLAW3670 International Business Law
Credit Hours: 3
The role of laws and organizations governing business done in the global arena. Study of the legal environment of international business; international sales, credits and the commercial transaction; international trade law and the regulation of the inter
Prerequisites: BUAD 3030 FOR LEVEL UG WITH MIN. GRADE OF D-

BLAW4570 Legal And Ethical Aspects Of Managing Innovation And Technology
Credit Hours: 3
This course examines intellectual property systems and presents management options for the protection of intellectual property. Technology's legal and ethical aspects are covered, including case studies on specific technological innovations and products.
Prerequisites: (BUAD 3030 FOR LEVEL UG WITH MIN. GRADE OF D- AND BUAD 3470 FOR LEVEL UG WITH MIN. GRADE OF D-)

BLAW4580 Detection And Prevention Of Deceptive Business Practices
Credit Hours: 3
The course prepares the student to prevent deceptive and fraudulent practices in business, including kinds and definitions of deception and fraud, history, legal aspects, legislation, detection and prevention.
Prerequisites: (BUAD 3470 FOR LEVEL UG WITH MIN. GRADE OF D- AND BLAW 3570 FOR LEVEL UG WITH MIN. GRADE OF D-)

BLAW5150 Dynamics Of Legal Environment Of Business
Credit Hours: 3
Emphasis will be placed on the law in those areas which would assist the student to have a better understanding of those ethical and social problems in our increasingly more complicated legal environment.

BLAW6040 Health Law
Credit Hours: 3
Provides an analytical framework for the understanding of the legal climate within which the health care institution operates. Emphasis on the legal concepts which bear upon current health care problems and operation and planning decisions.
BLAW6100  Business, Government And Society  Credit Hours:  3
Discussion of social criticisms of business and of responses which may improve its social performance. Topics include consumerism, ecology, market power, market organization, social responsibility and ethics regulation and public policy, social performan

BLAW7150  Dynamics Of Legal Environment Of Business  Credit Hours:  3
Emphasis will be placed on the law in those areas that would assist the student to have a better understanding of those ethical and social problems in our increasingly more complicated legal environment.

BME8900  Independent Research  Credit Hours:  1-16
[1-16 hours] Selected topics from current BME research with investigation into recent literature and/or via a laboratory experience in an area of mutual interest to the student and the instructor. Students are to use the section number of their instructo

BME8930  Graduate Seminar  Credit Hours:  0
0 hour] Biomedical engineering research presentations by external speakers from industry, universities and other organizations.

BME8960  Dissertation  Credit Hours:  1-16
[1-16 hours] Doctoral dissertation research credit hours for students in the biomedical engineering program. Students are to use the section number of their dissertation adviser.

BME8980  Special Topics  Credit Hours:  1-8
[1-8 hours] A special topic at the graduate level in biomedical engineering to be offered as a lecture course during a term by a BME faculty member. Prerequisite: Consent of the BME faculty member.

BMGT1000  Business Technologies/College Orientation  Credit Hours:  1
Acquaints the new student with the services, policies, procedures and layout of the university, college and department. Establishes relationships among new students, full-time professors and peer mentors during this time of adjustment.
BMGT1010  Business Principles  
An introduction to the world of business focusing on an overview of business operations with special emphasis on management, marketing, computers, accounting and finance.

BMGT1500  Workplace Communication And Presentations  
Covers all aspects of communicating in the workplace including oral, written and group communications. Specific subjects covered include composing agendas, conducting interviews and organizing meetings. Students will learn a computer graphics program and

BMGT1540  Organizational Behavior  
This course will address the impact of individual and group behavior on organizations. Topics covered include downsizing, stakeholder management, network organizations, participative management approaches and the quality movement.

BMGT1800  Principles Of Operations Management  
The study of planning and controlling the operations that an organization uses to produce goods and provide services and the decision making tradeoffs that occur.

BMGT1850  Principles Of Total Quality Management  
An introduction to the basic philosophies, concepts and tools of Quality Management. Continuous improvement, customer focus and appropriate measurement of quality are covered.

Prerequisites: BMGT 1800 FOR LEVEL UG WITH MIN. GRADE OF D-

BMGT2010  Workplace Management  
Covers issues dealing with managing a company in a predominantly service-oriented marketplace. Topics include training employees to deal with customers/clients, creating a customer-friendly business environment, problem-solving and strategic planning.

BMGT2020  Human Resource Development  
Explores the functions of Human Resource Management including acquiring and developing human resources with special emphasis on improving the quality of work life.
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<tr>
<td>BMGT2030</td>
<td>Supervision</td>
<td>3</td>
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<tr>
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<td>Explores the role of first-line managers in organizations with special emphasis on the responsibilities of supervisors. These responsibilities include delegation, communication, problem-solving, training and leading.</td>
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<tr>
<td>BMGT2050</td>
<td>Small Business Management</td>
<td>3</td>
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<td></td>
<td>Examines entrepreneurship with a special emphasis on formulating, developing and operating a small business.</td>
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<tr>
<td>BMGT2060</td>
<td>Customer Service and Computer End-User Support</td>
<td>3</td>
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<tr>
<td></td>
<td>Overview of knowledge and skills necessary to provide customer service and support to clients and computer users with an emphasis on problem-solving and communication skills in a technical setting.</td>
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<tr>
<td>BMGT2110</td>
<td>Managing In A Global Economy</td>
<td>3</td>
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<tr>
<td></td>
<td>Students will examine one particular industry and learn the various economic factors associated with operating a business in an international setting.</td>
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<tr>
<td>BMGT2120</td>
<td>Consumer Finance</td>
<td>3</td>
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<tr>
<td></td>
<td>Course is designed to assist students in understanding personal and consumer finance issues as well as sound financial planning measures.</td>
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<tr>
<td>BMGT2310</td>
<td>Legal Environment Of Business</td>
<td>3</td>
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<td>Carefully documents treatment of the legal framework of business. Emphasis on the international aspect of business law. Topics covered include contracts, bailments, agency relationships, legal forms of ownership and negotiable instruments.</td>
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<tr>
<td>BMGT2700</td>
<td>Managing Diversity In The Workplace</td>
<td>3</td>
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<tr>
<td></td>
<td>This course offers a conceptual framework for understanding diversity and its effects on organizational behavior. It will also provide action tools for effective management of diversity in organizations.</td>
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</tbody>
</table>
BMGT2720  Diversity Training And Bias-Free Work Practices  Credit Hours: 3
Students discover how to be a diversity trainer and explore bias-free practices that create more inclusive diverse work environments free from discrimination, contributing to enhanced organizational effectiveness.

BMGT2750  Cultural Communications In The Workplace  Credit Hours: 3
Strategies taught to increase communication effectiveness among employees from differing cultural backgrounds. Students will also learn market-specific tips and taboos and develop strategies for negotiating across cultures.

BMGT2800  Documentation And Implementation Of Iso/Os 9000 Quality Assurance Standards  Credit Hours: 3
Gain an understanding of the ISO 9000 and QS 9000 quality standards requirements and the actions and decisions necessary to successfully gain ISO/OS 9000 registration.
Prerequisites: BMGT 1850 FOR LEVEL UG WITH MIN. GRADE OF D-

BMGT2990  Independent Study  Credit Hours: 1-3
Students will study a management-related subject mutually agreed upon between the student and instructor. The format may include lecture, computer lab and/or practical experience.

BMSP625  Grant Writing Workshop  Credit Hours: 2
This is an interdisciplinary course designed to teach students skills in developing a research plan in the form of a grant proposal.

BMSP631  Systems Pathophysiology I  Credit Hours: 3
The course will cover the fundamentals and current research efforts in biomedical sciences, emphasizing diseases of the cardiovascular, immune, and nervous systems, as well as metabolic and infectious diseases.

BMSP632  Systems Pathophysiology II  Credit Hours: 2
The course will cover the fundamentals and current research efforts in biomedical sciences, emphasizing diseases of the cardiovascular, immune, and nervous systems, as well as metabolic and infectious diseases.
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<tr>
<td>BMSP633</td>
<td>Curr Prob Res App Protein Str</td>
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<td>The course will cover principles of protein</td>
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<td>structure/function relationships in proteins,</td>
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<td>protein folding, ligand-protein interactions</td>
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<td>and mechanism of enzyme-catalyzed reactions.</td>
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<td>BMSP634</td>
<td>Curr Prob Res App Genes/Genom</td>
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<td>areas of current research in genetics and</td>
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<td>molecular biology. Topics include gene structure</td>
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<td>and regulation, DNA replication, recombination,</td>
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<td>repair, mutation, and quantitative genetics.</td>
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<td>BMSP635</td>
<td>Cell Biology &amp; Signaling</td>
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<td>gical approaches in the area of fundamental cell</td>
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<td>lar processes and cell communication.</td>
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<td>BMSP636</td>
<td>Curr Prob Cell Membranes</td>
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<td>protein interactions in defining cytoarchitecture,</td>
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<td>BMSP637</td>
<td>Recent Advances in NND Journal</td>
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<td>Forum for the presentation, critique, and discu-</td>
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<td>BMSP638</td>
<td>Methods Biomed Sciences</td>
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<td>molecular biology, protein chemistry, and studies</td>
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<td>BMSP639</td>
<td>Mentored Research</td>
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<td>Students will be mentored in biomedical research</td>
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BMSP825  Grant Writing Workshop  
This is an interdisciplinary course designed to teach students skills in developing a research plan in the form of a grant proposal. 

BMSP831  Systems Pathophysiology I  
The course will cover the fundamentals and current research efforts in biomedical sciences, emphasizing diseases of the cardiovascular, immune, and nervous systems, as well as metabolic and infectious diseases. 

BMSP832  Systems Pathophysiology II  
The course will cover the fundamentals and current research efforts in biomedical sciences, emphasizing diseases of the cardiovascular, immune, and nervous systems, as well as metabolic and infectious diseases. 

BMSP833  Curr Prob Res App Protein Str  
The course will cover principles of protein structure/function relationships in proteins, protein folding, ligand-protein interactions and mechanisms of enzyme-catalyzed reactions. Special emphasis will be given to the present-day research. 

BMSP834  Curr Prob Res App Genes/Genome  
This course provides an introduction to major areas of current research in genetics and molecular biology. Topics include gene structure and regulation, DNA replication, recombination, repair, mutation, and quantitative genetics. 

BMSP835  Cell Biology & Signaling  
The content of this course will encompass didactic lectures on current knowledge and methodological approaches in the area of fundamental cellular processes and cell communication. 

BMSP836  Curr Prob Cell Membranes  
This course will explore vital roles played by plasma and intracellular membranes in communication and homeostasis, and by membrane lipid/protein interactions in defining cytoarchitecture, protein sorting, excitability and synaptic transmission.
Course Descriptions 2009-2010

BMSP837 Recent Advances in NND Journal  Credit Hours:  1
Forum for the presentation, critique, and discussion of recent primary literature important to the development of the field of biomedical sciences.

BMSP838 Methods Biomedical Sciences  Credit Hours:  3
This course will cover the basic principles and applications, of state-of-the-art technology in molecular biology, protein chemistry, and studies with culture cells, tissue explants and transgenic animal models.

BMSP839 Mentored Research  Credit Hours:  1-15
Students will be mentored in biomedical research and will gain familiarity with research projects ongoing in graduate laboratories. May be repeated for credit.

BUAD1000 Orientation For Business Students  Credit Hours:  1
Introduction to the University community. Strategies for successful college transition are explored.

BUAD1010 Introduction To Business  Credit Hours:  3
Introduction to the various functional areas of business, the critical role business plays in the economy, the impact of globalization and the performance of business functions.

BUAD1020 Micro-Computer Applications In Business  Credit Hours:  3
Course provides an overview of the role of micro-computers and information systems in business applications. It provides good training in word processing and spreadsheets for problem solving.

BUAD2000 Career Development I  Credit Hours:  1
This course will assist students with self-assessment, exploring career options and developing a resume. Skills in communicating, listening, organizing and supervising are some of the areas required for long-term career success that are covered.

Prerequisites:BUAD 1000 FOR LEVEL UG WITH MIN. GRADE OF D-
**BUAD2030  Leadership And Organizational Survival Skills**

Skills-based course equips the student to effectively lead and work in teams. Continuous improvement, problem solving, decision making, synergy and teamwork are explored in hands-on learning experience.

**Credit Hours:** 3

**BUAD2040  Financial Accounting Information**

This course is an introduction to financial accounting from the perspective of a financial statement user. Where appropriate, it provides a small and mid-sized company's perspective.

**Credit Hours:** 3

**BUAD2050  Accounting For Business Decision-Making**

This course is an introduction to management accounting, including the use and limitations of cost-volume-profit analysis for fundamental decisions concerning products, services and activities.

Prerequisites: BUAD 2040 FOR LEVEL UG WITH MIN. GRADE OF D-

**Credit Hours:** 3

**BUAD2060  Data Analysis For Business**

Business data analysis using interactive tools such as spreadsheets. Course will cover the application of statistical concepts, forecasting, the collection and analysis of data for business decision-making using cases where appropriate.

Prerequisites: MATH 1260 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 1270 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1850 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1920 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1760 FOR LEVEL UG WITH MIN. GRADE OF D-

**Credit Hours:** 3

**BUAD2070  Application Of Statistics In Business Decision Making**

A study of application of statistics in business using cases and spreadsheets. Course will cover hypothesis testing, regression analysis and correlation analysis, process control, time series and index numbers.

Prerequisites: BUAD 2060 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 2600 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 2630 FOR LEVEL UG WITH MIN. GRADE OF D-

**Credit Hours:** 3

**BUAD2080  Global Environment Of Business**

This course covers the global competitive challenges impacting businesses. Topics include globalization forces, country differences in political economy and culture, cross-border trade and investment, regional economic integration, and monetary systems.

**Credit Hours:** 3

**BUAD3000  Career Development II**

This course will assist students in developing job search skills necessary to obtain an internship and full-time position. Skills covered include resume enhancement, cover letter design, networking, informational interviewing, interview preparation and p

Prerequisites: (BUAD 1000 FOR LEVEL UG WITH MIN. GRADE OF D- AND BUAD 2000 FOR LEVEL UG WITH MIN. GRADE OF D-)
BUAD3010 Principles Of Marketing  
A practical approach to the planning and utilization of the marketing function. Topics include product development, pricing, promotion and distribution within a domestic and international framework.

Prerequisites: (ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D-) OR MIME 2600 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-

BUAD3020 Principles Of Manufacturing And Service Systems  
This course provides an overview of the functions, problems, solution techniques and decision making processes within the manufacturing and service environment. Topics include production planning, JIT, TQM and materials management.

Prerequisites: BUAD 2070 FOR LEVEL UG WITH MIN. GRADE OF D-

BUAD3030 Managerial And Behavioral Processes In Organizations  
Introduction to managerial and organizational concepts designed to develop knowledge, attitudes, techniques and skills in creating and managing innovative, adaptive organizations. Interactive exercises, videos, cases, discussions and lectures will be use

BUAD3040 Principles Of Financial Management  
Course emphasizes integrated financial decision making tools, techniques and theory. Content stresses acquisition and management of short and long-term capital, short and long-term investments, corporate securities and, financial markets.

Prerequisites: BUAD 2040 FOR LEVEL UG WITH MIN. GRADE OF D- OR ACTG 1040 FOR LEVEL UG WITH MIN. GRADE OF D- AND BUAD 2060 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

BUAD3050 Information Technology Management  
The role of computers and information systems in business decision-making will be carefully examined. The student is expected to develop computer-based applications for business decision making and problem solving through the use of state of the art soft

Prerequisites: BUAD 1020 FOR LEVEL UG WITH MIN. GRADE OF D- OR CMPT 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR BUSC FOR MIN. SCORE OF 39

BUAD3470 The Legal And Ethical Environment Of Business  
The nature of the law and the formation and application of Legal Principles; the Legal and Ethical Environment in which business operates; regulation of commerce and competition through Contracts, Torts and the Uniform Commercial Code.

BUAD4010 Integrative Capstone Experience  
Course is designed to be integrative and to provide a top-down focus in order to enhance overall understanding of key business concepts and processes. Students select from five options: The Dynamics of Family Business; Staying in Business: Value Based Man
**BUAD4020  Senior Business Policy Forum**  
Credit Hours: 3
This course integrates functional business knowledge learned in the core and stresses their interconnectedness and interrelationships. Students will develop and implement strategies in response to changes in the external environment.

Prerequisites: (BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND BUAD 3020 FOR LEVEL UG WITH MIN. GRADE OF D- AND BUAD 3030 FOR LEVEL UG WITH MIN. GRADE OF D- AND BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D-)

**BUAD6010  Assessing Emerging Business Opportunities**  
Credit Hours: 3
A contemporary view of entrepreneurship strategies in organizations is presented. This course deals with opportunity driven analysis and strategy. It will expose students to the role of the entrepreneur in an organization and the skills and attitudes r

**BUAD6030  Designing Products And Operations**  
Credit Hours: 3
Involves customer and market-driven issues and how they affect product/service/operations development. This integrated course examines marketing, operating and engineering in product development.

**BUAD6100  Accounting For Decision Making**  
Credit Hours: 3
This course develops an appreciation for financial statements and their usefulness in making decisions. The nature of costs, opportunity costs, responsibility accounting, budgeting, cost allocations, absorption cost systems, activity based costing and st

Prerequisites: (BUAD 2050 FOR LEVEL UG WITH MIN. GRADE OF D- AND BUAD 2040 FOR LEVEL UG WITH MIN. GRADE OF D-) OR ACCT 5000 FOR LEVEL GR WITH MIN. GRADE OF D-

**BUAD6200  Finance & Business Economics**  
Credit Hours: 3
This class uses cases and projects to develop skills necessary to integrate financial and nonfinancial considerations into the managerial process. Topics: (1) Assessing entrepreneurial opportunities; (2) Forecasting for strategic financial decision makin

Prerequisites: BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D- OR FINA 5310 FOR LEVEL GR WITH MIN. GRADE OF D-

**BUAD6300  Strategic Marketing And Analysis**  
Credit Hours: 3
This course covers the application of marketing concepts, models, technology and techniques to marketing problems, emphasizing strategic thinking and analysis in a global environment. Also covered are market research and information usage, and data-drive

Prerequisites: MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D- OR BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D-

**BUAD6400  Results-Based Management**  
Credit Hours: 3
An integrated approach to management. The focal point is organizational strategies, group and individual adaptation to environmental forces.

Prerequisites: BUAD 3030 FOR LEVEL UG WITH MIN. GRADE OF D- OR MGMT 5110 FOR LEVEL GR WITH MIN. GRADE OF D-
BUAD6500  International Business  
This course presents an understanding of the underlying theories and strategic challenges that must be encountered when firms “go global” or operate in the global context.

BUAD6600  Supply Chain Management  
This course presents an integrated approach to value chain management and analyzes key challenges, practices and trends concerning primary business functions and processes. The course also examines the strategic ramifications for the supply chain in an e

Prerequisites:BUAD 3020 FOR LEVEL UG WITH MIN. GRADE OF D- OR OPMT 5520 FOR LEVEL GR WITH MIN. GRADE OF D-

BUAD6800  Information Technology And E-Business  
This course covers the strategic role of information technology resources, e-commerce initiatives and e-business transformation for competitive advantage, managerial decision support, business process streamlining and inter-firm collaboration. Also cover

BUAD6900  Strategic Management Capstone  
This capstone course integrates business functions toward the strategic management of organizations or subunits thereof. Course pedagogy includes lectures, guest speakers, cases, experiential exercises field projects and simulations.

Prerequisites:(BUAD 6200 FOR LEVEL GR WITH MIN. GRADE OF D- AND BUAD 6300 FOR LEVEL GR WITH MIN. GRADE OF D-)

BUAD6920  Specialization Internship Opportunity  
Receive practical business experience working in an organization, while meeting with other students and learning about their experiences.

BUAD6940  Business Project Workshop  
Allow students to participate in real world problem in a consulting type of situation. Pre-requisite: 15 hours of MBA level work.

BUAD6980  Special Topics In Business Administration  
Independent study to be arranged with the Director, M.B.A. program.
BUAD6990    Project-Based Independent Study    Credit Hours: 1-4
Designed for students in a full-time employment situation who have the opportunity to do a supplemental project with their own employer. Must relate to specialization and be above normal responsibility.

CABP601    Intro to Cancer Biology    Credit Hours: 2
Introduction to neoplasia; epidemiology and etiology; the role of causative agents such as chemicals, radiation and viruses; cell proliferation, injury and death; oncogenes, suppressor genes and an overview of therapy.

CABP627    Advanced Cancer Biology    Credit Hours: 3
A comprehensive examination of the cellular and molecular foundation of cancer. Topics to be covered include: neoplasia; epidemiology and etiology; the role of causative agents such as chemicals, radiation, and viruses; cell proliferation, injury, and de

CABP656    Readings in Cancer Biology    Credit Hours: 1
A readings and discussion course that will examine classic and current research publications from within the broad realm of cancer biology.

CABP673    Research in Cancer Biology    Credit Hours: 1-15

CABP689    Ind Study in Cancer Biology    Credit Hours: 1-15
Intensive study in the field of cancer biology including theoretical and experimental work. May be repeated for credit.

CABP699    Thesis Research in Cancer Biology    Credit Hours: 1-15
CABP801  Intro to Cancer Biology  Credit Hours:  2
Introduction to neoplasia; epidemiology and etiology; the role of causative agents such as chemicals, radiation and viruses; cell proliferation, injury and death; oncogenes, suppressor genes and an overview of therapy.

CABP827  Advanced Cancer Biology  Credit Hours:  3
A comprehensive examination of the cellular and molecular foundation of cancer. Topics to be covered include: neoplasia; epidemiology and etiology; the role of causative agents such as chemicals, radiation, and viruses; cell proliferation, injury, and death.

CABP856  Readings in Cancer Biology  Credit Hours:  1
A readings and discussion course that will examine classic and current research publications from within the broad realm of cancer biology.

CABP889  Ind Study in Cancer Biology  Credit Hours:  1-15
Intensive study in the field of cancer biology including theoretical and experimental work. May be repeated for credit.

CABP999  Dissertation Research CABP  Credit Hours:  1-15

CARD1180  Cardiac Dysrhythmias  Credit Hours:  4
Study of cardiac electrophysiology and the process of rhythm analysis, along with heart sounds and ambulatory monitoring techniques.

Corequisite: CARD 1190

CARD1190  Cardiac Dysrhythmias Laboratory  Credit Hours:  1
 Twelve-lead EKG analysis and troubleshooting. Patient preparation and instruction for ambulatory monitoring.

Corequisite: CARD 1180
CARD1280  12-Lead Ekg Interpretation  Credit Hours:  4
Twelve-lead EKG analysis which includes bundle branch blocks, hypertrophics, infarction patterns, pediatric EKG interpretation and stress test procedures.

Prerequisites:(CARD 1180 FOR LEVEL UG WITH MIN. GRADE OF D- AND CARD 1190 FOR LEVEL UG WITH MIN. GRADE OF D-)

CARD1290  12-Lead Ekg Interpretation Laboratory  Credit Hours:  1
Analysis of abnormal twelve-lead EKGs and procedures for stress testing.

Prerequisites:(CARD 1180 FOR LEVEL UG WITH MIN. GRADE OF D- AND CARD 1190 FOR LEVEL UG WITH MIN. GRADE OF D-)

CARD1390  12-Lead Ekg Interpretation Clinical  Credit Hours:  4
Clinical experiences are provided in acute care and outpatient settings for EKG, ambulatory monitoring and stress testing.

Prerequisites:(CARD 1280 FOR LEVEL UG WITH MIN. GRADE OF D- AND CARD 1290 FOR LEVEL UG WITH MIN. GRADE OF D-)

CARD2080  Echocardiography  Credit Hours:  4
Study of the procedures and principles in M-mode, 2-D and Doppler echocardiography. Emphasis on views and pathology.

Prerequisites:CARD 1390 FOR LEVEL UG WITH MIN. GRADE OF D-

CARD2090  Echocardiography Lab/Clinical I  Credit Hours:  4
Introduction to echocardiography views utilized for M-mode, 2-D and Doppler measurements. Laboratory and clinical experience are provided to support the didactic curriculum.

Prerequisites:CARD 1390 FOR LEVEL UG WITH MIN. GRADE OF D-

CARD2180  Advanced Echocardiography  Credit Hours:  2
Advanced pathophysiology, including stress echo, transesophageal and congenital anomalies.

Prerequisites:(CARD 2080 FOR LEVEL UG WITH MIN. GRADE OF D- AND CARD 2090 FOR LEVEL UG WITH MIN. GRADE OF D-)

CARD2190  Echocardiography Laboratory/Clinical II  Credit Hours:  4
Advanced echocardiography studies, with Doppler interpretation. Clinical practice will be held off campus.

Prerequisites:(CARD 2080 FOR LEVEL UG WITH MIN. GRADE OF D- AND CARD 2090 FOR LEVEL UG WITH MIN. GRADE OF D-)
CARD2370  Ultrasound Instrument Mechanics And Wave Physics  
A study of ultrasound instrumentation mechanics and ultrasound wave physics. Introduction to knobology of the imaging system in noninvasive cardiology studies.

Prerequisites: MATH 1320 FOR LEVEL UG WITH MIN. GRADE OF C

CARD2380  Ultrasound Physics And Instrumentation  
The physical principles of ultrasound image generation and the image interpretation skills will be discussed. Assessment of cardiac and peripheral vascular diseases will be covered.

Prerequisites: MATH 1320 FOR LEVEL UG WITH MIN. GRADE OF D-

CARD2400  Peripheral Vascular - Venous Disorders  
Study of the procedures and principles involved in recording and performing an analysis of non-invasive PV data. The use of quantitative and qualitative methods of detecting venous diseases are covered.

Prerequisites: CARD 1390 FOR LEVEL UG WITH MIN. GRADE OF D-

CARD2410  Peripheral Vascular Laboratory/Clinical I  
Performance of non-invasive peripheral vascular procedures related to venous diseases. Laboratory and clinical experience are provided to support the didactic curriculum. Clinical rotations are held off campus.

Prerequisites: CARD 1390 FOR LEVEL UG WITH MIN. GRADE OF D-

CARD2420  Peripheral Vascular - Arterial Disorders  
A study of the procedures and principles involved in recording and performing analysis of non-invasive peripheral vascular data. The use of quantitative and qualitative methods of assessing arterial diseases are provided.

Prerequisites: (CARD 2400 FOR LEVEL UG WITH MIN. GRADE OF D- AND CARD 2410 FOR LEVEL UG WITH MIN. GRADE OF D-)

CARD2430  Peripheral Vascular Laboratory/Clinical II  
Performance of non-invasive peripheral vascular procedures related to arterial diseases. Laboratory and clinical experience are provided to support the didactic curriculum. Clinicals are held off campus.

Prerequisites: (CARD 2400 FOR LEVEL UG WITH MIN. GRADE OF D- AND CARD 2410 FOR LEVEL UG WITH MIN. GRADE OF D-)

CARD2500  Cardiovascular Clinical  
Clinical rotation which allows the student to perform non-invasive echocardiography or peripheral vascular exams under the direct supervision of a qualified technologist.

Prerequisites: (CARD 2420 FOR LEVEL UG WITH MIN. GRADE OF D- AND CARD 2430 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (CARD 2180 FOR LEVEL UG WITH MIN. GRADE OF D- AND CARD 2190 FOR LEVEL UG WITH MIN. GRADE OF D-)
**CARD2990 Independent Study**

Credit Hours: 1-3

A course designed to provide educational opportunities in a specialized academic area under the direct supervision of a faculty member.

**CET1000 Introduction To Construction Engineering Technology**

Credit Hours: 1

An introduction to Construction Engineering by introducing career sectors, current topics, teamwork, safety and the curriculum in order to provide the freshman CET student with building blocks for success within the program.

**CET1100 Architectural Drafting**

Credit Hours: 3

Fundamentals of construction drafting techniques (hand and computer-aided) will be covered in this course. Drafting of plan sheets for foundations, wall cross-sections, floor plans and architectural detail will be covered in the laboratory portion of the course.

**CET1150 Construction Materials And Codes**

Credit Hours: 3

Terminologies and properties of construction materials and construction techniques. Sources and organization of manufacturer's material information will be discussed. An introduction to the various building codes and these organizations will be examined.

**CET1200 Engineering Mechanics**

Credit Hours: 4

Analysis of the laws of statics and strength of materials. Application to the properties of common construction materials including stress, strain, compression, shear, moments and deflection with respect to columns and beams. The design of wood beams, columns, and beams with beams.

Prerequisites: (PHYS 2010 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 1330 FOR LEVEL UG WITH MIN. GRADE OF D-)

**CET1210 Surveying**

Credit Hours: 3

Study of construction and land surveying techniques, including the use of a steel tape, level, transit and total station. Laboratory will stress surveying measurement and layout techniques. Laboratory exercises will also introduce "AUTOCAD" and associated software.

Prerequisites: (ENGT 1050 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 1330 FOR LEVEL UG WITH MIN. GRADE OF D-)

**CET2030 Construction Graphics**

Credit Hours: 3

Computer drafting as related to construction engineering projects such as highways, streets, sanitary and storm sewers, and building sites. The computer drafting portion will use Microstation and associated third party support (e.g. Geopak).

Prerequisites: (ENGT 1050 FOR LEVEL UG WITH MIN. GRADE OF D- AND CET 1100 FOR LEVEL UG WITH MIN. GRADE OF D- AND CET 1210 FOR LEVEL UG WITH MIN. GRADE OF D-)
CET2110  Materials Testing  Credit Hours:  3
Design of portland and asphalt cement concrete mixes and associated quality control tests of mortar, aggregates, asphalt cements, portland and asphaltic concrete.

Prerequisites: ENGT 1050 FOR LEVEL UG WITH MIN. GRADE OF D-

CET2220  Soil Mechanics  Credit Hours:  3
Theory and application of soil properties as related to foundation design, including pressure distribution, bearing capacity, compressibility, consolidation, shear and stress analysis. Laboratory will cover quality control tests.

Prerequisites: (ENGT 1050 FOR LEVEL UG WITH MIN. GRADE OF D- AND CET 1200 FOR LEVEL UG WITH MIN. GRADE OF D-)

CET2250  Structural Design  Credit Hours:  4
Principles of statics and strength of materials as applied to structural design of steel, reinforced concrete and wood, using applicable codes.

Prerequisites: (ENGT 1050 FOR LEVEL UG WITH MIN. GRADE OF D- AND CET 1200 FOR LEVEL UG WITH MIN. GRADE OF D-)

CET2980  Special Topics  Credit Hours:  1-4
Student performs work on a specialized project of an advanced nature under the supervision of a Construction Engineering Technology faculty member.

CET3120  Advanced Construction Materials  Credit Hours:  3
Engineering design and problems of soils, aggregates, asphaltic and portland cement concretes, brick and block masonry construction. Emphasis will be upon earth-based quality construction.

Prerequisites: (CET 2220 FOR LEVEL UG WITH MIN. GRADE OF D- AND CET 2110 FOR LEVEL UG WITH MIN. GRADE OF D-)

CET3210  Surveying Applications  Credit Hours:  3
Study of land surveying concepts as related to land subdivision - construction, boundary and engineering surveys. Laboratory exercises will be field surveying problems and computer laboratory problems using "AUTOCAD" and associated computer surveying sof

Prerequisites: CET 1210 FOR LEVEL UG WITH MIN. GRADE OF D-

CET3220  Hydrology And Hydraulics  Credit Hours:  3
Surface and ground-water hydrology/hydraulic concepts as related to rainfall/runoff and surface and ground-water drainage. Open and closed channel hydraulics will be studied.

Prerequisites: (ENGT 1050 FOR LEVEL UG WITH MIN. GRADE OF D- AND CET 2030 FOR LEVEL UG WITH MIN. GRADE OF D-)
CET4250  Advanced Structural Design  Credit Hours: 4
Advanced studies of steel, wood, concrete and masonry structural design, examination of temporary construction structures and problems, demolition of structures.

Prerequisites:CET 2250 FOR LEVEL UG WITH MIN. GRADE OF D-

CET4350  Soils, Foundations And Earth Structures  Credit Hours: 4
Temporary and permanent earth structures (foundations and retaining walls), tunneling, trenching, cofferdams and dewatering.

Prerequisites:(CET 2250 FOR LEVEL UG WITH MIN. GRADE OF D- AND CET 2220 FOR LEVEL UG WITH MIN. GRADE OF D-)

CET4460  Construction Management And Scheduling  Credit Hours: 3
Topics include job startup, scheduling (pre-construction operations), CPM and PERT, disputes, work stoppages, job closeout, liens and client, contract, architect-engineer relationship. Supervision and inspection of various building elements (concrete, as

Prerequisites:(ARCT 1260 FOR LEVEL UG WITH MIN. GRADE OF D- AND ARCT 2160 FOR LEVEL UG WITH MIN. GRADE OF D-)

CHEE1000  Orientation And Computing For Chemical Engineers  Credit Hours: 3
An introduction to the UT campus, campus resources, the College of Engineering and the Department of Chemical and Environmental Engineering. Primary emphasis is on engineering computing, data analysis and basic chemical engineering calculations.

CHEE1010  Professional Development  Credit Hours: 1
Social protocol and ethics in industry. Resume writing and interview skills are presented in preparation for the Co-op experience. Review of resource materials for technical and non-technical individual learning. Oral and written presentation technique

CHEE2010  Mass And Energy Balances  Credit Hours: 3
Introduction to the principles and techniques used in chemical engineering. Basic concepts of mathematics, physics and chemistry are applied to solving problems involving stoichiometry, material balances and energy balances.

Prerequisites:CHEE 1000 FOR LEVEL UG WITH MIN. GRADE OF D- AND (MATH 1850 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND CHEM 1230 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY))

CHEE2110  Process Fluid Mechanics  Credit Hours: 3
A comprehensive introduction to process fluid mechanics. Topics include: hydrostatics, characteristics of laminar and turbulent flow, mechanical energy balance, flow through packed beds and fluidization of solids, design of pumping systems and piping network

Prerequisites:CHEE 2010 FOR LEVEL UG WITH MIN. GRADE OF D-
CHEE2230 Chemical Engineering Thermodynamics I
Credit Hours: 3
The principles of thermodynamics and their application to chemical engineering. Topics include states and properties of matter, the first and second law of thermodynamics and thermo-chemical effects.

Prerequisites: CHEE 2010 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEE2230 Chemical Engineering Thermodynamics II
Credit Hours: 3
Topics include properties of fluid mixtures, phase equilibria, chemical equilibria, power generation and refrigeration processes.

Prerequisites: CHEE 2230 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEE2980 Special Topics In Chemical Engineering
Credit Hours: 1-4
Special topics of interest to chemical engineers - lower division.

CHEE2990 Independent Studies In Chemical Engineering
Credit Hours: 1-4
Independent studies in chemical engineering - lower division. Selected subjects in chemical engineering of special interest to the professor and the student.

CHEE3030 Separation Processes
Credit Hours: 3
An introduction to equilibrium-based separation processes. Topics include distillation, extraction, leaching, drying and membrane separations. Preliminary equipment design calculations.

Prerequisites: CHEE 2330 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEE3110 Process Heat Transfer
Credit Hours: 2

Prerequisites: CHEE 2110 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND CHEE 2230 FOR LEVEL UG WITH MIN. GRADE OF D-

Corequisite: CHEE 2110

CHEE3120 Mass Transfer
Credit Hours: 3
Mass transfer and its application in chemical engineering separations. Diffusivity, mass transfer coefficients and Fick's Law. Applications in continuous and stagewise processes, including absorption, extraction and distillation.

Prerequisites: (CHEE 2110 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEE 3030 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY))
CHEE3300  Reactor Engineering And Design  Credit Hours:  3
Prerequisites: CHEE 2230 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEE3400  Process Dynamics And Control  Credit Hours:  3
An introduction to designing control systems for chemical engineering processes. Process stability and controller design and selection. Application of LaPlace transforms, frequency response techniques and simulation software for open-loop and closed-loop
Prerequisites: (CHEE 3300 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-) AND CHEE 2110 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEE3940  Co-Op Work Experience  Credit Hours:  1
Approved co-op work experience. Course may be repeated.
Prerequisites: CHEE 2010 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEE3950  Co-Op Experience  Credit Hours:  1
Approved co-op work experience beyond third required co-op experience. Course may be repeated.
Prerequisites: CHEE 3940 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEE4100  Environmental Chemo-Dynamics  Credit Hours:  3
A study of the transport and fate of chemicals in the environment. This course makes use of the principles of thermodynamics, material balances and transport concepts to concentrate on the mechanisms and rates of movement of chemicals in natural environment
Prerequisites: (CHEE 3110 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEE 3120 FOR LEVEL UG WITH MIN. GRADE OF D-)

CHEE4110  Pollution Prevention  Credit Hours:  3

CHEE4150  Environmental Reaction Engineering  Credit Hours:  3
The study of chemical reaction engineering as applied to environmental systems. Engineering reactor design considerations for environmental applications are covered.
CHEE4160  Industrial Waste Treatment  Credit Hours:  3
Discussion of and solution to the environmental problems of the chemical industry. Equal periods of time will be devoted to water, air and solid and hazardous waste control.

CHEE4180  Hazardous Material Spills  Credit Hours:  3
All aspects of oil and hazardous material spills. Causes of spills, safe responses to them, mitigation of spills, impact, cleanup, prevention, disposal of residues, transportation of chemicals. Air pollution problems from volatile chemicals. Safety laws.
Prerequisites: (CHEE 3110 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEE 3120 FOR LEVEL UG WITH MIN. GRADE OF D-)

CHEE4270  Estimation Of Physical Properties  Credit Hours:  3
Estimation of Physical Properties, especially thermodynamic properties of gases and liquids.
Prerequisites: CHEE 2330 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEE4410  New Separations  Credit Hours:  3
Introduction to and analysis of new separation techniques relevant to downstream processing of bioreactor products. Topics include new extraction and adsorption methods, chromatography techniques, ultrafiltration and electrokinetic methods such as electr
Prerequisites: (CHEE 3110 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEE 3120 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEE 3030 FOR LEVEL UG WITH MIN. GRADE OF D-)

CHEE4480  Membrane Science And Engineering  Credit Hours:  3
An introduction to formulating and solving engineering problems involving the use of both dense and porous membranes for gas separation, pervaporation, dialysis, filtration and reverse osmosis applications.

CHEE4500  Chemical Engineering Laboratory I  Credit Hours:  2
An experimental study of the design and performance of selected chemical engineering processes and equipment. Analysis of data, design of experiments and laboratory reports are emphasized.
Prerequisites: (CHEE 2110 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEE 3030 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEE 3110 FOR LEVEL UG WITH MIN. GRADE OF D-)

CHEE4510  Transport Phenomena  Credit Hours:  3
An introductory analysis of the equations of change governing the phenomena of momentum, heat and mass transfer in single and multicomponent systems from a continuum viewpoint. The analogies between the three phenomena will be stressed. The ability to obt
Prerequisites: (CHEE 3110 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEE 3120 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-)
CHEE4520  Chemical Process Economics And Design  Credit Hours:  3
Chemical equipment and process design. Introduction to simulation and flow-sheeting techniques and software. Topics include plant safety and pollution prevention, market analysis, cost estimating, decision making and cash flow analysis.
Prerequisites:(CHEE 2110 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEE 2330 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEE 3030 FOR LEVEL UG WITH MIN. GRADE OF D-) AND CHEE 3110 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEE4540  Chemical Process Simulation And Design  Credit Hours:  3
Application of chemical engineering fundamentals and the use of process simulators in the synthesis of chemical processes. Use of cost factors and environmental considerations in process decisions. The solution of a comprehensive case study and the prep
Prerequisites:CHEE 3120 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEE 4520 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEE 3300 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEE4550  Chemical Engineering Laboratory II  Credit Hours:  2
An experimental study of the design and performance of selected chemical engineering process equipment, focusing on heat and mass transfer and process control. Design of experiments, analysis of data and presentation techniques are emphasized.
Prerequisites:(CHEE 3300 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND CHEE 3120 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND CHEE 3400 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND CHEE 4

CHEE4600  Fractals In Engineering  Credit Hours:  3
The course will help students develop a working knowledge of the mathematical tools developed to describe seemingly random or chaotic behavior and the ability to apply these tools to problems of interest to engineers.

CHEE4800  Polymer Science And Engineering  Credit Hours:  3
Polymerization processes, characterization, structure and properties of polymers, processing and engineering applications of the major polymer types.

CHEE4820  Colloid And Surface Phenomena  Credit Hours:  3
Introduction to the physico-chemical principles and engineering of dispersions, emulsions and colloids relevant to chemical/biochemical, pharmaceutical and environmental areas. Topics include surface tension, adsorption, charge effects at interfaces, col
Prerequisites:MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 3820 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEE4850  Properties Of Polymer Systems  Credit Hours:  3
A quantitative treatment of the mechanical behavior of polymer systems emphasizing rubber elasticity, linear viscoelasticity, yield and failure, non-Newtonian flow of polymer melts, and viscometry. Application of stress-strain relationships to processing
Prerequisites:(CHEE 2330 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEE 2110 FOR LEVEL UG WITH MIN. GRADE OF D-)
CHEE4960  Senior Honors Thesis  Credit Hours:  3
Independent research under the guidance of a faculty member, requiring an oral report and a written thesis upon completion of work.

CHEE4980  Special Topics In Chemical Engineering  Credit Hours:  1-4
Special topics of interest to chemical engineers - upper division.

CHEE4990  Independent Studies In Chemical Engineering  Credit Hours:  1-4
Independent studies in chemical engineering - upper division.

CHEE5100  Environmental Chemo-Dynamics  Credit Hours:  3
A study of the transport and fate of chemicals in the environment. This course makes use of the principles of thermodynamics, material balances and transport concepts to concentrate on the mechanisms and rates of movement of chemicals in natural environme

CHEE5150  Environmental Reaction Engineering  Credit Hours:  3
The study of chemical reaction engineering as applied to environmental systems. Engineering reactor design considerations for environmental applications are covered.

CHEE5160  Industrial Waste Treatment  Credit Hours:  3
Discussion of and solution to the environmental problems of the chemical industry. Equal periods of time will be devoted to water, air and solid and hazardous waste control.

CHEE5180  Hazardous Material Spills  Credit Hours:  3
All aspects of oil and hazardous material spills. Causes of spills, safe responses to them, mitigation of spills, impact, cleanup, prevention, disposal of residues, transportation of chemicals. Air pollution problems from volatile chemicals. Safety laws.
CHEE5270  Estimation Of Physical Properties  Credit Hours: 3
Estimation of Physical Properties, especially thermodynamic and transport properties of gases and liquids.

CHEE5410  New Separations  Credit Hours: 3
Introduction to and analysis of new separation techniques relevant to downstream processing of bioreactor products. Topics include new extraction and adsorption methods, chromatography techniques, ultrafiltration and electrokinetic methods such as electro...

CHEE5480  Membrane Science And Engineering  Credit Hours: 3
Students learn how to formulate and solve engineering problems involving the use of both dense and porous membranes for gas separation, pervaporation, dialysis, filtration and reverse osmosis applications.

CHEE5600  Fractals In Engineering  Credit Hours: 3
The course will help students develop a working knowledge of the mathematical tools developed to describe seemingly random or chaotic behavior and the ability to apply these tools to problems of interest to engineers.

CHEE5800  Polymer Science And Engineering  Credit Hours: 3
Polymerization processes, characterization, structure and properties of polymers, processing and engineering applications of the major polymer types.

CHEE5820  Colloid And Surface Phenomena  Credit Hours: 3
Introduction to the physico-chemical principles and engineering of dispersions, emulsions and colloids relevant to chemical/biochemical, pharmaceutical and environmental areas. Topics include surface tension, adsorption, charge effects at interfaces, col...

CHEE5850  Properties Of Polymer Systems  Credit Hours: 3
A quantitative treatment of the mechanical behavior of polymer systems emphasizing rubber elasticity, linear viscoelasticity, yield and failure, non-Newtonian flow of polymer melts, and viscometry. Application of stress-strain relationships to processing...
CHEE5930  Seminars In Chemical Engineering  Credit Hours:  1
Research topics of current interest to chemical engineers will be presented by internal and external speakers in a research seminar format.

CHEE6100  Engineering Materials Science And Applications  Credit Hours:  3
Study of engineering materials science and applications relevant for industry and manufacturing. Course content emphasizes the relation of structure and processing to design and applications of metallic, semiconductor, ceramic polymeric and composite materials.

CHEE6500  Advanced Chemical Reaction Engineering  Credit Hours:  3
Analysis of kinetic, diffusive and flow factors on chemical reactor performance. Topics include batch, plug flow and CSTR reactors, empirical rate expressions, residence time distributions, catalytic reactors, stability and optimization.

CHEE6510  Advanced Chemical Engineering Thermodynamics  Credit Hours:  3
Advanced treatment of fundamental principles of thermodynamics, especially as related to calculation of phase equilibria. Topics include intermolecular potentials, excess functions, theories of solutions, high-pressure equilibria and introductory statistical thermodynamics.

CHEE6550  Transport Phenomena I  Credit Hours:  3
Students learn how to formulate and solve engineering problems involving momentum transfer from the microscopic view. Topics include vector/tensor analysis, approximation methods, computational solutions and non-Newtonian fluid phenomena.

CHEE6560  Transport Phenomena II  Credit Hours:  3
Students learn how to formulate and solve engineering problems involving simultaneous momentum, heat and mass transfer from the microscopic view. Topics include conduction, radiation, diffusion, forced convection and free convection.

Prerequisites: CHEE 6550 FOR LEVEL GR WITH MIN. GRADE OF D-

CHEE6600  Applied Tensor Analysis  Credit Hours:  3
The study of tensor algebra and calculus. Use of covariant, contravariant and mixed tensor algebra and calculus. Tests for tensor character. Christoffel symbols and derivative operations in curvilinear coordinates.
CHEE6700  Management Of Projects And Technological Innovation  Credit Hours:  3
Theory and practice of management technology applied to project management, engineering project development and major technological innovation to address new business needs and opportunities. Topics covered include schedule, budgets, performance, technolo

CHEE6790  Information Accelerated Radical Innovation  Credit Hours:  3
Study of new Accelerated Radical Innovation discipline targeting 2X-10X improvement in innovation effectiveness, measured by reduced risk, time and cost. Assessment and modeling to speed development, transfer and profitable commercialization.

CHEE6810  Physical Chemistry Of Polymers  Credit Hours:  3
The physical and chemical principles of polymer systems. Topics covered include: configuration and conformation, thermodynamics and statistical mechanics of polymer solutions, hydrodynamics, scattering, rubber elasticity, birefringence, glass phenomena, etc.
Prerequisites: CHEE 5800 FOR LEVEL GR WITH MIN. GRADE OF D-

CHEE6830  Transport In Plastics  Credit Hours:  3
A study of the transport properties of polymers including permeation of gases, vapors and liquids and movement of electrical charge. Topics include mathematics of diffusion, polymer-permeant interactions, effects of polymer structure, packaging and diele

CHEE6840  Polymer Processing  Credit Hours:  3
A study of the concepts and principles of basic thermoplastic processing methods with the emphasis of their application to selected topics of current interest in the industry.

CHEE6860  Polymer Laboratory Methods  Credit Hours:  3
Characterization of polymers by physical testing (tensile, creep and rheological), physicochemical methods (viscosity, gel permeation chromatography), thermal analysis, spectroscopy, light microscopy, permeation, density, light scattering and processing.

CHEE6870  Advanced Engineering Materials  Credit Hours:  3
An advanced course on the structure and bonding, theory, properties and materials processing of metallic, semiconductor, ceramic, macromolecular, composite and biological materials, emphasizing the relations between composition and structure, crystal grow
CHEE6880 Thermodynamics Of Semiconductor And Biological Materials  
Credit Hours: 3  
Application of chemical thermodynamics and phase equilibria in materials science. Basic principles of chemical thermodynamics will be introduced and then applied to metal alloy and semiconductor systems and to biological systems.
Prerequisites: CHEE 6870 FOR LEVEL GR WITH MIN. GRADE OF D-.

CHEE6890 Advanced Characterization Of Engineering Materials  
Credit Hours: 3  
An advanced course for students interested in multidisciplinary engineering materials science research, of the concepts, theory and techniques for advanced characterization of crystalline, amorphous and macromolecular materials at various length scales by
Prerequisites: CHEE 6870 FOR LEVEL GR WITH MIN. GRADE OF D-.

CHEE6960 Master's Graduate Research And Thesis  
Credit Hours: 1-15  
Graduate research towards the completion of a Master's Degree.

CHEE6980 Special Topics In Chemical Engineering  
Credit Hours: 1-6  
Selected topics from current chemical engineering research with intensive investigation into the recent literature in an area of mutual interest to the student and the instructor.

CHEE7100 Environmental Chemodynamics  
Credit Hours: 3

CHEE7150 Environmental Reaction Engr  
Credit Hours: 3

CHEE7160 Industrial Waste Treatment  
Credit Hours: 3
CHEE7180  Hazardous Material Spills  Credit Hours: 3

CHEE7270  Estimation-Physical Properties  Credit Hours: 3

CHEE7410  New Separations  Credit Hours: 3

CHEE7480  Membrane Science and Engnrng  Credit Hours: 3

CHEE7600  Fractals in Engineering  Credit Hours: 3

CHEE7800  Polymer Science and Engnrng  Credit Hours: 3

CHEE7820  Colloid and Surface Phenomena  Credit Hours: 3
CHEE7850  Properties of Polymer Systems  Credit Hours: 3

CHEE7930  Seminar in Chemical Engr  Credit Hours: 1

CHEE8500  Advanced Chemical Reaction Engineering  Credit Hours: 3
Analysis of kinetic, diffusive and flow factors on chemical reactor performance. Topics include batch, plug flow and CSTR reactors, empirical rate expressions, residence time distributions, catalytic reactors, stability and optimization.

CHEE8510  Advanced Chemical Engineering Thermodynamics  Credit Hours: 3
Advanced treatment of fundamental principles of thermodynamics, especially as related to calculation of phase equilibria. Topics include intermolecular potentials, excess functions, theories of solutions, high-pressure equilibria and introductory statisti

CHEE8550  Transport Phenomena I  Credit Hours: 3
Students learn how to formulate and solve engineering problems involving momentum transfer from the microscopic view. Topics include vector/tensor analysis, approximation methods, computational solutions and non-Newtonian fluid phenomena.

CHEE8560  Transport Phenomena II  Credit Hours: 3
Students learn how to formulate and solve engineering problems involving simultaneous momentum, heat and mass transfer from the microscopic view. Topics include conduction, radiation, diffusion, forced convection and free convection.
Prerequisites: CHEE 8550 FOR LEVEL GR WITH MIN. GRADE OF D-

CHEE8600  Applied Tensor Analysis  Credit Hours: 3
The study of tensor algebra and calculus. Use of covariant, contravariant and mixed tensor algebra and calculus. Tests for tensor character. Christoffel symbols and derivative operations in curvilinear coordinates.
<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credit Hours</th>
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<td>CHEE8810</td>
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<td>Prerequisites: CHEE 7800 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<td>Transport In Plastics</td>
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<td>Polymer Laboratory Methods</td>
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<td>Characterization of polymers by physical testing (tensile, creep and rheological), physicochemical methods (viscosity, gel permeation chromatography), thermal analysis, spectroscopy, light microscopy, permeation, density, light scattering and processing.</td>
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<td>CHEE8960</td>
<td>Doctoral Graduate Research And Dissertation</td>
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<td>Selected topics from current chemical engineering research with intensive investigation into the recent literature in an area of mutual interest to the student and the instructor.</td>
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<tr>
<td>CHEM1090</td>
<td>Elementary Chemistry</td>
<td>3</td>
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<td>For students who major in science, engineering or other fields which require chemistry as a prerequisite subject who have not had a previous course in chemistry and whose preparation is not sufficient to begin General Chemistry (CHEM 1230) or Chemistry fo</td>
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</tr>
</tbody>
</table>
CHEM1100 Chemistry And Society
An introduction to basic chemistry and a survey of the impact that chemistry has on society. Topics include: power, energy, and fuels; water and pollution; soaps and detergents; nutrition; poisons and toxins; plastics and polymers; drugs.

Credit Hours: 3

CHEM1120 Chemistry For Health Sciences
The study of chemistry for students majoring in nursing and other health-related fields. This course includes general, organic and biochemical topics in condensed form. The impact of chemistry in health fields will be emphasized.

Prerequisites: CHEM 1090 FOR LEVEL UG WITH MIN. GRADE OF D- OR CHPL FOR MIN. SCORE OF 19

Credit Hours: 4

CHEM1150 Chemistry And Society Laboratory
Laboratory introduction to the concepts of chemistry to accompany Chemistry 1100. Demonstrations by laboratory experiments of lessons developed in the accompanying lecture course.

Credit Hours: 1

CHEM1200 Problem Solving In General Chemistry
Problem solving and skill development for students enrolled in CHEM 1230 who obtained a satisfactory score on the chemistry placement test but need additional assistance in selected topics. May be taken only as P/NC.

Prerequisites: CHEM 1090 FOR LEVEL UG WITH MIN. GRADE OF D- OR CHPL FOR MIN. SCORE OF 18

Credit Hours: 1

CHEM1210 Chemistry For The Life Sciences I
A series of elementary courses oriented toward the life processes in plants and animals. Recommended for students in the allied health professions.

Credit Hours: 3

CHEM1220 Chemistry For The Life Sciences II
A series of elementary courses oriented toward the life processes in plants and animals. Recommended for students in the allied health professions.

Prerequisites: CHEM 1210 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3

CHEM1230 General Chemistry I
An introduction to atomic structure, chemical bonding, kinetic-molecular theory, energy relationships and structural concepts. This sequence is for students who major in science, engineering or other fields which require chemistry as a prerequisite subject.

Prerequisites: CHEM 1090 FOR LEVEL UG WITH MIN. GRADE OF D- OR CHPL FOR MIN. SCORE OF 17

Credit Hours: 4
CHEM1240  General Chemistry II  Credit Hours: 4
An introduction to solutions, equilibrium, acid-base theory, energy relationships and structural concepts. This sequence is for students who major in science, engineering or other fields which require chemistry as a prerequisite subject. Three hours lec

Prerequisites: CHEM 1230 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM1260  Chemistry For The Health Sciences Laboratory  Credit Hours: 1
Beginning laboratories directed toward a chemical study of the life processes in plants and animals. Approved chemistry safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

CHEM1280  General Chemistry Lab I  Credit Hours: 1
Experiments over topics covered in CHEM 1230 lectures. Approved chemistry safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

Prerequisites: CHEM 1230 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

CHEM1290  General Chemistry Lab II  Credit Hours: 1
Experiments over topics covered in CHEM 1240 lectures. Approved chemistry safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

Prerequisites: CHEM 1280 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM1910  Survey Of Research  Credit Hours: 1
Survey of current research areas at the frontiers of chemistry, including topics that cross the boundaries with other disciplines. May be taken only as P/NC.

CHEM2410  Organic Chemistry I  Credit Hours: 3
Study of structure and reactions of organic compounds. Three hours lecture per week.

Prerequisites: CHEM 1240 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM2420  Organic Chemistry II  Credit Hours: 3
Study of structure and reactions of organic compounds. Three hours lecture per week.

Prerequisites: CHEM 2410 FOR LEVEL UG WITH MIN. GRADE OF D-
CHEM2430  Recitation For Organic Chemistry I
Optional recitation sections that discuss concepts and solve practice questions in CHEM2410.

Prerequisites: CHEM 1240 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM2440  Recitation For Organic Chemistry II
Optional recitation sections that discuss concepts and solve practice questions in CHEM2420.

Prerequisites: CHEM 2410 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM2460  Organic Chemistry Laboratory I
Practice of organic laboratory techniques. Four hours of laboratory per week. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

Prerequisites: (CHEM 1240 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1290 FOR LEVEL UG WITH MIN. GRADE OF D-)

CHEM2470  Organic Chemistry Laboratory II
Practice of organic laboratory techniques. Four hours of laboratory per week. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

Prerequisites: CHEM 2460 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM2480  Organic Separations And Elementary Synthesis
Introduction to theory and laboratory practice in modern methods of physical separation techniques, synthesis and microscale manipulations. Approved chemistry safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student.

Prerequisites: CHEM 1290 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM2490  Synthesis And Identification Of Organic Compounds
Application of synthetic methods to elementary organic synthesis with special emphasis on instrumental approaches to problem solving in organic chemistry. Approved chemistry safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student.

Prerequisites: (CHEM 2410 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 2480 FOR LEVEL UG WITH MIN. GRADE OF D-)

CHEM2500  Instrumental Methods For Organic Chemistry
A bridge course for students wishing to major in chemistry at the B.S. level after taking CHEM 2460 or CHEM 2460 and 2470. The application of instrumental methods to organic synthesis. Approved chemical safety goggles meeting the American National Standard.

Prerequisites: (CHEM 2410 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 2460 FOR LEVEL UG WITH MIN. GRADE OF D-)
CHEM2910  Undergraduate Research  
Credit Hours: 1-3  
An introduction to research under the guidance of a faculty member. May be repeated. A maximum accumulated credit of 4 hours in 2910 and total of 10 hours in 2910, 3910, 4910 may be applied toward a degree. May be taken only as P/NC.

CHEM2920  Readings In Chemistry  
Credit Hours: 1-2  
Readings from the literature of chemistry. May be taken only as P/NC.

CHEM3310  Analytical Chemistry  
Credit Hours: 2  
Theory and applications of chemical equilibria to gravimetric, volumetric and separation techniques. Emphasis on the quantitative aspects of analytical chemistry. Two hours lecture per week.

Prerequisites: CHEM 1240 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM3360  Analytical Chemistry Laboratory  
Credit Hours: 2  
Practice of quantitative analytical methods of analysis. Six hours laboratory per week. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

Prerequisites: (CHEM 3310 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1290 FOR LEVEL UG WITH MIN. GRADE OF D-)

CHEM3510  Biochemistry I  
Credit Hours: 3  
Chemical structure and molecular transformation in biological systems.

Prerequisites: CHEM 2420 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM3520  Biochemistry II  
Credit Hours: 3  
Chemical structure and molecular transformation in biological systems.

Prerequisites: CHEM 3510 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM3560  Biochemistry Laboratory  
Credit Hours: 2  
Practice of biochemistry laboratory techniques. Four hours of laboratory per week.

Prerequisites: CHEM 3510 FOR LEVEL UG WITH MIN. GRADE OF D-
CHEM3610  Inorganic Chemistry I  Credit Hours:  3
The application of modern theories to the elements and their inorganic compounds. Physical chemical principles are used throughout. Prerequisite: CHEM 2420 or CHEE 2230 and 2330

Prerequisites: CHEM 2420 FOR LEVEL UG WITH MIN. GRADE OF D- OR CHEE 2230 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEE 2330 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM3710  Physical Chemistry For The Biosciences I  Credit Hours:  3
Physical and mathematical laws applied to chemistry with examples from biologically important processes. No credit given if Chemistry 3730-3740 are taken.

Prerequisites: (MATH 1860 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 2070 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 2080 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (MATH 1860 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 2130 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM3712  Recitation for Chem 3710  Credit Hours:  1
Optional recitation section that discusses concepts and solves practice questions for CHEM 3710. Must be taken simultaneously with CHEM 3710. Not for major/minor credit.

Prerequisites: CHEM 2420 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 3710 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

CHEM3720  Physical Chemistry For The Biosciences II  Credit Hours:  3
Physical and mathematical laws applied to chemistry with examples from biologically important processes. No credit given if Chemistry 3730-3740 are taken.

Prerequisites: CHEM 3710 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM3722  Recitation For Chem 3720  Credit Hours:  1
Optional recitation section that discusses concepts and solves practice questions for CHEM 3720. Must be taken simultaneously with CHEM 3720. Not for major/minor credit.

Prerequisites: CHEM 3710 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 3720 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

CHEM3730  Physical Chemistry I  Credit Hours:  3
Fundamental theories and basic laws of chemistry with emphasis on their mathematical development. Thermodynamics, equilibrium, electrochemistry, classical chemical kinetics.

CHEM3732  Recitation for Chem 3730  Credit Hours:  1
Optional recitation section that discusses concepts and solves practice questions for CHEM 3730. Must be taken simultaneously with CHEM 3730, Physical Chemistry 1. Not for major/minor credit.

Prerequisites: CHEM 2420 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 3730 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
CHEM3740  Physical Chemistry II  Credit Hours:  3
Fundamental theories and basic laws of chemistry with emphasis on their mathematical development. Structure of matter, statistical and quantum mechanics, reaction dynamics, spectroscopy.

Prerequisites: CHEM 3730 FOR LEVEL UG WITH MIN. GRADE OF D- OR CHEE 2230 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEE 2330 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM3742  Recitation For Chem 3740  Credit Hours:  1
Optional recitation section that discusses concepts and solves practice questions for CHEM 3740. Must be taken simultaneously with CHEM 3740, Physical Chemistry 2. Not for major/minor credit.

Prerequisites: CHEM 3730 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 3740 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

CHEM3810  CHEMISTRY OF SUSTAINABLE ENERGY RESOURCES  Credit Hours:  3
Application of the principles of chemistry to understand the issues related to implementing and optimizing a sustainable supply of energy.

Prerequisites: CHEM 1240 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1290 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 3400 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM3860  Advanced Laboratory I  Credit Hours:  2
Laboratory experiments and techniques relating to subjects developed in CHEM 3710, 3730, or 4570. Three-hour laboratory and one-hour discussion per week, see your advisor for proper section number. Approved chemical safety goggles meeting the American Nat

Prerequisites: (CHEM 2420 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 2470 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (CHEM 2490 FOR LEVEL UG WITH MIN. GRADE OF D- OR CHEM 3710 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)) OR CHEM 3730 FOR L

CHEM3870  Advanced Laboratory II  Credit Hours:  2
Laboratory experiments and techniques relating to subjects developed in 3710/3720, 3730/3740. Three hours laboratory and one hour discussion per week. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by eve

Prerequisites: CHEM 3860 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM3910  Undergraduate Research II  Credit Hours:  1-3
Research under the guidance of a faculty member. May be repeated. A maximum accumulated credit of 10 hours in CHEM 2910, 3910 and 4910 may be applied toward a degree. A written report is required. May be taken only as P/NC. Prerequisite: GPA (overall and

Prerequisites: CHEM 2420 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

CHEM3920  Readings In Chemistry II  Credit Hours:  1-2
Readings from the literature of chemistry. May be taken only as P/NC.
CHEM4300  Instrumental Analysis  Credit Hours:  2
An introduction to modern chemical instrumentation and applications to chemical analysis. Topics include electrical, magnetic, nuclear and spectroscopic instrumentation. Prerequisite: CHEM 3310 and 3360; Corequisite: CHEM 3710 or 3730 or 4570
Prerequisites:(CHEM 3310 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 3360 FOR LEVEL UG WITH MIN. GRADE OF D-) AND CHEM 3710 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR CHEM 3730 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

CHEM4500  Advanced Biological Chemistry  Credit Hours:  4
The chemistry of cellular and molecular transformation in biochemical systems.
Prerequisites:CHEM 3520 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM4510  Protein Chemistry  Credit Hours:  4
A detailed analysis of the structure and function of proteins.
Prerequisites:CHEM 3510 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM4520  Enzymology  Credit Hours:  4
The principles of chemical catalysis applied to molecular enzymology.
Prerequisites:CHEM 3510 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM4530  Nucleic Acid Chemistry  Credit Hours:  4
The structure and function of RNA and DNA.
Prerequisites:CHEM 3510 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM4570  Biophysical Chemistry  Credit Hours:  4
Principles and applications of physical chemistry as applied to biological macromolecules (i.e., proteins and nucleic acids in solution), including thermodynamics, kinetics and spectroscopy of macromolecular interactions.
Prerequisites:PHYS 2080 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 3520 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM4580  Bioinorganic Chemistry  Credit Hours:  4
This course surveys biologically important metals and metal-ligand complexes, and examines the role of metal ions in proteins, metal ion transport and regulation, and metals in medicine.
Prerequisites:CHEM 3520 FOR LEVEL UG WITH MIN. GRADE OF D-
CHEM4620  Inorganic Chemistry II  Credit Hours:  3
The application of modern theories to the elements and their inorganic compounds-advanced topics.  Physical chemical principles are used throughout.
Prerequisites: CHEM 3610 FOR LEVEL UG WITH MIN. GRADE OF D-

CHEM4880  Advanced Laboratory III  Credit Hours:  2
Laboratory experiments and techniques relating to subjects developed in CHEM 4300. Six hours of laboratory per week. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory c
Prerequisites: CHEM 3860 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 4300 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

CHEM4910  Undergraduate Research III  Credit Hours:  1-3
Thesis level research under the guidance of a faculty member. May be repeated. A minimum of three hours and an acceptable thesis required for credit toward the B.S. major. A maximum accumulated credit of 10 hours in CHEM 2910, 3910 and 4910 may be applied
Prerequisites: CHEM 3740 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR CHEM 4570 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

CHEM4920  Readings In Chemistry III  Credit Hours:  1-2
Readings from the literature of chemistry.  May be taken only as P/NC.

CHEM4980  Special Topics In Chemistry  Credit Hours:  2-4
An advanced course for chemistry majors in an important area of chemistry.  Consult the undergraduate adviser for details. Course may be repeated for credit under different specialty numbers (topics).
Prerequisites: (CHEM 2420 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 3740 FOR LEVEL UG WITH MIN. GRADE OF D-)

CHEM5300  Principles Of Analytical Chemistry  Credit Hours:  1-4
Tutorial in selected topics in analytical chemistry.

CHEM5400  Principles Of Organic Chemistry  Credit Hours:  1-4
Tutorial in selected topics in organic chemistry.  S/U grading only.
CHEM5500  Principles Of Biological Chemistry  Credit Hours:  1-4
Tutorial in selected topics in biological chemistry.

CHEM5600  Principles Of Inorganic And Organometallic Chemistry  Credit Hours:  1-4
Tutorial in selected topics in inorganic and organometallic chemistry. S/U grading only.

CHEM5700  Principles Of Physical Chemistry  Credit Hours:  1-4
Tutorial in selected topics in physical chemistry. S/U grading only.

CHEM5800  Principles Of Materials Chemistry  Credit Hours:  1-4
Tutorial in selected topics in materials chemistry.

CHEM6300  Advanced Analytical Chemistry  Credit Hours:  4
An overview of new techniques in analytical chemistry. Topics include sample preparation and sampling, spectroscopic, separation, electrochemical, surface characterization and thermal methods. Prerequisite: Permission of department.

CHEM6310  Separation Methods  Credit Hours:  3
[3 hours] The theory, design and application methods. Topics include extraction techniques, gas, liquid, and supercritical fluid chromatography, affinity and chiral separation, and capillary electrophoresis.

CHEM6320  Electrochemistry  Credit Hours:  4
A fundamental study of electrochemical concepts, methods, instrumentation and applications. Prerequisite: Permission of department.
CHEM6330  Spectroscopic Methods And Analysis Of Spectra  
A comprehensive study of theory and instrumentation. Applications of spectroscopic methods including spectral interpretation. Topics include a study of absorption, emission, Raman, NMR, ESR, mass spectrometry, and related subjects. Important methodology

CHEM6350  Separation Methods Laboratory
Experiments covering topics discussed in CHEM 6310 lectures. Five hours of laboratory per week. Approved chemical safety goggles meeting the American National Standard 287.1-1968 must be worn by every student during every laboratory class meeting.

Corequisite: CHEM 6310

CHEM6400  Advanced Organic Chemistry

CHEM6410  Organic Synthesis
Important methodology and strategy in organic synthesis including disconnection and retrosynthetic analysis.

CHEM6420  Topics in Modern Organic Chemistry

CHEM6430  Medicinal Chemistry
Qualitative and quantitative aspects of the design of new therapeutic agents are discussed. Approaches to the design of drugs and new therapeutic modalities directed at enzymes, receptors, membrane transport proteins and nucleic acids will be examined.

CHEM6500  Advanced Biological Chemistry
The chemistry of cellular and molecular transformations in biochemical systems. Molecular structure of proteins, nucleic acids and membranes. Metabolism and biosynthesis of carbohydrates, amino acids and lipids; gene regulation and replication.
CHEM6510  Protein Chemistry  Credit Hours:  4
A detailed analysis of the structure and function of proteins. Current methodology for the analysis of structure, the basis for molecular associations and relationships between structure and biological function.
Prerequisites: CHEM 6500 FOR LEVEL GR WITH MIN. GRADE OF D-

CHEM6520  Enzymology  Credit Hours:  4
Survey of current methods to study enzyme-catalyzed reactions, and application to examples from major enzyme, groups. Current topics in enzymology include abzymes and ribozymes, artificial enzymes, and enzymes, and enzyme engineering.

CHEM6530  Nucleic Acid Chemistry  Credit Hours:  4
The structural and chemical properties of nucleic acids and the resulting biological consequences. Topics include: 3D structures, conformation, protein/nucleic acid interactions, physical properties and chemical reactions, mutagenesis, damage/repair, and
Prerequisites: CHEM 6500 FOR LEVEL GR WITH MIN. GRADE OF D-

CHEM6540  Macromolecular Crystallography  Credit Hours:  2
Fundamental theory and practical application of X-ray diffraction to macromolecular structure determination, including protein crystallization and manipulation, data collection and reduction, phase solution, electron density interpretation, structural ref
Prerequisites: CHEM 6850 FOR LEVEL GR WITH MIN. GRADE OF D-

CHEM6550  Practical Protein Crystallography  Credit Hours:  2
Hands-on training in protein crystallography. Laboratory projects include: protein crystallization, crystal manipulation and mounting, X-ray diffraction data collection, data reduction, structure solution, electron density interpretation, refinement and
Prerequisites: CHEM 6850 FOR LEVEL GR WITH MIN. GRADE OF D-

CHEM6570  Biophysical Chemistry  Credit Hours:  4
Principles and applications of physical chemistry as applied to biological macromolecules (i.e., proteins and nucleic acids in solution), including thermodynamics, kinetics and spectroscopy of macromolecular interactions.

CHEM6580  Bioinorganic Chemistry  Credit Hours:  4
This course surveys biologically important metals and metal-ligand complexes, and examines the role of metal ions in proteins, metal ion transport and regulation, and metals in medicine
CHEM6600  Physical Inorganic Chemistry  Credit Hours:  4
[4 hours] Symmetry, bonding theories, magnetism, and spectroscopic characterization of inorganic compounds are described. Coverage of spectroscopic techniques such as NMR, EPR, UV/VIS, IR, AND Mossbauer focus on applications to inorganic systems. Prereq

CHEM6610  Chemistry of Transition and Post-Transition Elements  Credit Hours:  4
The inorganic and organometallic chemistry of the transition metals, lanthanides and actinides is described. Synthesis, structure, bonding, reactivity are considered. Applications in catalysis, bioinorganic, and materials chemistry are discussed. Prereq

CHEM6620  Chemistry of the Main Group Elements  Credit Hours:  4
The inorganic and organometallic chemistry of main group elements is described. Synthesis, structure, bonding, and reactivity are considered. The use of main group reagents in synthesis, catalysis, and materials chemistry are discussed.

CHEM6700  Advanced Physical Chemistry  Credit Hours:  4
[4 hours] Chemical systems and processes in the context of classical equilibrium thermodynamics. It introduces non-equilibrium and statistical thermodynamics to elucidate chemical changes and the connection between molecular and macroscopic system properties.

CHEM6710  Quantum Chemistry and Spectroscopy  Credit Hours:  4
Fundamental principles of quantum mechanics and their application to model systems, atoms and molecules; Introduction to molecular spectroscopy. Prerequisite: Permission of Department.

CHEM6720  Modern Topics in Physical Chemistry  Credit Hours:  4
[4 hours] Advanced topics of current interest in physical chemistry. Examples of topics include nanomaterials science, spectroscopic techniques, or molecular modeling. Prerequisite: Permission of department.

CHEM6800  Advanced Materials Chemistry  Credit Hours:  4
[4 hours] Introduction to important classes of solids, including conductors, magnetic materials, ferroelectrics, glasses, microporous materials, organic solids. Traditional and novel synthetic approaches, structure/property relationships, and characterization
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<td>Tutorial in selected topics in organic chemistry. S/U grading only.</td>
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<td>Principles Of Biological Chemistry</td>
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<td>CHEM7600</td>
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<td>Tutorial in selected topics in inorganic and organometallic chemistry. S/U grading only.</td>
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<td>Tutorial in selected topics in physical chemistry. S/U grading only.</td>
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<td>CHEM7800</td>
<td>Principles Of Materials Chemistry</td>
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<td>Tutorial in selected topics in materials chemistry.</td>
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CHEM8300  Advanced Analytical Chemistry  Credit Hours: 4
An overview of new techniques in analytical chemistry. Topics include sample preparation and sampling, spectroscopic, separation, electrochemical, surface characterization and thermal methods. Prerequisite: Permission of department.

CHEM8310  Separation Methods  Credit Hours: 3
[3 hours] The theory, design and application methods. Topics include extraction techniques, gas, liquid, and supercritical fluid chromatography, affinity and chiral separation, and capillary electrophoresis.

CHEM8320  Electrochemistry  Credit Hours: 4
A fundamental study of electrochemical concepts, methods, instrumentation and applications. Prerequisite: Permission of department.

CHEM8330  Spectroscopic Methods And Analysis Of Spectra  Credit Hours: 4
A comprehensive study of theory and instrumentation. Applications of spectroscopic methods including spectral interpretation. Topics include a study of absorption, emission, Raman, NMR, ESR, mass spectrometry, and related subjects. Important methodology

CHEM8350  Separation Methods Laboratory  Credit Hours: 1
Experiments covering topics discussed in CHEM 6310 lectures. Five hours of laboratory per week. Approved chemical safety goggles meeting the American National Standard 287.1-1968 must be worn by every student during every laboratory class meeting.

Corequisite: CHEM 8310

CHEM8400  Advanced Organic Chemistry  Credit Hours: 4

CHEM8410  Organic Synthesis  Credit Hours: 4
Important methodology and strategy in organic synthesis including disconnection and retrosynthetic analysis.
CHEM8420  Topics in Modern Organic Chemistry  Credit Hours:  4

CHEM8430  Medicinal Chemistry  Credit Hours:  4
Qualitative and quantitative aspects of the design of new therapeutic agents are discussed. Approaches to the design of drugs and new therapeutic modalities directed at enzymes, receptors, membrane transport proteins and nucleic acids will be examined.

CHEM8500  Advanced Biological Chemistry  Credit Hours:  4

CHEM8510  Protein Chemistry  Credit Hours:  4
A detailed analysis of the structure and function of proteins. Current methodology for the analysis of structure, the basis for molecular associations and relationships between structure and biological function.

CHEM8520  Enzymology  Credit Hours:  4
Survey of current methods to study enzyme-catalyzed reactions, and application to examples from major enzyme, groups. Current topics in enzymology include abzymes and ribozymes, artificial enzymes, and enzymes, and enzyme engineering.

CHEM8530  Nucleic Acid Chemistry  Credit Hours:  4
The structural and chemical properties of nucleic acids and the resulting biological consequences. Topics include: 3D structures, conformation, protein/nucleic acid interactions, physical properties and chemical reactions, mutagenesis, damage/repair, and

CHEM8540  Macromolecular Crystallography  Credit Hours:  2
Fundamental theory and practical application of X-ray diffraction to macromolecular structure determination, including protein crystallization and manipulation, data collection and reduction, phase solution, electron density interpretation, structural ref

Prerequisites:CHEM 6500 FOR LEVEL GR WITH MIN. GRADE OF D- OR CHEM 8500 FOR LEVEL GR WITH MIN. GRADE OF D-
CHEM8550  Practical Protein Crystallography  
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Hands-on training in protein crystallography. Laboratory projects include: protein crystallization, crystal manipulation and mounting, X-ray diffraction data collection, data reduction, structure solution, electron density interpretation, refinement and 
Prerequisites: CHEM 8850 FOR LEVEL GR WITH MIN. GRADE OF D-

CHEM8570  Biophysical Chemistry  
Credit Hours:  4
Principles and applications of physical chemistry as applied to biological macromolecules (i.e., proteins and nucleic acids in solution), including thermodynamics, kinetics and spectroscopy of macromolecular interactions.

CHEM8580  Bioinorganic Chemistry  
Credit Hours:  4
This course surveys biologically important metals and metal-ligand complexes, and examines the role of metal ions in proteins, metal ion transport and regulation, and metals in medicine

CHEM8600  Advanced Inorganic And Organometallic Chemistry  
Credit Hours:  4
[4 hours] Symmetry, bonding theories, magnetism, and spectroscopic characterization of inorganic compounds are described. Coverage of spectroscopic techniques such as NMR, EPR, UV/VIS, IR, AND Mossbauer focus on applications to inorganic systems. Prereq

CHEM8610  Chemistry of Transition and Post-Transition Elements  
Credit Hours:  4
The inorganic and organometallic chemistry of the transition metals, lanthanides and actinides is described. Synthesis, structure, bonding, reactivity are considered. Applications in catalysis, bioinorganic, and materials chlemistry are discussed. Prere

CHEM8620  Chemistry of the Main Elements  
Credit Hours:  4
The inorganic and organometallic chemistry of main group elements is described. Synthesis, structure, bonding, and reactivity are considered. The use of main group reagents in synthesis, catalysis, and materials chemistry are discussed.

CHEM8700  Advanced Physical Chemistry  
Credit Hours:  4
[4 hours] Chemical systems and processes in the context of classical equilibrium thermodynamics. It introduces non-equilibrium and statistical thermodynamics to elucidate chemical changes and the connection between molecular and macroscopic system propert
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<td>CHIN2140</td>
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CHIN2150  Intermediate Chinese II  Credit Hours:  3

Prerequisites: (CHIN 1110 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHIN 1120 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHIN 2140 FOR LEVEL UG WITH MIN. GRADE OF D-)

CI1900  Introduction To Middle Grades Education Linking Seminar  Credit Hours:  1
This course introduces students to the world of middle grades education. The students will explore the nature of middle grades education, its philosophy, history, students, curriculum and teaching.

CI1910  Communication Skills In The Discipline  Credit Hours:  1
A seminar which focuses on the relationship among the skills learned in English composition classes, the art of explaining and communicating and the specific disciplines. Students will be encouraged to see language skills in the wider context of enabling

CI1920  Introduction To Foreign Language Education: Linking Seminar I  Credit Hours:  1
This course introduces students to the world of foreign language education. Students will explore the nature of foreign language education, its philosophy, history, types of schools, students, curriculum and teaching.

CI2900  Diversity And Books Linking Seminar  Credit Hours:  1
Students will learn about various forms of cultural diversity as presented in books appropriate for middle childhood learners.

CI2910  Study Tour Linking Seminar  Credit Hours:  1
This course will allow students to explore education-related issues within the context of society in general. Structured field trips, coupled with pre- and post-seminars are planned.

CI2920  Case Studies Linking Seminar  Credit Hours:  1
Students will learn about cognitive, physical, emotional and social characteristics of pre- and young adolescents through participant observation in study and recreational settings and they will prepare a case study.
CI2930 Arts And Science Linking Seminar In Mathematics  
Credit Hours: 1  
Students will examine current reform efforts in mathematics education and the impact on the teaching and learning of mathematics at all levels - PreK-college. Students must join a professional mathematics education organization.

CI2940 Arts And Science Linking Seminar In Science  
Credit Hours: 1  
Students will examine current reform efforts in science education and the impact on the teaching and learning of science at all levels - PreK-college. Students must join a professional science education organization.

CI2950 Arts And Science Linking Seminar In Social Studies  
Credit Hours: 1  
Students will examine current reform efforts in social studies education and the impact on the teaching and learning of social studies at all levels - PreK-college. Students must join a professional social studies education organization.

CI2960 Arts And Science Linking Seminar In Reading/Language Arts  
Credit Hours: 1  
Students will examine current reform efforts in reading/language arts education and the impact on the teaching and learning of reading/language arts at all levels - PreK-college. Students must join a professional reading/language arts education organization.

CI2970 An Orientation To The School Environment And Developing A Personal Philosophy Of Teaching  
Credit Hours: 1  
This course will help the student explore school context including the sociology and culture of high schools. The goal of this course is to help students apply theory and explore the ways of supporting the wide diversity of backgrounds and abilities of students.

CI2980 Introduction To Foreign Language Education: Linking Seminar II  
Credit Hours: 1  
Students will understand salient factors relating to the effective teaching of foreign languages in elementary, middle-junior and high school. Specifically, students will assist foreign language teachers in teaching their students.

CI3010 Teaching Elementary Reading, Language Arts And Social Studies  
Credit Hours: 7  
Integration of instruction in listening, talking, writing and reading skills with purposes, scope and sequence of Social Studies. Ways to help children grow and develop in these areas. Preparation of an integrated unit.
CI3020 Integrated Elementary Field Experience
Credit Hours: 3
Prepare and teach integrated language arts/social studies unit and teach reading/language arts in an elementary, or middle school classroom.

CI3100 Effective Secondary School Teaching Methods
Credit Hours: 3
Introduction to theory and research supporting effective curriculum development and instruction. Students acquire knowledge and skills necessary to create effective classroom environments.

CI3110 Secondary Field Experience I
Credit Hours: 1-2
Students will implement and apply skills of instructional design, content area reading and classroom management within selected secondary school settings.
Prerequisites: UPDV FOR MIN. SCORE OF 1

CI3210 Office Production
Credit Hours: 2
Development of understanding and judgment relating to the production of documents and statistical reports. Introduction to Cortez Peters method of teaching keyboarding.

CI3220 Office Procedures
Credit Hours: 3
Analysis of the activities of today's office professionals. Includes office technology, management, communication procedures (oral and written) and office procedures.

CI3230 Information Processing For Business Education
Credit Hours: 3
Hands-on experience in the operation of information processing equipment used in today's modern offices.

CI3240 Best Practices In Middle Level Teaching
Credit Hours: 3
This course will provide a comprehensive study of effective teaching in the middle level schools. Students will study historical, philosophical and psychological factors, transescent instructional strategies, discipline, classroom management and evaluation.
CI3400 Literacy Issues  Credit Hours: 3
An introduction to literacy and the acquisition of reading and writing skills/proficiency. Presents a study of language development, language diversity, the process of reading and writing and their development.

CI3430 Phonics And Word Identification For Early Childhood Education  Credit Hours: 3
Phoneme-grapheme relationships using age appropriate techniques with young children, teaching phonics and word recognition, phonological and morphological underpinnings of English spelling, reading disabilities, sound awareness in spoken language.

CI3440 Phonics And Word Identification For Middle Childhood Education  Credit Hours: 3
Students learn methods for using phonics and word identification skills with pre- and early adolescent learners, focusing on strategies to help with reading, writing and spelling in the content areas.

CI3460 Literacy And Reading Development For Young Children  Credit Hours: 3
Professional standards for reading/language arts with specific attention to diverse learners. PreK through grade 3. Developmentally-appropriate classroom design and methods. Understanding of print. Use of computer software.

Prerequisites: UPDV FOR MIN. SCORE OF 1

CI3900 Internship Seminar: Relating College Level Content To The Secondary School Curriculum  Credit Hours: 1
The course will consider the content of the college courses taken in a student's major area and relate it to specific courses in the secondary school curriculum. Examples will be developed of the ways in which concepts of university level courses are rela

CI4000 Principles Of Curriculum Integration  Credit Hours: 3
A course designed to introduce students to major curriculum trends and issues. Focus will be placed on theory and practical issues related to curriculum integration and team teaching.

Prerequisites: UPDV FOR MIN. SCORE OF 1

CI4010 Middle Grades Field Experience For Curriculum Integration  Credit Hours: 1
A field experience for regular education and special education students. Teaching experiences to demonstrate knowledge and pedagogical skill in a team taught integrated unit.

Prerequisites: UPDV FOR MIN. SCORE OF 1
CI4030 Teaching Science In The Middle Grades  Credit Hours: 4
Introduction to the purposes, scope and sequence, resources, curriculum, instruction and evaluation in middle grades science. Methods and materials for teaching science concepts.

CI4040 Teaching Science In The Primary Grades  Credit Hours: 4
Introduction to the purposes, scope and sequence, resources, curriculum, instruction and evaluation in primary science. Relationships to DAP and science concept development.

CI4050 Science Field Experience  Credit Hours: 1
Prepare and teach a science unit of instruction in the elementary classroom.

CI4060 Teaching Elementary School Mathematics  Credit Hours: 4
Focus on the mathematics education of children in early childhood through the middle grades with emphasis on mathematics learning process, mathematics content, effective teaching strategies, instructional materials and assessment techniques.

CI4070 Teaching Elementary School Mathematics - Field  Credit Hours: 1
Teach a mathematics unit in an early childhood, elementary, or middle grade classroom.

CI4080 Integrated Elementary Teaching Methods I  Credit Hours: 5
Methods for teaching and integrating language arts in diverse classrooms. Emphasis on understanding the reading and writing process from emergent literacy through middle school. For Special Education Majors only.

CI4090 Integrated Elementary Teaching Methods II  Credit Hours: 5
Integrated approach to teaching mathematics and science. Emphasis on the learning process, mathematics and science content, effective teaching strategies, instructional materials and assessment techniques. For Special Education Majors Only.
CI4130  Teaching In Urban Communities  Credit Hours:  3
Focus on student learning in urban settings. Students will examine urban demographic and school achievement data, develop a profile of urban students and develop appropriate school activities.
Prerequisites: UPDV FOR MIN. SCORE OF 1

CI4140  Teaching Methods For Foreign Languages  Credit Hours:  3
Consideration of current theory and practice in teaching foreign languages in elementary and secondary schools. Focus on planning instruction, materials selection and methods for teaching communication skills and culture.
Prerequisites: UPDV FOR MIN. SCORE OF 1

CI4150  Teaching Methods For Secondary English  Credit Hours:  3
Language immersion techniques, mastery-based teaching and reliance on reading/writing-to-learn activities. Develop proficiency in methodologies that reflect current research and effective instructional practices in secondary English and Communications.
Prerequisites: UPDV FOR MIN. SCORE OF 1

CI4160  Teaching Methods For Secondary Mathematics  Credit Hours:  3
Preparation for teaching in the secondary mathematics classroom. Techniques for motivating students, using questioning and critical thinking strategies and integrating technology are developed.
Prerequisites: UPDV FOR MIN. SCORE OF 1

CI4170  Teaching Methods For Secondary Science  Credit Hours:  3
In-depth study of the methods and materials for teaching secondary science. Apply knowledge in a secondary classroom.
Prerequisites: UPDV FOR MIN. SCORE OF 1

CI4180  Teaching Methods For Secondary Social Studies Methods  Credit Hours:  3
In-depth study of methods and materials for teaching social studies. Implementation of secondary curriculum within the context of current technology and the development of critical thinking skills.
Prerequisites: UPDV FOR MIN. SCORE OF 1

CI4190  Secondary Field Experience II  Credit Hours:  3
Students will develop and implement a unit plan in the content area integrating teaching of content, thinking skills and adjusting the unit to a special needs population.
Prerequisites: UPDV FOR MIN. SCORE OF 1
CI4210 Administrative Office Management  
Office functions as part of business administration, including physical facility planning, office systems, procedures and services, control of office work and administrative/supervision of office staff.

CI4220 Information Management For Business Education  
Hands-on experience in a current word processing package. Also provides an overview of word processing methodologies, concepts and techniques needed to teach a secondary course.

CI4230 Business Teaching Methods I  
Development and application of appropriate materials and methods in teaching general business, accounting and computer technology.

CI4240 Business Technology Methods II  
Development and application of appropriate materials and methods in teaching keyboarding, business communication/English, vocational education and computer applications. Course required for vocational certification.

CI4250 Methods For Middle Grades Mathematics Licensure  
A course for preservice middle grade teachers seeking licensure in mathematics. The course will focus on curriculum, scope and sequence, resources, learning activities, teaching strategies, technology use and assessment following NCTM Standards and the O

Prerequisites:UPDV FOR MIN. SCORE OF 1

CI4260 Methods For Middle Grades Science Licensure  
Designed for middle grade teachers seeking licensure in science. The course covers standards, curriculum, learning activities, teaching strategies, use of technology and assessment techniques in a middle school setting.

Prerequisites:UPDV FOR MIN. SCORE OF 1

CI4270 Methods For Middle Grades Social Studies Licensure  
This course will focus upon the social studies education of middle grades students with an emphasis on standards, scope and sequence, resources, learning activities, teaching strategies, technology evaluation techniques.

Prerequisites:UPDV FOR MIN. SCORE OF 1
CI4280  Methods For Middle Grades Reading/Language Arts Licensure  Credit Hours:  4
A course for preservice middle grades teachers seeking licensure in reading/language arts. This course will focus upon the literary education of children in the middle grades. Standards, curriculum, scope and sequence, resources, learning activities, tea
Prerequisites:UPDV FOR MIN. SCORE OF 1

CI4290  Middle Grades Methods Field Experience  Credit Hours:  2
Field experience to demonstrate knowledge and pedagogical skills as students teach in two licensure areas. Instructional practice, assessment strategies and technology use will be integrated in tow units from a student's licensure areas.

CI4300  Literature For Children  Credit Hours:  3
Emphasis on all genres of literature for children, including poetry, traditional literature, fantasy, realistic fiction, biography and other information books, particularly for the preschool and primary student.

CI4310  Literature For Middle Graders  Credit Hours:  3
Emphasis on all genres of literature for children, including poetry, traditional literature, fantasy, realistic fiction, both historical and contemporary, biography and other information books. Geared for the middle school student.

CI4320  Literature For Young Adults  Credit Hours:  3
Survey of literature materials written for the junior and senior high school student. Emphasis is placed on all genres, literary elements and the use of literature across the curriculum.

CI4360  Multicultural Literature  Credit Hours:  3
Picture books, fiction, biography and poetry appropriate for elementary and middle school students that interpret and reflect honestly the lives of persons of color will be studied and evaluated.

CI4390  Sandberg Children's Literature Institute  Credit Hours:  3
To broaden students' knowledge of current professionals in children's literature, nationally-known authors, illustrators and editors presentations.
<table>
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<tr>
<th>Course Code</th>
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<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>CI4400</td>
<td>Reading in Middle Grades</td>
<td>3</td>
<td>Using various genres of literature, students focus on instructional strategies across the curriculum for teaching, assessing, diagnosing and remediating reading and reading difficulties. Evaluation of learning through writing emphasized. Prerequisites: UPDV FOR MIN. SCORE OF 1</td>
</tr>
<tr>
<td>CI4430</td>
<td>Issues in Second Language Teaching</td>
<td>3</td>
<td>A critical study of teaching foreign languages and English as a second language in secondary schools including current curriculum, materials, teaching strategies and evaluation. Prerequisites: UPDV FOR MIN. SCORE OF 1</td>
</tr>
<tr>
<td>CI4440</td>
<td>Issues in Linguistics, Writing, and Grammar</td>
<td>3</td>
<td>Examine the research on structural and generative grammars and oral language acquisition. Analyze process writing research, teaching-learning principles, and practices that employ process writing techniques. Prerequisites: UPDV FOR MIN. SCORE OF 1</td>
</tr>
<tr>
<td>CI4450</td>
<td>Creativity and Language Arts</td>
<td>3</td>
<td>Practical techniques for guiding children into effective oral and written expression of ideas and feelings will be presented. Develop lesson plans.</td>
</tr>
<tr>
<td>CI4470</td>
<td>Reading Assessment and Diagnosis</td>
<td>3</td>
<td>Focus on the knowledge and skill needed to assess the reading and writing of students and to plan appropriate instruction.</td>
</tr>
<tr>
<td>CI4480</td>
<td>Reading Assessment and Remediation Practicum</td>
<td>3</td>
<td>Focus on diagnostic assessment that represents differences in learners and emphasizes meeting student needs through a variety of instructional strategies to remediate problems in phonics, word recognition, fluency, comprehension and writing. Prerequisites: UPDV FOR MIN. SCORE OF 1</td>
</tr>
<tr>
<td>CI4490</td>
<td>Content Area Reading for Adolescent Young Adult, Multi-Age, and Career and Technical Education Teach</td>
<td>3</td>
<td>Study of the integration of reading comprehension, writing, oral language and word skill development in content reading. Attention will be given to instructional methods as well as assessment practices.</td>
</tr>
</tbody>
</table>
CI4510 Mathematics For The Young Child
Credit Hours: 3
Development of mathematical understanding in young children, appropriate learning and assessment experiences and analysis of curriculum. Mathematical focus on place value, number sense, geometry, measurement, algebra, data analysis and probability.
Prerequisites: UPDV FOR MIN. SCORE OF 1

CI4520 Mathematics For The Middle School
Credit Hours: 3
Conceptualization of mathematics curriculum and its implementation in the classroom. The inductive approach will be emphasized. Examination of middle school math concepts.

CI4530 Teaching Geometry In Grades K-12
Credit Hours: 3
Examination of the development of mathematics concepts and skills across the K-12 curriculum. Discussion of mathematics content, teaching methods, instructional materials, assessment techniques and applications to classroom practice.

CI4540 Teaching Algebra In Grades K-12
Credit Hours: 3
Examination of the development of mathematics concepts and skills across K-12 curriculum. Discussion of mathematics content, teaching methods, instructional materials, assessment techniques and applications to classroom practice.

CI4550 Teaching Problem Solving In Mathematics
Credit Hours: 3
Focuses on the art of problem solving and its implementation in the classroom. Basic problem solving strategies are developed; materials and methods for their integration in mathematics teaching are provided.

CI4570 Curriculum Issues In Mathematics
Credit Hours: 3
Focuses on the content of the 7-12 mathematics curriculum and its delivery in secondary schools. Consideration is given to the role of technology, proficiency testing, conceptualizations of mathematics and resulting implications.
Prerequisites: UPDV FOR MIN. SCORE OF 1

CI4640 Environmental Education
Credit Hours: 3
Issues, methods and materials related to teaching Environmental Science in grades PreK-12. Field trips to areas of environmental interest will be part of the course.
CI4670  Science In Middle School Curriculum  Credit Hours:  3
Nature, scope and role of science experiences in learning development of middle school age children; integration and application of current
developments; theory and research in middle school science education.

CI4680  Issues In Science Education  Credit Hours:  3
This course focuses on theoretical issues related to teaching science in grades pre K-12 and is designed for preservice teachers.
Prerequisites:UPDV FOR MIN. SCORE OF 1

CI4710  Teaching Strategies In Multiculture Education  Credit Hours:  3
Examines multicultural curriculum and teaching strategies. Reviews ethnicity, culturally pluralistic curricula, selection of instructional materials,
grouping practices, assessment of learning and multi-ethnic schools, with an emphasis on improving instr

CI4720  Issues In Social Studies  Credit Hours:  3
Examines current issues of content and pedagogy in secondary social studies.
Prerequisites:UPDV FOR MIN. SCORE OF 1

CI4740  Models Of Valuing  Credit Hours:  3
Reviews the rationale, research and strategies for character education, values clarification, moral developments as well as programs designed to promote
self concept.

CI4760  Teaching Local History  Credit Hours:  3
Rationale, strategies and resources for teaching local history including demonstrations of teaching oral history and utilization of community resources.

CI4790  Using News Media In The Classroom  Credit Hours:  3
Rationale and strategies for using newspapers as classroom resource for teaching across curriculum. Participants will explore classroom applications after
interviewing reporters, photographers, cartoonists as well as Newspaper in Education classroom teac
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CI4900</td>
<td>Student Teaching Seminar</td>
<td>2-4</td>
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<tr>
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<td>Focuses reflectivity on common experiences in Student Teaching. Attention to resume preparation, portfolio use, job interviews.</td>
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<tr>
<td>CI4910</td>
<td>Internship Seminar: Reforms, Research And Critical Literacy In The Content Areas</td>
<td>3</td>
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<tr>
<td></td>
<td>A professional teaching and reflection seminar that places internship experience in the context of reforms, research and critical literacy in the content areas. This will include a study of reports, studies and resulting recommendations of the societies a</td>
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<td>Prerequisites: UPDV FOR MIN. SCORE OF 1</td>
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<tr>
<td>CI4930</td>
<td>Internship/Student Teaching</td>
<td>6-12</td>
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<tr>
<td></td>
<td>Full-time supervised classroom teaching for 8-15 weeks.</td>
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<td>Prerequisites: UPDV FOR MIN. SCORE OF 1</td>
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<tr>
<td>CI4950</td>
<td>Workshop In Curriculum And Instruction</td>
<td>1-5</td>
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<td>Workshops developed around topics of interest and concern for pre-service and in-service teachers and other education personnel. Practical application of workshop topics will be emphasized.</td>
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<tr>
<td>CI4980</td>
<td>Special Topics In Curriculum And Instruction</td>
<td>1-5</td>
</tr>
<tr>
<td></td>
<td>Topics of interest and concern to preservice, inservice and non-degree teachers within school districts and community agencies. The course may be included in an undergraduate degree program.</td>
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<td>Prerequisites: UPDV FOR MIN. SCORE OF 1</td>
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</tr>
<tr>
<td>CI4990</td>
<td>Undergraduate Independent Study In Curriculum And Instruction</td>
<td>1-5</td>
</tr>
<tr>
<td></td>
<td>Provides student the opportunity to work individually on professional problems under the direction of the staff of the department of curriculum and instruction. This course is open to seniors with the consent of the adviser and permission of the instructo</td>
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<tr>
<td>CI5150</td>
<td>Teaching Methods For Secondary English</td>
<td>3</td>
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<tr>
<td></td>
<td>Language immersion techniques, mastery-based teaching and reliance on reading/writing-to-learn activities. Develop proficiencies in methodologies that reflect current research and best practice. Alternative preservice methods.</td>
<td></td>
</tr>
</tbody>
</table>
Course Descriptions 2009-2010

CI5160  Teaching Methods For Secondary Mathematics  Credit Hours: 3
Preparation for teaching in the secondary mathematics classroom. Techniques for motivating students, using questioning and critical thinking strategies and integrating technology are developed.

CI5170  Teaching Methods For Secondary Science  Credit Hours: 3
In-depth study of the methods and materials for teaching secondary science. Apply knowledge in a secondary classroom.

CI5180  Teaching Methods For Secondary Social Studies Methods  Credit Hours: 3
In-depth study of methods and materials for teaching social studies. Implementation of secondary curriculum within the context of current technology and the development of critical thinking skills.

CI5190  Secondary Field Experience II  Credit Hours: 3
Field experience for alternative 712 certification. Classroom observations and reports. Teach series of lessons or unit of study in secondary classroom. Students will develop and implement a unit plan in the content area integrating teaching of content.

CI5210  Administrative Office Management  Credit Hours: 3
Office functions as part of business administration, including physical facility planning, office systems, procedures and services, control of office work and administration/supervision of office staff.

CI5220  Information Management For Business Education  Credit Hours: 3
Hands-on experience in a current word processing package. Also provides an overview of word processing methodologies, concepts and techniques needed to teach a secondary course.

CI5250  Methods For Middle Grades Mathematics Licensure  Credit Hours: 4
A course for preservice middle grade teachers seeking licensure in mathematics. The course will focus on curriculum, scope and sequence, resources, learning activities, teaching strategies, technology use and assessment following NCTM standards and the O

Prerequisites: EDP 5220 FOR LEVEL GR WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CI5260</td>
<td>Methods For Middle Grades Science Licensure</td>
<td>4</td>
<td>Designed for middle grades teachers seeking licensure in science. The course covers standards, curriculum, learning activities, teaching strategies, use of technology and assessment techniques in a middle school setting.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prerequisites: EDP 5220 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>CI5270</td>
<td>Methods For Middle Grades Social Studies Licensure</td>
<td>4</td>
<td>This course will focus upon the social studies education of middle grades students with an emphasis on standards, scope and sequence, resources, learning activities, teaching strategies, technology evaluation techniques.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prerequisites: EDP 5220 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>CI5280</td>
<td>Methods For Middle Grades Reading/Language Licensure</td>
<td>4</td>
<td>A course for preservice middle grades teachers seeking licensure in reading/language arts. This course will focus upon the literary education of children in the middle grades. Standards, curriculum, scope and sequence, resources, learning activities, te</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prerequisites: EDP 5220 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>CI5300</td>
<td>Literature For Children</td>
<td>3</td>
<td>Emphasis on all genres of literature for children, including poetry, traditional literature, fantasy, realistic fiction, biography and other information books, particularly for the preschool and primary student.</td>
</tr>
<tr>
<td>CI5310</td>
<td>Literature For Middle Graders</td>
<td>3</td>
<td>Emphasis on all genres of literature for children, including poetry, traditional literature, fantasy, realistic fiction, both historical and contemporary, biography and other informational books. Geared for the middle school student.</td>
</tr>
<tr>
<td>CI5320</td>
<td>Literature For Young Adults</td>
<td>3</td>
<td>Survey of literature materials written for the junior and senior high school student. Emphasis is placed on all genres, literary elements and uses of literature across the curriculum.</td>
</tr>
<tr>
<td>CI5360</td>
<td>Multicultural Literature</td>
<td>3</td>
<td>Picture books, fiction, biography and poetry appropriate for elementary and middle school students that interpret and reflect honestly the lives of persons of color will be studied and evaluated.</td>
</tr>
</tbody>
</table>
CI5390  Sandberg Children's Literature Institute  Credit Hours:  3
To broaden students' knowledge of current professionals in children's literature, nationally-known authors, illustrators or editors presentations.

CI5430  Issues In Second Language Instruction  Credit Hours:  3
A critical study of teaching foreign languages and English as a second language in secondary schools including current curriculum, materials, teaching strategies and evaluation.

CI5440  Issues in Ling, Writ, Grammar  Credit Hours:  3

CI5450  Creativity And Language Arts  Credit Hours:  3
An exploration and analysis of research on cultivating creativity and enhancing literacy achievement at the middle and secondary levels.

CI5460  Theory & Practice In Language Arts  Credit Hours:  3
Advanced methods for teaching and integrating language arts in diverse classrooms. Emphasis is on understanding the reading and writing process from emergent literacy through middle school.

CI5470  Reading Assessment And Diagnosis  Credit Hours:  3
Focus on knowledge and skill needed to assess reading and writing of students and to plan appropriate instruction.

CI5480  Reading Assessment And Remediation Practicum  Credit Hours:  3
Focus on diagnostic assessment that represents differences in learners and emphasizes meeting student needs through a variety of instructional strategies to remediate problems in phonics, word recognition, fluency, comprehension and writing.
CI5490  Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach  Credit Hours:  3
Study of the integration of reading comprehension, writing, oral language and word skill development in content reading. Attention will be given to instructional methods as well as assessment practices.

CI5510  Mathematics For The Young Child  Credit Hours:  3
Development of mathematical understanding in young children, appropriate learning and assessment experiences and analysis of curriculum. Mathematics focus on place value, number sense, geometry, measurement, algebra, data analysis and probability.

CI5520  Mathematics For The Middle School  Credit Hours:  3
Conceptualization of mathematics curriculum and its implementation in the classroom. The inductive approach will be emphasized. Examination of middle school math concepts.

CI5530  TEACHING AND LEARNING GEOMETRY AND MEASUREMENT  Credit Hours:  3
Examination of the development of mathematics concepts and skills across the K-12 curriculum. Discussion of mathematics content, teaching methods, instructional materials, assessment techniques and applications to classroom practice.

CI5540  Teaching and Learning Algebra  Credit Hours:  3
Examination of the development of algebraic concepts and skills across the K-12 curriculum. Emphasis on current research, theory, and innovative approaches for teaching and learning algebra.

CI5550  Teaching Problem Solving In Mathematics  Credit Hours:  3
Focuses on the art of problem solving and methods and materials for classroom implementation. Consideration given to current trends and related resource regarding use of problem solving in mathematics teaching.

CI5560  ASSESSMENT IN MATHEMATICS EDUCATION  Credit Hours:  3
Study of the role of assessment in the teaching and learning of mathematics. Examination of current research, assessment techniques, and trends and ways in which assessment can guide and inform mathematics instruction.
<table>
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<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>CI5570</td>
<td>Curriculum Issues In Mathematics</td>
<td>3</td>
<td>Focuses on the content of the 7-12 mathematics curriculum and its delivery in secondary schools. Consideration is given to the role of technology, proficiency testing, conceptualizations of mathematics and resulting implications. Prerequisites: CI 5160 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>CI5580</td>
<td>Teaching and Learning Number, Data, and Probability</td>
<td>3</td>
<td>Examination of the development of concepts and skills associated with number, data, and probability across the K-12 curriculum. Emphasis on current research, theory, and innovative instructional approaches.</td>
</tr>
<tr>
<td>CI5590</td>
<td>Topics in Mathematics Education</td>
<td>3</td>
<td>Examination and exploration of policy issues, research, and national trends that have implications for teachers, curriculum specialists, school districts, and others involved in mathematics education</td>
</tr>
<tr>
<td>CI5640</td>
<td>Environmental Education</td>
<td>3</td>
<td>Issues, methods and materials related to teaching environmental science in grades PreK-12. Field trips to areas of environmental interest will be part of the course.</td>
</tr>
<tr>
<td>CI5650</td>
<td>Mentoring a Preservice Teacher</td>
<td>3</td>
<td>Prepares mentors to guide prospective teachers as they learn to teach in classroom settings. Emphasis is on reform oriented practice, developing productive mentor-mentee relationships, and guiding and assessing novices’ learning.</td>
</tr>
<tr>
<td>CI5660</td>
<td>Technological Tools In Science Education</td>
<td>3</td>
<td>Use of technology tools to foster learning in science classrooms. Emphasis is on integrating practical applications, research and theoretical perspectives to become intelligent users of computer applications in science education.</td>
</tr>
<tr>
<td>CI5670</td>
<td>Science In The Middle School Curriculum</td>
<td>3</td>
<td>Nature, scope and role of science experiences in learning and development of middle school age children; integration and application of current developments; theory and research in middle school science education.</td>
</tr>
</tbody>
</table>
CI5680  Issues In Science Education  
This course focuses on theoretical issues related to teaching science in grades preK-12 and is designed for preservice teachers.

Prerequisites:CI 5170 FOR LEVEL GR WITH MIN. GRADE OF D-

CI5690  Project-Based Science  
Advanced methods for teaching science to engage learners in extended inquiry as they investigate real-world questions. Emphasis on innovative instructional strategies, research and theoretical perspectives to promote deep understanding of fundamental con

CI5710  Teaching Strategies In Multicultural Education  
Examines multicultural curriculum and instructional issues. Reviews diversity issues. Reviews diversity issues, pluralistic curricula, selection and development of instructional materials, grouping practices, assessment of learning and multi-ethnic scho

CI5720  Issues In Social Studies  
Examines current issues of content and pedagogy in secondary social studies.

Prerequisites:CI 5180 FOR LEVEL GR WITH MIN. GRADE OF D-

CI5740  Models Of Valuing  
Rationale, research and strategies for character education, values clarification, moral development and self concept programs. Students will do a critical review of programs in values education.

CI5760  Teaching Local History  
Rationale, strategies and resources for teaching local history including demonstrations of teaching oral history and utilization of community resources.

CI5790  Using News Media In The Classroom  
Rationale and strategies for using newspapers as classroom resource for teaching across curriculum. Explore classroom applications after interviewing reporters, photographers, cartoonists as well as Newspaper in Education classroom teachers.
CI5810 Instructional Strategies
Credit Hours: 3
Purposes of classroom instruction and role of the teacher. Investigation and characteristics of mediated instruction, lecture-recitation, inductive discussion and inquiry and cooperative learning models. Modeling activities.

CI5820 Analysis Of School Curriculum & Teaching
Credit Hours: 3
Introduction to curriculum and teaching for initial 1-8 certification at the graduate level. Analysis of classroom management, curriculum and instructional planning and evaluation strategies. Unit and lesson preparations.

CI5830 Teaching In The Middle And Junior High
Credit Hours: 3
An exploration of quality teaching in middle grades schools (5-9) including historical and philosophical foundations, developmental traits of students, current curriculum, teaching strategies, discipline and classroom management and evaluation.

CI5860 Middle–Junior High Curriculum
Credit Hours: 3
An exploration of the junior high and middle school curriculum including philosophical, psychological and historical bases, current organization and design and principles of curriculum development. Designing developmentally-appropriate curriculum is stre

CI5870 Secondary School Curriculum
Credit Hours: 3
Exploration of senior high school curriculum. Social, psychological, historical and philosophical foundations. Curriculum organization and design. Sources of curriculum.

CI5880 Thinking Works: Comprehensive Content Reading
Credit Hours: 3
This course explores innovative research-based instructional strategies that show students how to teach comprehension as a constructive process in all curricula areas. It explores alternative methods for addressing the needs of less advanced students and

CI5950 Workshop In Curriculum & Instruction
Credit Hours: 1-5
Workshops developed around topics of interest and concern to inservice teachers. Practical application of workshop topics will be emphasized. Students may include several workshops in their master's or specialist degree programs.
CI5980 Special Topics In Curriculum & Instruction Credit Hours: 1-5
A course developed around topics of interest and concern to inservice teachers within school districts and agencies. Stresses solution and resolution of education problems occurring within the district.

CI5990 Graduate Independent Study In Curriculum And Instruction Credit Hours: 1-5
Individual study designed to provide a student the opportunity to work individually on professional problems under the direction of the faculty of the Department of Curriculum and Instruction.

CI6370 Fundamentals Of Grant Writing Credit Hours: 3
This seminar will teach participants about fundamentals of grant writing. Topics covered will include: locating sources of funding, writing grants, designing evaluation instruments and administering grants.

CI6400 Trends In Literacy Acquisition Credit Hours: 3
Study of the theories and problems of literacy instruction. Factors affecting literacy development including organizations and climate of the classroom texts and instructional methods will be considered.

CI6410 Content Area Literacy Credit Hours: 3
Study of the integration of reading and writing in the content areas. Attention will be given to instructional methods as well as assessment practices.

CI6420 Content Area Literacy For Secondary Teachers Credit Hours: 3
Study of the integration of reading and writing in the content areas. Attention will be given to instructional methods as well as assessment practices.

CI6430 Diagnosis Of Reading Disability Credit Hours: 3
Teachers acquire the knowledge and skill needed to assess the reading and writing of students and to plan appropriate instruction.

Prerequisites: CI 6400 FOR LEVEL GR WITH MIN. GRADE OF D-
CI6440 Remediation Practicum  
Focus on comprehension, vocabulary and word identification strategies for supporting disabled readers in the regular classroom in learning to read independently.

Prerequisites: (CI 6400 FOR LEVEL GR WITH MIN. GRADE OF D- AND CI 6430 FOR LEVEL GR WITH MIN. GRADE OF D-)

CI6460 Writing Process  
Understanding and implementation of writing process in elementary classrooms, focusing on helping students write more effectively in three genre-fiction, nonfiction and poetry, as well as on evaluating student writing.

CI6470 Integrating Language Arts Across The Curriculum  
Addresses the philosophical underpinnings of integrated instruction as well as practical aspects of its implementation. Students incorporate literature and instructional strategies in thematic units.

CI6490 Theory And Research In Literacy  
Extensive examination of current research in literacy instruction. The influence of scientific studies on teaching procedures, materials and contexts of learning will be considered.

CI6590 Theory And Research In Mathematics Education  
Analysis of the latest research in mathematics curriculum of the elementary school. A critical appraisal is made of current issues in mathematics instruction.

CI6650 Advanced Mentorship for Teachers  
Investigates theoretical frameworks for mentoring in reform-oriented teacher education. Mentors' roles as collaborators for student learning, guides and partners for teacher learning, and professionals and leaders in classrooms are examined.

CI6690 Theory And Research In Science Education  
Critical appraisal of current issues and trends in science education research. Emphasis on research investigations concerning concepts and issues in science learning theory, curriculum development and assessment.
CI6750  Children Of Substance Abuse-Strategies And Curriculum Materials  Credit Hours:  3
Examination of family substance abuse and dysfunction. Hidden learning, roles and patterns of behavior among COSAs. Strategies and materials for elementary, middle school, junior high COSAs.

CI6790  Theory And Research In Social Studies  Credit Hours:  3
Intensive study of contemporary developments in social studies including national standards, current research and major publications.

CI6800  Foundations Of Curriculum & Instruction  Credit Hours:  3
Consideration is given to major conceptualizations (models) of curriculum and instruction - classical, technological, personalized and interactional. Stress is placed upon the philosophical, psychological and historical determinants of these curricular m

CI6810  Curriculum Development: K-12  Credit Hours:  3
Study of essential structural components of curriculum. Role of the educator in making defensible curriculum decisions. Issues related to curricular aims, content, designs and evaluation are examined with the assistance of curriculum theory.

CI6820  Program Development For Non-School Settings  Credit Hours:  3
Program development for community agency personnel training and staff development. Principles of curriculum design applied to non-school programs. Model for design; evaluation.

CI6830  Curriculum Trends And Issues  Credit Hours:  3
Analysis of current curriculum developments in public school education such as the major curriculum reform projects, individualization of programs, compensatory programs, ITU and programmed instructional packages and related developments.

CI6840  Curriculum For Educational Leaders  Credit Hours:  3
Study of initiating and implementing curriculum change in the school setting. Students will build upon a review and examine key theories of educational leadership concerned with curriculum development.
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<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>CI6900</td>
<td>Masters Research Seminar In Curriculum And Instruction</td>
<td>2-3</td>
<td>Examination of research and current issues in curriculum and instruction. Emphasis on theory and research and evaluation models. Preparation and submission of article manuscript.</td>
</tr>
<tr>
<td>CI6920</td>
<td>Masters Research Project In Curriculum And Instruction</td>
<td>1-3</td>
<td>Students will complete an individual research project under the direction of a committee of at least two faculty members in Curriculum and Instruction, ordinarily including the faculty adviser.</td>
</tr>
<tr>
<td>CI6940</td>
<td>Internship In Curriculum And Instruction</td>
<td>8</td>
<td>Placement of a master’s student in appropriate school district setting under direction of a CI instructor. :04 Middle Childhood Education, :05 Adolescent and Young Adult Education, :06 Multiage. Prerequisite: Methods course in subject area. Corequisite:</td>
</tr>
<tr>
<td>CI6960</td>
<td>Masters Thesis In Curriculum And Instruction</td>
<td>1-3</td>
<td>Students will complete a thesis under the direction of committee of at least two faculty members from Curriculum and Instruction, ordinarily including the faculty adviser.</td>
</tr>
<tr>
<td>CI7460</td>
<td>Theory &amp; Practice In Language Arts</td>
<td>3</td>
<td>Advanced methods for teaching and integrating language arts in diverse classrooms. Emphasis is on understanding the reading and writing process from emergent literacy through middle school.</td>
</tr>
<tr>
<td>CI7530</td>
<td>TEACHING AND LEARNING GEOMETRY AND MEASUREMENT</td>
<td>3</td>
<td>Examination of the development of mathematics concepts and skills associated with geometry and measurement across the K-12 curriculum. Emphasis on current research, theory, and innovative instructional approaches to the teaching and learning of geometry a</td>
</tr>
<tr>
<td>CI7540</td>
<td>Teaching and Learning Algebra</td>
<td>3</td>
<td>Examination of the development of algebraic concepts and skills across the K-12 curriculum. Emphasis on current research, theory, and innovative approaches for teaching and learning algebra.</td>
</tr>
</tbody>
</table>
CI7560 ASSESSMENT IN MATHEMATICS EDUCATION  Credit Hours: 3
Study of the role of assessment in the teaching and learning of mathematics. Examination of current research, assessment techniques, and trends and ways in which assessment can guide and inform mathematics instruction.

CI7580 TEACHING AND LEARNING NUMBER, DATA, AND PROBABILITY  Credit Hours: 3
Examination of the development of concepts and skills associated with number, data, and probability across the K-12 curriculum. Emphasis on current research, theory, and innovative instructional approaches.

CI7590 TOPICS IN MATHEMATICS EDUCATION  Credit Hours: 3
Examination and exploration of policy issues, research, and national trends that have implications for teachers, curriculum specialists, school districts, and others involved in mathematics education.

CI7650 Mentoring a Preservice Teacher  Credit Hours: 3
Prepares mentors to guide prospective teachers as they learn to teach in classroom settings. Emphasis is on reform oriented practice, developing productive mentor-mentee relationships, and guiding and assessing novices’ learning.

CI7660 Technological Tools In Science Education  Credit Hours: 3
Use of technology tools to foster learning in science classrooms. Emphasis is on integrating practical applications, research and theoretical perspectives to become intelligent users of computer applications in science education.

CI7690 Project-Based Science  Credit Hours: 3
Advanced methods for teaching science to engage learners in extended inquiry as they investigate real-world questions. Emphasis on innovative instructional strategies, research and theoretical perspectives to promote deep understanding of fundamental concepts.

CI7810 Instructional Strategies  Credit Hours: 3
Purposes of classroom instruction and role of the teacher. Investigation and characteristics of mediated instruction, lecture-recitation, inductive discussion and inquiry and cooperative learning models. Modeling activities.
CI7830  Teaching In The Middle And Junior High  Credit Hours: 3
An exploration of quality teaching in middle grades schools (5-9) including historical and philosophical foundations, developmental traits of students, current curriculum, teaching strategies, discipline and classroom management and evaluation.

CI7860  Middle-Junior High Curriculum  Credit Hours: 3
An exploration of the junior high and middle school curriculum including philosophical, psychological and historical bases, current organization and design and principles of curriculum development. Designing developmentally-appropriate curriculum is stre

CI7870  Secondary School Curriculum  Credit Hours: 3
Exploration of senior high school curriculum. Social, psychological, historical and philosophical foundations. Curriculum organization and design. Sources of curriculum.

CI7880  Thinking Works: Comprehensive Content Reading  Credit Hours: 3
This course explores innovative research-based instructional strategies that show students how to teach comprehension as a constructive process in all curricula areas. It explores alternative methods for addressing the needs of less advanced students and

CI7940  Specialist Practicum In Curriculum And Instruction  Credit Hours: 1-3
Observation and supervised experience in an appropriate setting. Students will be assigned to work as interns under the joint supervision of school and University personnel.

CI7980  Special Topics In Curriculum & Instruction  Credit Hours: 1-5
A course developed around topics of interest and concern to inservice teachers within school districts and agencies. Stresses solution and resolution of education problems occurring within the district.

CI8370  Fundamentals Of Grant Writing  Credit Hours: 3
This seminar will teach participants about fundamentals of grant writing. Topics covered will include: locating sources of funding, writing grants, designing evaluation instruments and administering grants.
### CI8400 Trends In Literacy Acquisition  
**Credit Hours:** 3  
Study of the theories and problems of literacy instruction. Factors affecting literacy development including organizations and climate of the classroom texts and instructional methods will be considered.

### CI8410 Content Area Literacy  
**Credit Hours:** 3  
Study of the integration of reading and writing in the content areas. Attention will be given to instructional methods as well as assessment practices.

### CI8420 Content Area Literacy For Secondary Teachers  
**Credit Hours:** 3  
Study of the integration of reading and writing in the content areas. Attention will be given to instructional methods as well as assessment practices.

### CI8430 Diagnosis Of Reading Disability  
**Credit Hours:** 3  
Teachers acquire the knowledge and skill needed to assess the reading and writing of students and to plan appropriate instruction.  

Prerequisites: CI 6400 FOR LEVEL GR WITH MIN. GRADE OF D-

### CI8440 Remediation Practicum  
**Credit Hours:** 3  
Focus on comprehension, vocabulary and word identification strategies for supporting disabled readers in the regular classroom in learning to read independently.  

Prerequisites: (CI 6400 FOR LEVEL GR WITH MIN. GRADE OF D- AND CI 6430 FOR LEVEL GR WITH MIN. GRADE OF D-)

### CI8460 Writing Process  
**Credit Hours:** 3  
Understanding and implementation of writing process in elementary classrooms, focusing on helping students write more effectively in three genre-fiction, nonfiction and poetry, as well as on evaluating student writing.

### CI8470 Integrating Language Arts Across The Curriculum  
**Credit Hours:** 3  
Addresses the philosophical underpinnings of integrated instruction as well as practical aspects of its implementation. Students incorporate literature and instructional strategies in thematic units.
CI8490  Theory And Research In Literacy  
Extensive examination of current research in literacy instruction. The influence of scientific studies on teaching procedures, materials and contexts of learning will be considered.

CI8590  Theory And Research In Mathematics Education  
Analysis of the latest research in mathematics curriculum of the elementary school. A critical appraisal is made of current issues in mathematics instruction.

CI8650  Advanced Mentorship  
Investigates theoretical frameworks for mentoring in reform-oriented teacher education. Mentor's roles as collaborators for student learning, guides and partners for teacher learning, and professionals and leaders in classrooms are examined.

CI8690  Theory And Research In Science Education  
Critical appraisal of current issues and trends in science education research. Emphasis on research investigations concerning concepts and issues in science learning theory, curriculum development and assessment.

CI8700  Doctoral Pro-Seminar I: Introduction to Scholarship in Curriculum and Instruction  
The doctoral research cycle begins by introducing students to issues in curriculum and instruction, establishing a research agenda, and building a community of scholars. Pre-requisite to Pro-Seminar II.

CI8710  Doctoral Pro-Seminar II: Themes in theory and research in Curriculum and Instruction  
The doctoral research cycle continues by examining the paradigmatic and theoretical bases of C&I research. Develop lines of inquiry grounded in theoretical knowledge and personal interests. Prerequisite: Pro-Seminar I.

Prerequisites: CI 8700 FOR LEVEL GR WITH MIN. GRADE OF D-

CI8720  Doctoral Pro-Seminar III: Themes in theory and research in curriculum and instruction.  
The doctoral research cycle is completed. A study is designed, conducted and disseminated within a research group under the guidance of a mentor. Prerequisite: CI 8700 + 8710.

Prerequisites: CI 8710 FOR LEVEL GR WITH MIN. GRADE OF D-
Course Descriptions 2009-2010

CI8750  Children Of Substance Abuse-Strategies And Curriculum Materials  Credit Hours:  3
Examination of family substance abuse and dysfunction. Hidden learning, roles and patterns of behavior among COSAs. Strategies and materials for elementary, middle school, junior high COSAs.

CI8790  Theory And Research In Social Studies  Credit Hours:  3
Intensive study of contemporary developments in social studies including national standards, current research and major publications.

CI8800  Foundations Of Curriculum & Instruction  Credit Hours:  3
Consideration is given to major conceptualizations (models) of curriculum and instruction - classical, technological, personalized and interactional. Stress is placed upon the philosophical, psychological and historical determinants of these curricular m

CI8810  Curriculum Development: K-12  Credit Hours:  3
Study of essential structural components of curriculum. Role of the educator in making defensible curriculum decisions. Issues related to curricular aims, content, designs and evaluation are examined with the assistance of curriculum theory.

CI8820  Program Development For Non-School Settings  Credit Hours:  3
Program development for community agency personnel training and staff development. Principles of curriculum design applied to non-school programs. Model for design; evaluation.

CI8830  Curriculum Trends And Issues  Credit Hours:  3
Analysis of current curriculum developments in public school education such as the major curriculum reform projects, individualization of programs, compensatory programs, ITU and programmed instructional packages and related developments.

CI8840  Curriculum For Educational Leaders  Credit Hours:  3
Study of initiating and implementing curriculum change in the school setting. Students will build upon a review and examine key theories of educational leadership concerned with curriculum development.
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<tr>
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<tr>
<td>CI8860</td>
<td>Advanced Curriculum Theory</td>
<td>3</td>
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<td>Problems of conducting systematic inquiry in the curriculum field. Students will discuss ideas and research of curriculum scholars. Requires the ability to analyze and evaluate current programs and scholarly writing.</td>
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<tr>
<td>CI8870</td>
<td>Curriculum Criticism</td>
<td>3</td>
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<td></td>
<td>An in-depth investigation of the foundations of curriculum inquiry with specific emphasis on the application of contemporary philosophy, curricular criticism and possibility in the design of educational programs.</td>
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<td>CI8900</td>
<td>Doctoral Seminar In Curriculum And Instruction</td>
<td>2-4</td>
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<td>This seminar will consider problems and provide advanced study for doctoral students in Curriculum and Instruction.</td>
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<tr>
<td>CI8930</td>
<td>Independent Research In Curriculum And Instruction</td>
<td>1-5</td>
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<td>Individual study is designed to provide the doctoral student opportunity to work individually on professional problems under the direction of CI faculty.</td>
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<tr>
<td>CI8940</td>
<td>Doctoral Internship In Curriculum And Instruction</td>
<td>1-3</td>
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<td></td>
<td>Placement of doctoral students in appropriate school, school district, or other professional setting under direction of joint placement personnel and CI faculty.</td>
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<tr>
<td>CI8960</td>
<td>Dissertation In Curriculum And Instruction</td>
<td>1-10</td>
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<td>Original research in an area of curriculum and instruction.</td>
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<tr>
<td>CIEC3200</td>
<td>Early Childhood Education: Philosophy And Practice</td>
<td>3</td>
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<td></td>
<td>The course emphasizes the role, attitude and characteristics of the effective teacher of young children.</td>
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<tr>
<td>CIEC3250</td>
<td>Public Policy And Advocacy Issues In Early Childhood</td>
<td>2</td>
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<tr>
<td>CIEC3310</td>
<td>Curriculum And Methods For Preschool Education</td>
<td>4</td>
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<tr>
<td>CIEC3320</td>
<td>Play And Learning</td>
<td>3</td>
</tr>
<tr>
<td>CIEC3350</td>
<td>Child, Family &amp; Public Policy In Early Childhood</td>
<td>3</td>
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<tr>
<td>CIEC3380</td>
<td>Field Experience: Socio-Cultural Dimensions Of Education</td>
<td>3</td>
</tr>
<tr>
<td>CIEC3900</td>
<td>Ece Linking Seminar III</td>
<td>1</td>
</tr>
<tr>
<td>CIEC4070</td>
<td>Effective Teaching Practices, Pre-K To 3rd Grade</td>
<td>3</td>
</tr>
</tbody>
</table>
CIEC4150  Setting The Stage For Early Childhood Learning: Inspirations From Reggio Emilia  Credit Hours: 3
This course will explore Reggio's philosophy of early childhood education and the numerous ways that children explore the "hundred languages." Reggio uses these languages (art, clay, wire, sculpture, light, shadow, etc.) as a way to help children repre

CIEC4340  Infant/Toddler Curriculum  Credit Hours: 3
Sequential development of the young child from birth to 3 years. Taken in conjunction with placement in early childhood setting, permitting opportunities to participate in the caregiving of infants/toddlers.

CIEC4380  Practicum: Preschool  Credit Hours: 1-2
Practicum experience in preschool settings where students will observe, plan, implement and evaluate activities. Students will spend two half days per week in their field placements.

CIEC4390  Preschool Seminar  Credit Hours: 2
Planning, teacher made materials and managing classrooms will be covered.

CIEC4460  Science Methods For Early Childhood Education  Credit Hours: 3
This course is designed to help teachers of science in grades Pre-Kindergarten through third to understand the concepts, ideas and applications of science in the real world. Students will learn how scientific thinking involves collecting data, analyzing

Prerequisites: CIEC 4480 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Corequisite: CIEC 4480

CIEC4480  Integrative Field Experience: Best Practices  Credit Hours: 3
A five half day a week field experience in an inclusive Pre-K or primary classroom with focus on the implementation of content and skill based curriculum using the best practice methods and the integration of appropriate technology.

Prerequisites: UPDV FOR MIN. SCORE OF 1

CIEC4510  Language And Literacy  Credit Hours: 3
A study of the language, literacy and concept development of the young child with emphasis on the factors that influence this development and classroom practice which fosters their development.
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<tbody>
<tr>
<td>CIEC4520</td>
<td>Multisensory Experiences</td>
<td>3</td>
<td>Developmental, sensory and neurological principles underlying the planning and implementation of developmentally appropriate learning activities for young children.</td>
</tr>
<tr>
<td>CIEC4530</td>
<td>Affective Experiences</td>
<td>3</td>
<td>Emphasizes the rationale and methods for providing a wholesome affective environment for young children in preschool and primary settings.</td>
</tr>
<tr>
<td>CIEC4540</td>
<td>Pre-Kindergarten Programs</td>
<td>3</td>
<td>Provides early childhood educators with skills and knowledge related to the successful operation of an early childhood center, school, or program. Standards and regulations as set forth by State licensing agencies as well as accreditation by NAEYC will be.</td>
</tr>
<tr>
<td>CIEC4550</td>
<td>Teaching Methods For Early Childhood Social Studies</td>
<td>3</td>
<td>In depth study of methods and materials for teaching social studies from pre-school to third grade. Implementation of early childhood curriculum with the context of current technology and the development of critical thinking skills. Prerequisites:(CIEC 3200 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDP 3210 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
</tr>
<tr>
<td>CIEC4580</td>
<td>Practicum: Infant/Toddler</td>
<td>1</td>
<td>Practicum experience in infant/toddler settings where students will observe, plan, implement and evaluate activities.</td>
</tr>
<tr>
<td>CIEC4590</td>
<td>Infant/Toddler Seminar</td>
<td>2</td>
<td>Planning, teacher made materials and the environment for infant and toddlers will be covered.</td>
</tr>
<tr>
<td>CIEC4750</td>
<td>Developmental Assessment In Early Childhood</td>
<td>3</td>
<td>This course focuses on methods of assessment in early childhood classrooms. Issues covered include methods of observation, interpreting formal assessment results and using information gained from assessment to plan curriculum.</td>
</tr>
</tbody>
</table>
CIEC4760  Principles Of Developmentally Appropriate Curriculum  Credit Hours:  4
A study of the principles and knowledge base for designing developmentally appropriate curriculum and classroom environments. Principles of anti-bias education are also addressed. Students make observations in four K to grade 3 classrooms.

CIEC4770  Practicum: Primary Grades  Credit Hours:  3
Practicum experience in primary grade settings (grades K-3) where students will observe, plan, implement and evaluate activities.

CIEC4790  Kindergarten Seminar  Credit Hours:  2
Planning, research, teacher made materials appropriate for environments for kindergarten children will be covered.

CIEC4900  Internship/Student Teaching Seminar  Credit Hours:  3
A seminar designed to reflect on the student teaching experience and to enhance the student teacher's final preparation for employment. Professional issues, ethical behavior, resume and interview techniques and other processes and professional entry concepts will be covered.

Prerequisites: UPDV FOR MIN. SCORE OF 1

CIEC4910  Ece Senior Research Project  Credit Hours:  2
The internship senior will complete an action research study or related topic about student learning. In addition to a completed paper, the student will give a multi-media presentation that clearly articulates the research question/problem, methods used in the study.

Prerequisites: UPDV FOR MIN. SCORE OF 1

Corequisite: CIEC 4930

CIEC4930  Internship/Student Teaching  Credit Hours:  8-16
Planned experience in public school classrooms under direction of University supervisor. Observation of teaching of experienced teacher; gradual acceptance of full responsibility by student teacher for planning, instruction, evaluation and related duties.

Prerequisites: UPDV FOR MIN. SCORE OF 1

Corequisite: CIEC 4900

CIEC4950  Workshop I Early Childhood Education  Credit Hours:  1-5
Workshop developed around topics of interest and concern for pre-service and in-service teachers and other education personnel. Practical application of workshop topics will be emphasized.
Course Descriptions 2009-2010

CIEC4980  Special Topics In Early Childhood Education  Credit Hours: 1-5
Topics of interest and concern to preservice, inservice and non-degree teachers within districts and community agencies served by the Center for Educational Development. May be included in an undergraduate degree program.

CIEC4990  Undergraduate Independent Study In Early Childhood Education  Credit Hours: 1-5
Individual study designed to provide a student the opportunity to work individually on professional problems under the direction of the Early Childhood faculty.

CIEC5000  Ece: Philosophy And Practice  Credit Hours: 3
A comprehensive introduction to the profession of early childhood education by examining relevant issues as they relate to overall development of children ages birth to eight years.

CIEC5070  Effective Teaching Practices: Pre-K To 3rd Grade  Credit Hours: 3
Applies characteristics of best practice to curriculum development and implementation with adherence to national and state curriculum standards as they apply to children, age 3 to 8, with diverse educational needs.
Prerequisites:(EDP 5210 FOR LEVEL GR WITH MIN. GRADE OF D- AND CIEC 5000 FOR LEVEL GR WITH MIN. GRADE OF D-)

CIEC5150  Setting The Stage For Early Childhood Learning: Inspirations From Reggio Emilia  Credit Hours: 3
This course will explore Reggio's philosophy of early childhood education and the numerous ways that children explore the "hundred languages." Reggio uses these languages (art, clay, wire, sculpture, light, shadow, etc.) as a way to help children repre...

CIEC5340  Infant/Toddler Curriculum  Credit Hours: 3
Introduction to the sequential development of the young child from birth to 3 years. Students will engage in field hours in infant-toddler settings, design learning materials and critique research in topics related to infant/toddler curriculum.

CIEC5350  Public Policy And Advocacy In Early Childhood Education  Credit Hours: 3
Students will understand the implications of social, political and economic policies on the emergence of services for young children in the 21st century.
Prerequisites:CIEC 5000 FOR LEVEL GR WITH MIN. GRADE OF D-
CIEC5380  Practicum: Preschool
Practicum experience in pre-kindergarten settings where students will observe, plan, implement and evaluate activities.

Prerequisites:(CIEC 5070 FOR LEVEL GR WITH MIN. GRADE OF D- AND EDP 5210 FOR LEVEL GR WITH MIN. GRADE OF D-)

CIEC5460  Science Methods For Early Childhood Education
This course is designed to help teachers of science in grades Pre-Kindergarten through third to understand the concepts, ideas and applications of science in the real world. Students will learn how scientific thinking involves collecting data, analyzing

CIEC5520  Multisensory Experiences
Development and sensory principles underlying the planning and implementation of developmentally appropriate learning activities for young children. Technical content will include the physical and neurological bases for learning.

CIEC5530  Affective Experiences
This course focuses on teacher planning and activities that support the socio-emotional development of young children.

CIEC5540  Prekindergarten Programs
Focuses on the successful operations of an early childhood program. Covers topics such as licensing and certification standards, staff development selection and purchase of equipment and proper food and health services.

CIEC5550  Teaching Methods For Early Childhood Social Studies
In depth study of methods and materials for teaching social studies from pre-school to third grade. Implementation of early childhood curriculum within the context of current technology and the development of critical thinking skills.

Prerequisites:(CIEC 5000 FOR LEVEL GR WITH MIN. GRADE OF D- AND EDP 5210 FOR LEVEL GR WITH MIN. GRADE OF D-)

CIEC5580  Practicum: Infant/Toddler
Practicum experience in infant/toddler settings where students will observe, plan, implement and evaluate activities.
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<tr>
<td>CIEC5590</td>
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<td>2</td>
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<tr>
<td>CIEC5770</td>
<td>Practicum: Primary (k-3)</td>
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<td>CIEC5800</td>
<td>Teacher/Parent Child Relations</td>
<td>3</td>
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<td>CIEC5950</td>
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<td>CIEC5980</td>
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<tr>
<td>CIEC6310</td>
<td>Pre-K/Primary Curriculum</td>
<td>3</td>
</tr>
</tbody>
</table>

**CIEC5590 Infant Toddler/Seminar**
Planning, research, teacher-made materials appropriate for environments for infants and toddlers will be covered.

**CIEC5770 Practicum: Primary (k-3)**
Practicum experience in grades Kindergarten through 3 where students will observe, plan, implement and evaluate activities.

Prerequisites: (CIEC 5070 FOR LEVEL GR WITH MIN. GRADE OF D- AND EDP 3210 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (CIEC 5070 FOR LEVEL GR WITH MIN. GRADE OF D- AND EDP 5210 FOR LEVEL GR WITH MIN. GRADE OF D-) OR (CIEC 4070 FOR LEVEL UG WITH MIN. GRADE OF D-)

**CIEC5800 Teacher/Parent Child Relations**
This course is designed to assist the classroom teacher in building positive relationships with the parents of students and to develop effective strategies for communicating with them.

**CIEC5950 Workshop In Early Childhood Education**
Workshops developed around topics of interest and concern to inservice teachers. Practical application of workshop topics will be emphasized. Students may include several workshops in their master's or specialist degree programs.

**CIEC5980 Special Topics In Early Childhood Education**
A course developed around topics of interest and concern to inservice teachers within districts served by the Center for Educational Research and Services. Stresses solution and resolution of educational problems occurring within the district.

**CIEC5990 Graduate Independent Study In Early Childhood Education**
Individual study designed to provide a student the opportunity to work individually on professional problems under the direction of the faculty in Early Childhood Education.

**CIEC6310 Pre-K/Primary Curriculum**
The study and design of early childhood curriculum from a best practice/developmental perspective including integrated curriculum, anti-bias approaches, authentic assessment, direct learning strategies. Student self assessment and change project required.
CIEC6320  Meaning And Development Of Play Behavior  Credit Hours:  3
Theoretical bases of play behavior and its role in curriculum development/assessment. Students implement and evaluate a sociodramatic play kit and conduct library research on one aspect of play behavior.

CIEC6330  Language And Concept Development  Credit Hours:  3
Study of the language and literacy development of the young child with emphasis upon the factors that influence and support this development. Students will do projects to implement their learning.

CIEC6750  Developmental And Classroom Assessment  Credit Hours:  3
Focuses upon teaching and learning in a developmental learning environment. Emphases includes observing the developmental characteristics of young children and assessment for prescriptive teaching.

CIEC6900  Masters Research Seminar In Early Childhood Education  Credit Hours:  2-3
Examination of research and current issues in early childhood education. Emphasis on theory and research and evaluation models.

Prerequisites:CIEC 6950 FOR LEVEL GR WITH MIN. GRADE OF D-

CIEC6920  Masters Research Project In Early Childhood Education  Credit Hours:  1-3
Student will complete an individual research project under the direction of a committee of at least two faculty members in Early Childhood ordinarily involving the faculty advisor.

CIEC6940  Internship In Early Childhood  Credit Hours:  1-12
Placement of a Master's student in an appropriate PreK-Grade 3 school setting under the direction of a CIEC instructor. A maximum of 3 hours can be applied towards a masters degree.

CIEC6950  Theory And Research In Early Childhood  Credit Hours:  3
Review and analysis of theory and research related to rationale and methods for program options for young children. Critique research and prepare a review of synthesis of research.
CIEC6960  Masters Thesis In Early Childhood Education  Credit Hours: 1-3
Students who elect this option will complete a thesis under the direction of committee of at least two faculty members from Early Childhood Education, ordinarily including the faculty advisor.

CIEC7800  Teacher/Parent Child Relations  Credit Hours: 3
This course is designed to assist the classroom teacher in building positive relationships with the parents of students and to develop effective strategies for communicating with them.

CIEC7940  Specialist Practicum In Early Childhood Education  Credit Hours: 1-3
Observation and supervised experience in an appropriate setting. Students will be assigned to work as interns under the joint supervision of school and University personnel.

CIEC7980  Special Topics In Early Childhood Education  Credit Hours: 1-5
A course developed around topics of interest and concern to inservice teachers within districts served by the Center for Educational Research and Services. Stresses solution and resolution of educational problems occurring within the district.

CIEC8310  Pre-K/Primary Curriculum  Credit Hours: 3
The study and design of early childhood curriculum from a best practice/developmental perspective including integrated curriculum, anti-bias approaches, authentic assessment, direct learning strategies. Student self assessment and change project required

CIEC8320  Meaning And Development Of Play Behavior  Credit Hours: 3
Theoretical bases of play behavior and its role in curriculum development/assessment. Students implement and evaluate a sociodramatic play kit and conduct library research on one aspect of play behavior.

CIEC8330  Language And Concept Development  Credit Hours: 3
Study of the language and literacy development of the young child with emphasis upon the factors that influence and support this development. Students will do projects to implement their learning.
CIEC8340  Curriculum Design For Infants And Toddlers  Credit Hours:  3
Introduction to the sequential development of the young child from birth to 3 years. Students will engage in field hours in infant-toddler settings, design learning materials and critique research in topics related to infant/toddler curriculum.

CIEC8750  Developmental And Classroom Assessment  Credit Hours:  3
Focuses upon teaching and learning in a developmental learning environment. Emphases includes observing the developmental characteristics of young children and assessment for prescriptive teaching.

CIEC8900  Doctoral Seminar In Early Childhood Education  Credit Hours:  2-4
This seminar will consider problems and provide advanced study for doctoral students in Early Childhood Education.

CIEC8930  Independent Research In Early Childhood Education  Credit Hours:  1-5
Individual study is designed to provide the doctoral student opportunity to work individually on professional problems under the direction of Early Childhood faculty.

CIEC8940  Doctoral Internship In Early Childhood  Credit Hours:  1-3
Placement of doctoral students in an appropriate PreK-Grade 3 school, school district or other professional setting under the direction of joint placement personnel and CIEC faculty.

CIEC8950  Theory And Research In Early Childhood  Credit Hours:  3
Review and analysis of theory and research related to rationale and methods for program options for young children. Critique research and prepare a review of synthesis of research.

CIEC8960  Dissertation In Early Childhood Education  Credit Hours:  1-12
Original research in an area of early childhood education.
CIVE1000  Freshman Civil Engineering Experience  Credit Hours:  1
Computer literacy, report writing, word processing, table creation, equation, equation writing, data manipulation, data graphical plotting. Introduction to various disciplines in Civil Engineering, Structural, Geotechnical, Transportation, Environmental.

CIVE1100  Civil Engineering Measurements  Credit Hours:  3
Study of graphical representations of engineering structures and systems and application by hand drawing and computer aided techniques. Instruments and methods for linear and angular measurements. Error theory and propagation. Familiarization with geograph

Corequisite:CIVE 1110

CIVE1110  Computer Aided Drafting for Civil Engineers  Credit Hours:  1
Study of graphical representation of engineering structures and systems and application by hand-drawing and computer aided techniques.

Corequisite:CIVE 1100

CIVE1150  Engineering Mechanics: Statics  Credit Hours:  3
Study of coplanar statics of particles, vector addition, resultant components, equilibrium, free body diagrams, equivalent force systems, vector products, scalar products, 2 & 3 dimensional equilibrium of rigid bodies, analysis of machines, pulleys, trus

Prerequisites:(MATH 1850 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 2130 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (MATH 1920 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 2130 FOR LEVEL UG WITH MIN. GRADE OF D-)

CIVE1160  Engineering Mechanics: Strength Of Materials  Credit Hours:  3
Material properties. Axially loaded members, including eccentric loads and thin wall pressure vessels. Axial load applications: Stress-Strain relationships, Stress & Strain transformations. Torsion: solid sections, circular sections. Torsional load appl

Prerequisites:CIVE 1150 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE1170  Fluid Mechanics For Civil Engineers  Credit Hours:  3
Fundamental concepts of fluid mechanics required for the solutions of air pollution problems, water resource problems and transportation problems. Use of continuity, momentum and energy equations and dimensional analysis. Application to pipe flow, open ch

Prerequisites:(PHYS 2130 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 1890 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (PHYS 2130 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 2890 FOR LEVEL UG WITH MIN. GRADE OF D-)

CIVE2000  Professional Development  Credit Hours:  1
Basic concepts of career planning, co-op performance expectations, necessary skills for maximizing learning from experiences and realities of the professional community.

Prerequisites:CIVE 1000 FOR LEVEL UG WITH MIN. GRADE OF D-
CIVE2110  Civil Engineering Materials With Laboratory  
Credit Hours:  3
Introduction to properties of aggregates, Portland cement, concrete, steel, glass and bituminous mixtures. Mix designs of cement and asphalt concrete and standard test procedures for strength, workability, serviceability and durability.
Prerequisites:CIVE 1160 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE2990  Individual Study In Civil Engineering  
Credit Hours:  1-3
An opportunity for qualified underclassmen to pursue a relevant area of Civil Engineering of particular personal interest under the supervision of a faculty member.

CIVE3120  Civil Engineering Systems Analysis  
Credit Hours:  3
Systems Approach, optimization by differential calculus techniques, linear programming, transportation and assignment problems, management of construction projects, critical path method, PERT and decision analysis.
Prerequisites:MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 3820 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE3210  Soil Mechanics  
Credit Hours:  3
A study of soil as an engineering material. Geologic origins, physical properties, movement of water through soil, soil stresses, consolidation, shear strength. Engineering properties testing of soils in laboratory.
Prerequisites:(CIVE 1160 FOR LEVEL UG WITH MIN. GRADE OF D- AND CIVE 1170 FOR LEVEL UG WITH MIN. GRADE OF D-)

CIVE3220  Foundation Engineering  
Credit Hours:  3
Application of soil mechanics principles to design for problems encountered in excavations, embankments, foundations, retaining structures, abutments, slope stability. Evaluation of the ability of soil to function in various capacities.
Prerequisites:CIVE 3210 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE3310  Structural Analysis  
Credit Hours:  3
Analysis of statically determinate structures; analysis of simple and compound trusses, beams and frames; introduction to indeterminate structures; slope deflection and moment distribution. Introduction to computer applications.
Prerequisites:(CIVE 1160 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 1050 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 1890 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (CIVE 1160 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 1050 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE3320  Basic Finite Element Methods  
Credit Hours:  3
Introduction to modern computer oriented structural analysis technique. It covers the beam-column element, triangular element and rectangular element. State-of-the-art computer software will be used to analyze bridge trusses, high-rise building frames, fo
Prerequisites:(CIVE 3310 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 1050 FOR LEVEL UG WITH MIN. GRADE OF D-)
CIVE3410  Steel Design I  Credit Hours: 3
An introduction to the principles underlying design of axial tension members, axial compression members, beams, columns and base plates. Also includes welded and bolted connections.
Prerequisites: CIVE 3310 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE3420  Reinforced Concrete Design I  Credit Hours: 3
Introduction to principles and underlying design of basic structural beams, columns, one-way slabs in reinforced concrete. Shear reinforcement.
Prerequisites: CIVE 3310 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE3510  Transportation Engineering I  Credit Hours: 3
To provide an overview of transportation systems and operating characteristics of various highway modes. Concept of land use/transportation interaction. Considerations of vehicle and human characteristics in design of highway elements. Introduction to
Prerequisites: (CIVE 1100 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 2300 FOR LEVEL UG WITH MIN. GRADE OF D-)

CIVE3520  Transportation Engineering II  Credit Hours: 3
Survey of various modes of transport with emphasis on service provided by each and facilities required. Introduction to physical and practical aspects of design of transport facilities including drainage, pavements, railroads, ports and harbors, pipeline
Prerequisites: (CIVE 3510 FOR LEVEL UG WITH MIN. GRADE OF D- AND CIVE 3210 FOR LEVEL UG WITH MIN. GRADE OF D- AND CIVE 2110 FOR LEVEL UG WITH MIN. GRADE OF D-)

CIVE3610  Water Supply And Treatment  Credit Hours: 3
This course includes lecture, laboratory exercises and a team-based design project. The topics covered will include water quality, water supply, design of the physical and chemical treatment processes, water distribution systems and contemporary issues r
Prerequisites: CIVE 1170 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE3620  Air Pollution Engineering I  Credit Hours: 3
Introduction to sources of air pollution, basic meteorological processes, air quality modeling, technology for air pollution control, odor control and noise pollution. Introduction to health effects of air pollutants, risk assessment and global atmosphere
Prerequisites: CIVE 1170 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE3630  Wastewater Engineering  Credit Hours: 3
This course includes lecture, laboratory exercises and a team-based design project. The topics covered will include wastewater collection, treatment and discharge, sludge treatment and disposal, and contemporary issues related to wastewater treatment.
Prerequisites: CIVE 1170 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>CIVE3940</td>
<td>Co-Op Experience</td>
<td>1</td>
<td>Approved co-op work experience. Course may be repeated.</td>
</tr>
<tr>
<td>CIVE3950</td>
<td>Co-Op Experience</td>
<td>1</td>
<td>Approved co-op work experience beyond third required co-op experience. Course may be repeated.</td>
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<tr>
<td>Prerequisites: CIVE 3940 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>CIVE4210</td>
<td>Advanced Soil Mechanics</td>
<td>3</td>
<td>A study of soil behavior including stress distributions, deformation, consolidation and shear strength. The course focuses upon the development and use of well accepted solutions and practical applications.</td>
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<td>Prerequisites: CIVE 3210 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<td>CIVE4220</td>
<td>Advanced Foundation Engineering</td>
<td>3</td>
<td>Discussion of advanced topics concerned with the application of soil mechanics to subsurface investigation and characterization, soil compaction and site improvement, shallow foundations, deep foundations, slope stability, lateral earth pressures, design</td>
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<tr>
<td>CIVE4240</td>
<td>Design With Geosynthetics</td>
<td>3</td>
<td>Use of geosynthetic materials in engineering design for reinforcement, barrier, separation and/or drainage functions. Design applications for geotechnical, transportation and environmental uses.</td>
</tr>
<tr>
<td>Prerequisites: (CIVE 3210 FOR LEVEL UG WITH MIN. GRADE OF D- AND CIVE 3220 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
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<tr>
<td>CIVE4260</td>
<td>Experimental Soil Mechanics</td>
<td>3</td>
<td>Measurement of and research on the engineering properties of soils, with special emphasis on tests not covered in an introductory soil mechanics laboratory. Design of a testing program to include single and three dimensional consolidation, triaxial and d</td>
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<tr>
<td>Prerequisites: CIVE 3210 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>CIVE4300</td>
<td>Advanced Mechanics Of Materials</td>
<td>3</td>
<td>Introduction to theory of elasticity, plane-stress and plane-strain problems, yield criteria and failure theories, bending of beams, energy methods, curved flexural members, unsymmetrical bending, torsion, shear center and axisymmetrically loaded members.</td>
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<tr>
<td>Prerequisites: (CIVE 1160 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
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CIVE4320  Matrix Analysis Of Structures  Credit Hours:  3
Matrix analysis of continuous beams, trusses and frames by force method and displacement method. Methods of consistent deformation and slope deflection will be discussed to complement the matrix analysis. Computer applications.
Prerequisites: CIVE 3310 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE4340  Experimental Mechanics  Credit Hours:  3
Prerequisites: CIVE 2110 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE4350  Introduction To Structural Dynamics  Credit Hours:  3
Study of undamped and damped response to free and forced vibrations of single and multi-degree of freedom systems subjected to dynamic loading. Introduction to estimation of seismic loading on structures.
Prerequisites: MIME 2300 FOR LEVEL UG WITH MIN. GRADE OF D- AND CIVE 3310 FOR LEVEL UG WITH MIN. GRADE OF D- OR (MIME 2300 FOR LEVEL UG WITH MIN. GRADE OF D- AND CIVE 3410 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (MIME 2300 FOR LEVEL UG WITH MIN. GRADE OF

CIVE4410  Timber Design  Credit Hours:  3
Properties of wood and the design of beams, columns, horizontal diaphragms, shearwalls and connections. Basic behavior of structures and how this behavior is reflected in the design of wood structures.
Prerequisites: CIVE 3310 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE4430  Structural Steel Design II  Credit Hours:  3
Study of local failure in beams, biaxial bending, plate girders, composite beams, semi-rigid composite connections and beam columns.
Prerequisites: CIVE 3410 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE4440  Reinforced Concrete Design II  Credit Hours:  3
Analysis and design of columns under axial compression and biaxial bending. Consideration of bar cut-off, development lengths. Design of two-way slabs and building frames in reinforced concrete. Deflection of beams. Shear design provisions for deep be
Prerequisites: CIVE 3420 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE4480  Reinforced Masonry Design  Credit Hours:  3
Study of the design of reinforced and unreinforced masonry design, beams and walls and columns. Working stress design, strength design and empirical design are studied.
Prerequisites: CIVE 3420 FOR LEVEL UG WITH MIN. GRADE OF D-
CIVE4510  Materials Engineering  Credit Hours: 3
Mechanical properties of various civil engineering materials including metallic, ceramic, polymeric and composite materials; microstructures; fracture mechanics; fatigue and other failure modes; environmental effects; fiber reinforced concrete; quality co
Prerequisites:CIVE 2110 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE4550  Traffic Control  Credit Hours: 3
To provide a detailed understanding of the basic concepts of traffic engineering together with driver-roadway-vehicle system characteristics. Capacity analysis of freeways, rural highways, multilane and two lane highways. Traffic control devices and tra
Prerequisites:CIVE 3510 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE4580  Intelligent Transportation Systems  Credit Hours: 3
A study of the principles of advanced technologies and ideas that improve transportation mobility and efficiency, enhance safety, maximize use of existing transportation facilities, conserve energy resources and reduce environmental impacts.
Prerequisites:CIVE 3510 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE4610  Hydrology And Water Resources  Credit Hours: 3
Prerequisites:(CIVE 3610 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 4000 FOR LEVEL UG WITH MIN. GRADE OF D-)

CIVE4620  Open Channel Flow Hydraulics  Credit Hours: 3
Energy and momentum in open channel flow. Channel controls and transitions. Open channel flow with backwater curves. Unsteady flow.
Prerequisites:CIVE 3630 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE4630  Indoor Air Quality  Credit Hours: 3
Characterization of indoor air pollutants, predictions of indoor air quality levels and indoor air quality control. Four to five design problems involving indoor air quality will be discussed/solved in the class. Special emphasis on the indoor radon and a

CIVE4640  Industrial Hygiene  Credit Hours: 3
Basic concepts of industrial hygiene and occupational health hazards, physical and chemical stresses of the industrial environment; sources; effects; measurements; evaluation; control of exposure; and control methods other than ventilation for conservatio
Prerequisites:CIVE 3620 FOR LEVEL UG WITH MIN. GRADE OF D-
CIVE4650  Industrial Ventilation  Credit Hours: 3
Industrial ventilation as related to need of industrial hygiene engineer, including principles of air flow, natural and power ventilation, supply and exhaust, characteristics and design of systems, fans, collectors, testing instruments. Construction guid

Prerequisites:(CIVE 1170 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D-)

CIVE4660  Pollution Laboratory  Credit Hours: 1
Use of different flow devices, calibration of pitot tubes, stack sampling, use of high volume sampler, use of weather station, calibration of primary and secondary flow devices and pollution control equipment. One hour laboratory.

CIVE4670  Solid Waste Management And Disposal  Credit Hours: 3
A basic study of solid waste management concepts including origin, quantities, qualities, collection and disposal of solid waste materials. The course focuses upon municipal wastes and introduces the student to hazardous waste technologies. The primar

Prerequisites:CIVE 3630 FOR LEVEL UG WITH MIN. GRADE OF D-

CIVE4680  Environmental Law  Credit Hours: 3
An overview of the major federal environmental statutes: Clean Air Act, Clean Water Act, RCRA, CERCLA, etc. and legal perspective of why they were developed. Exposure to some basic legal principles which will be integrated into the overall study of enviro

CIVE4710  Advanced Engineering Systems Modeling  Credit Hours: 3
A systematic approach to the analysis of complicated engineering systems involving uncertain and probabilistic phenomena. Reliability analysis, systems simulation, Markov process, game theory, expert systems and probabilistic decision analysis.

Prerequisites:(CIVE 2120 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 4000 FOR LEVEL UG WITH MIN. GRADE OF D-)

CIVE4750  Senior Design Projects  Credit Hours: 3
To provide real world civil engineering design experience through a design problem as would be developed in an actual civil engineering consultant's office. Two hours lecture, two hours laboratory.

CIVE4810  Contracts And Specifications  Credit Hours: 3
To provide an in-depth understanding of contract writing procedures and development of comprehensive specifications for bid documents. Expose students to real world documents and to critically evaluate them in relations to ethics, professionalism and the
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<td>CIVE4820</td>
<td>Project Management</td>
<td>3</td>
<td>Concept of project management in the engineering and construction industry. Development and organization of projects with emphasis on application, preconstruction site investigation, planning, scheduling estimating and design. The bidding and award proc</td>
</tr>
<tr>
<td>CIVE4830</td>
<td>Engineering Ethics And Professionalism</td>
<td>2</td>
<td>To provide a philosophical base upon which engineering students may anchor the professional practice and growth of their technical skills, as well as the development of business and professional relationship throughout their lives. Discussion of the enti</td>
</tr>
<tr>
<td>CIVE4840</td>
<td>Gis For Civil Engineering</td>
<td>3</td>
<td>Introduction to the basic concepts to geographic information systems. The use of commercial software to integrate CAD and database to answer questions using both spatial (maps) and attribute (database) data. Topics studies include CAD/GIS conversion, da</td>
</tr>
<tr>
<td>CIVE4900</td>
<td>Seminars In Civil Engineering</td>
<td>1-3</td>
<td>An opportunity for qualified upperclassmen to pursue a relevant area of Civil Engineering of particular personal interest under the supervision of a faculty member.</td>
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<tr>
<td>CIVE4960</td>
<td>Honors Thesis Research</td>
<td>1-3</td>
<td>Independent research under the supervision of a faculty member to fulfill the thesis requirement of the University Honors Program.</td>
</tr>
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<td>CIVE5210</td>
<td>Advanced Soil Mechanics</td>
<td>3</td>
<td>A study of soil behavior including stress distributions, deformation, consolidation and shear strength. The course focuses upon the development and use of well accepted solutions and practical applications.</td>
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<td>CIVE5220</td>
<td>Advanced Foundation Engineering</td>
<td>3</td>
<td>Discussion of advanced topics concerned with the application of soil mechanics to subsurface investigation and characterization, soil compaction and site improvement, shallow foundations, deep foundations, slope stability, lateral earth pressures, design</td>
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Course Descriptions 2009-2010

CIVE5240 Design With Geosynthetics  
Use of geosynthetic materials in engineering design for reinforcement, barrier, separation and/or drainage functions. Design applications for geotechnical, transportation and environmental uses.

CIVE5260 Experimental Soil Mechanics  
Measurement of and research on the engineering properties of soils, with special emphasis on tests not covered in an introductory soil mechanics laboratory. Design of a testing program to include single and three dimensional consolidation, triaxial and d

CIVE5300 Advanced Mechanics Of Materials  
Introduction to theory of elasticity, plane-stress and plane-strain problems, yield criteria and failure theories, bending of beams, energy methods, curved flexural members, unsymmetrical bending, torsion, shear center and axisymmetrically loaded members.

CIVE5320 Matrix Analysis Of Structures  
Matrix analysis of continuous beams, trusses and frames by force method and displacement method. Methods of consistent deformation and slope deflection will be discussed to complement the matrix analysis. Computer applications.

CIVE5340 Experimental Mechanics  

CIVE5410 Timber Design  
Properties of wood and the design of beams, columns, horizontal diaphragms, shearwalls and connections. Basic behavior of structures and how this behavior is reflected in the design of wood structures.

CIVE5430 Structural Steel Design II  
Study of local failure in beams, biaxial bending, plate girders, composite beams, semi-rigid composite connections and beam columns.
CIVE5440 Reinforced Concrete Design II  Credit Hours: 3
Analysis and design of columns under axial compression and biaxial bending. Consideration of bar cutoff, development lengths. Design of two-way slabs and building frames in reinforced concrete. Deflection of beams. Shear design provisions for deep bea

CIVE5450 Bridge Design I  Credit Hours: 3
Design of the three most common types of short span bridges: concrete slabs, steel stringers and prestressed concrete. Additional topics are bearings, rehabilitation and retrofit and design to minimize maintenance.

CIVE5480 Reinforced Masonry Design  Credit Hours: 3
Study of the design of reinforced and unreinforced masonry, design, beams and walls and columns. Working stress design, strength design and empirical design are studied.

CIVE5510 Materials Engineering  Credit Hours: 3
Mechanical properties of various civil engineering materials including metallic, ceramic, polymeric and composite materials; microstructures; fatigue and other failure modes; environmental effects; fiber reinforced concrete; quality co

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To provide a detailed understanding of the basic concepts of traffic engineering together with driver-roadway-vehicle system characteristics. Capacity analysis of freeways, rural highways, multilane and two lane highways. Traffic control devices and tra

CIVE5610 Water Resources And Hydrology  Credit Hours: 3

CIVE5620 Open Channel Flow Hydraulics  Credit Hours: 3
Energy and momentum in open channel flow. Channel controls and transitions. Open channel flow with backwater curves. Unsteady flow.
**CIVE5630 Indoor Air Quality**

Characterization of the indoor air pollutants, predictions of indoor air quality levels and indoor air quality control. Four to five design problems involving indoor air quality will be discussed/solved in the class. Special emphasis on indoor radon and a

**CIVE5640 Industrial Hygiene**

Basic concepts of industrial hygiene and occupational health hazards, physical and chemical stresses of the industrial environment; sources; effects; measurements; evaluation; control of exposure; and control methods other than ventilation for conservati

**CIVE5650 Industrial Ventilation**

Industrial ventilation as related to need of industrial hygiene engineer, including principles of air flow, natural and power ventilation, supply and exhaust, characteristics and design of systems, fans, collectors, testing instruments. Construction gui

**CIVE5660 Pollution Laboratory**

Use of different flow devices, calibration of pitot tubes, stack sampling, use of high volume sampler, use of weather station, calibration of primary and secondary flow devices and pollution control equipment. One hour laboratory.

**CIVE5670 Solid Waste Management And Disposal**

A basic study of solid waste management concepts including origin, quantities, qualities, collection and disposal of solid waste materials. The course focuses upon municipal wastes and introduces the student to hazardous waste technologies. The primar

**CIVE5680 Environmental Law**

An overview of the major federal environmental statutes: Clean Air Act, Clean Water Act, RCRA, CERCLA, etc. and legal perspective of why they were developed. Exposure to some basic legal principles which will be integrated into the overall study of enviro

**CIVE5710 Advanced Engineering Systems Modeling**

A systematic approach to the analysis of complicated engineering systems involving uncertain and probabilistic phenomena. Reliability analysis, systems simulation, Markov process, game theory, expert systems and probabilistic decision analysis.
CIVE5810  Contracts And Specifications  Credit Hours:  3
To provide an in-depth understanding of contract writing procedures and development of comprehensive specifications for bid documents. Expose students to real world documents and to critically evaluate them in relations to ethics, professionalism and th

CIVE5820  Project Management  Credit Hours:  3
Concept of project management in the engineering and construction industry. Development and organization of projects with emphasis on engineering application, preconstruction site investigation, planning, scheduling, estimating and design. The bidding a

CIVE5830  Engineering Ethics And Professionalism  Credit Hours:  2
To provide a philosophical base upon which engineering students may anchor the professional practice and growth of their technical skills, as well as the development of business and professional relationships throughout their lives. Discussion of the ent

CIVE5930  Graduate Seminar In Civil Engineering  Credit Hours:  1-3
An opportunity for qualified graduate students to pursue a relevant area of Civil Engineering of particular personal interest under the supervision of a faculty member.

CIVE6230  Ground Water Modeling  Credit Hours:  3
Introduction to topics concerning groundwater and its existence, Darcy's law, derivation of flow equation for saturated and unsaturated soil, flow nets, discussion of numerical methods and use of computer programs for groundwater modeling. Includes a ter

CIVE6240  Site Investigation  Credit Hours:  3
A study of the availability and proper use of geotechnical and environmental investigative tools and techniques to include GIS, GPS, RS, non-destructive tests utilizing GPR, XRF and IR, destructive tests utilizing GC and MS, geotechnical testing to includ

CIVE6250  Mechanics Of Unsaturated Soil  Credit Hours:  3
CIVE6260  Numerical Analysis For Geomechanics  Credit Hours: 3
A study of numerical methods used in geotechnical engineering and their applications. Emphasis on finite element and finite difference methods for stress, displacement, consolidation, stability and seepage analysis.
Prerequisites:(CIVE 6310 FOR LEVEL GR WITH MIN. GRADE OF D- AND CIVE 6370 FOR LEVEL GR WITH MIN. GRADE OF D-)

CIVE6270  Contaminant Transport Modeling  Credit Hours: 3
Continuum models of groundwater flow and pollution. Strategies to select domains, boundary and initial conditions to approximate reality. Inherent errors in solution schemes. Use of multidimensional analytic and numerical models to solve groundwater quali

CIVE6300  Continuum Mechanics  Credit Hours: 3
A unified approach to the study of the mechanics of continuous media; analysis of tensors; kinematics of material media; analysis of deformation and stress; the mathematical statements of the laws of conservation of mass, momentum and energy and the formu

CIVE6310  Finite Element Methods  Credit Hours: 3
Study of direct stiffness method, introduction to the minimum potential energy method and the Galerkin method, formulation of truss, beam, triangular and rectangular elements, applications to the analyses of space trusses, building frames, folded plates,

CIVE6320  Advanced Finite Element Methods  Credit Hours: 3
Formulation of isoperimetric elements, coordinate transformation, solids of revolution, bending of flat plates, general shell elements, dynamics, vibrations and time dependent problems, geometric and material nonlinearity.
Prerequisites:CIVE 6310 FOR LEVEL GR WITH MIN. GRADE OF D-

CIVE6330  Optimum Structural Design  Credit Hours: 3
Optimum design methods for structural systems. Techniques considered include unconstrained minimization methods, penalty function methods, constrained search techniques, genetic algorithm and computer application.

CIVE6340  Mechanics Of Stability  Credit Hours: 3
Differential equations. Buckling of centrally and eccentrically loaded compression members; variational methods of determining critical loads; lateral and torsional buckling of beams; introduction to dynamic stability; parametric excitations; nonconservat
### CIVE6360  Dynamics Of Structures  
**Credit Hours:** 3  
Evaluation of dynamic response of structures to arbitrary time-varying loadings; single degree-of-freedom, multi-degree-of-freedom and distributed-parameter systems; partial differential equation formulations of simple systems; mode superposition and w

### CIVE6370  Numerical Methods In Civil Engineering  
**Credit Hours:** 3  
The solutions of linear and nonlinear equations, characteristic value equations. Applications of Monte Carlo, random walk and finite difference techniques to the solution of civil engineering problems such as seepage, temperature distribution, beam-column

### CIVE6380  Modal Analysis  
**Credit Hours:** 3  
**Prerequisites:** CIVE 6360 FOR LEVEL GR WITH MIN. GRADE OF D-

### CIVE6390  Wind Load Analysis And Design  
**Credit Hours:** 3  
Study of wind, its cause effect and damage mechanisms. Analysis of wind forces on structures and associated structural dynamics. Examination of wind load provisions of building codes.

### CIVE6430  Behavior Of Steel Structures  
**Credit Hours:** 3  
Study of the behavior of structural steel members and systems and their significance in terms of design and the development of specifications.

### CIVE6440  Behavior Of Reinforced Concrete Structures  
**Credit Hours:** 3  
Studies of the behavior and strength of reinforced concrete members by means of reviews of the more significant experimental and analytical investigations. Emphasis is placed on the empirical nature of current design specification and their relation to t

### CIVE6450  Seismic-Resistant Design  
**Credit Hours:** 3  
Characterization of strong ground motions for design; development of design criteria for elastic and inelastic structural systems; development of linear and nonlinear design spectra; basis for code design procedures; conceptual basis for seismic isolation
CIVE6460  Advanced Composite Materials in Infrastructure  Credit Hours:  3
Introduction to fiber composites and their applications in repair and retrofit of infrastructure. Strengthening of bridges, buildings, pavements. Understanding of basic concepts involved in design of concrete members reinforced with fiber reinforced pol

CIVE6470  Plastic Analysis Of Structures  Credit Hours:  3
Study of the basis of plastic theory and analysis  Application of these theories to the design of structures.

CIVE6480  Prestressed Concrete Structures  Credit Hours:  3
Structural behavior and failure modes of prestressed concrete structures; design in prestressed concrete, including long-span structures, bridges and precast systems.
Prerequisites:CIVE 5440 FOR LEVEL GR WITH MIN. GRADE OF D-

CIVE6510  Pavement Design And Analysis  Credit Hours:  3
Understanding of fundamental concepts of various stresses in flexible and rigid pavements; traffic loading and volume considerations; climatic effects; materials characterization and variability; design procedures; performance evaluation and rehabilitation

CIVE6520  Infrastructure Systems Management  Credit Hours:  3
An integrated, systemic approach to the management of infrastructure. Analysis methods are introduced and developed recognizing the multidimensional nature of performance of facilities, resource constraints, technological innovations and institutional fa

CIVE6550  Urban Transportation Design  Credit Hours:  3
To provide a detailed understanding of the basic factors affecting location and design of fixed facilities for urban highways and mass transit systems. Design of Origin and Destination studies. Discussion of changing concerns regarding metropolitan tran

CIVE6560  Transportation System Management And Economics  Credit Hours:  3
To provide a detailed understanding of the economic principles that are applicable to public infrastructures. Critical analysis of conventional procedure in transportation studies; user and nonuser costs and benefits, the value of travel time, evaluation
# Course Descriptions 2009-2010

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIVE6570</td>
<td>Traffic Flow Theory And Simulation Models</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>To develop a theoretical understanding of macroscopic and microscopic traffic flow characteristics. Analytic techniques to analysis demand-supply, shock waves, car following theory and application of queuing theory. Traffic simulation techniques that ha</td>
<td></td>
</tr>
<tr>
<td>CIVE6580</td>
<td>Intelligent Transportation Systems</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Intelligent Transportation Systems consist of advanced technologies and ideas which, in combination, can improve transportation mobility and productivity, enhance safety maximize use of existing transportation facilities, conserve energy resources and red</td>
<td></td>
</tr>
<tr>
<td>CIVE6590</td>
<td>Traffic Signal Design And Operations</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>To provide in-depth understanding of traffic control devices in particular to signal design. Role of signalized and unsignalized intersections in traffic operations, measure of performance. Time space correlation, actuated signals and detection, signal</td>
<td></td>
</tr>
<tr>
<td>CIVE6610</td>
<td>Physical, Chemical, And Biological Processes</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Theory and model development for physical, chemical and biological process design of wastewater treatment systems.</td>
<td></td>
</tr>
<tr>
<td>CIVE6620</td>
<td>Environmental Modeling</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Translation of the physics of environmental problems into mathematical models for engineering analysis. Topics include mathematics of equilibrium and kinetic chemical reaction systems; reactor modeling; mathematics of mass transfer.</td>
<td></td>
</tr>
<tr>
<td>CIVE6630</td>
<td>Dispersion And Risk Modeling</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Treatment of atmospheric dispersion problems, development of air quality models, components of a physical model, selection and evaluation of air pollution software, evaluation of models, risk modeling, EPA models and recent topics.</td>
<td></td>
</tr>
<tr>
<td>CIVE6640</td>
<td>Environmental Engineering Chemistry</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Study of the chemical progression of inorganic and organic materials that significantly contribute to water pollution. The engineering significance of these materials upon treatment systems and the environment. Selected written and/or oral presentations r</td>
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<tr>
<td>Course Code</td>
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<td>Credit Hours</td>
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<tr>
<td>CIVE6650</td>
<td>Environmental Engineering Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>CIVE6660</td>
<td>Advanced Treatment Processes</td>
<td>3</td>
</tr>
<tr>
<td>CIVE6680</td>
<td>Sediment Transport</td>
<td>3</td>
</tr>
<tr>
<td>CIVE6690</td>
<td>Dispersion Modeling Laboratory</td>
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</tr>
<tr>
<td>CIVE6840</td>
<td>Applied Gis For Civil Engineering</td>
<td>3</td>
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<tr>
<td>CIVE6900</td>
<td>Civil Engineering Problems</td>
<td>3</td>
</tr>
<tr>
<td>CIVE6960</td>
<td>Graduate Research And Thesis - Masters</td>
<td>1-9</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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</tr>
<tr>
<td>CIVE6980</td>
<td>Graduate Research And Project - Masters</td>
<td>1-6</td>
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<tr>
<td></td>
<td>MS student should register their adviser's section number.</td>
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<tr>
<td>CIVE7210</td>
<td>Advanced Soil Mechanics</td>
<td>3</td>
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<tr>
<td>CIVE7220</td>
<td>Adv Foundation Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CIVE7240</td>
<td>Design with Geosynthetics</td>
<td>3</td>
</tr>
<tr>
<td>CIVE7260</td>
<td>Experimental Soil Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>CIVE7300</td>
<td>Adv Mechanics of Materials</td>
<td>3</td>
</tr>
<tr>
<td>CIVE7320</td>
<td>Matrix Analysis of Structures</td>
<td>3</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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<tr>
<td>CIVE7340</td>
<td>Experimental Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>CIVE7410</td>
<td>Timber Design</td>
<td>3</td>
</tr>
<tr>
<td>CIVE7430</td>
<td>Structural Steel Design II</td>
<td>3</td>
</tr>
<tr>
<td>CIVE7440</td>
<td>Reinforced Concrete Design II</td>
<td>3</td>
</tr>
<tr>
<td>CIVE7450</td>
<td>Bridge Design I</td>
<td>3</td>
</tr>
<tr>
<td>CIVE7480</td>
<td>Reinforced Masonry Design</td>
<td>3</td>
</tr>
<tr>
<td>CIVE7510</td>
<td>Materials Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

**Bridge Design I**: Design of the three most common types of short span bridges: concrete slabs, steel stringers and prestressed concrete. Additional topics are bearings, rehabilitation and retrofit and design to minimize maintenance.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIVE7550</td>
<td>Traffic Control</td>
<td>3</td>
</tr>
<tr>
<td>CIVE7620</td>
<td>Open Channel Flow Hydraulics</td>
<td>3</td>
</tr>
<tr>
<td>CIVE7630</td>
<td>Indoor Air Quality</td>
<td>3</td>
</tr>
<tr>
<td>CIVE7640</td>
<td>Industrial Hygiene</td>
<td>3</td>
</tr>
<tr>
<td>CIVE7650</td>
<td>Industrial Ventilation</td>
<td>3</td>
</tr>
<tr>
<td>CIVE7660</td>
<td>Pollution Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CIVE7670</td>
<td>Solid Waste Mgmt and Disposal</td>
<td>3</td>
</tr>
<tr>
<td>Course Code</td>
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<td>Credit Hours</td>
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<tr>
<td>CIVE7680</td>
<td>Environmental Law</td>
<td>3</td>
</tr>
<tr>
<td>CIVE7710</td>
<td>Adv Eng Systems Modeling</td>
<td>3</td>
</tr>
<tr>
<td>CIVE7900</td>
<td>Independent Problems</td>
<td>1-6</td>
</tr>
<tr>
<td>CIVE8230</td>
<td>Ground Water Modeling</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Introduction to topics concerning groundwater and its existence, Darcy's law, derivation of flow equation for saturated and unsaturated soil, flow nets, discussion of numerical methods and use of computer programs for groundwater modeling. Includes a ter</td>
<td></td>
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<tr>
<td>CIVE8240</td>
<td>Site Investigation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>A study of the availability and proper use of geotechnical and environmental investigative tools and techniques to include GIS, GPS, RS, non-destructive tests utilizing GPR, XRF and IR, destructive tests utilizing GC and MS, geotechnical testing to includ</td>
<td></td>
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<tr>
<td>CIVE8250</td>
<td>Mechanics Of Unsaturated Soil</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Application of Soil Mechanics to unsaturated soils, physics of unsaturated soils, characterization of unsaturated soils. Relationships for flow, shear strength and volume change. Measurements for flow, shear strength and volume change. Includes journal</td>
<td></td>
</tr>
<tr>
<td>CIVE8260</td>
<td>Numerical Analysis For Geomechanics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>A study of numerical methods used in geotechnical engineering and their applications. Emphasis on finite element and finite difference methods for stress, displacement, consolidation, stability and seepage analysis.</td>
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<tr>
<td></td>
<td>Prerequisites:(CIVE 8310 FOR LEVEL GR WITH MIN. GRADE OF D- AND CIVE 8370 FOR LEVEL GR WITH MIN. GRADE OF D-)</td>
<td></td>
</tr>
</tbody>
</table>
CIVE8270  Contaminant Transport Modeling  Credit Hours:  3
Continuum models of groundwater flow and pollution. Strategies to select domains, boundary and initial conditions to approximate reality. Inherent errors in solution schemes. Use of multidimensional analytic and numerical models to solve groundwater quali
Prerequisites:CIVE 8230 FOR LEVEL GR WITH MIN. GRADE OF D-

CIVE8300  Continuum Mechanics  Credit Hours:  3
A unified approach to the study of the mechanics of continuous media; analysis of tensors; kinematics of material media; analysis of deformation and stress; the mathematical statements of the laws of conservation of mass, momentum and energy and the formu

CIVE8310  Finite Element Methods  Credit Hours:  3
Study of direct stiffness method, introduction to the minimum potential energy method and the Galerkin method, formulation of truss, beam, triangular and rectangular elements, applications to the analyses of space trusses, building frames, folded plates,

CIVE8320  Advanced Finite Element Methods  Credit Hours:  3
Formulation of isoperimetric elements, coordinate transformation, solids of revolution, bending of flat plates, general shell elements, dynamics, vibrations and time dependent problems, geometric and material nonlinearity.
Prerequisites:CIVE 8310 FOR LEVEL GR WITH MIN. GRADE OF D-

CIVE8330  Optimum Structural Design  Credit Hours:  3
Optimum design methods for structural systems. Techniques considered include unconstrained minimization methods, penalty function methods, constrained search techniques, genetic algorithm and computer application.

CIVE8340  Mechanics Of Stability  Credit Hours:  3
Differential equations. Buckling of centrally and eccentrically loaded compression members; variational methods of determining critical loads; lateral and torsional buckling of beams; introduction to dynamic stability; parametric excitations; nonconserva

CIVE8360  Dynamics Of Structures  Credit Hours:  3
Evaluation of dynamic response of structures to arbitrary time-varying loadings; single degree-of-freedom, multi-degree-of-freedom and distributed-parameter systems; partial differential equation formulations of simple systems; mode superposition and w
CIVE8370 Numerical Methods In Civil Engineering
Credit Hours: 3
The solutions of linear and nonlinear equations, characteristic value equations. Applications of Monte Carlo, random walk and finite difference techniques to the solution of civil engineering problems such as seepage, temperature distribution, beam-column.

CIVE8380 Modal Analysis
Credit Hours: 3

Prerequisites: CIVE 8360 FOR LEVEL GR WITH MIN. GRADE OF D-

CIVE8390 Wind Load Analysis And Design
Credit Hours: 3
Study of wind, its cause effect and damage mechanisms. Analysis of wind forces on structures and associated structural dynamics. Examination of wind load provisions of building codes.

CIVE8430 Behavior Of Steel Structures
Credit Hours: 3
Study of the behavior of structural steel members and systems and their significance in terms of design and the development of specifications.

CIVE8440 Behavior Of Reinforced Concrete Structures
Credit Hours: 3
Studies of the behavior and strength of reinforced concrete members by means of reviews of the more significant experimental and analytical investigations. Emphasis is placed on the empirical nature of current design specification and their relation to t

CIVE8450 Seismic-Resistant Design
Credit Hours: 3
Characterization of strong ground motions for design; development of design criteria for elastic and inelastic structural systems; development of linear and nonlinear design spectra; basis for code design procedures; conceptual basis for seismic isolation

CIVE8460 Advanced Composite Materials In Infrastructure
Credit Hours: 3
Introduction to fiber composites and their applications in repair and retrofit of infrastructure. Strengthening of bridges, buildings, pavements. Understanding of basic concepts involved in design of concrete members reinforced with fiber reinforced pol
CIVE8470  Plastic Analysis Of Structures  Credit Hours: 3
Study of the basis of plastic theory and analysis. Application of these theories to the design of structures.

CIVE8480  Prestressed Concrete Structures  Credit Hours: 3
Structural behavior and failure modes of prestressed concrete structures; design in prestressed concrete, including long-span structures, bridges and precast systems.
Prerequisites: CIVE 7440 FOR LEVEL GR WITH MIN. GRADE OF D-

CIVE8510  Pavement Design And Analysis  Credit Hours: 3
Understanding of fundamental concepts of various stresses in flexible and rigid pavements; traffic loading and volume considerations; climatic effects; materials characterization and variability; design procedures; performance evaluation and rehabilitation.

CIVE8520  Infrastructure Systems Management  Credit Hours: 3
An integrated, systemic approach to the management of infrastructure. Analysis methods are introduced and developed recognizing the multidimensional nature of performance of facilities, resource constraints, technological innovations and institutional factors.

CIVE8550  Urban Transportation Design  Credit Hours: 3
To provide a detailed understanding of the basic factors affecting location and design of fixed facilities for urban highways and mass transit systems. Design of Origin and Destination studies. Discussion of changing concerns regarding metropolitan transportation.

CIVE8560  Transportation System Management And Economics  Credit Hours: 3
To provide a detailed understanding of the economic principles that are applicable to public infrastructures. Critical analysis of conventional procedure in transportation studies; user and nonuser costs and benefits, the value of travel time, evaluation.

CIVE8570  Traffic Flow Theory And Simulation Models  Credit Hours: 3
To develop a theoretical understanding of macroscopic and microscopic traffic flow characteristics. Analytic techniques to analysis demand-supply, shock waves, car following theory and application of queuing theory. Traffic simulation techniques that have...
CIVE8580  Intelligent Transportation Systems  Credit Hours:  3
Intelligent Transportation Systems consist of advanced technologies and ideas which, in combination, can improve transportation mobility and productivity, enhance safety maximize use of existing transportation facilities, conserve energy resources and red

CIVE8590  Traffic Signal Design And Operations  Credit Hours:  3
To provide in-depth understanding of traffic control devices in particular to signal design. Role of signalized and unsignalized intersections in traffic operations, measure of performance. Time space correlation, actuated signals and detection, signal

CIVE8610  Physical, Chemical, And Biological Processes  Credit Hours:  4
Theory and model development for physical, chemical and biological process design of wastewater treatment systems.

CIVE8620  Environmental Modeling  Credit Hours:  3
Translation of the physics of environmental problems into mathematical models for engineering analysis. Topics include mathematics of equilibrium and kinetic chemical reaction systems; reactor modeling; mathematics of mass transfer.

CIVE8630  Dispersion And Risk Modeling  Credit Hours:  3
Treatment of atmospheric dispersion problems, development of air quality models, components of a physical model, selection and evaluation of air pollution software, evaluation of models, risk modeling, EPA models and recent topics.

CIVE8640  Environmental Engineering Chemistry  Credit Hours:  3
Study of the chemical progression of inorganic and organic materials that significantly contribute to water pollution. The engineering significance of these materials upon treatment systems and the environment. Selected written and/or oral presentations r

CIVE8650  Environmental Engineering Microbiology  Credit Hours:  3
Study of the microbiology, biochemistry and microorganisms of importance to biological waste treatment operations and environmental management systems. The optimization of biological waste treatment facilities and other purification bioremediation proces
CIVE8660  Advanced Treatment Processes
Credit Hours: 3
Theory, development and design of advanced processes for the treatment of water, wastewater and sludge. Processes such as reverse osmosis, electrodialysis, centrifugation, belt filtration, dissolved air flotation and foam fractionation are studied. Selec

Prerequisites:CIVE 8610 FOR LEVEL GR WITH MIN. GRADE OF D-

CIVE8680  Sediment Transport
Credit Hours: 3
Sediment movement in streams and rivers. Topics include sediment properties, threshold of movement, suspended sediment, stable channel design, sediment waves and bed features. Erosion of channels and the near bank region.

CIVE8690  Dispersion Modeling Laboratory
Credit Hours: 1
Use of USEPA network, use of ten computer programs from the USEPA network, use of Internet and environmental BBS, search for environmental data bases using search engines.

Prerequisites:CIVE 8630 FOR LEVEL GR WITH MIN. GRADE OF D-

CIVE8900  Independent Problems
Credit Hours: 1-6
Ph.D. student should register their adviser's section number.

CIVE8960  Doctoral Graduate Research & Dissertation
Credit Hours: 1-16
Graduate research towards the completion of a Doctoral degree.

CLC1010  Classical Humanities
Credit Hours: 3
An introduction to the civilization of the Greeks and Romans in which history, literature, mythology, art and philosophy are interrelated and interpreted. (not for major credit)

CLC2040  Ancient Near East
Credit Hours: 3
A survey of the history and civilization of ancient Sumer, Babylonia, Assyria, Egypt, Palestine and Persia.
CLC2050  Ancient Greece
A survey of the history and civilization of Hellenic and Hellenistic Greece.

Credit Hours: 3

CLC2060  Ancient Rome
A survey of the history and civilization of Rome from its origin through the Empire.

Credit Hours: 3

CLC3100  Classical Mythology
A survey of Greek and Roman mythology in classical literature, sculpture and art.

Credit Hours: 3

CLEP1000  College Level Exam Program

Credit Hours: 1-18

CMNP585  Sensory Neuroscience
Presentation and discussion of current research in six major sensory systems: visual, somatosensory, auditory, vestibular, olfactory, and gustatory.

Credit Hours: 2

CMNP601  Cellular Molecular Neurobiolog
Introductory survey course covering important structural, functional and developmental aspects of cells and molecules relevant to the nervous system.

Credit Hours: 4

CMNP610  Auditory Neuroscience
An introductory reading and discussion of the anatomy, physiology, chemistry, and psychology of auditory function.

Credit Hours: 2
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMNP611</td>
<td>Vestibular Neuroscience</td>
<td>2</td>
</tr>
<tr>
<td>CMNP653</td>
<td>Neurochemistry Seminar</td>
<td>0-2</td>
</tr>
<tr>
<td></td>
<td>This weekly seminar is based on discussion of assigned research papers in Neurochemistry. Students are graded on class participation and a written research-based paper that is also presented orally to the class.</td>
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</tr>
<tr>
<td>CMNP655</td>
<td>Jnl Paper Review Neuroscience</td>
<td>1</td>
</tr>
<tr>
<td>CMNP660</td>
<td>Neuroscience Lab Rotation I</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Introductory research course in which first-year students are exposed to ongoing work in a neuroscience lab (first half of fall semester) to introduce the issues and methods used in these labs.</td>
<td></td>
</tr>
<tr>
<td>CMNP661</td>
<td>Neuroscience Lab Rotation II</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Introductory research course in which first-year students are exposed to ongoing work in a neuroscience lab (second half of fall semester) to introduce the issues and methods used in these labs.</td>
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</tr>
<tr>
<td>CMNP662</td>
<td>Neuroscience Lab Rotation III</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Introductory research course in which first-year students are exposed to ongoing work in a neuroscience lab (first half of spring semester) to introduce the issues and methods used in these labs.</td>
<td></td>
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<tr>
<td>CMNP663</td>
<td>Neuroscience Lab Rotation IV</td>
<td>2</td>
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<tr>
<td></td>
<td>Introductory research course in which first-year students are exposed to ongoing work in a neuroscience lab (second half of spring semester) to introduce the issues and methods used in these labs.</td>
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</tr>
</tbody>
</table>
CMNP664  Neuroscience Lab Rotation V
Optional introductory research course in which first-year students are exposed to ongoing work in a neuroscience lab (first half of summer semester) to introduce the issues and methods used in these labs.

CMNP665  Neuroscience Lab Rotation VI
Optional introductory research course in which first-year students are exposed to ongoing work in a neuroscience lab (second half of summer semester) to introduce the issues and methods used in these labs.

CMNP673  Research in Neuroscience
Training in neuroscience research techniques through laboratory experience. May be repeated for credit.

CMNP785  Sensory Neuroscience
Presentation and discussion of current research in six major sensory systems: visual, somatosensory, auditory, vestibular, olfactory, and gustatory.

CMNP801  Cellular Molec Neurobiology
Introductory survey course covering important structural, functional and developmental aspects of cells and molecules relevant to the nervous system.

CMNP805  Intro to Neuroscience Research
The purpose of this course is to introduce first year Neuroscience students to the research of program faculty. Discussions are based on papers related to faculty members' research interests.

CMNP810  Auditory Neuroscience
An introductory reading and discussion of the anatomy, physiology, chemistry, and psychology of auditory function.
CMNP811  Vestibular Neuroscience  Credit Hours: 2

CMNP853  Neurochemistry Seminar  Credit Hours: 0-2
This weekly seminar is based on discussion of assigned research papers in Neurochemistry. Students are graded on class participation and a written research-based paper that is also presented orally to the class.

CMNP855  Jnl Paper Review Neuroscience  Credit Hours: 1

CMNP860  Neuroscience Lab Rotations I  Credit Hours: 2
Introductory research course in which first-year students are exposed to ongoing work in a neuroscience lab (first half of fall semester) to introduce the issues and methods used in these labs.

CMNP861  Neuroscience Lab Rotations II  Credit Hours: 2
Introductory research course in which first-year students are exposed to ongoing work in a neuroscience lab (second half of fall semester) to introduce the issues and methods used in these labs.

CMNP862  Neuroscience Lab Rotations III  Credit Hours: 2
Introductory research course in which first-year students are exposed to ongoing work in a neuroscience lab (first half of spring semester) to introduce the issues and methods used in these labs.

CMNP863  Neuroscience Lab Rotations IV  Credit Hours: 2
Introductory research course in which first-year students are exposed to ongoing work in a neuroscience lab (second half of spring semester) to introduce the issues and methods used in these labs.
CMNP864  Neuroscience Lab Rotations V  Credit Hours:  2
Optional introductory research course in which first-year students are exposed to ongoing work in a neuroscience lab (first half of summer semester) to introduce the issues and methods used in these labs.

CMNP865  Neuroscience Lab Rotations VI  Credit Hours:  2
Optional introductory research course in which first-year students are exposed to ongoing work in a neuroscience lab (second half of summer semester) to introduce the issues and methods used in these labs.

CMNP873  Research in Neuroscience  Credit Hours:  0-15
Training in neuroscience research techniques through laboratory experience. May be repeated for credit.

CMPT1010  Computer Fundamentals  Credit Hours:  1
Introduction to microcomputers. Topics covered are hardware, software, computer operation, terminology and applications.

CMPT1020  Computer Concepts  Credit Hours:  4
Introduction to computer software, hardware, and processes associated with contemporary computer systems. Topics include operating systems, user applications, e-mail, WWW, and search capabilities. Emphasis is placed on the Internet and networking.

CMPT1050  Scripting Languages  Credit Hours:  4
Introduces scripting technology focusing on industry trends and standards. Students will demonstrate the ability to evaluate, learn and adopt new scripting languages such as JavaScript.

CMPT1100  Computer Information Applications  Credit Hours:  3
Concepts and techniques on the application of computers to the solution of business computer information systems. Students will have hands-on experience in word processing, spreadsheet and database on microcomputers.
CMPT1110  Pc Operating Systems  Credit Hours:  3
A+ certification aligned study of both command line and graphical user-based current PC operating systems. Topics include installation and upgrade, configuration, management, troubleshooting and network connectivity.

CMPT1120  Application Programming  Credit Hours:  4
A currently popular programming language, such as Microsoft Visual Studio, will be used to create stand-alone applications. Topics such as object-oriented coding, logical procedures and proper documentation are stressed.

CMPT1320  Internet And The World Wide Web  Credit Hours:  1
Internet topics including history of the Internet, IP addressing, Telnet, Gopher, FTP, WAIS and World Wide Web. Students will create a personal home page with Hyper Text.

CMPT1400  Introduction to Web Page Development  Credit Hours:  3
Students will learn the basics of creating custom Web designs by using tables, forms, graphics and interactive features. Plan, write and format Web pages for workplace applications.

CMPT1410  Microsoft Excel Spreadsheet Application  Credit Hours:  2
Hands-on analysis of the use of Excel spreadsheets in solving workplace problems with an emphasis on the design of templates to meet the needs of specific applications.

CMPT1420  Microsoft Access Database Applications  Credit Hours:  2
Hands-on analysis of the use of Access in solving workplace problems with an emphasis on the entering, updating, manipulating, storing and retrieving of information.

CMPT1430  Microsoft Word  Credit Hours:  2
MS Word will teach students word processing concepts and applications using industry standard software. Students will prepare a variety of documents and master basic software functions in an effective and efficient manner.
CMPT1440  Microsoft Powepoint Presentation  Credit Hours:  2
Students will learn basic to advanced features of PowerPoint software from creating a presentation and adding graphics to presenting a slide show and integrating PowerPoint with other software.

CMPT1450  Microsoft Outlook  Credit Hours:  1
Students will learn a flexible messaging and personal information management program used to send and receive e-mail and manage messages, contacts, appointments and tasks.

CMPT1470  Crystal Reports  Credit Hours:  3
Crystal Reprots teaches students how to create reports utilizing various data sources such as Microsoft Access, Paradpx, and others. It incorporates maps and graphs and presents data in an easy-to-read format.

CMPT1500  Flash Web Animation  Credit Hours:  3
Student will use Flash to create interactive websites. Students will learn to create animated banners, action scripts, special effects, movies, buttons and navigation.

CMPT1510  Digital Imaging  Credit Hours:  2
This course offers a broad overview and extensive practical experience in the production of digital images. Students create digital images using scanners, video and digital cameras. Image resolution, format options, color correction, screen frequency, h

Prerequisites:CMPT 1100 FOR LEVEL UG WITH MIN. GRADE OF D-

CMPT1520  Beginning Adobe Illustrator  Credit Hours:  3
Explores the use of computers for digital image creation using Adobe Illustrator. Concepts, techniques and applications also covered. Students create print, presentation and Web graphics.

CMPT1530  Beginning Adobe Photoshop  Credit Hours:  3
Hands-on exploration of digital imaging using Adobe Photoshop. Topics include photo-retouching, imaging editing techniques, color painting and Web applications.
**CMPT1540  Digital Video**  
Credit Hours: 3  
Explores use of video editing software. Students will analyze, evaluate, describe terminology. Also develop proficiency in desktop video production and create an electronic resume using popular video-editing software.

Prerequisites: CMPT 1100 FOR LEVEL UG WITH MIN. GRADE OF D-

**CMPT1600  Internet Design And Publishing**  
Credit Hours: 3  
This course offers a broad overview and extensive practical experience in the design and production of Web pages. Students learn current Web design technology and create Web pages using Microsoft Expression Web.

**CMPT1700  Podcasting, Vodcasting, and Blogging**  
Credit Hours: 3  
This course offers a broad overview and extensive practical experience in the design and production of web sites containing podcasts, vodcasts, and bloggs. Students will learn how to plan, record, edit, and publish.

**CMPT2010  Rpg Programming**  
Credit Hours: 4  
Experience in the operation of current mid-range computer architecture. Fundamental programming experience in the RPG language with emphasis on logic and efficiency.

Prerequisites: CMPT 1020 FOR LEVEL UG WITH MIN. GRADE OF D-

**CMPT2030  C Family Programming**  
Credit Hours: 4  
Students are introduced to the C family of programming languages. Students will write computer programs using the most up-to-date versions of this language family.

**CMPT2110  Advanced Concepts In Programming**  
Credit Hours: 4  
The course covers advanced programming techniques and the concepts of object-oriented programming using a currently popular programming language (such as C++)

**CMPT2210  Data Management With Sql**  
Credit Hours: 3  
Hands-on course utilizing a multi-user database management system. SQL will be used as a data manipulation and a data definition language.
CMPT2220  Information Systems Design And Implementation  Credit Hours:  4
Provides students interested in an information technology career an opportunity to work on a project that will include analysis, design and implementation of a workplace application.

CMPT2320  Xml Concepts And Programming  Credit Hours:  3
Creation of XML applications through document specification and self-defining data definition. The role of XML in business-to-business communication.

CMPT2400  Microcomputer Project  Credit Hours:  4
Provides practical experience in applying concepts studied in previous courses to a systems design project. The project consists of student teams performing the analysis, design, software selection, testing and implementation of a microcomputer system.

Prerequisites:CNET 2200 FOR LEVEL UG WITH MIN. GRADE OF D-

CMPT2410  Adobe InDesign Desktop Publishing  Credit Hours:  3
This course will use Adobe InDesign to enable the student to learn the elements of the publishing cycle: writing, editing, typesetting, design, graphic production, page makeup and final publication. Newsletters, brochures, pamphlets and fliers will be pro

CMPT2420  Advanced Adobe Indesign Desktop Publishing  Credit Hours:  3
This course will use Adobe InDesign to cover advanced electronic desktop publishing concepts, procedures and applications. Students will design sophisticated desktop documents for print, internet and prepress.

CMPT2430  Advanced Microsoft Word  Credit Hours:  2
This hands-on course will use Microsoft Word to teach advanced document production skills including generating large documents, and creating professional print, Web, and graphic features.

Prerequisites:CMPT 1430 FOR LEVEL UG WITH MIN. GRADE OF D-

CMPT2460  Advanced Microsoft Excel Spreadsheet  Credit Hours:  2
Students will learn intermediate and advanced functions of Microsoft Excel Spreadsheets in order to utilize them effectively in workplace situations.

Prerequisites:CMPT 1410 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CMPT2510</td>
<td>Intermediate Adobe Illustrator</td>
<td>3</td>
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<tr>
<td></td>
<td>An intermediate, hands-on exploration of Adobe Illustrator for professional illustration creation and manipulation. Students will incorporate typography, image compositing, painting and image-correction techniques.</td>
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<td></td>
<td>Prerequisites: CMPT 1520 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>CMPT2530</td>
<td>Intermediate Adobe Photoshop</td>
<td>3</td>
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<tr>
<td></td>
<td>An intermediate, hands-on exploration of Adobe Photoshop for digital imaging. Students capture, create, manipulate and edit images for high-end output.</td>
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<tr>
<td></td>
<td>Prerequisites: CMPT 1530 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>CMPT2550</td>
<td>Advanced Digital Video</td>
<td>3</td>
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<td></td>
<td>This course covers advanced techniques of video editing software. Students will use professional video-editing techniques to develop short- and long-format movies for video, film, desktops, multimedia and the WWW using popular video-editing software.</td>
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<td></td>
<td>Prerequisites: CMPT 1100 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>CMPT2620</td>
<td>Web Site Maintenance</td>
<td>3</td>
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<td></td>
<td>This course develops skills for students who will function as Web developers or project managers responsible for increasing Web site traffic, updating Web content and designs. Students learn planning issues related to Web design and redesign.</td>
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<tr>
<td>CMPT2630</td>
<td>Mous Certification Concepts</td>
<td>2</td>
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<td></td>
<td>Students will reinforce Word, Excel, Access and PowerPoint concepts to prepare them to take Microsoft Office User Specialist (MOUS) certification tests in these areas.</td>
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<tr>
<td></td>
<td>Prerequisites: (CMPT 1410 FOR LEVEL UG WITH MIN. GRADE OF D- AND CMPT 1420 FOR LEVEL UG WITH MIN. GRADE OF D- AND CMPT 1430 FOR LEVEL UG WITH MIN. GRADE OF D- AND CMPT 1440 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
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<tr>
<td>CMPT2990</td>
<td>Independent Study</td>
<td>1-4</td>
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<td></td>
<td>Students will study a computer-related subject mutually agreed upon between the student and the instructor. The format may include lecture, computer lab and/or practical experience.</td>
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<tr>
<td>CNET2100</td>
<td>Network Operating Systems I</td>
<td>3</td>
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<tr>
<td></td>
<td>In-depth study of a contemporary network operating system. Topics include operating system installation and upgrade, configuration, management and troubleshooting.</td>
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</tbody>
</table>
CNET2150 Computer Hardware  Credit Hours: 3
Knowledge of computer hardware for the purpose of acquisition, installation and maintenance at the equipment level. The curriculum is aligned with the A+ certification standards.

CNET2200 Network Technologies  Credit Hours: 4
Examines the network technologies utilized in today's networks. Emphasis is placed on understanding hardware and software concepts and protocols referred to in technical publications and advanced network studies.

CNET2300 Network Operating Systems II  Credit Hours: 4
This course builds on CNET 2100 by offering in-depth study of a second contemporary network operating system. Topics include operating system installation and upgrade, configuration, management and troubleshooting.
Prerequisites: CNET 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

CNET2400 Network Operating System Support  Credit Hours: 4
Examines the support aspects of a contemporary network operating system in a local area network environment. Topics include operating system installation, upgrade, configuration, management and troubleshooting.
Prerequisites: CNET 2200 FOR LEVEL UG WITH MIN. GRADE OF D-

CNET2410 Network Services and Infrastructures  Credit Hours: 3
This course culminates the CNET server curriculum by focusing on vital network services and supporting network infrastructure. Topics include network budgeting, design, planning and implementation, as well as enterprise-wide internetworking.
Prerequisites: CNET 2400 FOR LEVEL UG WITH MIN. GRADE OF D-

CNET2420 Enterprise Network Services  Credit Hours: 4
This course builds on CNET 2410 by examining services available on enterprise networks. Topics include enterprise-wide directory and network services design, configuration, management and troubleshooting.
Prerequisites: CNET 2410 FOR LEVEL UG WITH MIN. GRADE OF D-

CNET2940 Network Capstone Project  Credit Hours: 2
Practical experience in a networking environment in an educational setting or at a workplace. Conducted under faculty supervision.
Prerequisites: CNET 2200 FOR LEVEL UG WITH MIN. GRADE OF D- AND CNET 2400 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM1010</td>
<td>Comm Principles And Practices</td>
<td>3</td>
<td>An introductory course that provides instruction and practice in human communication including interpersonal communication, group discussion, public speaking and mass communication. (not for major credit)</td>
</tr>
<tr>
<td>COMM1ELA</td>
<td>Comm Elective-Applied 100 Level</td>
<td>0-5</td>
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<tr>
<td>COMM1ELC</td>
<td>Comm Elective-Conceptual 100 Level</td>
<td>0-5</td>
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<tr>
<td>COMM2000</td>
<td>Mass Communication And Society</td>
<td>3</td>
<td>Overview of the media of mass communication, which considers social, economic and intellectual impact on American culture and democracy. Exploration of various mass media and their methods of shaping public perceptions.</td>
</tr>
<tr>
<td>COMM2100</td>
<td>News Writing</td>
<td>4</td>
<td>Theory and practice of news writing as journalistic discourse. Emphasis on news style and values, story structure, types of stories. Ethics, taste and rudiments of law integrated throughout.</td>
</tr>
<tr>
<td>COMM2150</td>
<td>Reporting Methods</td>
<td>4</td>
<td>Introduction to writing for publication in the student newspaper, developing skills in interviewing, listening, using primary sources, thinking critically, and mastering electronic data-collection methods. (COMM-2400 recommended)</td>
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<td></td>
<td>Prerequisites:COMM 2100 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>COMM2120</td>
<td>Editing And Graphics</td>
<td>4</td>
<td>Introduction to Writing, Editing, Design approach in editing newspapers, newsletters, electronic and similar publications. Fundamentals of desktop publishing, copy editing, headline writing, typography, layout, design, use of photos, illustrations.</td>
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<td>Course Code</td>
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<tr>
<td>COMM2210</td>
<td>Radio Production And Programming</td>
<td>4</td>
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<td></td>
<td>Basic principles of production and programming including training and development in basic performance areas. A study of contemporary station programming theories and techniques. Includes individual weekly lab requirement.</td>
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<tr>
<td>COMM2220</td>
<td>Basic Television Studio Operation</td>
<td>4</td>
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<td>Study and practice in the use of studio and control room equipment, including editing equipment. Discussion of the role of the director and producer in television production.</td>
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<tr>
<td>COMM2400</td>
<td>Information Analysis And Synthesis</td>
<td>3</td>
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<td></td>
<td>Introductory course for all Communication majors. Identification of primary sources that match information needs, gaining access to these sources, retrieving information and using it for responsible media decision making.</td>
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<tr>
<td>COMM2600</td>
<td>Public Presentations</td>
<td>3</td>
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<tr>
<td></td>
<td>Applies the principles of informative and persuasive communication in the construction, delivery, and critique of public presentations.</td>
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<tr>
<td>COMM2630</td>
<td>Visual Communication</td>
<td>4</td>
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<td></td>
<td>Application of the principles of visual communication to informing, persuading, and entertaining the public through digital photography, layout &amp; design in print, Web design, and a multimedia presentation.</td>
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<tr>
<td>COMM2990</td>
<td>Independent Study</td>
<td>1-4</td>
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<td>A freshman/sophomore seminar in which the student pursues a problem of special interest in communication. A prospectus must be submitted to the faculty member with whom the student will work.</td>
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<tr>
<td>COMM2ELA</td>
<td>Comm Elective-Applied 200 Leve</td>
<td>0-5</td>
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</table>
COMM2ELC  Comm Elective-Conceptual 200 L  Credit Hours: 0-5

COMM3150  Feature Writing  Credit Hours: 4
Theory and practice in writing in various kinds of discourse for newspapers, magazines and electronic publications and writing for specialized audiences. Developing context, analysis, background and appropriate standards of evidence for publication.

Prerequisites: COMM 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

COMM3180  Mass Communication Law  Credit Hours: 4
Case studies and readings in libel, privacy, access and other legal issues arising from constitutional, judicial and administrative laws that affect mass communication.

Prerequisites: COMM 2000 FOR LEVEL UG WITH MIN. GRADE OF D-

COMM3270  Radio/Television Newswriting  Credit Hours: 4
Training in the skills required in the preparation, writing and editing of both radio and television news.

COMM3280  Media Performance  Credit Hours: 3
A study of the principles and philosophies involved with successful broadcast communication and performance techniques. Includes laboratory projects in commercials, interviewing, news and ad-lib announcing.

COMM3290  Media Management  Credit Hours: 3
The study of electronic media systems from an operations perspective. Course includes: programming, marketing, production and ethical considerations.

Prerequisites: COMM 2000 FOR LEVEL UG WITH MIN. GRADE OF D-

COMM3610  Speech And Publicity Writing For Public Relations  Credit Hours: 3
Applies principles of effective public relations communication to the practice of developing speeches for others and composing publicity materials.
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>COMM3720</td>
<td>Public Relations Theory</td>
<td>3</td>
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<tr>
<td></td>
<td>Public relations principles, planning and methods in business, government, educational institutions and other organizations. Examination of law, ethics, professionalism, history, theory, strategies and practices of the profession.</td>
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<td></td>
<td>Prerequisites:COMM 2100 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>COMM3810</td>
<td>Group Communication</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Theory and practice of group communication variables and processes with an emphasis on problem-solving approaches.</td>
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<tr>
<td>COMM3820</td>
<td>Persuasion Theory</td>
<td>4</td>
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<tr>
<td></td>
<td>Examination of the theory and practices used in persuasive communication in public presentations, advertising, sales and political campaigns.</td>
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<tr>
<td>COMM3830</td>
<td>Basic Principles Of Debate And Forensics</td>
<td>4</td>
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<td></td>
<td>Theory and practice in reasoned discourse; analysis, evidence, logical forms and fallacies. Problems and procedures in administering a forensic program, teaching and directing debate and individual speaking events.</td>
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<tr>
<td>COMM3840</td>
<td>Interpersonal Communication</td>
<td>4</td>
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<tr>
<td></td>
<td>Review and application of interpersonal communication theory and research in a variety of one-to-one social contexts.</td>
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<tr>
<td>COMM3850</td>
<td>Research Methods</td>
<td>3</td>
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<tr>
<td></td>
<td>Introduction to qualitative and quantitative methods in communication research. Focus on evaluating and interpreting reports in various forms of communication.</td>
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<tr>
<td>COMM3870</td>
<td>Communication Theory</td>
<td>3</td>
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<tr>
<td></td>
<td>A review of human communication theory and research directed toward understanding and applying theory and research in various communication contexts and for various communication outcomes.</td>
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<td></td>
<td>Prerequisites:COMM 2400 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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<tr>
<td>COMM3880</td>
<td>Professional Business Communication</td>
<td>3</td>
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<tr>
<td></td>
<td>Developing oral and written business communication skills through practice in public speaking, interviewing, resume writing, and communication in various formats.</td>
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<tr>
<td>COMM3890</td>
<td>Case Studies In Reducing Workplace Conflict</td>
<td>3</td>
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<tr>
<td></td>
<td>An examination of communication variables that may reduce the potential for workplace conflict. Students survey theoretical models, conduct interviews with professionals and write analyses of case studies of successful conflict management.</td>
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<tr>
<td>COMM3ELA</td>
<td>Comm Elective-Applied 300 Level</td>
<td>0-5</td>
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<tr>
<td>COMM3ELC</td>
<td>Comm Elective-Conceptual 300 Level</td>
<td>0-5</td>
</tr>
<tr>
<td>COMM4090</td>
<td>Mass Communication Ethics</td>
<td>4</td>
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<tr>
<td></td>
<td>Investigation of problems and practical application of classical theories as well as current strategies to confront ethical crises in mass-media settings.</td>
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<td></td>
<td>Prerequisites: COMM 2000 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>COMM4100</td>
<td>Television Journalism</td>
<td>4</td>
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<tr>
<td></td>
<td>Developing a thorough understanding of researching, writing, and presenting television news. Includes both studio and remote productions.</td>
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<tr>
<td></td>
<td>Prerequisites: COMM 2220 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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</tr>
<tr>
<td>COMM4110</td>
<td>High School Publications</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Problems involved in the production of high school newspapers and yearbooks including approaches to design, advertising, content, news, editorials, administration and business management.</td>
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</tbody>
</table>
COMM4220  Advanced Television Production  Credit Hours:  4
Advanced principles and aesthetic considerations in the production of various television programs. Includes working with remote equipment and digital editing.

Prerequisites: COMM 2220 FOR LEVEL UG WITH MIN. GRADE OF D-

COMM4250  Mass Communication History  Credit Hours:  4
Historical consideration of the media from colonial era to the present, with special emphasis on learning through problem-solving and critical thinking about the role of mass communication as a force in shaping national identity.

Prerequisites: COMM 2000 FOR LEVEL UG WITH MIN. GRADE OF D-

COMM4330  New Technologies  Credit Hours:  3
The content is designed to develop a thorough understanding of the ever-emerging field of new technologies and its impact on society.

Prerequisites: COMM 2630 FOR LEVEL UG WITH MIN. GRADE OF D-

COMM4340  Visual Communication II  Credit Hours:  4
Advanced theory, application, and interpretation of visual communication and rhetoric to inform, persuade and entertain the public through digital photography, layout and design in print, Web design, and digital multimedia.

Prerequisites: COMM 2630 FOR LEVEL UG WITH MIN. GRADE OF D-

COMM4630  Public Relations Practices  Credit Hours:  3
Examination of practices, techniques, tools and strategies used in public relations. Research theory and techniques; strategic planning and management of public relations programs. In-depth study of one detailed project.

Prerequisites: (COMM 2000 FOR LEVEL UG WITH MIN. GRADE OF D- AND COMM 3720 FOR LEVEL UG WITH MIN. GRADE OF D-)

COMM4640  Public Relations Case Studies  Credit Hours:  3
Analysis of successful and unsuccessful public relations efforts and programs. Emphasis on the theoretical and ethical foundations of successful public relations programming.

Prerequisites: COMM 3720 FOR LEVEL UG WITH MIN. GRADE OF D-

COMM4810  Nonverbal Communication  Credit Hours:  3
Survey, analysis and application of research in nonverbal communication variables and phenomena.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>COMM4820</td>
<td>Family Communication</td>
<td>3</td>
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<tr>
<td></td>
<td>Explores variables and processes of</td>
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<td></td>
<td>family communication emphasizing</td>
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<td></td>
<td>theory, definitions of family, roles</td>
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<td></td>
<td>&amp; rules, conflict, intimacy, societal</td>
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<td></td>
<td>influences, and effects on the</td>
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<td></td>
<td>individual and the family as a whole.</td>
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</tbody>
</table>

| COMM4830    | Gender, Culture & Communication     | 3            |
|             | Cross-listed as WGST-4350. Explores  |              |
|             | how gender and culture simultaneously|              |
|             | shape and are shaped by communication|              |
|             | through relationships, institutions, |              |
|             | and society. WAC class.             |              |

| COMM4900    | Communication Seminar               | 3-4          |
|             | An in-depth examination of a        |              |
|             | communication topic, problem or     |              |
|             | media event. May be writing         |              |
|             | intensive.                         |              |

| COMM4910    | Senior Portfolio                    | 1            |
|             | Students develop a portfolio for    |              |
|             | post graduate work that includes    |              |
|             | an assessment of work from five     |              |
|             | Communication classes including two |              |
|             | from both Applied and Conceptual    |              |
|             | Communication, cover letter, resume|              |
|             | etc. Course offered P/NC.           |              |
|             | Prerequisites: (COMM 2000 FOR LEVEL |              |
|             | UG WITH MIN. GRADE OF D- AND COMM   |              |
|             | 2400 FOR LEVEL UG WITH MIN. GRADE  |              |
|             | OF D-)                               |              |

| COMM4940    | Communication Internship            | 1-3          |
|             | Professional training in            |              |
|             | communication relating to newspaper |              |
|             | work, public relations, broadcasting|              |
|             | etc. Arrangements with the          |              |
|             | appropriate communication            |              |
|             | organization must be made in        |              |
|             | consultation with the internship    |              |
|             | director prior to enrollment.       |              |
|             | Course offered.                     |              |

| COMM4990    | Independent Study                   | 1-4          |
|             | A seminar in which the student      |              |
|             | pursues a problem of special        |              |
|             | interest in communication. A        |              |
|             | prospectus must be submitted prior  |              |
|             | to registration to the participating |              |
|             | faculty member.                     |              |

| COMM4ELA   | Comm Elective-Applied 400 Level     | 0-5          |
COMM4ELC  Comm Elective-Conceptual 400 L  Credit Hours: 0-5

COMM6210  Principles And Practices Of Visual Communication  Credit Hours: 3
This course explores the influence of factors like color and design on human visual communication, the role of Gestalt principles, and the impact of various forms of visual communication.

COMM6220  Communication, Technology, And Society  Credit Hours: 3
This course covers issues in communication technology including media, policy and strategic planning. Particular emphasis is given to the information revolution, communication industry development, and the marketplace for communication products.

COMM6230  Communication, Propaganda And Persuasion  Credit Hours: 3
This seminar examines techniques of persuasion in social science research and applications and how this knowledge is used for the engineering of perception, mobilization and consent in organizations and society.

COMM6240  Communication, Ethics And The Workplace  Credit Hours: 3
This course evaluates the impact of ethics on job performance, public perception of companies or agencies, and the ramifications of personal decision-making on the worker's job satisfaction and long-range goals.

COMM6250  Communication Conflict In Organizations  Credit Hours: 3
Students will explore the role of communication in organizational conflict management, assess conflict scenes, design correction regimens for those scenes, and present their solutions.

COMM6260  Business, Communication And Technology  Credit Hours: 3
The course examines how organizations use media and communication strategies. Effective tools of communication to be studied include face-to-face interaction, dissemination of information through mass media, and communication through technologies.
COMM6980 Special Topics In Communication Studies  Credit Hours:  3
Examination of emerging issues and topics in the field of communication. May be repeated for credit in different specialized topics.

COMP701 Medical Informatics  Credit Hours:  0-6

COMP702 Mastering the Biomedical Literature: Skill Sets for the Virtual Environment  Credit Hours:  3
Because of the increasing volume of available information and increasingly busy schedules, practitioners requires a high degree of skill in identifying and obtaining relevant information for clinical practice, research, and life-long learning. This electi

COUN1110 Fundamentals Of Human Mental Health  Credit Hours:  4
An introduction to the field of human services, especially mental health, history and current trends in treatment and prevention of disease and the basic skills common to the field. Students will learn skills at the demonstrable level as they will later

COUN1210 Mental Health Skills  Credit Hours:  4
This course is designed to enable students to master the therapeutic interpersonal skills required of mental health professionals. Successful completion of this course is a requirement for continuation into advanced courses.

Prerequisites:(COUN 1110 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (CMHS 1110 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF D-)

COUN1220 Theories In Mental Health  Credit Hours:  3
An overview of current approaches of psychological theory. This course includes an examination of the basic issues in mental health, including ethical issues and personal implications for the mental health professional.

Prerequisites:(COUN 1110 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (CMHS 1110 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF D-)

COUN1230 Pathology In Mental Health  Credit Hours:  3
This course deals with an introduction to the concepts of abnormal psychology with emphasis on understanding the cultural and historical bases for defining abnormality as well as modern classification systems, the biological model, treatment modalities an

Prerequisites:PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF D-
COUN1240  Substance Abuse Issues In Mental Health \hspace{1cm} Credit Hours: 3
An overview and survey of addictive disorders, use and abuse, and the personal and cultural effects of chemical dependency.

Prerequisites: (COUN 1110 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (CMHS 1110 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF D-)

COUN2060  Career Exploration \hspace{1cm} Credit Hours: 3
Designed for the university student undecided about a career. The student is assisted in self-assessment, exploration of occupations and in career decision-making skills.

COUN2120  Group And Therapeutic Approaches \hspace{1cm} Credit Hours: 4
A study of various types of groups and activity skills used in mental health environments both inpatient and community based. Focus on design, principles, procedures and applications of various techniques.

COUN2130  Assessment And Intervention In Mental Health \hspace{1cm} Credit Hours: 4
The various techniques and requirements of assessment and interventions used in the most important mental health environments will be explored and practiced. Special emphasis is placed on interview assessment and crisis intervention; implications for reco

Prerequisites: PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

COUN2220  Family Theories And Cultural Influences In Mental Health \hspace{1cm} Credit Hours: 3
Study of basic family systems and structures and the influences of cultural patterns as they interact and impact the mental health and therapeutic needs of individual family members.

COUN2940  Mental Health Internship \hspace{1cm} Credit Hours: 4
Students are placed in community agencies relevant to mental health and work in a role related to the function of a mental health technician under the guidance of a supervisor.

Prerequisites: COUN 1210 FOR LEVEL UG WITH MIN. GRADE OF B OR CMHS 1210 FOR LEVEL UG WITH MIN. GRADE OF B

COUN2980  Special Topics In Counselor Education \hspace{1cm} Credit Hours: 1-3
This course is open to an undergraduate student pursuing a degree program and may be a requirement of that program.
COUN2990  Independent Study  Credit Hours:  1-3
A course designed to provide educational opportunities in a specialized academic area under the direct supervision of a faculty member.

COUN3070  Family Counseling  Credit Hours:  3
Overview of aspects of counseling with families. Major focus is on family as a system and a variety of interventions. Ethnic, gender and socioeconomic considerations of family systems will be stressed.

COUN3110  Case Management In Mental Health  Credit Hours:  3
The study of and practice of using case management models and skills with clients within the mental health environment. Models appropriate for different agency types will be explored and the various modalities available will be introduced.

COUN3120  Mental Retardation And Mental Health  Credit Hours:  3
The relationship between retardation and mental health with emphasis on the characteristics making this a population of special concern within the treatment protocols of the mental health profession.
Prerequisites:COUN 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR CMHS 1110 FOR LEVEL UG WITH MIN. GRADE OF D-

COUN3130  Advanced Interventions: Crisis And Employee Assistance Programs  Credit Hours:  3
Advanced intervention issues including crisis management, disaster survival, rescue and emergency personnel debriefing and Employee Assistance Programs.
Prerequisites:COUN 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR CMHS 1110 FOR LEVEL UG WITH MIN. GRADE OF D-

COUN3140  Substance Abuse Prevention And Community Programming  Credit Hours:  3
An evaluation of prevention programs and community resources available in the prevention and treatment of substance abuse.

COUN3150  Models Of Treatment For Substance Abuse  Credit Hours:  3
A review of the various components of substance abuse and philosophies of treatment. Theories of etiology and maintenance are also addressed.
COUN3160  Charting And Reporting In The Mental Health Professions  Credit Hours:  3
The importance of coding, charting and record keeping in various fields of mental health professions is examined. Various types of report writing formats and requirements will be learned.

Prerequisites:COUN 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR CMHS 1110 FOR LEVEL UG WITH MIN. GRADE OF D-

COUN3220  Theories in Mental Health  Credit Hours:  3
Overview of current approaches of psychological theory. This course includes an examination of the basic issues in mental health, including ethical issues and personal implications for the mental health professional.

COUN3230  Pathology in Mental Health  Credit Hours:  3
Introduction to the concepts of psychopathology with emphasis on understanding the cultural and historical bases for defining abnormality, modern classification systems, the biological model, treatment modalities and theoretical perspectives.

COUN3380  College Student Leadership Development I  Credit Hours:  1-3
First semester in development of skills for student leaders through didactic experience, simulation exercises and practicum experiences. Especially designed for student government leaders and peer counselor/advisers.

COUN3390  College Student Leadership Development II  Credit Hours:  1-3
Second semester in student leadership training. The development of skills for student leaders through didactic experience, simulation exercises and practicum experiences. Especially designed for student government leaders and peer counselor/advisers.

Prerequisites:COUN 3380 FOR LEVEL UG WITH MIN. GRADE OF D- OR CMHS 3380 FOR LEVEL UG WITH MIN. GRADE OF D-

COUN3940  Substance Abuse Internship  Credit Hours:  4
Students are placed in community agencies working in the area of substance abuse under the guidance of a supervisor.

Prerequisites:(COUN 2940  AND COUN 4240  AND COUN 4940 ) OR (CMHS 2940  AND CMHS 4240  AND CMHS 4940 )

COUN4080  Essentials Of Helping Relationships  Credit Hours:  3
Emphasis upon skills, concepts and practices in the helping professions. Multicultural and ethical issues along with dealing with crisis situations will be covered.
COUN4090  Therapeutic Environments For The Aged  Credit Hours:  3
This course focuses on therapeutic care giving for the aged in institutional settings, addressing techniques for developing activities and responding to sensory changes and social needs of individuals.

COUN4110  Consultation And Supervision In Mental Health Services  Credit Hours:  3
Explores the roles and techniques of consultation and supervision within the mental health professions, including individual and group skills, models, strategies and legal and ethical issues.
Prerequisites:COUN 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR CMHS 1110 FOR LEVEL UG WITH MIN. GRADE OF D-

COUN4120  Dual Diagnosis: Substance Abuse And Mental Illness  Credit Hours:  3
Issues involving clients with a dual diagnosis are explored. Specific treatment strategies for clients dually-diagnosed with substance abuse and mental illness will be learned.
Prerequisites:COUN 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR CMHS 1110 FOR LEVEL UG WITH MIN. GRADE OF D-

COUN4240  Substance Abuse Treatment Techniques  Credit Hours:  3
An examination of ethical and legal issues in substance abuse, as well as examination of the specific skills needed by workers in substance abuse programs.
Prerequisites:(COUN 3140 FOR LEVEL UG WITH MIN. GRADE OF D- AND COUN 3150 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (CMHS 3140 FOR LEVEL UG WITH MIN. GRADE OF D- AND CMHS 3150 FOR LEVEL UG WITH MIN. GRADE OF D-)

COUN4580  Teacher As Advisor  Credit Hours:  3
This course will provide students in education an overview of the role of art and music in curriculum development. (Students may enroll in either art or music education sections.)
Prerequisites:(CI 4250 FOR LEVEL UG WITH MIN. GRADE OF D- AND CI 4260 FOR LEVEL UG WITH MIN. GRADE OF D- AND CI 4270 FOR LEVEL UG WITH MIN. GRADE OF D- AND CI 4280 FOR LEVEL UG WITH MIN. GRADE OF D-) OR CI 5250 FOR LEVEL GR WITH MIN. GRADE OF D-

COUN4940  Advanced Internship  Credit Hours:  4
Students are placed in community agencies relevant to mental health and work in a role related to the function of an advanced level mental health technician under the guidance of a supervisor.
Prerequisites:(COUN 2940 AND COUN 3110 ) OR (CMHS 2940 AND CMHS 3110 )

COUN4980  Special Topics In Counselor Education  Credit Hours:  1-3
This course is open to an undergraduate student pursuing a degree program and may be a requirement of that program.
COUN4990  Independent Study  Credit Hours:  1-3
Individual study is designed to provide the student to work independently on professional problems under the direction of a faculty member in the department of counseling and mental health services.

COUN5010  Professional Orientation To School Counseling  Credit Hours:  4
Introduction to school counseling; historical foundations; roles and responsibilities; legal and ethical issues; implications of sociocultural diversity, organization and administration, and future trends within the context of the school community.

COUN5020  Professional Orientation To Community Counseling  Credit Hours:  3
An orientation to the counseling profession; ethical and legal issues, counseling process, skills and theories; counselor roles, functions and work settings; and historical foundations of counseling.

COUN5110  Career Counseling And Development  Credit Hours:  3
Theories, resources and practices of career counseling and development are presented. Knowledge and skills for promoting career growth among a broad range of individuals across the life span is emphasized.

COUN5120  Individual And Group Assessment  Credit Hours:  3
This course provides an in-depth understanding of psychological testing through (1) an overview of basic testing concepts, (2) an understanding of test construction, (3) familiarity with instruments and (4) an overview of using test results. History and r

COUN5130  Group Counseling  Credit Hours:  4
Provides training and experience in group development, dynamics, theories, methods and skills of group counseling, group leadership, research and evaluation, ethical issues and other group work approaches.

COUN5140  Counseling Theories And Techniques  Credit Hours:  4
Includes a study of basic counseling and consultation theories and helping relationships from individual, group and systemic perspectives. Explores helper and helpee characteristics, sociocultural factors and legal and ethical considerations. Includes s
COUN5150  Counseling Across The Life Span  
Theories of individual and family development across the lifespan are examined. Developmental processes of individuals and families and implications for counseling are presented from a multi-generational family perspective.

COUN5160  Cultural Diversity For Counselors And School Psychologists  
Credit Hours: 3
Addresses the cross-cultural theories, knowledge, beliefs and techniques required for providing effective services to culturally diverse populations. Examines assumptions about cultural differences which underlie counseling theories and therapies.

COUN5190  Counseling Practicum  
Credit Hours: 4
Students receive supervised, practical experiences in providing counseling services to clients. Performance of counseling skills; relationship skills; intervention techniques; documentation skills; and professional, ethical and legal conduct is expected.

COUN5250  Creating Therapeutic Environments For The Aged  
Credit Hours: 3
Explores the various aspects necessary for creating therapeutic physical and social psychological settings for older institutionalized adults. Models of care giving and programmatic skills are examined.

COUN5980  Special Topics In Counseling, Mental Health, And School Psychology  
Credit Hours: 1-3
This course is open to a graduate student pursuing a master's, specialist or doctoral degree program and may be a requirement of that program.

COUN6210  Psychopathology  
Credit Hours: 4
The study of various paradigms for conceptualizing psychopathology related to children, adolescents and adults. Includes study of specific personality theories and their application to clinical counseling.

COUN6220  Child, Adolescent, Family Therapy  
Credit Hours: 3
Specialized study of therapeutic techniques commonly emphasized in working with children, adolescents and their families. Approaches to family therapy in a multicultural context, family assessment and ethical issues will be emphasized.

Prerequisites:COUN 5140 FOR LEVEL GR WITH MIN. GRADE OF D-
COUN6230  Crisis Intervention Counseling  Credit Hours: 3
Instruction in the theories, skills and techniques necessary to intervene into a variety of crisis situations such as suicide, violence, domestic violence, drug and alcohol abuse and family dysfunction.

Prerequisites:COUN 5140 FOR LEVEL GR WITH MIN. GRADE OF D-

COUN6240  Diagnosis And Mental Health  Credit Hours: 4
Study of the signs, symptoms, etiology and psychodynamics of various mental and emotional disorders based on the most current edition of the Diagnostic and Statistical Manual for Mental Disorders (DSM).

COUN6470  Drugs And Mental Health Counseling  Credit Hours: 4
Study of the psychobiological and psychophysiological effects of psychotropic medications used for the psychopharmacological treatment of mental and emotional disorder. Theoretical, efficacy and ethical concerns are reviewed.

COUN6500  Advanced Theory And Practice Of Career Counseling  Credit Hours: 3
Advanced study in theories pertaining to the principles and practice of career counseling. Special emphasis on research, legal and ethical issues, and the role of culture in career choice and development.

COUN6920  Master's Research Project  Credit Hours: 1-3
In this capstone experience, master's students review the literature, report implications and produce a project which can be applied in counseling-related settings. This can substitute for CMHS 6930.

COUN6930  Master's Research Seminar  Credit Hours: 2-3
In this capstone experience, master's students review and critique the literature and report implications for research, theory and practice on counseling-related topic of interest, approved by the instructor.

COUN6940  Counseling Internship  Credit Hours: 1-8
Supervised practical experiences in various settings while assuming a spectrum of counseling roles and functions. Emphasis is placed upon integrating ethical practice, theory and research in work settings.

Prerequisites:COUN 5190 FOR LEVEL GR WITH MIN. GRADE OF B OR CMHS 5190 FOR LEVEL GR WITH MIN. GRADE OF B
COUN6950  Workshop In Counseling, Mental Health, And School Psychology  Credit Hours:  1-6
Workshops developed around topics of interest and concern to counselors, school psychologists or other mental health care professionals. Practical application of topics will be stressed.

COUN6960  Master's Research Thesis  Credit Hours:  1-3
In this capstone experience, master's students complete an original piece of research, including literature review, methods, analysis and discussion. This can substitute for CMHS 6930.

COUN6990  Master's Independent Study  Credit Hours:  1-4
Provides students the opportunity to work independently on professional problems under the direction of a faculty member in the Department of Counseling and Mental Health Services.

COUN7010  Professional Orientation To School Counseling  Credit Hours:  4
Introduction to school counseling; historical foundations; roles and responsibilities; legal and ethical issues; implications of sociocultural diversity, organization and administration, and future trends within the context of the school community.

COUN7130  Group Counseling  Credit Hours:  4
Provides training and experience in group development, dynamics, theories, methods and skills of group counseling, group leadership, research and evaluation, ethical issues and other group work approaches.

COUN7140  Counseling Theories And Techniques  Credit Hours:  4
Includes a study of basic counseling and consultation theories and helping relationships from individual, group and systemic perspectives. Explores helper and helpee characteristics, sociocultural factors and legal and ethical considerations. Includes s

COUN7150  Counseling Across The Life Span  Credit Hours:  3
Theories of individual and family development across the lifespan are examined. Developmental processes of individuals and families and implications for counseling are presented from a multi-generational family perspective.
### Course Descriptions 2009-2010

**COUN7160 Cultural Diversity For Counselors And School Psychologists**  
Credit Hours: 3  
Addresses the cross-cultural theories, knowledge, beliefs and techniques required for providing effective services to culturally diverse populations. Examines assumptions about cultural differences which underlie counseling theories and therapies.

**COUN7210 Psychopathology**  
Credit Hours: 4  
The study of various paradigms for conceptualizing psychopathology related to children, adolescents and adults. Includes study of specific personality theories and their application to clinical counseling.

**COUN7220 Child, Adolescent, Family Therapy**  
Credit Hours: 3  
Specialized study of therapeutic techniques commonly emphasized in working with children, adolescents and their families. Approaches to family therapy in a multicultural context, family assessment and ethical issues will be emphasized.  
Prerequisites: COUN 5140 FOR LEVEL GR WITH MIN. GRADE OF D-

**COUN7230 Crisis Intervention Counseling**  
Credit Hours: 3  
Instruction in the theories, skills and techniques necessary to intervene into a variety of crisis situations such as suicide, violence, domestic violence, drug and alcohol abuse and family dysfunction.  
Prerequisites: COUN 5140 FOR LEVEL GR WITH MIN. GRADE OF D-

**COUN7240 Diagnosis And Mental Health**  
Credit Hours: 4  
Study of the signs, symptoms, etiology and psychodynamics of various mental and emotional disorders based on the most current edition of the Diagnostic and Statistical Manual for Mental Disorders (DSM).

**COUN7510 Supervision In Counseling And School Psychology**  
Credit Hours: 3  
Training in supervision models, methods, roles, ethical issues, research and evaluation. Advanced training in consultation.

**COUN7520 Education And Leadership In Mental Health Professions**  
Credit Hours: 3  
Orient students to the roles and tasks of educators and leaders in mental health professions, curricular issues of programs, professional and ethical issues and current status and future trends in higher education among mental health professions.
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<tr>
<th>Course Code</th>
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<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>COUN7530</td>
<td>Advanced Theories Of Counseling And Consultation</td>
<td>4</td>
<td>Advanced preparation in theory pertaining to the principles and practice of individual counseling, group work and consultation.</td>
</tr>
<tr>
<td>COUN7540</td>
<td>Advanced Personality Assessment</td>
<td>4</td>
<td>Administration, scoring and interpretation of selected advanced personality assessment instruments. Special emphasis will be given to the MMPI-2 and the MCMI-III, CPI and report writing.</td>
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<td>Prerequisites: COUN 5120 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>COUN7930</td>
<td>Doctoral Research Seminar</td>
<td>3</td>
<td>Advanced preparation in research problems, design and implementation of quantitative and qualitative research and methodology in the fields of counseling and supervision.</td>
</tr>
<tr>
<td>COUN8410</td>
<td>Advanced Practicum In Individual And Group Therapy</td>
<td>4</td>
<td>Students receive supervised, practical experiences in providing counseling in individual and group modes of services. Advanced therapy skills will be emphasized.</td>
</tr>
<tr>
<td>COUN8420</td>
<td>Advanced Practicum In Family Therapy</td>
<td>4</td>
<td>This course is designed to provide specialized opportunity under live supervision to develop specialized skills in family therapy. The student will work in co-therapy with a family experiencing difficulties.</td>
</tr>
<tr>
<td>COUN8440</td>
<td>Advanced Theory And Practice Of Group Counseling</td>
<td>3</td>
<td>Advanced training and experience in development, dynamics, theories, methods and skills of group counseling and therapy, leadership, research and evaluation and ethical issues as applicable to normal and abnormal populations.</td>
</tr>
<tr>
<td>COUN8450</td>
<td>Couples And Family Therapy</td>
<td>3</td>
<td>Theories and practice of couples and family counseling are explored. Foundations of systems theories and their application to couples and family therapy are presented.</td>
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<tr>
<td></td>
<td>Prerequisites: (COUN 5140 FOR LEVEL GR WITH MIN. GRADE OF D- AND COUN 5150 FOR LEVEL GR WITH MIN. GRADE OF D-)</td>
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</tbody>
</table>
COUN8460  Substance Abuse Counseling          Credit Hours: 3
Review of treatment approaches, techniques and programs for counseling individuals and families experiencing substance-related problems.

COUN8470  Drugs And Mental Health Counseling   Credit Hours: 4
Study of the psychobiological and psychophysiological effects of psychotropic medications used for the psychopharmacological treatment of mental and emotional disorder. Theoretical, efficacy and ethical concerns are reviewed.

COUN8480  Advanced Training In Professional, Legal, And Ethical Issues Credit Hours: 3
Advanced training in contemporary professional, legal and ethical issues that regulate or affect the work of counselors, psychologists and other mental health professionals.

COUN8490  Gender Issues In Counseling And Mental Health Services Credit Hours: 3
Examines the effect of gender role and related dynamics upon the psychological functioning of men and women and considers how these issues can be explored in counseling based upon an interactive model of gender roles emphasizing the learned nature of these issues.

COUN8500  Advanced Theory And Practice Of Career Counseling Credit Hours: 3
Advanced study in theories pertaining to the principles and practice of career counseling. Special emphasis on research, legal and ethical issues, and the role of culture in career choice and development.

COUN8930  Advanced Doctoral Seminar Credit Hours: 3
This seminar will consider problems and provide advanced study. Open only to advanced graduate students.

COUN8940  Counseling Internship Credit Hours: 1-8
Supervised practical experiences in various settings while assuming a spectrum of counseling roles and functions. Emphasis is placed upon integrating ethical practice, theory and research in work settings.

Prerequisites: COUN 5190 FOR LEVEL GR WITH MIN. GRADE OF B OR CMHS 5190 FOR LEVEL GR WITH MIN. GRADE OF B
COUN8950 Workshop In Counseling, Mental Health, And School Psychology  Credit Hours:  1-6
Workshops developed around topics of interest and concern to counselors, school psychologists, or other mental health care professionals. Practical application of topics will be stressed.

COUN8960 Doctoral Research Dissertation  Credit Hours:  1-12
Dissertation credit may not total less than 10 semester hours and no greater than 32 hours. A doctoral student may register for such credit in more than one semester.

COUN8980 Special Topics In Counseling, Mental Health, And School Psychology  Credit Hours:  1-3
This course is open to a graduate student pursuing a master's, specialist or doctoral degree program and may be a requirement of that program.

COUN8990 Doctoral Independent Study  Credit Hours:  1-4
Provides students the opportunity to work independently on professional problems under the direction of a faculty member in the Department of Counseling and Mental Health Services.

CRIM1010 Criminal Justice  Credit Hours:  3
The overall history, philosophy and functioning of the criminal justice system in the U.S. The integrated roles of law enforcement, the courts and corrections will be analyzed and discussed.

CRIM1040 HUMAN RELATIONS AND DIVERSITY IN CRIMINAL JUSTICE  Credit Hours:  3
This class will focus on human relations and cultural diversity faced by the criminal justice system, including the police, courts, corrections, and community organizations, and the course will explore general principles in effective human relations, the

CRIM1110 Penology  Credit Hours:  3
The study of jails, prisons and other types of specialized correctional institutions. The philosophy of incarceration along with the administration, staffing and operations of these facilities will be reviewed.
<table>
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<tr>
<th>Course Code</th>
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<tr>
<td>CRIM1240</td>
<td>Policing</td>
<td>3</td>
<td>Introduction to law enforcement practices and agencies in the United States, including the history, philosophy and operation of federal, state and local enforcement agencies.</td>
</tr>
<tr>
<td>CRIM2010</td>
<td>Court Case Processing</td>
<td>3</td>
<td>A survey of federal, state and local courts, including structure, organization, processes and probation.</td>
</tr>
<tr>
<td>CRIM2150</td>
<td>Applied Psychology And Criminology For Criminal Justice Personnel</td>
<td>3</td>
<td>This course will focus on the social and psychological explanations of offenders' behaviors. The needs of victims and behaviors of criminal justice professionals will also be addressed.</td>
</tr>
<tr>
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<td></td>
<td>Prerequisites: CRIM 1010 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>CRIM2200</td>
<td>Criminal Law</td>
<td>3</td>
<td>The statutes of Ohio relating to crime and the elements necessary for establishing and providing proof of crimes are studied.</td>
</tr>
<tr>
<td></td>
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<td>Prerequisites: CRIM 1010 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>CRIM2210</td>
<td>Criminal Investigation I</td>
<td>3</td>
<td>Introduction to the processes, theories and principles of criminal investigation. Methods of gathering information, report writing, interview/interrogation strategies, surveillance, search warrant information, affidavit preparation and execution are studied.</td>
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<td>Prerequisites: CRIM 1010 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>CRIM2220</td>
<td>Laws Of Evidence</td>
<td>3</td>
<td>A thorough study of the evidence rules with specific emphasis on the application of these rules in preparing and presenting evidence.</td>
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<td>Prerequisites: CRIM 1010 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>CRIM2230</td>
<td>Constitutional Law</td>
<td>3</td>
<td>A comprehensive study and analysis of the Bill of Rights of the U.S. Constitution and its effect on the administration of justice.</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
<td>Description</td>
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<tr>
<td>CRIM2250</td>
<td>Juvenile Justice</td>
<td>3</td>
<td>To analyze the causes of juvenile delinquency and the extent of the problem</td>
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<td></td>
<td>in the U.S. Also, to discuss the inter-workings of the juvenile justice system</td>
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<td></td>
<td>in response to the delinquency problem, in conjunction with delinquency</td>
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<td></td>
<td></td>
<td></td>
<td>prevention programs.</td>
</tr>
<tr>
<td>CRIM2950</td>
<td>Field Observation</td>
<td>1-6</td>
<td>An examination of criminal justice through placement in the field to observe</td>
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<td>practices and behavior. Regular class meetings and writing about the</td>
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<td></td>
<td></td>
<td>experience are also required.</td>
</tr>
<tr>
<td>CRIM2990</td>
<td>Independent Study</td>
<td>1-6</td>
<td>Supervised independent study.</td>
</tr>
<tr>
<td>CRIM3110</td>
<td>Hate Crimes</td>
<td>3</td>
<td>The course examines the genesis, development, theory and practice of hate</td>
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<td>crimes and how society has and can respond to hate crimes.</td>
</tr>
<tr>
<td>CRIM3180</td>
<td>The Law Of Corrections And Punishment</td>
<td>3</td>
<td>An examination of the law that governs punishment, institutional and</td>
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<td></td>
<td>community-based corrections and the rights and liabilities of corrections</td>
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<td>personnel.</td>
</tr>
<tr>
<td>CRIM3220</td>
<td>Crime Mapping And Criminal Profiling</td>
<td>3</td>
<td>The course content develops an understanding of the uses of information</td>
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<td>technologies and psychological profiling in defining criminal behavior as</td>
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<td>well as the geographic consideration.</td>
</tr>
<tr>
<td>CRIM3230</td>
<td>White Collar Crime</td>
<td>3</td>
<td>A historical overview of the evolution of white-collar crime in American</td>
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<td>Society as well as an understanding of the nature, causes and consequences</td>
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<td>of different forms of white-collar crime.</td>
</tr>
</tbody>
</table>
CRIM3240  Victimology  Credit Hours:  3
This course examines the history of victimology and includes topics such as the characteristics of crime victims and specific types of victimization such as hate crimes and sexual assault.
Prerequisites: CRIM 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

CRIM3260  Domestic And International Terrorism  Credit Hours:  3
The history and evolution of terrorism in the United States and other countries, including the weapons, ideology and people involved in terrorist events and counterterrorist methods plus deterrents.

CRIM3270  Organized Crime: History, Theory, And Contemporary Reality  Credit Hours:  3
This course will examine the origins and functioning of organized crime and criminal organizations from a criminal justice perspective.

CRIM3280  Juvenile Gang Culture And Organization  Credit Hours:  3
An examination of the behavioral, socioeconomic and cultural dimensions of juvenile gang activity in the United States plus prevention, intervention and law enforcement strategies.

CRIM3290  Criminal Investigation II  Credit Hours:  3
An introduction to the crime scene, including methods of searching, photography, sketching and gathering of physical evidence. Fingerprint analysis. Methods utilized in drug investigations and development of information sources are studied.
Prerequisites: CRIM 2210 FOR LEVEL UG WITH MIN. GRADE OF D-

CRIM3420  Criminal Justice Leadership  Credit Hours:  3
An introduction to principles governing the organization, structure and administration of law enforcement organizations.

CRIM4100  Criminal Justice Research Methods  Credit Hours:  3
This course provides students with an understanding of criminal justice research, the concepts and logic of research designs and widely used statistical procedures.
CRIM4200  Ethics In Criminal Justice  
This course is designed to provide students with an opportunity to integrate ethics in their understanding of criminal justice.

CRIM4250  Comparative Criminal Justice Systems  
Examination of how different counties around the world have organized their law enforcement courts and corrections agencies into a uniquely structured system of criminal justice based on cultural and legal differences.

CRIM4300  Theories Of Criminal Justice  
A critical study and appreciation of the theories of criminal justice, including micro and macro theories.

CRIM4400  Criminal Justice Field Studies  
An examination of criminal justice operations in metropolitan areas through student participation in applied research and field observations related to program evaluation, policy analysis, etc..

CRIM4450  Administration Of Police Services  
The application of management principles to municipal police departments, emphasizing the resources, constraints and strategies of police managers.

CRIM4490  Current Topics In Criminal Justice  
Examination of selected current issues in criminology/criminal justice that impact our knowledge and understanding of the field.

CRIM4520  Police And Society  
An examination of the role of the police in contemporary America, emphasizing the ambivalence of the self-image of the police and the social and political forces that compete to redefine police function.
**CRIM4590  Administration Of Criminal Justice  Credit Hours: 3**
General systems approach to criminal justice from an organizational and legal perspective with emphasis on the interaction of the major components - police, prosecutors, courts and corrections.

**CRIM4940  Criminal Justice Internships  Credit Hours: 3-12**
Field placement experience within a criminal justice agency to enhance the student's practical knowledge of the field in conjunction with career planning opportunities.

**CRIM4990  Independent Study In Criminal Justice  Credit Hours: 1-3**
Individual course of study in a selected topic pertaining to Criminal Justice chosen by the student, with the consent of the instructor.

**CRIM5370  Disproportionate Confinement Of Minority Youth  Credit Hours: 3**
The course examines the issue of disproportionate minority confinement of youth in the juvenile and criminal justice systems.

**CRIM5400  Criminal Justice Field Studies  Credit Hours: 1-3**
An examination of criminal justice operations in metropolitan areas through classroom study and field observations.

**CRIM6000  Advanced Theories: Criminal Justice  Credit Hours: 3**
This course critically examines contributions made by a variety of theorists to an understanding of crime/deviance and reactions to it.

**CRIM6100  Metropolitan Problems And The Criminal Justice System  Credit Hours: 3**
Explores the diverse populations and problems encountered by criminal justice and juvenile systems, including major social control systems and policies, victimology, mental health issues, discrimination, and comparative analyses.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>CRIM6200</td>
<td>Data Analysis In Criminal Justice</td>
<td>3</td>
<td>This course provides students with a basic understanding of fundamental data analysis techniques utilized in criminal justice research.</td>
</tr>
<tr>
<td>CRIM6300</td>
<td>Advanced Studies In Ethics And Criminal Justice</td>
<td>3</td>
<td>This course is designed to provide students with the opportunity to integrate ethics in an understanding of criminal justice.</td>
</tr>
<tr>
<td>CRIM6310</td>
<td>Juvenile Justice In The Metropolitan Community</td>
<td>3</td>
<td>Criminal justice theories of delinquency are studied and compared with a paradigmatic foundation of current criminal justice processes.</td>
</tr>
<tr>
<td>CRIM6320</td>
<td>Women, Crime And Criminal Justice</td>
<td>3</td>
<td>This course explores women as offenders, victims and professionals in criminal justice.</td>
</tr>
<tr>
<td>CRIM6330</td>
<td>Advanced Studies In Victimology</td>
<td>3</td>
<td>This course will address crime victims' issues and will challenge students to consider how the criminal justice system can improve its response to victims.</td>
</tr>
<tr>
<td>CRIM6340</td>
<td>Advanced Studies In Mental Illness, Crime And Criminal Justice System</td>
<td>3</td>
<td>This course will examine the historical processes that have led to an influx of persons with mental illness and substance abuse into the metropolitan criminal justice system.</td>
</tr>
<tr>
<td>CRIM6350</td>
<td>Advanced Comparative Criminal Justice</td>
<td>3</td>
<td>This course examines how different countries around the globe have organized their criminal justice agencies into uniquely structured systems of criminal justice. Cultural and legal differences influencing justice are also examined.</td>
</tr>
</tbody>
</table>
CRIM6360 Genocide & Crimes Against Humanity In International Justice
Credit Hours: 3
This course traces the genesis and evolution of genocide and crimes against humanity as distinct categories of international criminality.

CRIM6400 Graduate Criminal Justice Research Methodology
Credit Hours: 3
This course is designed to provide students with an understanding of criminal justice research.

CRIM6420 Adv Criminal Procedure
Credit Hours: 3
This course examines the role of criminal law and procedure in the criminal justice and juvenile systems and prosecution, defense, and court procedures and decision-making issues.

CRIM6430 Admin of Police Services
Credit Hours: 3

CRIM6500 Corrections In The Metropolitan Community
Credit Hours: 3
This course will review the theoretical and historical roots of corrections. Students will examine metropolitan corrections problems and practices, particularly as they exist in Toledo, Lucas County and other metropolitan areas.

CRIM6550 The Criminal Justice System And Inequality
Credit Hours: 3
This course examines critical theories and applications of law in reference to a variety of identities, groups and communities designated as "minority."

CRIM6570 Civil And Criminal Liability In Criminal Justice
Credit Hours: 3
This course examines the law and social science literature concerning the civil and criminal liability that attends working in the criminal justice field.
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CRIM6590</td>
<td>Administration Of Criminal Justice</td>
<td>3</td>
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<tr>
<td></td>
<td>A research-oriented course into the relationship of the major structures of criminal justice - police, prosecutor, courts and corrections with emphasis on the development of performance evaluation criteria.</td>
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<tr>
<td>CRIM6610</td>
<td>Corrections Policy And Administration</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Study of the political, managerial and legal factors in the corrections system.</td>
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</tr>
<tr>
<td>CRIM6620</td>
<td>Police And Society</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>An examination of the role of the police in contemporary America, emphasizing the ambivalence of the self-image of the police and the social and political forces that compete to redefine the police function.</td>
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</tr>
<tr>
<td>CRIM6940</td>
<td>Criminal Justice Graduate Internship</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Field placement experience in an approved criminal justice agency to enhance the knowledge of the student.</td>
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<tr>
<td>CRIM6950</td>
<td>Policy Projects In Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>This course provides a forum to facilitate the development of individual scholarly criminal justice projects.</td>
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<tr>
<td>CRIM6960</td>
<td>Thesis</td>
<td>1-6</td>
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<tr>
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<td>This course involves research leading to a written thesis. Both the topic of the research and the final thesis must be defended and approved by the student's thesis committee.</td>
<td></td>
</tr>
<tr>
<td>CRIM6980</td>
<td>Special Topics In Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Content will vary as instructors present a single concentration on developments, problems and controversies in criminal justice.</td>
<td></td>
</tr>
</tbody>
</table>
CRIM6990  Independent Study In Criminal Justice  Credit Hours: 1-3
Directed study in criminal justice under the supervision of a criminal justice faculty member.

CRIM8420  Adv Criminal Procedure  Credit Hours: 3

CRIM8430  Admin of Police Services  Credit Hours: 3

CRXM1000  Credit By Exam  Credit Hours: 0-21

CSET1100  Introduction To Computer Science And Engineering Technology  Credit Hours: 3
A first course in computer hardware and software for CSET majors. Single and multi-user operating systems, command-line processing, program planning and creation and simple Internet tools are covered.
Corequisite:EET 2420

CSET1200  Gui Programming And Visual Basic  Credit Hours: 3
Introduction to Windows-based programming for engineering technology applications. Topics include Windows Application Program Interface (API), message processing, Windows Procedures, using Windows resources, modal and modeless dialog boxes and the graphic
Prerequisites:CSET 1100 FOR LEVEL UG WITH MIN. GRADE OF D-

CSET1500  Survey Of Computer Electronics  Credit Hours: 3
Designed to explore the field of computers. Topics include circuit components, Ohm's Law, DC and AC circuits, power supplies, transistor amplifiers, integrated circuits, and an introduction to computer hardware.
Course Descriptions 2009-2010

**CSET2100  Small Computer Systems**  Credit Hours: 4

**CSET2200  Pc And Industrial Networks**  Credit Hours: 4
Current concepts and technologies used with personal computers and PLCs in both industrial (factory-floor) and commercial data networks. Topics include PC networking hardware and software, PLC hardware and programming and PLC networking alternatives.

Prerequisites:CSET 2100 FOR LEVEL UG WITH MIN. GRADE OF D- OR EET 2230 FOR LEVEL UG WITH MIN. GRADE OF D-

**CSET3100  Advanced Web Site Design**  Credit Hours: 3
HTML forms, creation of static and animated web graphics, Dynamic Fonts, SMIL (Synchronized Multimedia Integration Language) as it relates to G2, Realtext, Realpix and XML. The course also covers Frames, META Tags, Optimizing Speed, Cookies, Imagemapping

Prerequisites:CSET 1100 FOR LEVEL UG WITH MIN. GRADE OF D-

**CSET3150  Advanced Programming**  Credit Hours: 4
Advanced programming in C++ language using UNIX workstations in a networked environment. Topics include advanced C++ syntax, structures, and object oriented programming. Programming assignments focus on engineering technology applications.

Prerequisites:EET 2230 FOR LEVEL UG WITH MIN. GRADE OF D-

**CSET3200  Client/Server Computing**  Credit Hours: 3
Covers client/server architecture and programming techniques. Major topics include two-tier and three-tier client server architectures, programming considerations, cleanlayering, advanced graphical user interface controls, database processing, transactio

**CSET3250  Client-Side Scripting**  Credit Hours: 3
Introduction to the Document Object Model (DOM), JavaScript and VBScript scripting languages, cascading style sheets, browser recognition, browser-specific content, data validation and layers.

Prerequisites:CSET 3100 FOR LEVEL UG WITH MIN. GRADE OF D-

**CSET3300  Database-Driven Web Sites**  Credit Hours: 4
Creation of dynamic Web applications that interact with a database using client-side scripts, server-side scripts and compiled server programs. Includes database fundamentals, scripting language fundamentals and server considerations.

Prerequisites:CSET 3150 FOR LEVEL UG WITH MIN. GRADE OF D-
Course Descriptions 2009-2010

CSET3400  Unix System Administration  Credit Hours:  3
Commands and methods to install and manage a UNIX system. System administration topics include configuration, user and file management, backup procedures, peripheral devices, performance tuning and troubleshooting.

CSET3600  Software Engineering and Human Interfacing  Credit Hours:  3
An introduction to software engineering processes for technology students. Includes: user requirements, software specification, design approaches, human-computer interfacing, software tools, validation, modification, maintenance, documentation, lifecycle

Prerequisites:CSET 3150 FOR LEVEL UG WITH MIN. GRADE OF D- OR EET 3150 FOR LEVEL UG WITH MIN. GRADE OF D-

CSET4100  Cgi Programming With Perl And Java  Credit Hours:  3
Covers Common Gateway Interface (CGI) programming on the Internet using the most popular scripting languages. Topics include client-side programs, server-side programs, distributed database creation and searching.

Prerequisites:CSET 3150 FOR LEVEL UG WITH MIN. GRADE OF D-

CSET4150  Web Server Administration  Credit Hours:  3
Installation and configuration of the web server operating systems (e.g., UNIX, Windows NT), installation and administration of web daemon (e.g., Apache, Microsoft IIS). Site management, including file and directory hierarchy, web log analysis, installat

Prerequisites:CSET 2200 FOR LEVEL UG WITH MIN. GRADE OF D-

CSET4200  Vlsi Technology  Credit Hours:  4
Introduction to CMOS technology and circuits, MOS transistor switches and CMOS logic. Practical aspects of silicon manufacturing technology including wafer processing, layout design rules and process parameterization. Electrical and physical design of log

Prerequisites:ENGT 1050 FOR LEVEL UG WITH MIN. GRADE OF D-

CSET4250  Applied Programming Languages  Credit Hours:  3
How to select the most appropriate language for a specific engineering technology application. Topics include comparison of programming languages by evolution, formal specifications, structures, features, application domains, programming paradigms, implem

Prerequisites:CSET 4100 FOR LEVEL UG WITH MIN. GRADE OF D-

CSET4650  Field Programmable Logic Devices  Credit Hours:  4
This course covers the implementation of digital circuits using Field Programmable Logic Devices, with emphasis on Field Programmable Gate Arrays. Students learn to download their designs on Xilinx FPGA's using schematic capture and VHDL code.

Prerequisites:EET 3350 FOR LEVEL UG WITH MIN. GRADE OF D-
CSET4750     Computer Networks And Data Communication     Credit Hours:  4
Computer network architectures and their application to industry needs. Major topics include vocabulary, hardware, design concepts, current issues, trends, hardware, multi-user operating systems, network protocols, local and wide area networks, intranet a

Prerequisites:CSET 2200 FOR LEVEL UG WITH MIN. GRADE OF D-

CSET4850     Network Security Fundamentals     Credit Hours:  4
Theory and practice of network security. Topics include firewalls, Windows, UNIX and TCP/IP network security. Security auditing, attacks, viruses, intrusion detection and threat analysis will also be covered.

CTE2010     Occupation Competency Exam - Technology     Credit Hours:  1-12
Written examination covering technology. NOTE: Students must have completed 30 semester hours at UT before the examination credit can be applied toward the bachelor of career and technical education degree.

CTE2020     Occupation Competency Exam - Performance     Credit Hours:  1-12
Performance examination covering the occupation to be taught. NOTE: Students must have 30 semester hours at UT before examination credit can be applied towards the bachelor of career and technical education degree.

CTE2990     Independent Field Experience     Credit Hours:  1-4
The student will contract with the faculty member assigned to set up an independent field experience that will enable the student to meet personal career objectives.

CTE3010     Teaching Occupational Skills     Credit Hours:  3
The development of pedagogical skills designed to assist the beginning teacher with basic classroom techniques and strategies.

CTE3020     Teaching Occupational Knowledge     Credit Hours:  3
The development of career and technical teaching concepts, designed to assist teachers with the presentation of occupational knowledge.

Prerequisites:CTE 3010 FOR LEVEL UG WITH MIN. GRADE OF D-
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CTE3030</td>
<td>Methods Of Teaching Career And Technical Education I</td>
<td>2</td>
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<tr>
<td></td>
<td>The development and application of career and technical teaching methods and strategies in an actual classroom/laboratory situation or under a simulated classroom setting.</td>
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<tr>
<td>CTE3040</td>
<td>Methods Of Teaching Career And Technical Education II</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>The continued development and application of career and technical teaching methods and strategies in an actual classroom/laboratory situation or under a simulated classroom setting.</td>
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<tr>
<td>CTE3060</td>
<td>Occupational Test Development</td>
<td>3</td>
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<td>Study and construction of psychomotor, cognitive, affective and perceptual evaluation instruments for use in laboratory and related technology classes.</td>
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<tr>
<td>CTE3080</td>
<td>Strategies For Teaching Technical Theory</td>
<td>3</td>
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<td>An analysis of occupational skills to identify mathematics, science and communication competencies and apply reflective analysis to teaching affective, cognitive and psychomotor skills using a results oriented teaching model.</td>
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<tr>
<td>CTE3100</td>
<td>Curriculum Construction Career And Technical Education</td>
<td>3</td>
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<td>Development of knowledge and skill in competency based education to include occupational analysis, selection of course content, course of study and instructional guide development and credentialing students. Required for certification.</td>
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<tr>
<td>CTE3120</td>
<td>Construction &amp; Utilization Of Learning Activities Packed</td>
<td>3</td>
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<td>This course provides the career and technical teacher with the skills to develop and utilize individualized competency based learning activity packets from a previously developed curriculum.</td>
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<tr>
<td>CTE3160</td>
<td>Updating Occupational Skills And Knowledges</td>
<td>1-6</td>
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<tr>
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<td>This course provides the student with an opportunity to upgrade occupational proficiency and technical knowledge through business or industrial experiences or supplemental training for the purpose of improving instruction.</td>
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</tbody>
</table>
**Course Descriptions 2009-2010**

**CTE3910  Seminar For Career And Technical Teachers**  
Credit Hours: 3  
The study of current developments in specific areas of instruction with the development of course materials as assigned.

**CTE4020  Occupational Safety & Liability**  
Credit Hours: 3  
The study of occupational health and safety hazards. Regulations applicable to school, business and industry will be examined. Strategies to minimize exposure to and prevent injuries will be developed.

**CTE4040  Laboratory Organization And Management**  
Credit Hours: 3  
Designed for laboratory instructors to increase their operating efficiency and effectiveness. Focus is on arranging the facility and controlling materials, supplies, learning activities and maintenance through various system approaches.

**CTE4060  Foundations Of Career And Technical Education**  
Credit Hours: 3  
A study of social issues, historical events and philosophies that provide a basis for the development of career and technical education. Principles and their implications are also reviewed.

**CTE4080  Principles Of School-To-work Transition**  
Credit Hours: 3  
Designed for educators and employers to increase their knowledge and skill to build partnerships between schools and business, industry and labor. Examines transition concepts, components, implementation strategies and models.

**CTE4100  Organization, Administration & Regulation Of Career And Technical Education**  
Credit Hours: 3  
Study of the organization and administration of career and technical education at the national, state and local levels, noting relationships existing between the agencies.

**CTE4120  Supervision Of Career And Technical Education**  
Credit Hours: 3  
Development of supervisory skills in career and technical education. Stresses human relations, team building, basic management and leadership skills in program inauguration and operations.
CTE4140  Cooperative Education  
Designed to present the basic fundamentals of establishing and operating a cooperative occupational program.

CTE4160  Curriculum Development & Teaching Co-Operative Education  
A study of cooperative education curriculum and instructional methods, including the coordination of classroom-related instruction with on-the-job experience based on the commonalities of a variety of occupations.

CTE4180  Promotion, Recruitment & Retention In Career And Technical Education  
A study of career and technical education in the community, and promotion, recruitment and retention strategies, including school publics, theories of community power structure and the career and technical school in a democratic society.

CTE4220  Adviser Training - Youth Leadership Development  
Designed for teachers and supervisors to increase their skills and knowledge of youth leadership development. Focus is on advising a student career and technical organization and includes both establishing and maintaining functions.

CTE4570  Teaching Adult Learners In Career And Technical Education  
A study of the unique learning and teaching characteristics associated with adult learners, adult learning theory, learner characteristics, physical effects of aging and strategies consistent with adult learning styles.

CTE4910  Directed Research In Career And Technical Education  
Investigations in such fields as community surveys to determine needs for career and technical education, industrial surveys, follow-up studies of career and technical graduates, developing content of shop-related technology courses.

CTE4930  Supervised Teaching  
A planned field experience held in public school classrooms under the direction of University supervisors. Practicing teacher observed planning, presenting and demonstrating teaching skills and managing the laboratory and classroom.
**CTE4940 Practicum-Internship In Career And Technical Education**

**Credit Hours:** 1-3

Observation and supervised experiences will be offered in a variety of appropriate settings, or students will be assigned to work as interns in a school setting under the joint supervision of school and university personnel.

**CTE4950 Workshop In Career And Technical Education**

**Credit Hours:** 1-5

Workshops developed around topics of interest and concern for preservice and inservice teachers and other education personnel. Practical applications of workshop topics are emphasized.

**CTE4980 Problems In Career And Technical Education**

**Credit Hours:** 1-5

A course developed around topics of interest and concern to inservice teachers. Stresses solution and resolution of educational problems occurring within selected districts.

**CTE4990 Individual Study In Career And Technical Education For Undergraduate Students**

**Credit Hours:** 1-3

Individual study is designed to provide the opportunity to work individually on professional problems under the direction of the faculty in career and technical education.

**CTE5020 Occupational Safety And Liability**

**Credit Hours:** 3

The study of occupational health and safety hazards. Regulations applicable to school, business and industry will be examined. Strategies to minimize exposure to and prevent injuries will be developed.

**CTE5040 Laboratory Organization And Management**

**Credit Hours:** 3

Designed for laboratory instructors to increase their operating efficiency and effectiveness. Focus is on arranging the facility and controlling materials, supplies, learning activities and maintenance through various system approaches.

**CTE5060 Foundations Of Career And Technical Education**

**Credit Hours:** 3

A study of social issues, historical events and philosophies that provide a basis for the development of career and technical education. Principles and their implications are also reviewed.
Course Descriptions 2009-2010

CTE5080 Principles Of School-To-work Transition  
Credit Hours: 3  
Design for educators and employers to increase their knowledge and skill to build partnerships between schools and business, industry and labor. Examines transition concepts, components, implementation strategies and models.

CTE5100 Organization, Administration & Regulations Of Career And Technical Education  
Credit Hours: 3  
Study of the organization and administration of career and technical education at the national, state and local levels, noting relationships existing between the agencies.

CTE5120 Supervision Of Career And Technical Education  
Credit Hours: 3  
Development of supervisory skills in career and technical education. Stresses human relations, team building, basic management and leadership skills in program inauguration and operations.

CTE5140 Cooperative Education  
Credit Hours: 2  
Designed to present the basic fundamentals of establishing and operating a cooperative occupational program.

CTE5160 Curriculum Development & Teaching  
Credit Hours: 3  
A study of cooperative education curriculum and instructional methods, including the coordination of classroom-related instruction with on-the-job experience based on the commonalities of a variety of occupations.

CTE5180 Promotion, Recruitment & Retention  
Credit Hours: 3  
A study of career and technical education in the community, and promotion, recruitment and retention strategies, including school publics, theories of community power structure and the career and technical school in a democratic society.

CTE5220 Adviser Training For Youth Leaders  
Credit Hours: 3  
Designed for teachers and supervisors to increase their skills and knowledge of youth leadership development. Focus is on advising a student career and technical organization and includes both establishing and maintaining functions.
**CTE5570 Teaching Adult Learners**  
Credit Hours: 3  
A study of the unique learning and teaching characteristics associated with adult learners, adult learning theory, learner characteristics, physical effects of aging and strategies consistent with adult learning styles.

**CTE5810 Staff Evaluation And Development**  
Credit Hours: 3  
An analysis of the processes and current instruments available for evaluation of programs and personnel, and an appraisal of the professional development needs of individuals in educational settings.

**CTE5830 Curriculum Principles And Models**  
Credit Hours: 3  
Curriculum principles and models are examined. The characteristics of curricula are established and inferences are drawn for the planning, implementation and evaluation phases of curriculum development.

**CTE5940 Practicum-Internship In Career And Technical Education**  
Credit Hours: 1-3  
Observation and supervised experiences will be offered in a variety of appropriate settings, or students will be assigned to work as interns in a school setting under the joint supervision of school and university personnel.

**CTE5950 Workshop In Career And Technical Education**  
Credit Hours: 1-5  
Workshops developed around topics of interest and concern for preservice and inservice teachers and other education personnel. Practical applications of workshop topics will be emphasized.

**CTE5980 Problems In Career And Technical Education**  
Credit Hours: 1-5  
A course developed around topics of interest and concern to inservice teachers and administrators. Stresses solution and resolution of educational problems occurring within selected districts.

**CTE5990 Individual Study In Career And Technical Education**  
Credit Hours: 1-3  
Individual study is designed to provide the opportunity to work individually on professional problems under the direction of the faculty in career and technical education.
CTE6900 Research In Career And Technical Education  
Credit Hours: 1-3  
Investigations in such fields as community surveys to determine needs for career and technical education, industrial surveys, follow-up studies of vocational graduates, developing content of shop-related technology courses.

CTE6920 Master's Research Project In Career And Technical Education  
Credit Hours: 1-3  
Open to a graduate student who elects the completion of a research project in fulfilling the research requirement of the master's degree.

CTE6960 Master's Thesis In Career And Technical Education  
Credit Hours: 1-3  
Open to a graduate student who elects the completion of a master's thesis in fulfilling the research requirement of the master's degree.

CTE7810 Staff Evaluation And Development  
Credit Hours: 3  
An analysis of the processes and current instruments available for evaluation of programs and personnel, and an appraisal of the professional development needs of individuals in educational settings.

CTE7830 Curriculum Principles And Models  
Credit Hours: 3  
Curriculum principles and models are examined. The characteristics of curricula are established and inferences are drawn for the planning, implementation and evaluation phases of curriculum development.

CTE7940 Practicum-Internship In Career And Technical Education  
Credit Hours: 1-3  
Observation and supervised experiences will be offered in a variety of appropriate settings, or students will be assigned to work as interns in a school setting under the joint supervision of school and university personnel.

CTE7950 Workshop In Career And Technical Education  
Credit Hours: 1-5  
Workshops developed around topics of interest and concern for preservice and inservice teachers and other education personnel. Practical applications of workshop topics will be emphasized.
Course Descriptions 2009-2010

CTE7980 Problems In Career And Technical Education Credit Hours: 1-5
A course developed around topics of interest and concern to in-service teachers and administrators. Stresses solution and resolution of educational problems occurring within selected districts.

CTE7990 Individual Study In Career And Technical Education Credit Hours: 1-3
Individual study is designed to provide the opportunity to work individually on professional problems under the direction of the faculty in career and technical education.

CVMD601 Cardiovasc & Metabolic Disease Credit Hours: 2

CVMD630 Seminar in CV & Metab Diseases Credit Hours: 1
Seminars presented by invited speakers expose CVMD graduate students to the latest advancements in basic research related to cardiovascular and metabolic diseases. Informal discussions sessions are organized which enable students to meet with speakers in

CVMD640 Principles of Pharmacology Credit Hours: 1
This is a one credit course in which students learn the fundamental principles of pharmacodynamics and pharmacokinetics, which are the basis for understanding the actions of drugs and the use of drugs in research and medicine.

CVMD650 Advanced Topics in CVMD Credit Hours: 3
An advanced course focusing on the physiology and pathophysiology of the cardiovascular and metabolic systems. This course will provide a multidisciplinary view of the processes leading to cardiovascular and metabolic diseases through lectures focused on

CVMD660 Journal Paper Review in CVMD Credit Hours: 1
Presentation and in depth discussion of original papers to give students an opportunity to assess and report on recent advances in cardiovascular and metabolic diseases. May be repeated for credit.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>CVMD673</td>
<td>Research CV/Metabolic Diseases</td>
<td>1-15</td>
</tr>
<tr>
<td>CVMD689</td>
<td>Independent Study in CVMD</td>
<td>1-12</td>
</tr>
<tr>
<td>CVMD699</td>
<td>Thesis Research in CVMD</td>
<td>1-15</td>
</tr>
<tr>
<td>CVMD830</td>
<td>Seminar in CV &amp; Metab Diseases</td>
<td>1</td>
</tr>
<tr>
<td>CVMD840</td>
<td>Principles of Pharmacology</td>
<td>1</td>
</tr>
<tr>
<td>CVMD850</td>
<td>Advanced Topics in CVMD</td>
<td>3</td>
</tr>
<tr>
<td>CVMD860</td>
<td>Journal Paper Review in CVMD</td>
<td>1</td>
</tr>
</tbody>
</table>

**CVMD689 Independent Study in CVMD**

This is a variable credit course in which a student carries out independent study in CVMD directed by their major advisor.

**CVMD699 Thesis Research in CVMD**

This is a variable credit course in which a student carries out independent study in CVMD directed by their major advisor.

**CVMD830 Seminar in CV & Metab Diseases**

Seminars presented by invited speakers expose CVMD graduate students to the latest advancements in basic research related to cardiovascular and metabolic diseases. Informal discussions sessions are organized which enable students to meet with speakers in

**CVMD840 Principles of Pharmacology**

This is a one credit course in which students learn the fundamental principles of pharmacodynamics and pharmacokinetics, which are the basis for understanding the actions of drugs and the use of drugs in research and medicine.

**CVMD850 Advanced Topics in CVMD**

An advanced course focusing on the physiology and pathophysiology of the cardiovascular and metabolic systems. This course will provide a multidisciplinary view of the processes leading to cardiovascular and metabolic diseases through lectures focused on

**CVMD860 Journal Paper Review in CVMD**

Presentation and in depth discussion of original papers to give students an opportunity to assess and report on recent advances in cardiovascular and metabolic diseases. May be repeated for credit.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>CVMD873</td>
<td>Research CV/Metabolic Diseases</td>
<td>1-15</td>
</tr>
<tr>
<td>CVMD889</td>
<td>Independent Study in CVMD</td>
<td>1-12</td>
</tr>
<tr>
<td>CVMD999</td>
<td>Dissertation Research CV/Metab</td>
<td>1-15</td>
</tr>
<tr>
<td>DENT650</td>
<td>Seminar in Oral Biology</td>
<td>0-3</td>
</tr>
<tr>
<td>DENT655</td>
<td>Jrn Paper Review Oral Biology</td>
<td>1</td>
</tr>
<tr>
<td>DENT656</td>
<td>Readings in Oral Biology</td>
<td>0-3</td>
</tr>
<tr>
<td>DENT657</td>
<td>Topics in Adv Dental Materials</td>
<td>0-4</td>
</tr>
</tbody>
</table>

This is a variable credit course in which a student carries out independent study in CVMD directed by their major advisor.

Recent developments, critical analysis of recent publications, literature reviews in specific areas of oral biology, e.g., oral surgery, endodontics, pedodontics, prosthodontics, oral pathology, and implant dentistry. May be repeated for credit.

A weekly report on recent advances in oral biology taken from original papers to give students an opportunity to find, assess, and report on important developments in the field. May be repeated for credit.

Presentation of selected papers on oral biology and health-related topics and discussion.

Presentation of advanced dental materials. May be repeated for credit.
## Course Descriptions 2009-2010

### DENT660  Topics in Restructive Dentist  
Credit Hours: 0-3  
Seminar in current reconstructive dentistry, including all the structures of the masticatory system as they relate to occlusal rehabilitation.

### DENT672  Current Topics in Oral Biology  
Credit Hours: 0-4

### DENT673  Research in Oral Biology  
Credit Hours: 0-3
Students will participate in selected ongoing research programs of members of the division faculty. May be repeated for credit.

### DENT689  Independent Study Oral Biology  
Credit Hours: 0-6
The student and instructor will agree on a program of intense study that will enable the student to achieve his/her objectives including theoretical and experimental work. May be repeated for credit.

### DENT690  Ind Study Pediatric Dentistry  
Credit Hours: 1-4
Elective experiences that are intended to expand knowledge base in areas of interest related to the field of pediatric dentistry. Departmental approval required.

### DENT691  J Review Ped Dentistry  
Credit Hours: 2
Presentation of selected articles related to the field of pediatric dentistry and other health related topics with discussion. May be repeated for credit.

### DENT692  Seminar Clinical Ped Dentistry  
Credit Hours: 4
Scientific principles underlying the contemporary practice of pediatric dentistry, including the prevention of disease, dental anomalies, habits and other problems in occlusal development and Child Abuse and Neglect. May be repeated for credit.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DENT693</td>
<td>Research in Ped Dentistry</td>
<td>1-6</td>
</tr>
<tr>
<td>DENT701</td>
<td>Dentistry</td>
<td>0-3</td>
</tr>
<tr>
<td></td>
<td>Student will receive an overview of hospital dentistry and develop an interdisciplinary approach to the study of oral and dental diseases.</td>
<td></td>
</tr>
<tr>
<td>DENT750</td>
<td>Dentistry Away Elective</td>
<td>0-6</td>
</tr>
<tr>
<td>DENT751</td>
<td>Dentistry Away Elective</td>
<td>0-3</td>
</tr>
<tr>
<td>DENT789</td>
<td>Independent Study in Dentistry</td>
<td>0-3</td>
</tr>
<tr>
<td>DERM706</td>
<td>Dermatology</td>
<td>6</td>
</tr>
<tr>
<td>DERM730</td>
<td>Dermatology</td>
<td>3</td>
</tr>
</tbody>
</table>
DERM750  Dermatology Away Elective  Credit Hours: 6

DERM751  Dermatology Away Elective  Credit Hours: 3

DERM789  Independent Study Dermatology  Credit Hours: 0-6

DST2020  Disability In The United States  Credit Hours: 3
An overview of the emergence of disability rights in the U.S. with an emphasis on the independent living movement, disability history, culture and representation in mass media. (Not for credit in the minor).

DST2980  SPECIAL TOPICS IN DISABILITY STUDIES  Credit Hours: 3
Special topics in Disability Studies. Topics vary by instructor; may be repeated for credit.

DST3020  Definitions Of Disability  Credit Hours: 3
An interdisciplinary exploration of the definitions, models and paradigms of disability, including medical, social, phenomenological, rehabilitative and independent living constructions of disability.
Prerequisites:ENGL 1110 FOR LEVEL UG WITH MIN. GRADE OF D-

DST3030  Issues In Disability Studies  Credit Hours: 3
An interdisciplinary exploration of the history and culture of disability, including the issues of stigmatizing and stereotyping, communication barriers and breakthroughs, educational segregation and mainstreaming and the experience of "passing."
Prerequisites:ENGL 1110 FOR LEVEL UG WITH MIN. GRADE OF D-
### DST3980 SPECIAL TOPICS IN DISABILITY STUDIES

Credit Hours: 3

Special topics in Disability Studies. Topics vary by instructor, may be repeated for credit.

### DST4890 Disability Studies Research And Methodologies

Credit Hours: 3

An interdisciplinary exploration and review of research issues and methodologies suited to the study of disability.

Prerequisites: DST 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

### DST4940 Internship In Disability Studies

Credit Hours: 3

This course is a service learning model internship with on-campus and/or community agencies addressing disability studies issues. Sites must be approved by the instructor.

Prerequisites: DST 4890 FOR LEVEL UG WITH MIN. GRADE OF D-

### DST4980 SPECIAL TOPICS IN DISABILITY STUDIES

Credit Hours: 3

This course allows Disability Studies minors to take disability studies-related courses for DST credit.

### EBUS3090 E-Commerce And The Networked Economy

Credit Hours: 3

This course is an introduction to the networked economy, e-commerce and business transformation. It covers the technological trends, business opportunities, competitive threats, marketing responses and public policy issues concerning e-commerce.

### EBUS3180 Web Design For Business Communication

Credit Hours: 3

A study of Web site design and management process for effective business communication, including authoring software, graphic tools, scripting techniques, java applets and related technical, legal ethical and managerial issues.

### EBUS4040 E-Commerce Intelligence Management

Credit Hours: 3

A study of business intelligence management in an e-commerce environment, including the use of data mining and warehousing tools for market analysis and business decision supports.

Prerequisites: EBUS 3090 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBUS4150</td>
<td>E-Commerce Business Models And Project Management</td>
<td>3</td>
<td>A hands-on course involving case studies of successful e-commerce business models and a team-based project to develop e-commerce plan for established and start-up businesses.</td>
</tr>
<tr>
<td>ECON1010</td>
<td>Introduction To Economic Issues</td>
<td>3</td>
<td>Basic concepts and theory applications to major economic problems and controversies. Designed primarily to meet requirements of students not planning to take upper level economics courses. (not for major credit)</td>
</tr>
<tr>
<td>ECON1150</td>
<td>Principles Of Macroeconomics</td>
<td>3</td>
<td>Explaining the level and the growth of economic activity, its fluctuations and ways of achieving greater stability, including the roles of money, banking and international finance.</td>
</tr>
<tr>
<td>ECON1200</td>
<td>Principles Of Microeconomics</td>
<td>3</td>
<td>Theories of consumer behavior; determination of input and output; prices and quantities in factor and product markets; analysis of international trade and policy; applications include labor markets and income distribution.</td>
</tr>
<tr>
<td>ECON2810</td>
<td>Introduction to Econometrics</td>
<td>3</td>
<td>Included is the study of hypothesis testing, single and multiple regression, correlation analysis, time series and index numbers, and non-parametric statistics.</td>
</tr>
<tr>
<td>ECON3030</td>
<td>Consumer Economics</td>
<td>3</td>
<td>Economic role of the consumer, theory of choice-making - rational purchasing of food, housing, health care, transportation, insurance, credit, budgeting, investing and tax returns.</td>
</tr>
</tbody>
</table>

Prerequisites:
- EBUS 3090 FOR LEVEL UG WITH MIN. GRADE OF D-
- ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-
ECON3050  Economics Of Gender  Credit Hours:  3
Analysis of labor market outcomes and income distribution characteristics resulting from gender differences; gender-related economic outcomes: the "feminization of poverty," persistent male-female wage differential, expanding proportion of female-headed h

Prerequisites:ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON3070  Economics And Law  Credit Hours:  3
Methodologies of Law and Economics; Legal institutions; Economic Theory of Property; Property Rights; Contract Theory; Economic Theory of Torts and Tort Law, Common Law Process; Economics of Crime and Punishment.

Prerequisites:ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON3080  Economics Of Crime  Credit Hours:  3
Study of crime as an economic activity; costs of crime to the community; economic approach to crime reduction.

Prerequisites:ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON3120  Topics In Monetary And Financial Economics  Credit Hours:  3
Current issues in money, banking and finance; interest rate theory; international money and banking; monetary policy and modeling monetary economies.

Prerequisites:ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON3150  Intermediate Macroeconomic Theory  Credit Hours:  3
National income accounting; theory of income determination; causal relationships; analysis of consumption, investment, government and foreign demand functions; integration of theories of income, output, money and interest.

Prerequisites:ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON3200  Intermediate Micro-Economic Theory  Credit Hours:  3
Consumer theory, utility and indifference curve analysis, theory of the firm, industry pricing in perfect and imperfect competition and distribution theory.

Prerequisites:ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON3240  Environmental Economics And Policy  Credit Hours:  3
Economic analysis of the causes of environmental problems; Examination of various economic policies for addressing current environmental issues such as pollution control policies and optimal use of resources.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ECON3250</td>
<td>Economics Of Sports</td>
<td>3</td>
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<tr>
<td></td>
<td>This course will survey the theoretic and applied economic issues within the world of professional and amateur sports, focusing on industrial organization, labor economics and public finance.</td>
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<tr>
<td></td>
<td>Prerequisites:ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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</tr>
<tr>
<td>ECON3410</td>
<td>World Economic History</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Study of economic growth throughout the world, particularly in Europe, Asia, Africa and Latin America. Analysis of economic institutions, technological change, industrialization and living standards.</td>
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<tr>
<td></td>
<td>Prerequisites:ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>ECON3500</td>
<td>Comparative Economic Systems</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Theory and ideology of market, socialist and mixed economic systems. Case study of the economies of U.S., Russia, China and India.</td>
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<tr>
<td></td>
<td>Prerequisites:ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>ECON3600</td>
<td>Urban Economics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Analysis bearing on intermetropolitan and intrametropolitan growth processes.</td>
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<tr>
<td></td>
<td>Prerequisites:ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>ECON3900</td>
<td>Undergraduate Seminar</td>
<td>1-4</td>
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<tr>
<td></td>
<td>Small group study of special topics initiated either by student or a faculty member.</td>
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<tr>
<td>ECON3910</td>
<td>Honors Research</td>
<td>1-4</td>
</tr>
<tr>
<td></td>
<td>Study of special topics initiated either by student or a faculty member.</td>
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</tr>
<tr>
<td>ECON3920</td>
<td>Honors Reading</td>
<td>1-4</td>
</tr>
<tr>
<td></td>
<td>Study of special topics initiated either by student or a faculty member.</td>
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</tr>
</tbody>
</table>
ECON3980 Current Economic Issues Credit Hours: 3
Course content varies as changes in the interaction between economic topics and writing assignments occur.

ECON4050 Population Economics Credit Hours: 3
Interaction of economic changes and demographic variables; topics include birth rates, women's employment, marriage and divorce, aging and mortality, migration and overpopulation.
Prerequisites: ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON4120 Monetary Theory Credit Hours: 3
Modern theories of financial markets, money and the theory of interest rates, money's role in general equilibrium and growth models and money's ability to cause inflation.
Prerequisites: ECON 2120 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 3120 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 3150 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON4130 Monetary And Fiscal Policy Credit Hours: 3
Changes in the quantity of money and alternative government spending, taxation and debt policies, interrelations of fiscal and monetary policies in stabilization programs.
Prerequisites: ECON 3150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 4120 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON4150 Advanced Macroeconomic Theory Credit Hours: 3
Prerequisites: ECON 3150 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON4200 Advanced Microeconomic Theory Credit Hours: 3
Advanced topics in microeconomic theory, consumer behavior, the firm and market structure, distribution theory, equilibrium conditions, welfare economics.
Prerequisites: ECON 3200 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON4240 Advanced Environmental Economics Credit Hours: 3
The economics of the environment and natural resources using applied welfare theory, benefit-cost analyses, and nonmarket valuation. Examination of economic instruments, such as marketable permits, for solving environmental problems.
Prerequisites: ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-
ECON4250  Labor Economics  Credit Hours:  3
Labor force characteristics, wage determination, hours and condition of work, unemployment, labor union structure and growth, collective bargaining and modern labor legislation.
Prerequisites: ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON4300  Mathematical Economics  Credit Hours:  3
Development and applications of the mathematical tools used by economists. Differential and integral calculus, linear algebra, transcendental functions and series.
Prerequisites: ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON4410  American Economic History  Credit Hours:  3
Exploration of economic growth in America from pre-Columbian times to the present day. Analysis of economic institutions, technological change, industrialization and standards of living.
Prerequisites: ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON4510  International Economics I  Credit Hours:  3
Theory of international trade; commercial policy; costs and benefits, economic integration; trade and economic growth and balance of payments problems.
Prerequisites: ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON4550  Economic Development  Credit Hours:  3
Economic problems and policies in less-developed countries, including such topics as schooling, population growth, urbanization, landholding, income distribution, capital formation and development strategies.
Prerequisites: ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON4620  Regional Economics  Credit Hours:  3
Examination of regional income estimates and social accounts, regional multipliers, diverse location theories, supplemented with techniques of regional analysis.
Prerequisites: ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON4660  Public Finance Economics  Credit Hours:  3
An analysis of the government sector in the economy, government expenditures, taxation and borrowing and their effects on employment, price levels and growth.
Prerequisites: ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-
ECON4750  Health Economics  Credit Hours:  3
Economic analysis of health and health services. Topics currently include medical and allied manpower, hospitals, drugs and cost-benefit analysis of selected health programs.
Prerequisites: ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON4810  Econometrics Models And Methods I  Credit Hours:  3
An introduction to econometric methods and their use in quantitative analysis of economic theories. Diagnostics for problems typically encountered are detailed along with techniques for correcting these problems.
Prerequisites: ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D- OR (ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 2630 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON4820  Econometrics Models And Methods II  Credit Hours:  3
An introduction to forecasting methods for economic time-series including Bayesian methods. Both theory and application of forecasting models and methods are covered.
Prerequisites: ECON 4810 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON4910  Research  Credit Hours:  1-4

ECON4920  Readings  Credit Hours:  1-4

ECON4960  Senior Honors Thesis  Credit Hours:  1-4

ECON5050  Population Economics  Credit Hours:  3
Interaction of economic changes and demographic variables; topics include birth rates, women's employment, marriage and divorce, aging and mortality, migration and overpopulation.
Prerequisites: ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D-
ECON5120 Monetary Theory

Modern theories of financial markets, money and the theory of interest rates, money's role in general equilibrium and growth models and money's ability to cause inflation.

Prerequisites: ECON 2120 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 3120 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 3150 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON5130 Monetary And Fiscal Policy

Changes in the quantity of money and alternative government spending, taxation and debt policies, interrelations of fiscal and monetary policies in stabilization programs.

Prerequisites: ECON 3150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 4120 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON5150 Advanced Macroeconomic Theory


Prerequisites: ECON 3150 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON5200 Advanced Microeconomic Theory

Advanced topics in microeconomic theory, consumer behavior, the firm and market structure, distribution theory, equilibrium conditions, welfare economics.

Prerequisites: ECON 3200 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON5240 Environmental And Natural Resource Economics

The economics of the environment and natural resources. Examination of economic instruments for solving environmental problems. Analyzed policies include direct regulation, user charges, taxes on polluting products and marketable permits.

Prerequisites: ECON 3200 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON5250 Labor Economics

Labor force characteristics, wage determination, hours and condition of work, unemployment, labor union structure and growth, collective bargaining and modern labor legislation.

Prerequisites: ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON5300 Mathematical Economics

Development and applications of the mathematical tools used by economists. Differential and integral calculus, linear algebra, transcendental functions and series.

Prerequisites: ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D-
ECON5410  American Economic History  Credit Hours:  3
Exploration of economic growth in America from pre-Columbian times to the present day. Analysis of economic institutions, technological change, industrialization and standards of living.
Prerequisites:ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1880 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON5510  International Economics I  Credit Hours:  3
Theory of international trade; commercial policy; costs and benefits, economic integration; trade and economic growth and balance of payments problems.
Prerequisites:ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON5550  Economic Development  Credit Hours:  3
Economic problems and policies in less-developed countries, including such topics as schooling, population growth, urbanization, landholding, income distribution, capital formation and development strategies.
Prerequisites:ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON5620  Regional Economics  Credit Hours:  3
Examination of regional income estimates and social accounts, regional multipliers, diverse location theories, supplemented with techniques of regional analysis.
Prerequisites:ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON5660  Public Finance Economics  Credit Hours:  3
An analysis of the government sector in the economy, government expenditures, taxation and borrowing and their effects on employment, price levels and growth.
Prerequisites:ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON5750  Health Economics  Credit Hours:  3
Economic analysis of health and health services. Topics currently include medical and allied manpower, hospitals, drugs and cost-benefit analysis of selected health programs.
Prerequisites:ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

ECON5810  Econometrics Models And Methods I  Credit Hours:  3
An introduction to econometric methods and their use in quantitative analysis of economic theories. Diagnostics for problems typically encountered are detailed along with techniques for correcting these problems.
Prerequisites:(ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 2630 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D)
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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ECON5820</td>
<td>Econometrics Models And Methods II</td>
<td>3</td>
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<tr>
<td></td>
<td>An introduction to forecasting methods for economic time-series including Bayesian methods. Both theory and application of forecasting models and methods are covered.</td>
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<td>Prerequisites: ECON 5810 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>ECON5980</td>
<td>Current Economic Problems</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Course content changes from time to time as important economic problems arise.</td>
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</tr>
<tr>
<td></td>
<td>Prerequisites: ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>ECON6150</td>
<td>Seminar in Macroeconomics</td>
<td>4</td>
</tr>
<tr>
<td>ECON6200</td>
<td>Seminar in Microeconomics</td>
<td>4</td>
</tr>
<tr>
<td>ECON6810</td>
<td>Sem: Appl Econometrics I</td>
<td>2</td>
</tr>
<tr>
<td>ECON6820</td>
<td>Sem: Appl Econometrics II</td>
<td>2</td>
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<tr>
<td>ECON6830</td>
<td>Sem: Appl Econometrics III</td>
<td>2</td>
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<tr>
<td>Course Code</td>
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<tr>
<td>ECON6900</td>
<td>Graduate Research</td>
<td>1-7</td>
</tr>
<tr>
<td>ECON6960</td>
<td>Thesis</td>
<td>1-8</td>
</tr>
<tr>
<td>ECON6990</td>
<td>Graduate Readings</td>
<td>1-7</td>
</tr>
<tr>
<td>EDAS4100</td>
<td>Supervisory Skill Development</td>
<td>3</td>
</tr>
<tr>
<td>EDAS4260</td>
<td>Leadership For Supervisors</td>
<td>3</td>
</tr>
<tr>
<td>EDAS4280</td>
<td>Organizational Development</td>
<td>3</td>
</tr>
<tr>
<td>EDAS4290</td>
<td>Labor Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

**EDAS4100 Supervisory Skill Development**
A study of supervisory skills for education and allied professions. The focus is on the supervisor and how she engages in activities to develop personal growth and development of staff members.

**EDAS4260 Leadership For Supervisors**
An examination of different leadership styles within the organization is the focal point of this course. Participants will conduct research related to directive and non-directive supervisory skills.

**EDAS4280 Organizational Development**
The course explores the concepts of organizations and people who work in organizations. Participants will be involved in exercises and procedures of organizational diagnosis, evaluation and development.

**EDAS4290 Labor Relations**
The course examines methods and procedures for improving labor relations in organizations. Participants will analyze a variety of models and issues that confront labor relations in education and allied professions.
EDAS4940 Administrative Field Experience
Credit Hours: 3-6
Working in a guided reflective practice environment, the student will apply knowledge gained in previous coursework to working situations in positions in the private sector.

EDAS5950 Workshop In Educational Administration
Credit Hours: 3
Topical workshops, based on practical application of skills and knowledge, are intended for in-service educational professionals. Credit may be applied to doctoral degrees upon approval of the committee.

EDAS5980 Special Topics In Educational Administration
Credit Hours: 3
Courses, based on issues, topics and concerns of educational administrators for the real world. Credit may be applied to degree programs upon approval of the adviser or committee.

EDAS6000 The Individual In Organizations
Credit Hours: 3
An overview of the individual in educational administration, i.e., as strategic leader, organizational leader, instructional leader and policy/community leader. Opportunities for personal assessment are provided as students explore critical educational

EDAS6010 Supervision For Improved Instruction
Credit Hours: 3
An examination of those principles of supervision which promote improved instruction. Emphasis is on teacher performance evaluation, curriculum management and strategies for staff development to improve staff performance.

EDAS6020 Instructional Leadership
Credit Hours: 3
An in-depth analysis of instructional leadership to improve teacher classroom performance. Attention will focus on instructional analysis, strategies for providing feedback and writing professional growth plans.

EDAS6030 Developing Effective Learning Environments
Credit Hours: 3
An exploration of group dynamics/processes. Development of effective action plans to improve school climate/culture and the learning environment is explored using problem-based learning.
Course Descriptions 2009-2010

EDAS6110  Legal Aspects Of School Administration  Credit Hours:  3
This course provides students an opportunity to analyze major topics and issues through which law influences education. Participants will examine the basic legal structure for education.

EDAS6150  The Administrative Experience  Credit Hours:  3
A study of administrative leadership for modern schools. Emphasis is on blending current theory and practice and examining the interaction among the organization and the internal and external environment.

EDAS6200  Continuous Improvement Of Schools  Credit Hours:  3
Course addresses current Pre K-16 national and regional reform agendas, relating them to systemic changes in policies, governance and articulation of learner outcomes in local settings.

EDAS6210  Leadership In Diverse Settings  Credit Hours:  3
Issues of multicultural, cross-cultural, race, gender, ethnicity, inter-agency cooperation in school settings are examined in diverse settings - urban, suburban and rural, noting problems, concerns and common issues for leaders.

EDAS6220  Administration Of Special Programs  Credit Hours:  3
This course examines the administration of special programs that operate at the district and school level. These include special education, Chapter I, vocational education, guidance and athletic programs.

EDAS6230  Community And Schools  Credit Hours:  3
The unique role of school systems in the democratic social structure is examined through a theoretical critique of strategies that increase citizen involvement in and build support for schools.

EDAS6240  Developing Learning Organizations In Educational Settings  Credit Hours:  3
Course introduces the theories, techniques and practices of planned organizational learning. Students examine the philosophical, theoretical and practical differences of organizational development as interventionist, consultative and collaborative process
EDAS6320   School Business Management  Credit Hours:  3
The purpose of the course is to involve students in an analysis of the role and functions of school business management. Participants will analyze data in each topical area of school business management.

EDAS6330   Collective Bargaining And Dispute Resolution  Credit Hours:  3
The purpose of the course is to examine the issues that arise before, during and after the collective bargaining process in the public sector, including resolving labor disputes and grievances.

EDAS6350   Computers In Educational Administration Decision Making  Credit Hours:  3
This course allows the development for increased decision making based on local, state and national retrievable data concerning learning, achievement, efficiency and effectiveness of resource allocations.

EDAS6360   Personnel Management And Contract Administration In Education  Credit Hours:  3
Course provides insight into the purposes, policies and processes of personnel administration and contract administration in public education, including recruitment, hiring, induction, evaluation, compensation and development.

EDAS6380   Planning Educational Facilities For Learning  Credit Hours:  3
This course examines the issues surrounding planning, building and maintaining educational facilities appropriate for maximizing learning. Included is an examination of legal, health and safety requirements.

EDAS6420   Micropolitics Of School Communities  Credit Hours:  3
Course focus is on the day to day politics of school work that increase the complexities of educating. Using case studies and problem-based learning, students will practice skills that support democratic practices in school communities.

EDAS6430   Legal Aspects Of Educational Administration  Credit Hours:  3
This course provides students a background in legislation and court decisions that affect the administration of public schools. Students will investigate legal problem areas in schools.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>EDAS6440</td>
<td>Equity Issues In Educational Finance And Economics</td>
<td>3</td>
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<tr>
<td></td>
<td>Analysis of educational finance and economic issues pertinent to school districts. Analysis of various funding models at the local, state and national level are studied employing various measures of equity.</td>
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<tr>
<td>EDAS6900</td>
<td>Master's Seminar In Educational Administration And Supervision</td>
<td>3</td>
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<tr>
<td></td>
<td>Examination and reflection on the practice of research in Educational Leadership.</td>
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<tr>
<td>EDAS6920</td>
<td>Master's Project In Educational Administration</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Open to graduate students who elect the completion of a research project in fulfilling the research requirements of the master's program.</td>
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</tr>
<tr>
<td>EDAS6960</td>
<td>Master's Thesis In Educational Administration</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Open to graduate students who elect the completion of a research thesis in fulfilling the research requirements of the master's program.</td>
<td></td>
</tr>
<tr>
<td>EDAS6990</td>
<td>Individual Study In Educational Administration - Master's</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Open to graduate students who wish to pursue individual study on professional problems in EDAS under the direction of an EDAS faculty member.</td>
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</tr>
<tr>
<td>EDAS7920</td>
<td>Specialist Project In Educational Administration</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Open to graduate students to fulfill the completion of a research project in fulfilling the research requirements of the specialist program.</td>
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<tr>
<td>EDAS7950</td>
<td>Workshop In Educational Administration</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Topical workshops, based on practical application of skills and knowledge, are intended for in-service educational professionals. Credit may be applied to doctoral degrees upon approval of the committee.</td>
<td></td>
</tr>
</tbody>
</table>
**EDAS7980  Special Topics In Educational Administration**  
Credit Hours: 3  
Courses, based on issues, topics and concerns of educational administrators for the real world. Credit may be applied to degree programs upon approval of the adviser or committee.

**EDAS7990  Independent Study In Education Administration**  
Credit Hours: 1-3  
Individual study on professional problems in EDAS under the direction of a EDAS faculty member.

**EDAS8000  The Individual In Organizations**  
Credit Hours: 3  
An overview of the individual in educational administration, i.e., as strategic leader, organizational leader, instructional leader and policy/community leader. Opportunities for personal assessment are provided as students explore critical educational i

**EDAS8010  Supervision For Improved Instruction**  
Credit Hours: 3  
An examination of those principles of supervision which promote improved instruction. Emphasis is on teacher performance evaluation, curriculum management and strategies for staff development to improve staff performance.

**EDAS8020  Instructional Leadership**  
Credit Hours: 3  
An in-depth analysis of instructional leadership to improve teacher classroom performance. Attention will focus on instructional analysis, strategies for providing feedback and writing professional growth plans.

**EDAS8030  Developing Effective Learning Environments**  
Credit Hours: 3  
An exploration of group dynamics/processes. Development of effective action plans to improve school climate/culture and the learning environment is explored using problem-based learning.

**EDAS8110  Legal Aspects Of School Administration**  
Credit Hours: 3  
This course provides students an opportunity to analyze major topics and issues through which law influences education. Participants will examine the basic legal structure for education.
EDAS8150  The Administrative Experience  
A study of administrative leadership for modern schools. Emphasis is on blending current theory and practice and examining the interaction among the organization and the internal and external environment. 

EDAS8190  Integrated Experiences In Education Administration  
Working in a guided reflective practice environment, the student will apply knowledge gained in previous coursework to working in school building operations. 

EDAS8200  Continuous Improvement Of Schools  
Course addresses current Pre K-16 national and regional reform agendas, relating them to systemic changes in policies, governance and articulation of learner outcomes in local settings. 

EDAS8210  Leadership In Diverse Settings  
Issues of multicultural, cross-cultural, race, gender, ethnicity, inter-agency cooperation in school settings are examined in diverse settings - urban, suburban and rural, noting problems, concerns and common issues for leaders. 

EDAS8220  Administration Of Special Programs  
This course examines the administration of special programs that operate at the district and school level. These include special education, Chapter I, vocational education, guidance and athletic programs. 

EDAS8230  Community And Schools  
The unique role of school systems in the democratic social structure is examined through a theoretical critique of strategies that increase citizen involvement in and build support for schools. 

EDAS8240  Developing Learning Organizations In Educational Settings  
Course introduces the theories, techniques and practices of planned organizational learning. Students examine the philosophical, theoretical and practical differences of organizational development as interventionist, consultative and collaborative process.
EDAS8300  Integrate Experiences: Policies In Action  
This course analyses policies employed by schools and school districts in providing for education of students and services to the school community. On-site fieldwork is required.

EDAS8310  School District Leadership  
Analysis of duties, roles and responsibilities of local school district leadership. Specific competencies of building school support, planning, curriculum development, personnel, legal, financial and planning are covered.

EDAS8320  School Business Management  
The purpose of the course is to involve students in an analysis of the role and functions of school business management. Participants will analyze data in each topical area of school business management.

EDAS8330  Collective Bargaining And Dispute Resolution  
The purpose of the course is to examine the issues that arise before, during and after the collective bargaining process in the public sector, including resolving labor disputes and grievances.

EDAS8350  Computers In Educational Administration Decision Making  
This course allows the development for increased decision making based on local, state and national retrievable data concerning learning, achievement, efficiency and effectiveness of resource allocations.

EDAS8360  Personnel Management And Contract Administration In Education  
Course provides insight into the purposes, policies and processes of personnel administration and contract administration in public education, including recruitment, hiring, induction, evaluation, compensation and development.

EDAS8380  Planning Educational Facilities For Learning  
This course examines the issues surrounding planning, building and maintaining educational facilities appropriate for maximizing learning. Included is an examination of legal, health and safety requirements.
EDAS8420  Micropolitics Of School Communities  Credit Hours:  3
Course focus is on the day to day politics of school work that increase the complexities of educating. Using case studies and problem-based learning, students will practice skills that support democratic practices in school communities.

EDAS8430  Legal Aspects Of Educational Administration  Credit Hours:  3
This course provides students a background in legislation and court decisions that affect the administration of public schools. Students will investigate legal problem areas in schools.

EDAS8440  Equity Issues In Educational Finance And Economics  Credit Hours:  3
Analysis of educational finance and economic issues pertinent to school districts. Analysis of various funding models at the local, state and national level are studied employing various measures of equity.

EDAS8600  Leadership And Organizational Theory  Credit Hours:  3
An analysis of leadership and organizational theory as influences on current thinking about and approaches to educational administration. Emphasis is on understanding dominant themes that impact administrative theory.

EDAS8610  Organizational Behavior  Credit Hours:  3
This course integrates the educational and management theories and knowledge bases on leadership, power, motivation and change to understand the internal and external dynamics of people in educational organizations.

EDAS8620  Politics And Policy Analysis And Development  Credit Hours:  3
This course examines the issues involved in policy formation and analysis along with the political process of public education. Local, intermediate, state and federal levels are considered.

EDAS8640  Leading Systems Change  Credit Hours:  3
Course explores processes and practices used by educators to redesign preK-12 educational systems to improve outcomes for students. Content examines processes of moving espoused organizational values to actionable knowledge. Organizational Development re
### EDAS8650 Interdisciplinary Perspectives In Educational Administration  
**Credit Hours:** 3  
Seminar focused on interdisciplinary examination of critical issues in educational administration. Multiple theoretical lenses from sociology, political science, economics and science are used to address educational issues.

### EDAS8660 Critical Analysis Of Inquiry In Schools  
**Credit Hours:** 3  
Addresses the knowledge base school leaders must have to evaluate, use and initiate educational research in school settings. Students use action research to monitor implementation of researched ideas in schools. Quant. I and/or Qual. I (E) recommended.

### EDAS8930 Doctoral Seminar In Educational Administration And Supervision  
**Credit Hours:** 3  
The course examines research findings and research methodology in Educational Administration and Supervision as they are pertinent to development of dissertation proposals. Dissertation proposal development is encouraged.

### EDAS8940 Educational Administration Internship  
**Credit Hours:** 3  
An advanced field/seminar experience for doctoral students with fieldwork at the school system level. Fieldwork employs application of graduate coursework under supervision by the school system and the university.

### EDAS8960 Doctoral Dissertation In Educational Administration And Supervision  
**Credit Hours:** 1-12  
Production of an original, scholarly product in the area Educational Administration and Supervision. Dissertation credit may total not less than 12 semester hours.

### EDP1550 Adaptive Learning In College  
**Credit Hours:** 3  
Examines a variety of cognitive, affective and social factors associated with academic performance in college. Major emphasis is placed on applications to learning and college success.

### EDP3110 Learning And Individual Differences  
**Credit Hours:** 3  
Focuses on selected research findings and theoretical principles on learning and individual differences. Considers relationships of this body of information to learning and performance in a variety of contexts.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>EDP3120</td>
<td>Psychology Of Coping And Adaptation</td>
<td>3</td>
<td>Reviews and analyzes principles, research findings, coping models, as well as personal and situational factors associated with coping and adaptational processes in a variety of life circumstances.</td>
</tr>
<tr>
<td>EDP3200</td>
<td>Applied Psychology For Teachers</td>
<td>3</td>
<td>Examination of the ways in which psychological principles can be applied to the planning and implementation of meaningful instruction in elementary and secondary classrooms.</td>
</tr>
<tr>
<td>EDP3210</td>
<td>Child Development For Early Childhood Educators</td>
<td>3</td>
<td>Students in early childhood education will be introduced to emotional, social and cognitive factors in child development (birth to age eight) and examine how teachers can create optimal environments for students.</td>
</tr>
<tr>
<td>EDP3230</td>
<td>Human Development For P-12 Educators</td>
<td>3</td>
<td>This course will examine concepts in the physical, cognitive, social, emotional and personality development of children and adolescents. It will provide a necessary background for future teachers to deal effectively with children and youth and to better u</td>
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<td>Prerequisites: EDP 3200 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>EDP3240</td>
<td>Child And Adolescent Development For Middle Grades Educators</td>
<td>3</td>
<td>Students will consider the ways in which an understanding of development can be used to guide teacher behavior. Biological, social and psychological factors will be considered.</td>
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<td>Prerequisites: UPDV FOR MIN. SCORE OF 1</td>
</tr>
<tr>
<td>EDP3250</td>
<td>Adolescent Development And Learning</td>
<td>3</td>
<td>The purpose of this course is to provide pre-service teachers with an understanding of the psychological principles of adolescent development and learning as well as the application of these principles to classroom instruction, assessment, and management.</td>
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<td>Prerequisites: UPDV FOR MIN. SCORE OF 1</td>
</tr>
<tr>
<td>EDP3280</td>
<td>Foundations Of Teaching And Learning</td>
<td>3</td>
<td>This course will focus on major conceptions of learning as applied to education, including basic principles of conditioning, information processing and social learning. Concepts such as designing instructional events, classroom management, student assessments</td>
</tr>
</tbody>
</table>
EDP3290  Life Span Development  
This course will examine concepts delineating the physical (including genetic influences), cognitive, social and personality development across the life span. The course is designed to provide a necessary background in the concepts of development as they

EDP4120  Alternative Approaches To Discipline  
Reviews a variety of models, constructs and methodologies for addressing behavior and discipline problems, especially within school and family settings. Emphases are placed on individual and group approaches to discipline.

EDP4210  Child Behavior And Development  
Examines the physical, cognitive, social, emotional and personality development of children. Provides helping professionals with background to identify and solve problems related to child growth and development.

EDP4220  Adolescent Behavior And Development  
Examines the physical, cognitive, social, emotional and personality development of adolescents. Provides helping professionals with background to identify and solve problems related to adolescent growth and development.

EDP4230  Adult Development  
An overview of life-span development analyzing cognitive, physical, personality and social development from early adulthood through the later years.

EDP4330  Behavior Management  
Theoretical and practical study of behavioral and cognitive approaches to behavior management. Students will design, develop, implement and evaluate management plans for themselves and others.

EDP4990  Independent Study In Educational Psychology  
Directed study of a current topic in educational psychology. The student meets with the instructor at arranged intervals without formal classes.
EDP5110 Basic Educational Psychology
Credit Hours: 3
A graduate level introduction to the field of educational psychology. Instruction will cover fundamentals of learning, motivation, cognition, individual differences and instructional applications as well as a research-oriented approach to answering scientific questions.

EDP5120 Alternative Approaches To Discipline
Credit Hours: 3
Reviews a variety of models, constructs and methodologies for addressing behavior and discipline problems, especially within school and family settings. Emphases are placed on individual and group approaches to discipline.

EDP5210 Child Behavior And Development
Credit Hours: 3
Current theory and research on physical, cognitive, social, emotional and personality development are examined and used as the basis for identifying and solving problems related to child growth and development.

EDP5220 Adolescent Behavior And Development
Credit Hours: 3
Current theory and research on physical, cognitive, social, emotional and personality development are examined and used as the basis for identifying and solving problems related to adolescent growth and development.

EDP5230 Adult Development
Credit Hours: 3
Emphasizes classical and modern theories of adulthood from a critical perspective, as well as applications of research on cognitive, physical, personality and social development from early adulthood through old age.

EDP5310 Issues And Innovations In Learning And Instruction
Credit Hours: 3
Reviews emergent theory, principles and research findings on cognition and learning and applies these concepts to developing instructional experiences and conditions for optimizing classroom learning and performance.

EDP5320 Instructional Psychology
Credit Hours: 3
Theory and research in psychology that contributes to effective instruction. Topics include varieties and conditions of learning, information processing, learning analysis, constructivism, mastery learning, cooperative learning, norm & criterion-reference.
EDP5330  Behavior Management  Credit Hours: 3
Theory and research related to behavioral and cognitive approaches to behavior management. Students will carry out research-based behavior management projects requiring behavioral analyses, observation, program design, development and evaluation.

EDP5950  Workshop In Educational Psychology  Credit Hours: 3
Each workshop is developed around a topic of interest and concern to in-service teachers and other educational personnel. Practical application of workshop topics will be emphasized.

EDP6130  Human Coping In Adulthood  Credit Hours: 3
Considers models, research methodologies and constructs on coping in relation to a range of circumstances during the adult years. Emphasis is placed on coping behavior within an ecological context.

EDP6140  Motivation Theory And Application  Credit Hours: 3
Graduate-level study of conceptions of motivation in various settings. Emphasis is on understanding major concepts and principles, as well on application to such settings as classroom, counseling and industry.

Prerequisites: EDP 5110 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 5220 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 5230 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 7110 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 72

EDP6150  CULTURAL PERSPECTIVES IN LEARNING AND DEVELOPMENT  Credit Hours: 3
This course aims to develop a broader understanding of the role of culture in psychological processes and the implications of such psychological understanding for a culturally diverse society.

EDP6190  Seminar In Educational Psychology  Credit Hours: 3
The collaborative study of a specific topic in educational psychology by a group of advanced students under the direction of one or more professors.

EDP6240  Theories Of Development  Credit Hours: 3
Analysis and evaluation of theories of development with emphasis on the philosophical and psychological evolutionary history of the theories and their usefulness for individuals in the helping professions.

Prerequisites: EDP 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 5220 FOR LEVEL GR WITH MIN. GRADE OF D-
EDP6250  Social Development  Credit Hours:  3
Critical examination of theory and research on social behaviors such as attachment, aggression and prosocial behavior, including their causes, how they affect the person and how they change with age.
Prerequisites: EDP 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 5220 FOR LEVEL GR WITH MIN. GRADE OF D-

EDP6260  Research Methods In Child And Adolescent Development  Credit Hours:  3
Builds upon basic understanding of development through direct experiences in child study. This course provides individual/small group experiences in the design, implementation and written/oral presentation of original research.
Prerequisites: EDP 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 5220 FOR LEVEL GR WITH MIN. GRADE OF D-

EDP6270  Parenting: Theory And Research  Credit Hours:  3
Analysis and evaluation of the research on parenting across a variety of sociocultural contexts.
Prerequisites: EDP 5320 FOR LEVEL GR WITH MIN. GRADE OF D-

EDP6340  Theories Of Learning  Credit Hours:  3
Intensive inquiry into the study of learning with particular emphasis on more recent theories. Theory application in a wide variety of settings will also be stressed.

EDP6350  Advanced Topics In Cognition And Instruction  Credit Hours:  3
Theory and research on cognition related to learning/instruction, to include study of expertise, knowledge learned from experience, analysis of ill-structured domains, tacit knowledge, and knowledge representation.
Prerequisites: (EDP 5110 FOR LEVEL GR WITH MIN. GRADE OF D- AND EDP 5320 FOR LEVEL GR WITH MIN. GRADE OF D-) OR (EDP 7110 FOR LEVEL GR WITH MIN. GRADE OF D- AND EDP 7320 FOR LEVEL GR WITH MIN. GRADE OF D-)

EDP6360  Thinking And Reasoning In School Contexts  Credit Hours:  3
Analysis of theory and research about thinking and reasoning in school subjects and school learning.
Prerequisites: EDP 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 5220 FOR LEVEL GR WITH MIN. GRADE OF D-

EDP6960  Master’s Thesis In Educational Psychology  Credit Hours:  1-3
A formal, independent study culminating in a written discourse that advances our understanding of educational psychology.
EDP6980  Master’s Project In Educational Psychology  Credit Hours:  1-3
A formal, independent project applying principles of educational psychology to solve a particular problem and culminating in a written discourse.

EDP6990  Independent Study In Educational Psychology  Credit Hours:  1-3
Directed study of a current topic in educational psychology. The student meets with the instructor at arranged intervals without formal classes.

EDP7110  Basic Educational Psychology  Credit Hours:  3
A graduate level introduction to the field of educational psychology. Instruction will cover fundamentals of learning, motivation, cognition, individual differences and instructional applications as well as a research-oriented approach to answering scien

EDP7230  Adult Development  Credit Hours:  3
Emphasizes classical and modern theories of adulthood from a critical perspective, as well as applications of research on cognitive, physical, personality and social development from early adulthood through old age.

EDP7310  Issues And Innovations In Learning And Instruction  Credit Hours:  3
Reviews emergent theory, principles and research findings on cognition and learning and applies these concepts to developing instructional experiences and conditions for optimizing classroom learning and performance.

EDP7320  Instructional Psychology  Credit Hours:  3
Theory and research in psychology that contributes to effective instruction. Topics include varieties and conditions of learning, information processing, learning analysis, constructivism, mastery learning, cooperative learning, norm & criterion-reference

EDP7330  Behavior Management  Credit Hours:  3
Theory and research related to behavioral and cognitive approaches to behavior management. Students will carry out research-based behavior management projects requiring behavioral analyses, observation, program design, development and evaluation.
**EDP7950 Workshop In Educational Psychology**  
Credit Hours: 3  
Each workshop is developed around a topic of interest and concern to in-service teachers and other educational personnel. Practical application of workshop topics will be emphasized.

**EDP8130 Human Coping In Adulthood**  
Credit Hours: 3  
Considers models, research methodologies and constructs on coping in relation to a range of circumstances during the adult years. Emphasis is placed on coping behavior within an ecological context.

**EDP8140 Motivation Theory And Application**  
Credit Hours: 3  
Graduate-level study of conceptions of motivation in various settings. Emphasis is on understanding major concepts and principles, as well on application to such settings as classroom, counseling and industry.

Prerequisites: EDP 5110 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 5220 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 5230 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 7110 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 72

**EDP8150 CULTURAL PERSPECTIVES IN LEARNING AND DEVELOPMENT**  
Credit Hours: 3  
This course aims to develop a broader understanding of the role of culture in psychological processes and the implications of such psychological understanding for a culturally diverse society.

**EDP8180 Interdisciplinary Seminar In Foundations Of Education**  
Credit Hours: 1  
The proseminar will enable doctoral students to improve their understanding of the research process. Students will learn to ask research questions, choose alternative methodologies and interpret the validity of conclusions.

**EDP8190 Seminar In Educational Psychology**  
Credit Hours: 3  
The collaborative study of a specific topic in educational psychology by a group of advanced students under the direction of one or more professors.

**EDP8240 Theories Of Development**  
Credit Hours: 3  
Analysis and evaluation of theories of development with emphasis on the philosophical and psychological evolutionary history of the theories and their usefulness for individuals in the helping professions.

Prerequisites: EDP 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 5220 FOR LEVEL GR WITH MIN. GRADE OF D-
EDP8250  Social Development  Credit Hours:  3
Critical examination of theory and research on social behaviors such as attachment, aggression and prosocial behavior, including their causes, how they affect the person and how they change with age.

Prerequisites: EDP 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 5220 FOR LEVEL GR WITH MIN. GRADE OF D-

EDP8260  Research Methods In Child And Adolescent Development  Credit Hours:  3
Builds upon basic understanding of development through direct experiences in child study. This course provides individual/small group experiences in the design, implementation and written/oral presentation of original research.

Prerequisites: EDP 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 5220 FOR LEVEL GR WITH MIN. GRADE OF D-

EDP8270  Parenting: Theory And Research  Credit Hours:  3
Analysis and evaluation of the research on parenting across a variety of sociocultural contexts.

EDP8340  Theories Of Learning  Credit Hours:  3
Intensive inquiry into the study of learning with particular emphasis on more recent theories. Theory application in a wide variety of settings will also be stressed.

EDP8350  Advanced Topics In Cognition And Instruction  Credit Hours:  3
Theory and research on cognition related to learning/instruction, to include study of expertise, knowledge learned from experience, analysis of ill-structured domains, tacit knowledge, and knowledge representation.

Prerequisites: (EDP 5110 FOR LEVEL GR WITH MIN. GRADE OF D- AND EDP 5320 FOR LEVEL GR WITH MIN. GRADE OF D-) OR (EDP 7110 FOR LEVEL GR WITH MIN. GRADE OF D- AND EDP 7320 FOR LEVEL GR WITH MIN. GRADE OF D-)

EDP8360  Thinking And Reasoning In School Contexts  Credit Hours:  3
Analysis of theory and research about thinking and reasoning in school subjects and school learning.

Prerequisites: EDP 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR EDP 5220 FOR LEVEL GR WITH MIN. GRADE OF D-

EDP8960  Dissertation Research In Educational Psychology  Credit Hours:  1-12
A formal, independent study culminating in a written discourse that advances our understanding of educational psychology.
Course Descriptions 2009-2010

EDP8990  Independent Study In Educational Psychology  Credit Hours:  1-6
Directed study of a current topic in educational psychology. The student meets with the instructor at arranged intervals without formal classes.

EDU1000  Orientation To Education  Credit Hours:  1
Academic and student development course offering an introduction to College and University community. Offers strategies for successful transition to University environment by examining University resources, procedures, academic programs and advising.

EDU1700  Introduction to Education  Credit Hours:  3
Exploration of purposes of schools in society, focusing on professionalism, standards & accountability, education for democracy, legal & organizational issues, diversity, and curriculum & instruction, as well as knowledge and dispositions required to be a

EECS1000  Orientation To Eecs  Credit Hours:  1
Orientation to the facilities and procedures available to the student in the University, college and department. Introduction to the fields of Electrical Engineering and Computer Science and Engineering; group project design experience.

EECS1010  ELECTRICAL ENGINEERING AND COMPUTER SCIENCE FIRST YEAR DESIGN  Credit Hours:  3
Orientation to the University, college and departmental facilities, procedures and methodologies available to the student for the academic journey. Introduction to engineering design to EECS freshmen with emphasis on a semester long team-based design pro

EECS1020  Introduction To Modern Computing  Credit Hours:  3
This course provides an introduction to various fundamental areas in Computer Science: hardware, software, computer programming, communications, application programs, theoretical limitations of computers and artificial intelligence. The course features a

EECS1050  Introduction To Computing In C/C++  Credit Hours:  2
Covers the concept and properties of an algorithm, analysis and decomposition of computational problems, use of modern programming practices and application of the C/C++ language to problem solving.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EECS1100</td>
<td>Digital Logic Design</td>
<td>4</td>
</tr>
<tr>
<td>EECS1530</td>
<td>Introduction To Programming</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Covers the concept and properties of an algorithm, analysis and decomposition of computational problems, use of modern programming practices. Introduction to arrays and classes. Uses the C++ language.</td>
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<tr>
<td>EECS1560</td>
<td>Introduction To Object Oriented Programming</td>
<td>3</td>
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<tr>
<td></td>
<td>Introduces the basics of programing using the Java language. Covers number types, objects, methods, control structures, vectors, files, and inheritance. Utilizes the Java platform to develop GUI interfaces.</td>
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<tr>
<td>EECS1570</td>
<td>Linear Data Structures</td>
<td>3</td>
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<td></td>
<td>This course looks at stacks, queues, and lists as well as the order of algorithms used to access and modify these structures. In addition recursion, hashing, sorting, and set representation are examined in depth. Prerequisites:EECS 1560 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
<td></td>
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<tr>
<td>EECS1580</td>
<td>Nonlinear Data Structures</td>
<td>3</td>
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<td></td>
<td>The data structures introduced in EECS 1570 are extended to include trees (binary, balanced, and n-ary), graphs, and advanced sorting techniques. In addition, the C++ language is used as the main vehicle and is introduced in the course. Students are expe Prerequisites:EECS 1570 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>EECS1590</td>
<td>Discrete Structures</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>An introduction to the discrete structures used in computer science to develop software including proof techniques, Boolean logic, graphs, trees, recurrence relations and functions. Prerequisites:PHIL 1010 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
<td></td>
</tr>
<tr>
<td>EECS2000</td>
<td>Eecs Professional Development</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Preparation for entry to the professions of Electrical Engineering and Computer Science and Engineering, including ethics and social responsibilities, employment practices, continuing education and professional registration. One hour lecture.</td>
<td></td>
</tr>
</tbody>
</table>
EECS2100  Computer Organization And Assembly Language  Credit Hours: 4
Design of CPU, memory, I/O and arithmetic units. Assembly language programming: symbolic coding, macros and program segmentation. Use of interactive debuggers, utility programs and system I/O facilities.

Prerequisites: (EECS 1100 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 1530 FOR LEVEL UG WITH MIN. GRADE OF D-) OR EECS 1560 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS2300  Electric Circuits  Credit Hours: 4
An introduction to electrical circuit components and laws, including ideal op-amps, DC circuit analysis, AC circuit analysis, transient analysis of RL and RC circuits and computer-aided circuit analysis.

Prerequisites: PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

EECS2340  Electric Circuits For Nonmajors  Credit Hours: 3
For students not majoring in EECS. An introduction to electrical circuit components and laws, resistive circuit analysis, AC circuit analysis, phasers, three-phase circuits and computer-aided circuit analysis.

Prerequisites: PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS2550  Operating Systems And Systems Programming  Credit Hours: 3
Examines the external and internal characteristics of computer operating systems and related software. Details of at least one operating system and comparison with other operating systems. An introduction to systems level programming.

Prerequisites: (EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 1530 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 1580 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS3100  Microsystems Design  Credit Hours: 4
Microprocessor systems design: basic computer system, CPU, embedded assembly programming, memory and peripheral interfaces, I/O techniques, interrupt structures, DMA, memory management, hierarchies and caches.

Prerequisites: (EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3400 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS3150  Data Communications  Credit Hours: 3
Analog and digital data transmission, transmission media, Modulation techniques. Data encoding, asynchronous and synchronous transmissions, USART, RS232-C, RS-449 standards. Data link configuration and control, error control, multiplexing and demultiplexing.

Prerequisites: (EECS 1100 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3400 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS3200  Signals And Systems  Credit Hours: 4

Prerequisites: (EECS 1530 FOR LEVEL UG WITH MIN. GRADE OF D- OR EECS 1560 FOR LEVEL UG WITH MIN. GRADE OF D-) AND MATH 2890 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 2300 FOR LEVEL UG WITH MIN. GRADE OF D-)

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EECS3300  Probabilistic Methods In Engineering  Credit Hours: 3
Techniques for modeling and analysis of random phenomena in EECS, including communication, control and computer systems. Distribution, density and characteristic functions. Computer generation. Functions of random variables.
Prerequisites: EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS3400  Electronics I  Credit Hours: 4
Large-signal and incremental characteristics of the pn diode, BJT, MOSFET and JFET. Large- signal analysis and computer simulation of devices and digital circuits. Logic gate implementation. Laboratory experiments and projects.
Prerequisites: EECS 2300 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS3420  Electronics II  Credit Hours: 3
Analog transistor, diode and integrated circuit analysis and design. Incremental analysis techniques, frequency response and feedback techniques.
Prerequisites: (EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3400 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS3440  Electronics Laboratory  Credit Hours: 1
Laboratory experiments and projects in the testing and design of analog and mixed-signal electronic circuits.
Prerequisites: EECS 3420 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS3450  Electrical And Electronic Devices  Credit Hours: 3
For students not majoring in EECS. An introduction to electrical engineering devices and techniques with an emphasis on applications. Topics include solid-state devices, amplifiers, digital logic circuits, transformers and AC and DC machines.
Prerequisites: EECS 2340 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS3460  Electrical Energy Conversion  Credit Hours: 3
Traditional and renewable electrical energy sources, principles of electromechanical energy conversion, magnetic circuits and transformers, steady state performance of synchronous machines, dc machines, single phase and three phase induction motors.
Prerequisites: EECS 3700 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

EECS3480  Energy Conversion Laboratory  Credit Hours: 1
Laboratory studies of power transformers, synchronous machines, DC machines, single and three phase induction motors.
Prerequisites: EECS 3460 FOR LEVEL UG WITH MIN. GRADE OF D-
EECS3500  FORMAL LANGUAGES AND AUTOMATA  Credit Hours:  3
Examines formal models of computing (automata and grammars), computability and undecidability and language translation systems.

Prerequisites: EECS 1550 FOR LEVEL UG WITH MIN. GRADE OF D- OR EECS 1590 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS3550  Software Engineering  Credit Hours:  3
An introduction to the Software Engineering process. Includes: the software lifecycle, user requirements, human-computer interaction, functional specification, software design, software tools, testing and modification. A major term project is assigned.

Prerequisites: (EECS 1550 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (EECS 1580 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGL 2960 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS3700  Electromagnetics  Credit Hours:  4
Analysis of static electric and magnetic fields and steady currents, Faraday's law and time-varying fields. Maxwell's equations, propagation of electromagnetic waves in free space, lossy media and conductors. Transmission line theory.

Prerequisites: (MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 2300 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (MATH 3820 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS3940  Co-Op Experience  Credit Hours:  1
Approved co-op work experience. Course may be repeated.

Prerequisites: EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS3950  Co-Op Experience  Credit Hours:  1
Approved co-op work experience beyond third required co-op experience. Course may be repeated.

Prerequisites: EECS 3940 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS4000  Senior Design Project  Credit Hours:  4
Student teams select and research a design project and propose a design which is implemented, tested and evaluated. Progress reports, a written final report and an oral presentation are required. One hour lecture, one-hour recitation, 5 hours lab.

Prerequisites: EECS 3100 FOR LEVEL UG WITH MIN. GRADE OF D- OR EECS 3420 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS4110  Simulation Of Computer Systems  Credit Hours:  4

Prerequisites: (EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 4000 FOR LEVEL UG WITH MIN. GRADE OF D-)
**EECS4130  Digital Design**
Credit Hours: 4
The design of digital systems, design methodologies, hardware description language such as VHDL: behavioral-, data flow- and structural-level description of digital systems. Implementation technologies including PLDs and FPGAs.
Prerequisites: EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

**EECS4140  Fault-Tolerant Digital Systems**
Credit Hours: 3
Prerequisites: (EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 4000 FOR LEVEL UG WITH MIN. GRADE OF D-)

**EECS4150  Automotive Electronics**
Credit Hours: 4
Introduction to automotive electronic subsystems. Design of various electronic control units and in-vehicle networks. Laboratory multidisciplinary team projects in the design of control units, using state-of-the-art microcontrollers. Project presentation
Prerequisites: EECS 3100 FOR LEVEL UG WITH MIN. GRADE OF D- OR EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D- OR EECS 4170 FOR LEVEL UG WITH MIN. GRADE OF D-

**EECS4160  Advanced Microsystems Design**
Credit Hours: 4
Design of microcomputers at the system level. Buses for varying types of microcomputers in real-time and parallel processing. Software and hardware requirements for interprocessor communications. IEEE 488 and CAMAC standards buses.
Prerequisites: EECS 3100 FOR LEVEL UG WITH MIN. GRADE OF D-

**EECS4170  Real-Time Embedded Systems Design**
Credit Hours: 3
Programming applications in a real-time environment. C language is used to program various microcontroller functions, including timers, A/D and D/A converters, RS-232 communication and CAN networking.
Prerequisites: EECS 3100 FOR LEVEL UG WITH MIN. GRADE OF D-

**EECS4180  Computer Networks**
Credit Hours: 4
Prerequisites: EECS 3150 FOR LEVEL UG WITH MIN. GRADE OF D- OR EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

**EECS4200  Feedback Control Systems**
Credit Hours: 3
Feedback methods for the control of dynamic systems. Topics include characteristics and performance of feedback systems, state variable analysis, stability, root locus and frequency response methods and computer simulation.
Prerequisites: EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D- OR EECS 3220 FOR LEVEL UG WITH MIN. GRADE OF D-
EECS4220  Programmable Logic Controllers  Credit Hours:  3
An introduction to programmable logic controllers (PLCs), process control algorithms, interfacing of sensors and other I/O devices, simulation and networking.
Prerequisites:(EECS 1100 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS4240  Power Systems Operation  Credit Hours:  3
Single line diagrams and per unit calculations, network matrices and Y-bus, load flow techniques, large system loss formula, real and reactive power dispatch, power system relays and protection.
Prerequisites:EECS 3460 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS4250  Robotics  Credit Hours:  4
The concepts, theory and application of robotics. Topics include: arm geometry, kinematics and transformation matrices, motion kinematics, dynamics of industrial robots, trajectory planning and execution and control robotic systems.
Prerequisites:EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS4260  Control Systems Design  Credit Hours:  3
A general study of computer-aided design of control systems. Topics include: stability, compensation, pole placement, nonlinear systems and digital systems.
Prerequisites:EECS 4200 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS4290  Electrical Machines Modeling And Control  Credit Hours:  3
Coupled rotating coils, primitive machines, machine winding transformations, state space modeling of dc, synchronous and three phase induction machines. Control schemes for dc, synchronous and three phase induction machines.
Prerequisites:EECS 3460 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS4320  Industrial Imaging Systems  Credit Hours:  3
Systems (cameras and other components) and techniques for machine vision (surface imaging). Nondestructive evaluation (internal inspection) of industrial materials and products, using ultrasound and radiographic systems. Contemporary applications.
Prerequisites:(PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3400 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS4330  Image Analysis And Computer Vision  Credit Hours:  3
Imaging geometry, image filtering, segmentation techniques, image representation and description, stereo vision and depth measurements, texture analysis, dynamic vision and motion analysis, matching and recognition.
Prerequisites:EECS 3300 FOR LEVEL UG WITH MIN. GRADE OF D-
EECS4340  Imaging Architectures And Hardware  Credit Hours:  3
Video work station components and display hardware; pyramid, pipeline, cellular logic and artificial neural net architectures for vision and image processing; real-time imaging; systolic implementation of image processing algorithms; current advances.

Prerequisites: (EECS 3100 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 4330 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS4360  Communication Systems  Credit Hours:  3
Fourier transform applications in signal analysis and communication. Signals spectra, filtering, AM and FM modulation, noise and optimum receiver, sampling theorem, multiplexing, PCM, introduction to digital modulators and demodulators.

Prerequisites: EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS4370  Information Theory And Coding  Credit Hours:  3
Coding concepts, Huffman code, entropy analysis, channel and mutual information, channel capacity and Shannon's theorem, algebraic coding theory and application to blockcode and cyclic code, introduction to convolutional code.

Prerequisites: EECS 3300 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS4380  Digital Signal Processing  Credit Hours:  3
Discrete Fourier Transform (DFT), discrete convolution and correlation, Fast Fourier Transform (FFT) and its applications, design of IIR and FIR digital filters, multirate/channel digital systems, decimation and interpolation.

Prerequisites: EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS4390  Wireless And Mobile Networks  Credit Hours:  3
Mobile radio propagation; the cellular concept; multiple radio access; multiple division techniques; channel allocation; mobile communication systems; existing wireless systems; network protocols; AD HOC and sensor networks; wireless LANS and PANS; recent

Prerequisites: (EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3300 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 4000 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS4400  Solid State Electronics  Credit Hours:  3
A comprehensive treatment of the theory and operation of physical electronic devices emphasizing electrical transport in metals and semiconductors and various models of BJT's and FET's.

Prerequisites: (EECS 3400 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 3070 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS4410  Electro-Optics  Credit Hours:  3
Introduction to laser physics, optics, optical waveguides, optical communication systems and electro-optics. Design of light processing and communication systems will be considered with emphasis on optics and optical communication.

Prerequisites: EECS 3700 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
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<th>Credit Hours</th>
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<tr>
<td>EECS4420</td>
<td>Microwave Electronics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Analysis and design of active and passive microwave components and systems. Theory and design of transmission lines, solid state and electron beam devices will be considered.</td>
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<td>Prerequisites: (EECS 3700 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3420 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
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<tr>
<td>EECS4430</td>
<td>Microwave Laboratory</td>
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<td>Laboratory introduction to microwave and millimeter wave hardware and high frequency measurement techniques.</td>
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<td>Corequisite: EECS 4420</td>
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<tr>
<td>EECS4440</td>
<td>Antenna Theory And Design</td>
<td>3</td>
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<tr>
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<td>Introduction to antenna theory and design emphasizing engineering aspects of antenna systems. Dipole, loop and biconical antennas, arrays, broadband and aperture antennas will be considered.</td>
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<td>Prerequisites: EECS 3700 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>EECS4450</td>
<td>Electromagnetics Laboratory</td>
<td>2</td>
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<td>A general laboratory that provides experiences in several areas of electromagnetics and includes a special student project.</td>
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<td>Prerequisites: EECS 3700 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>EECS4460</td>
<td>Power System Analysis</td>
<td>3</td>
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<td>Power system symmetrical components, fault analysis, transient stability analysis, transmission system modeling, distribution networks.</td>
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<td>Prerequisites: EECS 3460 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>EECS4470</td>
<td>Electronic Design</td>
<td>3</td>
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<td>Principles and techniques of analog active circuit design. Selected design problems are given and circuits using standard parts are designed and laboratory tested. A design notebook is kept.</td>
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<td>Prerequisites: (EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3420 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
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<tr>
<td>EECS4480</td>
<td>Electronic Energy Processing I</td>
<td>3</td>
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<td></td>
<td>Prerequisites: (EECS 3400 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3460 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
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</tbody>
</table>
EECS4490  Electronic Energy Processing II  Credit Hours:  3
Resonant dc-de converters.  DC-AC inverters and harmonic analysis.  Variable-speed motor drives.  Laboratory design and analysis of various electronic energy processing circuits.

Prerequisites:EECS 4480 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS4500  Programming Language Paradigms  Credit Hours:  3
Fundamental concepts of modern programming languages.  Differences and similarities between procedural, functional, object-oriented and rule-based languages are examined as well as their impact on the programming process.

Prerequisites:(EECS 1550 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3500 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (EECS 1580 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3500 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS4510  Translation Systems  Credit Hours:  4
Design of translation systems including compilers and interpreters, grammars and parsing methods, error detection and correction schemes and optimization techniques.

Prerequisites:(EECS 3500 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 1550 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS4520  Advanced Systems Programming  Credit Hours:  4
Pertinent concepts of systems programming.  Topics covered include: synchronization, distributed programming models, kernel design, peripheral handling, file systems and security history and methods.

Prerequisites:EECS 2550 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS4530  Computer Graphics I  Credit Hours:  4
An introduction to typical computer graphics systems and their operation.  Interactive techniques will be introduced as well as representations and projections of three-dimensional images.  Exercises using graphics equipment are assigned.

Prerequisites:EECS 1050 FOR LEVEL UG WITH MIN. GRADE OF D- OR EECS 1530 FOR LEVEL UG WITH MIN. GRADE OF D- OR EECS 1560 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS4540  Computer Graphics II  Credit Hours:  4
Examines current topics related to realistic and representative 3D computer graphics.  Topics include curve and surface geometry, solid modeling, ray tracing, radiosity and real-time computer graphics.

Prerequisites:(EECS 1550 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 4530 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (EECS 1580 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 4530 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS4550  Creating Multimedia Software  Credit Hours:  4
An audio-visual experience in the design and production of multimedia products.  Investigates computer-human interfaces, performance measurement and analysis, storage/retrieval of data, compression/decompression techniques.

Prerequisites:(EECS 1550 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 2550 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (EECS 1580 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 2550 FOR LEVEL UG WITH MIN. GRADE OF D-)

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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EECS4560</td>
<td>Database Systems I</td>
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<tr>
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<td>The following topics are covered: relational database modeling, query languages, design issues and implementation issues of databases. An appropriate database language is introduced and used to demonstrate principles.</td>
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<td>Prerequisites: EECS 1550 FOR LEVEL UG WITH MIN. GRADE OF D- OR EECS 1580 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>EECS4570</td>
<td>Database Systems II</td>
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<td>The emphasis of this course is on database recovery techniques, integrity constraints and concurrency control. The similarities and differences between distributed, networked, client/server and object-oriented database systems are also investigated.</td>
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<td>Prerequisites: EECS 4560 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>EECS4610</td>
<td>Digital VLSI Design I: Basic Subsystems</td>
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<td>CMOS process technologies, CMOS logic families, custom and semi-custom design. Subsystem design of adders, counters and multipliers. System design methods and VLSI design tools.</td>
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<td>Prerequisites: EECS 3400 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>EECS4620</td>
<td>Digital VLSI Design II: Memory And Structured Logic</td>
<td>3</td>
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<td>Memory categories, functions, architectures, cells and peripheral circuitry in CMOS/BiCMOS. Overview and technology trends in SRAMs, DRAMs, EPROMs, EEPROMs, FPGAs...Class exercises in selected small system circuit and layout design.</td>
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<td>Prerequisites: EECS 4610 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>EECS4630</td>
<td>Physical Design Of VLSI Circuits</td>
<td>4</td>
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<td>VLSI design process automation and tools, mask level design, compaction, module placement, routing area partitioning, loose routing, channel routing and P/G and clock routing.</td>
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<td>Prerequisites: EECS 4610 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>EECS4710</td>
<td>Advanced Electro-Magnetics</td>
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<td>Advanced topics in electromagnetic wave propagation in metals and dielectric waveguides, free space propagation in lossless and lossy media and good conductors, antennas and wave scattering will be considered.</td>
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<td>Prerequisites: EECS 3700 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>EECS4740</td>
<td>Artificial Intelligence</td>
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<td>This course explores the topic of intelligent software agents with a emphasis on hands-on design of adaptive problem-solving agents for environments of increasing complexity ranging from single-agent computer games to complex real-world multi-agent environ</td>
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</tbody>
</table>
EECS4750  Machine Learning  
This course emphasizes learning algorithms and theory including concept, decision tree, neural network, computational, Bayesian, evolutionary, and reinforcement learning.

Prerequisites: (MIME 4000 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 2890 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS4760  Computer Security  
Survey of computer security concepts: ethics and responsibility, OS, vulnerabilities and intrusion detection, viruses and worms, defensive strategies including secret/public key cryptosystems, firewalls and decoys.

Prerequisites: EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 2550 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS4770  Computer Hacking and forensic Analysis  
Hacking ethics, beneficial vs. malicious hacking, unconventional (extreme) programming techniques, casing networks and operating systems, exposing system vulnerabilities through penetration, collecting and analyzing digital evidence, forensic tools, case

Prerequisites: EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS4780  Quantum Computing  
Fundamentals of the quantum computing paradigm, data representation, quantum gates, quantum algorithms utilizing entanglement, teleportation, and superdense coding. Applications to cryptography, searching and simulation.

EECS4810  Introduction To Nanotechnology  
An introductory treatment of the theory and operation of physical electronic devices, emphasizing electrical transport semiconductors and MOSFET's and application to nanotechnology.

Prerequisites: EECS 2300 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS4820  Nanotechnology And Microfabrication  
A comprehensive treatment of the theory and techniques associated with semiconductor nanotechnology and microfabrication of biomedical devices, sensors, MEMS, and Microsystems.

Prerequisites: EECS 3420 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS4980  Special Topics In Eecs  
Pilot offerings of new courses involving emerging topics of interest are introduced using this number. One credit per lecture/recitation hour and/or 2.5 lab hours per week.
Course Descriptions 2009-2010

EECS4990  Independent Study In Eecs  
Credit Hours: 1-4
Selected topics in electrical engineering or computer science and engineering. The instructor will specify the scope of the investigation and will meet regularly with the student(s). The study is expected to require an average of 3 hours student effort.

EECS5110  Simulation Of Computer Systems  
Credit Hours: 4
Prerequisites:(EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 4000 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS5130  Digital Design  
Credit Hours: 4
The design of digital systems, design methodologies, hardware description language such as VHDL, behavioral-, dataflow- and structural-level description of digital systems. Implementation technologies including PLDs and FPGAs.
Prerequisites:EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5140  Fault-Tolerant Digital Systems  
Credit Hours: 3
Faults testing in combinational and sequential circuits. Design techniques for fault tolerance in digital systems. Evaluation techniques. Fault masking and self checking systems.
Prerequisites:EECS 1100 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5150  Automotive Electronics  
Credit Hours: 4
Introduction of automotive electronics and its various subsystems. Sensors and actuators, design of engine control unit, body control unit and vehicle control unit. Display and multiplexing systems.
Prerequisites:(EECS 3100 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 4170 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS5160  Advanced Microcomputer Systems  
Credit Hours: 4
Design of microcomputers at the system level. Buses for varying types of microcomputers in real-time and parallel processing. Software and hardware requirements for interprocessor communications. IEEE 488 and CAMAC standards buses.
Prerequisites:EECS 3100 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5170  Real-Time Embedded Systems Design  
Credit Hours: 3
Programming applications in a real-time environment. Applications programs in a multitasking environment. Examples from process control, robotics, signal analysis and multiwindow software.
Prerequisites:(EECS 2550 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D-)
Course Descriptions 2009-2010

EECS5180  Computer Networks  Credit Hours:  4

EECS5220  Programmable Logic Controllers  Credit Hours:  3
Programmable Logic Controllers (PLCs), programming, sensors, process control algorithms, interfacing of sensors and other I/O devices, simulation and networking.
Prerequisites:(EECS 1100 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS5240  Power Systems Operation  Credit Hours:  3
Single Line Diagrams & Per Unit calculations, Network Matrices & Ybus for systems with uncoupled lines, Load Flow Techniques, Large system Loss Formula using Zbus, Real and Reactive Power Dispatch programming, Power systems relays & protection schemes.
Prerequisites:EECS 3460 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5250  Robotics  Credit Hours:  4
The concepts, theory and application of robotics. Topics include: arm geometry, kinematics and transformation matrices, motion kinematics, dynamics of industrial robots, trajectory planning and execution and control of robotic systems.
Prerequisites:EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5260  Control Systems Design  Credit Hours:  3
A general study of computer-aided design of control systems. Topics include: stability, compensation, pole placement, nonlinear systems and digital systems.
Prerequisites:EECS 4200 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5290  Electric Machines Modeling And Control  Credit Hours:  3
Coupled rotating coils, Primitive machines, machine winding transformations, State space modeling of dc, synchronous and 3-phase induction machines. Control schemes for dc motors, synchronous machines and 3-phase induction motors.
Prerequisites:EECS 3460 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5320  Industrial Imaging Systems  Credit Hours:  3
Systems (cameras and other components) and techniques for machine vision (surface imaging). Nondestructive evaluation (internal inspection) of industrial materials and products, using ultrasound and radiographic systems. Contemporary applications.
Prerequisites:(PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3400 FOR LEVEL UG WITH MIN. GRADE OF D-)
EECS5330  Image Analysis And Computer Vision  Credit Hours:  3
Imaging geometry, image filtering, segmentation techniques, image representation and description, stereovision and depth measurements, texture analysis, dynamic vision and motion analysis, matching and recognition.
Prerequisites:(EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3300 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS5340  Imaging Architectures And Hardware  Credit Hours:  3
Study of the hardware and parallel implementation of various image processing and vision algorithms. Topics include components of a video workstation; video display hardware; pyramid, pipeline, cellular logic and artificial neural net architectures for
Prerequisites:(EECS 3100 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 4330 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS5360  Communication Systems  Credit Hours:  3
Fourier transform applications in signal analysis and communication. Signals spectra, Filtering, AM and FM modulations, Noise and optimum receiver, Sampling theorem, Multiplexing, PCM Introduction to digital modulators and demodulators.
Prerequisites:EECS 3300 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5370  Information Theory And Coding  Credit Hours:  3
Coding concepts, Huffman code, Entropy analysis, Channel and mutual information, Channel capacity and Shannon's theorems, Algebraic coding theory and application to block code and cyclic code, Introduction to convolutional code.
Prerequisites:EECS 3300 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5380  Digital Signal Processing  Credit Hours:  3
Discrete Fourier Transform (DFT), Discrete convolution and correlation, Fast Fourier Transform (FFT) and its applications. Design of IIR and FIR digital filters, Multi-rate/channel digital systems, Decimation and Interpolation.
Prerequisites:EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5390  Wireless And Mobile Networks  Credit Hours:  3
Mobile radio propagation; traffic engineering; cellular concept; multiple radio access; multiple division techniques; channel allocation; mobile communication systems; existing wireless systems; network protocols; Ad Hoc and sensor networks; wireless LANS

EECS5400  Solid State Electronics  Credit Hours:  3
A comprehensive treatment of the theory and operation of physical electronic devices emphasizing electrical transport in metals and semiconductors and various models of BJT's and FET's.
Prerequisites:(EECS 3400 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 3070 FOR LEVEL UG WITH MIN. GRADE OF D-)
EECS5410  Electro-Optics  Credit Hours:  3
Laser physics, optics, optical waveguides, optical communication systems and electro-optics. Design of light processing and communication systems will be considered with emphasis on optics and optical communication.

Prerequisites: EECS 3700 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5420  Microwave Electronics  Credit Hours:  3
Analysis and design of active and passive microwave components and systems. Theory and design of transmission lines, solid state and electron beam devices.

Prerequisites: (EECS 3700 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3420 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS5430  Microwave Lab  Credit Hours:  1

EECS5440  Antenna Theory And Design  Credit Hours:  3
Introduction to antenna theory and design emphasizing engineering aspects of antenna systems. Dipole, loop and biconical antennas, arrays, broadband and aperture antennas will be considered.

Prerequisites: EECS 3700 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5460  Power Systems Analysis  Credit Hours:  3
Fault analysis, Transient Stability Analysis, Transmission System modeling, Distribution Networks.

Prerequisites: EECS 3460 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5470  Electronic Design  Credit Hours:  3
Principles and techniques of analog active circuit design. Selected design problems are given; working circuits using standard parts are designed and laboratory tested. A design notebook is kept.

Prerequisites: (EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3420 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS5480  Electronic Energy Processing I  Credit Hours:  3

Prerequisites: (EECS 3400 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3460 FOR LEVEL UG WITH MIN. GRADE OF D-)
EECS5490  Electronic Energy Processing II  Credit Hours: 3
Resonant dc-dc converters. DC-AC inverters and harmonic analysis. Variable-speed motor drives. Laboratory design and analysis of various electronic energy processing circuits.

Prerequisites: EECS 5480 FOR LEVEL GR WITH MIN. GRADE OF D-

EECS5500  Programming Language Paradigms  Credit Hours: 3
The course investigates the fundamentals of modern programming languages. Differences and similarities between procedural, functional, object-oriented and rule-based languages are examined along with their impact on the programming process.

Prerequisites: (EECS 1550 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3500 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS5510  Translation Systems  Credit Hours: 4
The course includes: the design of translation systems including compilers and interpreters, grammars and parsing methods, error detection and correction schemes and optimization techniques.

Prerequisites: (EECS 3500 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 1550 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS5520  Advanced Systems Programming  Credit Hours: 4
This course examines pertinent concepts of systems programming. Topics covered include: synchronization, distributed programming models, kernel design, peripheral handling, file systems and security history and methods.

Prerequisites: EECS 2550 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5530  Computer Graphics I  Credit Hours: 4
An introduction to typical computer graphics systems and their operation. Interactive techniques will be introduced as well as representations and projections of three-dimensional images. Exercises using graphics equipment are assigned.

Prerequisites: (EECS 1050 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 1500 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS5540  Computer Graphics II  Credit Hours: 4
Examines current topics related to realistic and representative 3D computer graphics. Topics include curve and surface geometry, solid modeling, raytracing, radiosity and real-time computer graphics.

Prerequisites: (EECS 4530 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 1550 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS5550  Creating Multimedia Software  Credit Hours: 4
An audio-visual experience in the design and production of multimedia products. Investigates computer-human interfaces, performance measurement and analysis, storage/retrieval of data and compression/decompression techniques.

Prerequisites: (EECS 2550 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 1550 FOR LEVEL UG WITH MIN. GRADE OF D-)
Course Descriptions 2009-2010

EECS5560 Database Systems I
The following topics are covered: relational database modeling, query languages, design issues and implementation issues of databases. An appropriate database language is introduced and used to demonstrate principles.

Prerequisites: EECS 1550 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5570 Database Systems II
The emphasis of this course is on database recovery techniques, integrity constraints and concurrency control. The similarities and differences between distributed, networked, client/server and object-oriented database systems are also investigated.

Prerequisites: EECS 5560 FOR LEVEL GR WITH MIN. GRADE OF D-

EECS5580 Survey Of Artificial Intelligence
This course covers, more in breadth than in depth, the areas that artificial intelligence currently encompasses. Topics examined: history, reasoning, search techniques, knowledge representation, uncertainty and learning.

Prerequisites: EECS 1550 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5610 Digital VLSI Design I: Basic Subsystems
CMOS process technologies. CMOS logic families. Custom and semicustom design. Subsystem design; adders, counters, multipliers. System design methods. VLSI design tools.

Prerequisites: EECS 3400 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5620 Digital VLSI Design II: Memory And Structured Logic
Memory categories, functions, architectures, cells and peripheral circuitry in CMOS/BiCMOS. Overview and technology trends in SRAMs, DRAMs, EPROMs, EEPROMs, FPGAs. Class exercises in selected small system circuit and layout design.

Prerequisites: EECS 5610 FOR LEVEL GR WITH MIN. GRADE OF D-

EECS5630 Physical Design Of VLSI Circuits

EECS5740 Artificial Intelligence
This course explores the topic of intelligent software agents with an emphasis on hands-on design of adaptive problem-solving agents for environments of increasing complexity ranging from single-agent computer games to complex real-world multi-agent environ...
EECS5750  Machine Learning  Credit Hours: 3
This course emphasizes learning algorithms and theory including concept, decision tree, neural network, computational, Bayesian, evolutionary, and reinforcement learning.
Prerequisites: MIME 4000 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 2890 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS5760  Computer Security  Credit Hours: 3
Survey of computer security concepts: ethics and responsibility, OS vulnerabilities and intrusion detection, viruses and worms, defensive strategies including secret/public key cryptosystems, firewalls and decoys.
Prerequisites: EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 2550 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5780  Quantum Computing  Credit Hours: 3
Fundamentals of the quantum computing paradigm, data representation, quantum gates, quantum algorithms utilizing entanglement, teleportation, and superdense coding. Application to cryptography, searching and simulation.
Prerequisites: EECS 1580 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 1590 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS5920  Projects  Credit Hours: 1-6
Independent research project with intensive investigation into an area of practical interest to the student and the instructor.

EECS5930  Electrical Engineering & Computer Science Seminar  Credit Hours: 1
All graduate students are expected to attend the seminars and to prepare a report summarizing their experiences, questions and the impact of the seminar series. Students will also present their thesis and dissertation results.

EECS6110  Advanced Computer Architecture  Credit Hours: 3
Architectural development in computer systems and scalability. Processors and arithmetic algorithms. Memory hierarchy, shared memory and cache architecture. Pipeline, superscaler and vector organization.
Prerequisites: EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS6120  Computer Systems Performance And Reliability  Credit Hours: 4
Prerequisites: (EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 4000 FOR LEVEL UG WITH MIN. GRADE OF D-)
Course Descriptions 2009-2010

EECS6130  Parallel Computing  Credit Hours: 4
Survey of computer architectures and languages that support parallelism. Analysis of algorithms for inherent parallelism. Issues surrounding the granularity of the parallelism. Mapping of parallel program structures to architectural topologies.
Prerequisites: EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS6140  Logic Synthesis And Optimization  Credit Hours: 3
Architectural synthesis, scheduling algorithms, resource sharing and binding, multiple-level combinational logic optimization and sequential logic optimization.
Prerequisites: EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS6150  Advanced Computer Networks  Credit Hours: 3
High speed LANs and MANs. Performance analysis of Ethernet, token ring, token bus, FDDI, FDDI-II and DQDB protocols. WANS and their routing protocols. Flow control techniques in WANS.
Prerequisites: EECS 4180 FOR LEVEL UG WITH MIN. GRADE OF D- OR EECS 5180 FOR LEVEL GR WITH MIN. GRADE OF D-

EECS6160  B-Isdn And Atm Networks  Credit Hours: 3
Prerequisites: EECS 4180 FOR LEVEL UG WITH MIN. GRADE OF D- OR EECS 5180 FOR LEVEL GR WITH MIN. GRADE OF D-

EECS6170  Petri Nets And Software Reliability  Credit Hours: 3
Prerequisites: (MIME 4000 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 1550 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS6200  Digital Control Systems  Credit Hours: 3
Analysis and design of digital control systems by classical and state methods. Topics include: stability, pole placement, polynomial manipulation, quadratic optimal control and introduction to digital control system implementation.
Prerequisites: EECS 4200 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS6210  Adaptive Control Systems  Credit Hours: 3
Schemes of adaptive control systems, MIT rule for Model Reference Adaptive Control, self Tuning regulator systems, Recursive Least Squares for system identification, Minimum Variance, PID and other controller design techniques for STR systems.
Prerequisites: EECS 6200 FOR LEVEL GR WITH MIN. GRADE OF D-
EECS6220  Nonlinear Control Systems  Credit Hours: 3

Prerequisites:(EECS 4200 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3300 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS6230  Optimal Control Theory  Credit Hours: 3
Optimization of dynamic systems by the calculus of variations and Pontryagin's Maximum Principle. Solution of optimal control problems using direct and indirect computational methods. Applications include constrained state and/or control parameters.

Prerequisites:EECS 4200 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS6240  Optimal Control II  Credit Hours: 3

EECS6300  Random Signals And Optimal Filters  Credit Hours: 3
Description and properties of random signals and their processing by optimal filters. Correlation and power spectra. GRP. Narrowband noise. Signal detection (matched filter) and estimation (Wiener and Kalman filters).

Prerequisites:(EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3300 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS6310  Digital Image Processing  Credit Hours: 3
Image digitization, image transforms, image enhancement, spatial and frequency domain filtering, image restoration techniques, inverse filtering, least square filtering, image interpolation and motion estimation, video filtering, superresolution.

Prerequisites:EECS 4380 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS6320  Data Compression For Multimedia Communication  Credit Hours: 3
Multimedia information representation, Huffman, run length and arithmetic coding, predictive, transform, pyramid coding; vector quantization and subband coding; wavelet-based coding, data packetization, error resilience coding, multimedia compression stand

EECS6340  Modern Communications Engineering I  Credit Hours: 3
Introduction to detection and estimation and applications to the bandpass signals, Bipary and M-ary digital modulation techniques, Error-control convolutional coding, Trellis Coded Modulation (TCM), Spread Spectrum (SS) communication techniques.

Prerequisites:EECS 4360 FOR LEVEL UG WITH MIN. GRADE OF D-
EECS6350  Modern Communications Engineering II  Credit Hours:  3
Digital transmission over Gaussian/non-Faussian channels, Satellite systems (GEO and LEO) and multiple accesses, Cellular and satellite communication network, Mobile/wireless Personal communication services (PCS) and its networking.

Prerequisites:EECS 6340 FOR LEVEL GR WITH MIN. GRADE OF D-

EECS6360  Knowledge Based Systems  Credit Hours:  3
Knowledge representation, dealing with uncertainty in knowledge-based systems. Machine learning techniques for rule extraction.

Prerequisites:EECS 4580 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS6370  Pattern Recognition And Neural Networks  Credit Hours:  3
Bayes decision theory, parameter estimation and supervised learning, nonparametric techniques, linear discriminant functions, pattern recognition with neural networks, feed-forward networks, Hopfield and Kohonen networks, unsupervised learning and cluster

Prerequisites:MATH 4680 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS6380  Advanced Computational Methods  Credit Hours:  3
MATLAB is used to solve mathematical engineering. Reviews fundamental structural code elements, followed by case study solutions that illustrate MATLAB functionality. Individual/group projects reinforce understanding principles and methodologies.

EECS6390  Modeling And Performance Evaluation Of Communication Networks  Credit Hours:  3

EECS6400  Electromagnetic Fields And Waves  Credit Hours:  3
An advanced study of electrostatic and magnetostatic fields and associated boundary-value problems. Time varying fields, wave propagation, wave scattering and electromagnetic radiation will be considered.

EECS6450  Dynamic Analysis Of Switching Converters  Credit Hours:  3
Cyclic steady-state analysis of the switching power converter using switching functions. Dynamic modeling of the switching converter as a discrete-time system and as a switching-period-averaged system.

Prerequisites:EECS 5490 FOR LEVEL GR WITH MIN. GRADE OF D-
Course Descriptions 2009-2010

**EECS6500  Computation, Computability And Complexity**  Credit Hours: 3
Covers: context-free languages and pushdown automata and their relationship with computer language implementation. Turing machines and U-recursive functions are examined. Uncomputability, the halting problem, computational complexity and NP-completeness

Prerequisites:EECS 3500 FOR LEVEL UG WITH MIN. GRADE OF D-

**EECS6520  Operating Systems Design**  Credit Hours: 4
This course investigates past and present trends in the design and implementation of operating systems. The unique requirements of real-time, highly reliable and distributed systems are addressed.

Prerequisites:EECS 2550 FOR LEVEL UG WITH MIN. GRADE OF D-

**EECS6530  Concurrent Programming**  Credit Hours: 3
This course studies theoretical and practical issues in concurrent programming. Topics include: mutual exclusion, the producer-consumer problem, the dining philosophers problem, semaphores, monitors, threads and the Ada model for multi-tasking.

Prerequisites:EECS 2550 FOR LEVEL UG WITH MIN. GRADE OF D-

**EECS6550  Software Specification And Design**  Credit Hours: 3
This course covers the software development steps of specification, requirements analysis and design in depth. Computer-human interfaces are also discussed.

**EECS6560  Topics In Software And Human Engineering**  Credit Hours: 3
This course investigates issues in software engineering and human aspects of software engineering. Topics user interfaces, programming practices, documentation, programming environments, applications, empirical methods and physical aspects.

Prerequisites:EECS 6550 FOR LEVEL GR WITH MIN. GRADE OF D-

**EECS6600  Analog Integrated Circuits**  Credit Hours: 3
Review of SPICE-based device models and analysis techniques. Bias and small signal design techniques in modern, low-voltage CMOS/BiCMOS. Op-amps, comparators and PLLs are emphasized; other topics as time permits.

**EECS6620  Digital Vlsi Cmos/Bicmos Circuit Design**  Credit Hours: 3
Design styles; static, dynamic, T-gate intensive; optimization of speed and robustness of selected CMOS/BiCMOS examples using SPICE-high fan in/fan out, I/O buffers, other Hi-C loads, sense amps, programming drivers, other examples as time permits.
Course Descriptions 2009-2010

**EECS6640**  Vlsi Channel Routing  

**EECS6660**  Field Programmable Gate Arrays  

Prerequisites:EECS 5610 FOR LEVEL GR WITH MIN. GRADE OF D-

**EECS6810**  Solid State Electronics With Bioengineering Applications  
A comprehensive treatment of the theory and operation of physical electronic devices emphasizing electrical transport in metals and semiconductors, various models of BJT's and FET's and applications to biochemical and biomechanical sensing will be conside

**EECS6820**  Microelectronic And Micromechanical Fabrication  
A comprehensive treatment of the theory, principles and techniques associated with microfabrication of electronic circuits and biosensors.

**EECS6900**  Independent Research  
Selected topics from current EE and CSE research with intensive investigation into recent literature in an area of mutual interest to the student and the instructor.

**EECS6960**  Master's Graduate Research And Thesis  
Graduate research towards the completion of a Master's degree.

**EECS6980**  Special Topics In Electrical Engineering & Computer Science  
Selected topics in the field of Electrical Engineering and Computer Science in areas of special interest to the class and the professor.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EECS6990</td>
<td>Independent Study</td>
<td>1-3</td>
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<tr>
<td></td>
<td>In depth study of a selected topic of mutual interest to the student and the instructor.</td>
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</tr>
<tr>
<td>EECS7110</td>
<td>Simulation of Computer Systems</td>
<td>4</td>
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<tr>
<td>EECS7130</td>
<td>Digital Design</td>
<td>4</td>
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<tr>
<td>EECS7140</td>
<td>Fault-Tolerant Digital Systems</td>
<td>3</td>
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<tr>
<td>EECS7150</td>
<td>Automotive Electronics</td>
<td>4</td>
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<tr>
<td>EECS7160</td>
<td>Adv Microcomputer Systems</td>
<td>4</td>
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<tr>
<td>EECS7170</td>
<td>Realtime Embedded System Dsgn</td>
<td>3</td>
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<td>Course Code</td>
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<tr>
<td>EECS7180</td>
<td>Computer Networks</td>
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<tr>
<td>EECS7220</td>
<td>Programmable Logic Controllers</td>
<td>3</td>
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<tr>
<td>EECS7240</td>
<td>Power Systems Operation</td>
<td>3</td>
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<tr>
<td>EECS7250</td>
<td>Robotics</td>
<td>4</td>
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<tr>
<td>EECS7260</td>
<td>Control Systems Design</td>
<td>3</td>
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<td></td>
<td>Prerequisites: EECS 4200 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>EECS7290</td>
<td>Elect Machn Modelng and Contrl</td>
<td>3</td>
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<tr>
<td>EECS7320</td>
<td>Industrial Imaging Systems</td>
<td>3</td>
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<td>Course Code</td>
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<td>EECS7330</td>
<td>Image Analysis and Comptr Visn</td>
<td>3</td>
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<tr>
<td>EECS7340</td>
<td>Imaging Architect and Hardware</td>
<td>3</td>
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<tr>
<td>EECS7360</td>
<td>Communication Systems</td>
<td>3</td>
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<td>EECS7370</td>
<td>Information Theory and Coding</td>
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<tr>
<td>EECS7380</td>
<td>Digital Signal Processing</td>
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<td>EECS7400</td>
<td>Solid State Electronics</td>
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<td>EECS7460</td>
<td>Power Systems Analysis</td>
<td>3</td>
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<td>Course Code</td>
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<td>EECS7470</td>
<td>Electronic Design</td>
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<tr>
<td>EECS7480</td>
<td>Electronic Energy Processing I</td>
<td>3</td>
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<tr>
<td>EECS7490</td>
<td>Electronic Energy Processing II</td>
<td>3</td>
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<tr>
<td>EECS7500</td>
<td>Programming Language Paradigms</td>
<td>3</td>
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<tr>
<td>EECS7510</td>
<td>Translation Systems</td>
<td>4</td>
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<tr>
<td>EECS7520</td>
<td>Advanced Systems Programming</td>
<td>4</td>
</tr>
<tr>
<td>EECS7530</td>
<td>Computer Graphics I</td>
<td>4</td>
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<tr>
<td>Course Code</td>
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<tr>
<td>EECS7540</td>
<td>Computer Graphics II</td>
<td>4</td>
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<tr>
<td>EECS7550</td>
<td>Creating Multimedia Software</td>
<td>4</td>
</tr>
<tr>
<td>EECS7560</td>
<td>Database Systems I</td>
<td>3</td>
</tr>
<tr>
<td>EECS7570</td>
<td>Database Systems II</td>
<td>3</td>
</tr>
<tr>
<td>EECS7580</td>
<td>Survey Artificial Intelligence</td>
<td>4</td>
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<tr>
<td>EECS7610</td>
<td>Digital VLSI Des I: Bsc Subsys</td>
<td>4</td>
</tr>
<tr>
<td>EECS7620</td>
<td>Dig VLSI Des II: Mem-Struc Lgc</td>
<td>3</td>
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</tbody>
</table>

Prerequisites: EECS 1550 FOR LEVEL UG WITH MIN. GRADE OF D-
EECS7630  Physical Dsgn-VLSI Circuits  Credit Hours:  4

EECS7920  Projects  Credit Hours:  1-6

EECS8110  Advanced Computer Architecture  Credit Hours:  3
Architectural development in computer systems and scalability. Processors and arithmetic algorithms. Memory hierarchy, shared memory and cache architecture. Pipeline, superscaler and vector organization.

Prerequisites:EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS8120  Computer Systems Performance And Reliability  Credit Hours:  4
Relative importance of performance and reliability. Fault-tolerance in computer systems. Techniques for reliability modeling and analysis. Markov and semi-Markov models. Queuing network models of computer systems. Performability modeling and analysis

Prerequisites:(EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 4000 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS8130  Parallel Computing  Credit Hours:  4
Survey of computer architectures and languages that support parallelism. Analysis of algorithms for inherent parallelism. Issues surrounding the granularity of the parallelism. Mapping of parallel program structures to architectural topologies.

Prerequisites:EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS8140  Logic Synthesis And Optimization  Credit Hours:  3
Architectural synthesis, scheduling algorithms, resource sharing and binding, multiple-level combinational logic optimization and sequential logic optimization.

Prerequisites:EECS 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS8150  Advanced Computer Networks  Credit Hours:  3
High speed LANs and MANs. Performance analysis of Ethernet, token ring, token bus, FDDI, FDDI-II and DQDB protocols. WANS and their routing protocols. Flow control techniques in WANs.

Prerequisites:EECS 4180 FOR LEVEL UG WITH MIN. GRADE OF D- OR EECS 5180 FOR LEVEL GR WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>EECS8160</td>
<td>B-Isdn And Atm Networks</td>
<td>3</td>
<td>ATM overview and B-ISDN networks. ATM adaptation layer and ATM LANs. Issues in traffic management. Admission control and policing. Flow control, priority control and self-learning strategies.</td>
<td>EECS 4180 FOR LEVEL UG WITH MIN. GRADE OF D- OR EECS 5180 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>EECS8200</td>
<td>Digital Control Systems</td>
<td>3</td>
<td>Analysis and design of digital control systems by classical and state methods. Topics include: stability, pole placement, polynomial manipulation, quadratic optimal control and introduction to digital control system implementation.</td>
<td>EECS 4200 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>EECS8210</td>
<td>Adaptive Control Systems</td>
<td>3</td>
<td>Schemes of adaptive control systems, MIT rule for Model Reference Adaptive Control, self Tuning regulator systems, Recursive Least Squares for system identification, Minimum Variance, PID and other controller design techniques for STR systems.</td>
<td>EECS 6200 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>EECS8220</td>
<td>Nonlinear Control Systems</td>
<td>3</td>
<td>The multiple input describing function. Random signals in nonlinear systems. The phase plane, equilibrium points, limit cycles and linearization methods. Liapunov stability theorems. Optimum switching systems. Selected applications.</td>
<td>(EECS 4200 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3300 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
</tr>
<tr>
<td>EECS8230</td>
<td>Optimal Control Theory</td>
<td>3</td>
<td>Optimization of dynamic systems by the calculus of variations and Pontryagin's Maximum Principle. Solution of optimal control problems using direct and indirect computational methods. Applications include constrained state and/or control parameters.</td>
<td>EECS 4200 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>EECS8240</td>
<td>Optimal Control II</td>
<td>3</td>
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</tbody>
</table>
EECS8300  Random Signals And Optimal Filters  Credit Hours:  3
Description and properties of random signals and their processing by optimal filters. Correlation and power spectra. GRP. Narrowband noise. Signal detection (matched filter) and estimation (Wiener and Kalman filters).
Prerequisites:(EECS 3200 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 3300 FOR LEVEL UG WITH MIN. GRADE OF D-)

EECS8310  Digital Image Processing  Credit Hours:  3
Image digitization, image transforms, image enhancement, spatial and frequency domain filtering, image restoration techniques, inverse filtering, least square filtering, image interpolation and motion estimation, video filtering, superresolution.
Prerequisites:EECS 4380 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS8320  Data Compression For Multimedia Communication  Credit Hours:  3
Multimedia information representation, Huffman, run length and arithmetic coding, predictive, transform, pyramid coding; vector quantization and subband coding; wavelet-based coding, data packetization, error resilience coding, multimedia compression stand

EECS8340  Modern Communications Engineering I  Credit Hours:  3
Introduction to detection and estimation and applications to the bandpass signals, Bially and M-ary digital modulation techniques, Error-control convolutional coding, Trellis Coded Modulation (TCM), Spread Spectrum (SS) communication techniques.
Prerequisites:EECS 4360 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS8350  Modern Communications Engineering II  Credit Hours:  3
Digital transmission over Gaussian/non-Faussian channels, Satellite systems (GEO and LEO) and multiple accesses, Cellular and satellite communication network, Mobile/wireless Personal communication services (PCS) and its networking.
Prerequisites:EECS 6340 FOR LEVEL GR WITH MIN. GRADE OF D-

EECS8360  Knowledge Based Systems  Credit Hours:  3
Knowledge representation, dealing with uncertainty in knowledge-based systems. Machine learning techniques for rule extraction.
Prerequisites:EECS 4580 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS8370  Pattern Recognition And Neural Networks  Credit Hours:  3
Bayes decision theory, parameter estimation and supervised learning, nonparametric techniques, linear discriminant functions, pattern recognition with neural networks, feed-forward networks, Hopfield and Kohonen networks, unsupervised learning and cluster
Prerequisites:MATH 4680 FOR LEVEL UG WITH MIN. GRADE OF D-
EECS8390  Modeling And Performance Evaluation Of Communication Networks  Credit Hours:  3

EECS8400  Electromagnetic Fields And Waves  Credit Hours:  3
An advanced study of electrostatic and magnetostatic fields and associated boundary-value problems. Time varying fields, wave propagation, wave scattering and electromagnetic radiation will be considered.

EECS8450  Dynamic Analysis Of Switching Converters  Credit Hours:  3
Cyclic steady-state analysis of the switching power converter using switching functions. Dynamic modeling of the switching converter as a discrete-time system and as a switching-period-averaged system.
Prerequisites:EECS 5490 FOR LEVEL GR WITH MIN. GRADE OF D-

EECS8500  Computation, Computability And Complexity  Credit Hours:  3
Covers: context-free languages and pushdown automata and their relationship with computer language implementation. Turing machines and U-recursive functions are examined. Uncomputability, the halting problem, computational complexity and NP-completeness
Prerequisites:EECS 3500 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS8520  Operating Systems Design  Credit Hours:  4
This course investigates past and present trends in the design and implementation of operating systems. The unique requirements of real-time, highly reliable and distributed systems are addressed.
Prerequisites:EECS 2550 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS8530  Concurrent Programming  Credit Hours:  3
This course studies theoretical and practical issues in concurrent programming. Topics include: mutual exclusion, the producer-consumer problem, the dining philosophers problem, semaphores, monitors, threads and the Ada model for multi-tasking.
Prerequisites:EECS 2550 FOR LEVEL UG WITH MIN. GRADE OF D-

EECS8550  Software Specification And Design  Credit Hours:  3
This course covers the software development steps of specification, requirements analysis and design in depth. Computer-human interfaces are also discussed.
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EECS8560  Topics In Software And Human Engineering  Credit Hours: 3
This course investigates issues in software engineering and human aspects of software engineering. Topics user interfaces, programming practices, documentation, programming environments, applications, empirical methods and physical aspects.

Prerequisites:EECS 8550 FOR LEVEL GR WITH MIN. GRADE OF D-

EECS8600  Analog Integrated Circuits  Credit Hours: 3
Review of SPICE-based device models and analysis techniques. Bias and small signal design techniques in modern, low-voltage CMOS/BiCMOS. Op-amps, comparators and PLLs are emphasized; other topics as time permits.

EECS8620  Digital Vlsi Cmos/Bicmos Circuit Design  Credit Hours: 3
Design styles; static, dynamic, T-gate intensive; optimization of speed and robustness of selected CMOS/BiCMOS examples using SPICE-high fan in/fan out, I/O buffers, other Hi-C loads, sense amps, programming drivers, other examples as time permits.

EECS8640  Vlsi Channel Routing  Credit Hours: 4

EECS8660  Field Programmable Gate Arrays  Credit Hours: 3

Prerequisites:EECS 7610 FOR LEVEL GR WITH MIN. GRADE OF D-

EECS8810  Solid State Electronics With Bioengineering Applications  Credit Hours: 3
A comprehensive treatment of the theory and operation of physical electronic devices emphasizing electrical transport in metals and semiconductors, various models of BJT's and FET's and applications to biochemical and biomechanical sensing will be conside

EECS8820  Microelectronic And Micromechanical Fabrication  Credit Hours: 3
A comprehensive treatment of the theory, principles and techniques associated with microfabrication of electronic circuits and biosensors.
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<tr>
<th>Course Code</th>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>EECS8900</td>
<td>Independent Research</td>
<td>1-6</td>
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<tr>
<td>EECS8900</td>
<td>Independent Research</td>
<td>1-6</td>
</tr>
<tr>
<td>EECS8960</td>
<td>Dissertation</td>
<td>1-15</td>
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<tr>
<td>EECS8980</td>
<td>Current Topics In Electrical Engineering &amp; Computer Science</td>
<td>1-5</td>
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<tr>
<td>EECS8990</td>
<td>Independent Study</td>
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<td>EEES1010</td>
<td>Physical Geology</td>
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<td>EEES1020</td>
<td>Introductory Geology Laboratory</td>
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<tr>
<td>EEES1030</td>
<td>Historical Geology</td>
<td>3</td>
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</table>

Selected topics from current EE and CSE research with intensive investigation into recent literature in an area of mutual interest to the student and the instructor.

Graduate research towards completion of a doctoral degree.

Current topics in the field of Electrical Engineering and Computer Science in areas of special interest to the class and the professor. Students will be expected to complete a written project based on a review of the research literature of the area covered.

In depth study of a selected topic of mutual interest to the student and the instructor.

Introduction to classification and origins of rocks and minerals, surficial processes and landscape development, groundwater and other natural resources, geologic structures, earthquakes and the earth's interior, plate tectonics and geologic time. No credit.

Identification of rocks and minerals. Study of the Earth's surface features and geologic structures through the use of topographic maps and aerial photographs.

Study of rock and fossil records to discover their tabulation of physical and biological earth history. Three hours lecture, laboratory (GEOL 1040) is optional. Offered as writing intensive.
EEES1050  Geological Hazards And The Environment  Credit Hours:  3  
Introduction to risk mitigation involving hazardous geological processes and materials: volcanic eruptions, earthquakes, floods, ground subsidence and collapse, radon, asbestos and others.

EEES1130  Down To Earth: Environmental Science  Credit Hours:  3  
Evaluation of environmental controversies using ecology, economics and human values. Issues range from global change, overpopulation, food production, pollution, disease, endangered species, to unique habitats including rainforests and coral reefs. (not

EEES1140  Environmental Problems Laboratory  Credit Hours:  1  
Basic scientific methods are used to conduct laboratory and field studies relevant to contemporary environmental problems.

EEES1150  Marine Biology  Credit Hours:  3  
An exploration of life in the world's oceans, emphasizing how marine organisms thrive in broadly diverse environments. Topics include the major ocean habitats, and ecological relationships among associated flora/fauna.

EEES1160  Plants And Society  Credit Hours:  3  
This course centers on the importance of plants to our planet. Includes an introduction to botany and discussion of plants that provide food, materials, spices, medicines, drugs and poisons. (not for major credit)

EEES1170  Microbes And Society  Credit Hours:  3  
This course describes how microbes impact everyday life in areas including food safety, agriculture and bioterrorism. Natural Sciences core course.

EEES2010  Introduction To Environmental Studies  Credit Hours:  3  
Introduction to issues currently affecting environmental quality. Fundamental scientific concepts relating to those issues and ethical, economic, legal and political considerations that affect the resolution of environmental problems.
EEES2100 Fundamentals Of Geology Credit Hours: 4
Consideration of earth materials and the dynamic external and internal processes active on earth; the physical and biological history of the earth. Intended for science majors.

Prerequisites: CHEM 1090 FOR LEVEL UG WITH MIN. GRADE OF D- OR CHEM 1230 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES2150 Biodiversity Credit Hours: 4
Examination of the diversity of life on earth and its evolution, systematics and behavior; the structure of ecosystems and concepts of population and community ecology.

EEES2160 Biodiversity Laboratory Credit Hours: 1
Laboratory exercises designed to complement the material covered in EEES 2150.

Corequisite: EEES 2150

EEES2200 Climate Change Credit Hours: 3
An overview of the understanding of climate change and role of human activities, including atmospheric processes, greenhouse effect, carbon cycling, physical evidence, impacts, and proposed global actions in response.

EEES2210 Mineralogy Credit Hours: 4
Crystallization and stability of minerals in the geologic environment. Systematic classification and identification of silicate and non-silicate minerals.

Prerequisites: (EEES 1010 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1230 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (EEES 2100 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1230 FOR LEVEL UG WITH MIN. GRADE OF D-)

EEES2220 Megascopic Petrology Credit Hours: 3
Megascopic identification and classification of igneous, sedimentary and metamorphic rocks. Rock origins, including plate tectonic settings, are also discussed. Two hours lecture, two hours laboratory.

Prerequisites: EEES 2210 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES2230 EARTH HISTORY: HISTORICAL GEOLOGY AND PALEONTOLOGY Credit Hours: 3
The morphology and paleoecology of fossil taxa, significant strata, and tectonic events important to the interpretation of paleoenvironments and Earth history are stressed. Field trip(s) required.

Prerequisites: EEES 2100 FOR LEVEL UG WITH MIN. GRADE OF D-
EEES2400 Oceanography And Water Resources  
Physical, chemical, geological and biological nature of oceans and ocean basins. Ocean resources, circulation, climate and the hydrologic cycle. Fresh water resources and resource management.

EEES2500 Computer Applications In Environmental Sciences  
Desktop computers used by scientists: word processing, spreadsheets, databases, e-mail and world-Wide Web, table digitizer, processing GPS and data logger files, contour and mapping software.

Prerequisites: EEES 1010 FOR LEVEL UG WITH MIN. GRADE OF D- OR EEES 2010 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES2980 Special Topics  
A lower division undergraduate course covering some aspect of environmental sciences not covered in the formal course offerings of the department. Students may repeat the course for different topics.

EEES2990 Independent Study  
Student selects an appropriate approved subject for individualized study and prepares a report or gives equivalent evidence of mastery of the selected subject.

EEES3000 Geology Of National Parks  
Study of regional geology of the U.S., focusing on national parks and monuments with the aim of furthering the student's geological knowledge and encouraging visitation as a tourist.

Prerequisites: EEES 1010 FOR LEVEL UG WITH MIN. GRADE OF D- OR EEES 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES3050 General Ecology  
The structure, function and regulation of populations, communities and ecosystems, emphasizing human activities and their ecological consequences.

Prerequisites: (EEES 2150 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1090 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (EEES 2150 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1230 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (BIOL 2150 FOR LEVEL UG WITH MIN. GRADE OF

EEES3060 General Ecology Laboratory  
Laboratory and field exercises demonstrating ecological principles.

Corequisite: EEES 3050
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description and Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEES3100</td>
<td>Surficial Processes</td>
<td>3</td>
<td>Description and study of the earth's surface features from the point of view of their origin, including landforms created by volcanism, tectonics and erosional/depositional processes. Field trip required. Prerequisites: EEES 1010 FOR LEVEL UG WITH MIN. GRADE OF D- OR EEES 2100 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>EEES3200</td>
<td>Stratigraphy And Sedimentology</td>
<td>3</td>
<td>Introduction to depositional processes and environments of sediments; stratigraphic relationships of sedimentary rock. Prerequisites: EEES 2200 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>EEES3210</td>
<td>Earth Materials I: Mineralogy/Petrology</td>
<td>3</td>
<td>Mineralogy: Rock-forming mineral characteristics, identification and geologic environments of formation. Igneous and Metamorphic Petrology: Igneous and metamorphic rock characteristics, origins, classification and interpretation of conditions of formation. Prerequisites: EEES 2100 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>EEES3220</td>
<td>Earth Materials II Sedimentary Petrology, And Stratigraphy-WAC</td>
<td>3</td>
<td>Megascopic description of sediments and sedimentary rocks, including their characteristics, classification and diagenesis; introduction to depositional processes and environments of sediments, and stratigraphic relationships of sedimentary rocks. Prerequisites: EEES 2100 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>EEES3250</td>
<td>Engineering Geology</td>
<td>3</td>
<td>Application of geologic principles to engineering practices (dams, tunnels, drainage, foundations and water supply). Labs stress rock and mineral identification, quality control tests in engineering design and construction using rock. Prerequisites: MATH 1750 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1850 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1920 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>EEES3310</td>
<td>Field Methods: Structural Geology And Mapping</td>
<td>3</td>
<td>Rock deformation and its expression on maps; applying geometrical and trigonometric principles to solve problems involving dipping strata; stereonet applications, interpreting geological maps, constructing cross sections, geological GIS applications. Prerequisites: EEES 2100 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>EEES3320</td>
<td>Structural Geology</td>
<td>3</td>
<td>Descriptive analysis of rock structures, with emphasis on relationship to regional tectonics; term paper or field trip required. Prerequisites: EEES 1010 FOR LEVEL UG WITH MIN. GRADE OF D- OR EEES 2100 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
</tbody>
</table>
Course Descriptions 2009-2010

EEES3900  Literature And Communications In The Environmental Sciences  Credit Hours:  3
Survey and analysis of environmental issues featuring guest experts from a variety of environment-related occupations, readings from the environmental literature and student reports.

EEES4000  Invertebrate Paleontology  Credit Hours:  3
Biologic and stratigraphic significant taxa of invertebrate fossils, principles of taxonomy, morphology and paleoecology. Paleoenvironmental use of fossils. Field trip required.
Prerequisites: EEES 1030 FOR LEVEL UG WITH MIN. GRADE OF D- OR EEES 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES4010  Microscopic Petrology  Credit Hours:  3
Principles of optical crystallography, training and use of the petrographic microscope; classification, occurrence, petrogenesis and petrography of igneous, metamorphic and sedimentary rocks. Two hours lecture, two hours laboratory.

EEES4100  Glacial Geology  Credit Hours:  3
To understand glaciers and glacial landscapes. Topics include mass balance, ice flow, hydrology, erosion, deposition, landforms, glacial lakes and development of the Ohio glacial landscape. Field trip is mandatory.
Prerequisites: EEES 3100 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES4150  Evolution  Credit Hours:  3
The modern theory of evolution presented within a framework of theoretical genetics and population biology; phylogeny and evolution of the vertebrates.
Prerequisites: (EEES 2150 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1230 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (BIOL 2150 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1230 FOR LEVEL UG WITH MIN. GRADE OF D-)

EEES4200  Quaternary Geology  Credit Hours:  3
To provide understanding of such cyclical events as climate change, sea level fluctuations, vegetation change and ice sheet paleogeography during the Quaternary Period and to explore future changes for planet Earth.
Prerequisites: EEES 3200 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES4220  Environmental Geochemistry  Credit Hours:  3
Chemical reactions of environmental concern. Water and soil chemistry related to contaminant fate and mobility. Petroleum formation, migration and accumulation in the subsurface. Computer software used.
Prerequisites: CHEM 1240 FOR LEVEL UG WITH MIN. GRADE OF D-
EEES4240  Soil Science  
Basic principles of soil formation, physics, chemistry and biology with emphasis on their influence on fluid and chemical migration and preservation of soil quality from geological, agricultural and environmental perspectives.  
Prerequisites: CHEM 1240 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES4250  Soil Ecology  
Underlying concepts and theory of modern soil ecology will be reviewed including spatial and temporal distributions, sampling methods, biogeochemical cycles and ecological functions of soil.  (Spring, alternate years, odd)  
Prerequisites: EEES 3050 FOR LEVEL UG WITH MIN. GRADE OF D- OR EEES 4240 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES4300  Field Botany  
Introduction to the principles and methodology of plant taxonomy with particular attention to the native plant species.  
Prerequisites: EEES 2150 FOR LEVEL UG WITH MIN. GRADE OF D- OR BIOL 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES4330  Vertebrate Ecology And Systematics  
Ecology, systematics and conservation of the vertebrates, with special emphasis on forms native to North America.  
Prerequisites: EEES 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES4400  ENVIRONMENTAL IMPACTS OF ALTERNATIVE ENERGY  
Compares environmental impacts of alternative energy with environmental impacts of conventional energy. Identifies obstacles to implementing various sustainable energy technologies and ways to mitigate negative impacts of alternative energy.  
Prerequisites: PHYS 2080 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES4410  Hydrogeology  
Fundamentals of groundwater flow and geological controls, including applications to water resource evaluation, utilization, chemical characterization, contaminant transport and geological processes.  
Prerequisites: MATH 1750 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1850 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1830 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1920 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES4450  Hazardous Waste Management  
Environmental regulations concerning hazardous waste, characteristics of hazardous waste and disposal technologies, toxicology, characteristics of organic chemicals and heavy metals, biodegradation, soil science, groundwater contamination, risk assessment.  
Prerequisites: CHEM 1230 FOR LEVEL UG WITH MIN. GRADE OF D-
### Course Descriptions 2009-2010

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEES4520</td>
<td>Bioremediation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>The environmental fate and transport of contaminants; their transformation and biodegradation by plants and microorganisms; bioremediation strategies, including solid phase, slurry phase, and vapor-phase treatments, and natural attenuation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prerequisites: (EEES 2150 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1230 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
<td></td>
</tr>
<tr>
<td>EEES4540</td>
<td>Microbial Ecology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Students will learn the underlying processes that drive microbial population structure and function in the environment and become familiar with classical and current methodology used in microbial community analysis.</td>
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<tr>
<td></td>
<td>Prerequisites: EEES 2150 FOR LEVEL UG WITH MIN. GRADE OF D- OR BIOL 2170 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
<td></td>
</tr>
<tr>
<td>EEES4550</td>
<td>Methods Of Microbial Investigation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Student will learn the classical and current methodologies (biochemical and molecular) used in microbial community analysis while developing an understanding of experimental design sample handling and data analysis.</td>
<td></td>
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<tr>
<td></td>
<td>Prerequisites: EEES 4540 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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</tr>
<tr>
<td>EEES4610</td>
<td>Geophysics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Survey of theory, field applications, interpretation principles of solid earth and exploration geophysics. Two hours lecture, three hours methods laboratory.</td>
<td></td>
</tr>
<tr>
<td>EEES4620</td>
<td>Environmental And Engineering Geophysics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Electrical resistivity, electromagnetic conductivity, magnetometer and seismic methods are used to investigate subsurface structures and characterize materials concealed under the earth's surface.</td>
<td></td>
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<tr>
<td></td>
<td>Prerequisites: EEES 2500 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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</tr>
<tr>
<td>EEES4630</td>
<td>Numerical Methods In Geophysics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Numerical filters and matrix operations used to process potential field data and wave forms, isolating anomalies and signals of interest; derivative maps, upward and downward continuation; current interpretation software. Term project.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prerequisites: EEES 4610 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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</tr>
<tr>
<td>EEES4640</td>
<td>Applied Geology</td>
<td>1-2</td>
</tr>
<tr>
<td></td>
<td>Weekly field experiments Friday mornings (10 weeks in fall; or 5 weeks in spring) covering a variety of geology topics to simulate professional activity and strengthen concepts. Junior standing required.</td>
<td></td>
</tr>
</tbody>
</table>
**EEES4650 Geology Field Course**
Credit Hours: 6
Intensive field studies in the Black Hills, South Dakota and Wyoming; stratigraphic section measuring, geologic mapping and interpretation and other field methods in geology.

**EEES4720 Ecology Of Freshwater Invertebrates**
Credit Hours: 3
Major freshwater invertebrate taxa are covered. The focus is the interaction of individual invertebrates with their biotic and abiotic environment with emphasis on community and ecosystem level interactions.
Prerequisites: EEES 3050 FOR LEVEL UG WITH MIN. GRADE OF D-

**EEES4730 Aquatic Ecology**
Credit Hours: 3
The biology of populations, communities and ecosystems with emphasis on aquatic environments. Includes the application of principles and theory from aquatic ecology to help understand and solve management problems in aquatic systems.
Prerequisites: EEES 3050 FOR LEVEL UG WITH MIN. GRADE OF D-

**EEES4740 Aquatic Ecology Laboratory**
Credit Hours: 1
Laboratory exercises on the biology of aquatic populations, communities and ecosystems.
Corequisite: EEES 4730

**EEES4750 Conservation Biology**
Credit Hours: 3
The application of principles of ecology, biogeography, genetics, economics, philosophy and other disciplines to the study and maintenance of biological diversity in temperate, subtropical and tropical systems.
Prerequisites: EEES 3050 FOR LEVEL UG WITH MIN. GRADE OF D-

**EEES4760 Landscape Ecology**
Credit Hours: 3
Emphasis will be placed on ecological patterns, processes and management applications at multiple spatial and temporal scales.
Prerequisites: EEES 3050 FOR LEVEL UG WITH MIN. GRADE OF D-

**EEES4790 Ecology Field Trip**
Credit Hours: 2-4
Field trip to a major ecosystem of a region other than northwestern Ohio. Includes analysis of structural and functional relationships within and between ecosystems, with opportunities for individual student projects.
Prerequisites: EEES 3050 FOR LEVEL UG WITH MIN. GRADE OF D-
EEES4800  Plant Physiological Ecology  Credit Hours: 4
Study of how form (morphology, anatomy) and function (physiology, metabolism, biophysics) affect plant ecology. Laboratory emphasizes experimentation and introduction to techniques. Lecture includes reading and written critiques of scientific literature.
Prerequisites: (EEES 2150 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1230 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1240 FOR LEVEL UG WITH MIN. GRADE OF D- OR (BIOL 2170 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1230 FOR LEVEL UG WITH MIN. GRADE OF D)

EEES4910  Directed Research  Credit Hours: 1-5
Research under guidance of faculty member. An acceptable thesis is required for credit toward major.

EEES4920  Senior Geology Seminar  Credit Hours: 2
Survey of geology at a senior level using readings, class discussions and some lectures. The final exam will be one of the assessment vehicles of the department.

EEES4940  Internship  Credit Hours: 1-4
Student gains up to 4 credits for relevant professional experience with an adviser-approved organization. Student must enroll during the term service is performed.

EEES4980  Special Topics: Advanced Undergraduate  Credit Hours: 1-4
An advanced undergraduate course covering some aspect of the environmental sciences not covered in the formal upper-division undergraduate curriculum. Students may repeat the course for different topics.

EEES4990  Independent Study: Advanced Undergraduate  Credit Hours: 1-4
Student selects an appropriate approved subject for individualized study and prepares a report or gives equivalent evidence of mastery of the selected subject.

EEES5000  Invertebrate Paleontology  Credit Hours: 3
Invertebrate fossil taxa of biologic and stratigraphic importance; morphology, paleoecology, biostratigraphy of each taxon reviewed. Field project required.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEE5100</td>
<td>Advanced Glacial Geology</td>
<td>3</td>
<td>To understand glaciers and glacial landscapes. Topics include mass balance, ice flow, hydrology, erosion, deposition, landforms, glacial lakes and development of the Ohio glacial landscape. Field trip is mandatory. Prerequisites: EEES 3100 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>EEE5150</td>
<td>Organic Evolution</td>
<td>3</td>
<td>The modern theory of evolution presented within a framework of theoretical genetics and population biology.</td>
</tr>
<tr>
<td>EEE5200</td>
<td>Advanced Quaternary Geology</td>
<td>3</td>
<td>To provide understanding of such cyclical events as climate change, sea level fluctuations, vegetation change and ice sheet paleogeography during the Quaternary Period and to explore future changes for planet Earth. Prerequisites: EEES 3200 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>EEE5220</td>
<td>Environmental Geochemistry</td>
<td>3</td>
<td>Chemical reactions of environmental concern. Water and soil chemistry related to contaminant fate and mobility. Petroleum formation, migration and accumulation in the subsurface. Computer software used.</td>
</tr>
<tr>
<td>EEE5240</td>
<td>Soil Science</td>
<td>3</td>
<td>Basic principles of soil formation of physics, chemistry and biology with emphasis on their influence on fluid and chemical migration and preservation of soil quality from geological, agricultural and environmental perspectives.</td>
</tr>
<tr>
<td>EEE5250</td>
<td>Soil Ecology</td>
<td>3</td>
<td>Underlying concepts and theory of modern soil ecology will be reviewed including spatial and temporal distributions, sampling methods, biogeochemical cycles and ecological functions of soil. Prerequisites: BIOL 3050 FOR LEVEL UG WITH MIN. GRADE OF D- AND EEE5240 FOR LEVEL UG WITH MIN. GRADE OF D- OR (BIOL 3050 FOR LEVEL UG WITH MIN. GRADE OF D- AND EEE 4240 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (BIOL 3050 FOR LEVEL UG WITH MIN. GRADE OF D- AND EEE 5240 FOR LEVEL GR WITH MIN. GRADE OF D-)</td>
</tr>
<tr>
<td>EEE5300</td>
<td>Advanced Field Botany</td>
<td>3</td>
<td>Principles of plant systematics stressing identification of local taxa; field trips.</td>
</tr>
</tbody>
</table>
EEES5330  Vertebrate Ecology And Systematics  Credit Hours: 4
Ecology, systematics and conservation of the vertebrates, with special emphasis on forms native to North America.

EEES5400  ENVIRONMENTAL IMPACTS OF ALTERNATIVE ENERGY  Credit Hours: 3
Compares environmental impacts of alternative energy with environmental impacts of conventional energy. Identifies obstacles to implementing various sustainable energy technologies and ways to mitigate negative impacts of alternative energy.
Prerequisites: PHYS 2080 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES5410  Hydrogeology  Credit Hours: 3
Fundamentals of groundwater flow and geological controls, including applications to water resource evaluation, utilization, chemical characterization, contaminant transport and geological processes. Primarily for graduate students in environmental science.
Prerequisites: MATH 1750 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1850 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1830 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1920 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES5450  Hazardous Waste Management  Credit Hours: 3
Environmental regulations concerning hazardous waste, characteristics of hazardous waste and disposal technologies, toxicology, characteristics of organic chemicals and heavy metals, biodegradation, soil science, groundwater contamination, risk assessment.

EEES5520  Bioremediation  Credit Hours: 3
The environmental fate and transport of contaminants; their transformation and biodegradation by plants and microorganisms; bioremediation strategies, including solid phase, slurry phase and vapor-phase treatments, and natural attenuation.

EEES5540  Advanced Microbial Ecology  Credit Hours: 3
Students will learn the underlying processes that drive microbial population structure and function in the environment and become familiar with classical and current methodology used in microbial community analysis.

EEES5550  Advanced Methods Of Microbial Investigation  Credit Hours: 3
Student will learn the classical and current methodologies (biochemical and molecular) used in microbial community analysis while developing an understanding of experimental design sample handling and data analysis.
Prerequisites: EEES 5540 FOR LEVEL GR WITH MIN. GRADE OF D-
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EEES5610 Solid Earth Geophysics  Credit Hours: 3
Survey of theory, field applications, interpretation principles of solid earth and exploration geophysics. Two hours lecture, three hours methods laboratory.

Prerequisites:(PHYS 2070 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 2080 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 1850 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 1860 FOR LEVEL UG WITH MIN. GRADE OF D-)

EEES5620 Environmental And Engineering Geophysics  Credit Hours: 3
Electrical resistivity, electromagnetic conductivity, magnetometer and seismic methods are used to investigate subsurface structures and characterize materials concealed under the earth's surface.

Prerequisites:PHYS 2070 FOR LEVEL UG WITH MIN. GRADE OF D- OR PHYS 2130 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES5650 Geology Field Course  Credit Hours: 6
Intensive field studies in the Black Hills, South Dakota and Wyoming; stratigraphic section measuring, geologic mapping and interpretation and other field methods in geology.

EEES5720 Ecology And Literature Of Freshwater Invertebrates  Credit Hours: 3
Major freshwater invertebrate taxa are covered. The focus is the interaction of individual invertebrates with their biotic and abiotic environment with emphasis on community and ecosystem level interactions.

EEES5730 Advanced Aquatic Ecology  Credit Hours: 3
Advanced cross-disciplinary concepts in the ecology of aquatic environments emphasizing the biology of populations, communities and ecosystems. Includes a project on the application of principles and theory to help understand and solve a management probl

Prerequisites:EEES 3050 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES5740 Advanced Aquatic Ecology Laboratory  Credit Hours: 1
Laboratory exercises on the biology of aquatic populations, communities and ecosystems.

Corequisite:EEES 5730

EEES5750 Advanced Conservation Biology  Credit Hours: 4
Advanced cross-disciplinary concepts in the application of principles and theory to the study and maintenance of biological diversity in temperate, subtropical and tropical systems. Lectures, classroom discussion and readings.

Prerequisites:EEES 3050 FOR LEVEL UG WITH MIN. GRADE OF D-
Course Descriptions 2009-2010

**EEES5760  Advanced Landscape Ecology**  
Credit Hours: 3  
This course is for graduate students from a variety of disciplines. Emphasis will be placed on up-to-date knowledge and methods in landscape analysis, pattern-process relationship and potential management applications at multiple spatial and temporal scales.  
Prerequisites: EEES 3050 FOR LEVEL UG WITH MIN. GRADE OF D-

**EEES5790  Ecology Field Trip**  
Credit Hours: 2-4  
Field trip to a major ecosystem of a region other than northwestern Ohio. Includes analysis of structural and functional relationships within and between ecosystem, with opportunities for individual student projects.  
Prerequisites: EEES 3050 FOR LEVEL UG WITH MIN. GRADE OF D-

**EEES5800  Advanced Plant Physiological Ecology**  
Credit Hours: 4  
Study of how form (morphology, anatomy) and function (physiology, metabolism biophysics) affect plant ecology. Laboratory emphasizes experimentation and introduction to techniques. Lecture includes reading and written critiques of scientific literature.

**EEES6100  Glacial Stratigraphy And Geophysics**  
Credit Hours: 3  
To integrate glacial sedimentology and stratigraphy, with near-surface, geophysical methodologies. Field work to collect a variety of field data to analyze in the lab is mandatory. Data to be presented as posters.  
Prerequisites: EEES 3200 FOR LEVEL UG WITH MIN. GRADE OF D-

**EEES6150  Spreadsheet Programming For Scientists**  
Credit Hours: 3  
Programming the Excel spreadsheet using Microsoft Visual Basic for Applications (VBA); VBA programming language; controls, charts and objects; applications to geological and environmental science. Two hours lecture, two hours laboratory.

**EEES6200  Earth System Science Through Inquiry-Based Learning**  
Credit Hours: 3  
The course is geared towards in-service teachers. Teachers will explore four natural events affecting the earth as a system, using inquiry-based learning and lesson plan development.

**EEES6400  Biostatistics**  
Credit Hours: 4  
Application of statistical tools to sampling and measurement in biology and testing of hypotheses. Computer lab is included.
EEES6440  Contaminant Hydrogeology  Credit Hours:  3
Groundwater contaminant sources, impacts, transport, geochemistry and remediation in relation to geological environments with attention to sampling, detection, characterization, modeling and aquifer protection.

Prerequisites: EEES 5410 FOR LEVEL GR WITH MIN. GRADE OF D-

EEES6450  Advanced Applied Hydrogeology  Credit Hours:  3
Applications of hydrogeological monitoring, analyses and modeling using mathematics, statistics and computers. Subjects include: well field and pump test design, sampling strategies, data presentation and analysis and modeling fundamentals.

Prerequisites: EECS 5410 FOR LEVEL GR WITH MIN. GRADE OF D-

EEES6500  Multivariable Geostatistics  Credit Hours:  3
Application of multivariate statistical methods to scientific data. Emphasis is on applied regression, cluster, principal components, factor, correspondence, canonical correlation and discriminant analyses.

Prerequisites: EEES 6400 FOR LEVEL GR WITH MIN. GRADE OF D-

EEES6550  Thermodynamics And Phase Transformations Condensed Systems  Credit Hours:  4
A materials science approach to the thermodynamics of condensed state equilibria and phase transformation kinetics.

EEES6600  Foundations Of Ecology  Credit Hours:  4
An overview of the development of ecological concepts for beginning graduate students. Readings and discussion focus on classic papers and historical essays.

EEES6650  Statistical Modeling in Environmental Sciences  Credit Hours:  4
Statistical modeling techniques of factorial design and regression applied to environmental problems.

Prerequisites: EEES 6400 FOR LEVEL GR WITH MIN. GRADE OF D-

EEES6660  Biophysical Processes Of Ecosystems  Credit Hours:  3
This course is for graduate students who are interested in the biophysical environment, energy flows and microclimate. Emphasis will be placed on hands-on experience and discussion on current literature.
Course Descriptions 2009-2010

EEES6800  Digital Field Mapping  Credit Hours:  3
Technology and techniques for determining locations and elevations during field surveys; transferring field measurements to a digital database; total station, GPS and other tools used in ecological and geological research.

EEES6810  Writing For The Environmental Sciences  Credit Hours:  3
This course will familiarize students with technical and persuasive aspects of scientific text preparation. Writing exercises will focus on basic manuscript formatting for journal submission and grant proposals.

EEES6930  Seminar  Credit Hours:  1
Individual presentation and discussion of papers in the environmental sciences.

EEES6960  Thesis Research  Credit Hours:  1-15
Research on a particular geologic problem leading to a written thesis which must be presented and defended before a faculty committee.

EEES6980  Special Topics  Credit Hours:  1-4
A graduate course covering some aspect of environmental sciences not covered in the formal graduate curriculum. Students may repeat the course for credit as topics vary.

EEES6990  Independent Study  Credit Hours:  1-4
Student selects an approved subject for individual study and prepares a detailed report, or gives equivalent evidence of mastering of the selected subject. Taken only as S/U.

EEES7150  Organic Evolution  Credit Hours:  3
The modern theory of evolution presented within a framework of theoretical genetics and population biology.
Course Descriptions 2009-2010

EEES7300  Advanced Field Botany  Credit Hours:  3
Principles of plant systematics stressing identification of local taxa; field trips.

EEES7730  Advanced Aquatic Ecology  Credit Hours:  3
Advanced cross-disciplinary concepts in the ecology of aquatic environments emphasizing the biology of populations, communities and ecosystems. Includes a project on the application of principles and theory to help understand and solve a management probl
Prerequisites:EEES 3050 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES7740  Advanced Aquatic Ecology Laboratory  Credit Hours:  1
Laboratory exercises on the biology of aquatic populations, communities and ecosystems.
Corequisite:EEES 7730

EEES7750  Advanced Conservation Biology  Credit Hours:  4
Advanced cross-disciplinary concepts in the application of principles and theory to the study and maintenance of biological diversity in temperate, subtropical and tropical systems. Lectures, classroom discussion and readings.
Prerequisites:EEES 3050 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES7790  Ecology Field Trip  Credit Hours:  2-4
Field trip to a major ecosystems of a region other than northwestern Ohio. Includes analysis of structural and functional relationships within and between ecosystem, with opportunities for individual student projects.
Prerequisites:EEES 3050 FOR LEVEL UG WITH MIN. GRADE OF D-

EEES8400  Biostatistics  Credit Hours:  4
Application of statistical tools to sampling and measurement in biology and testing of hypotheses. Computer lab is included.

EEES8500  Multivariate Geostatistics  Credit Hours:  3
Application of multivariate statistical methods to scientific data. Emphasis is on applied regression, cluster, principal components, factor, correspondence, canonical correlation and discriminant analyses.
Prerequisites:EEES 8400 FOR LEVEL GR WITH MIN. GRADE OF D-
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EEES8600</td>
<td>Foundations Of Ecology</td>
<td>4</td>
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<tr>
<td></td>
<td>An overview of the development of ecological concepts for beginning graduate students. Readings and discussion focus on classic papers and historical essays.</td>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EEES8650</td>
<td>Statistical Modeling in Environmental Sciences</td>
<td>4</td>
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<tr>
<td></td>
<td>Statistical modeling techniques of factorial design and regression applied to environmental problems.</td>
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<td>Prerequisites: EEES 6400 FOR LEVEL GR WITH MIN. GRADE OF D- AND EEES 8400 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EEES8660</td>
<td>Biophysical Processes Of Ecosystems</td>
<td>3</td>
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<td></td>
<td>This course is for graduate students who are interested in the biophysical environment, energy flows and microclimate. Emphasis will be placed on hands-on experience and discussion on current literature.</td>
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<th>Course Code</th>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>EEES8810</td>
<td>Writing For The Environmental Sciences</td>
<td>3</td>
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<tr>
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<td>This course will familiarize students with technical and persuasive aspects of scientific text preparation. Writing exercises will focus on basic manuscript formatting for journal submission and grant proposals.</td>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EEES8930</td>
<td>Seminar In Ecology</td>
<td>1</td>
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<td></td>
<td>Presentation on research or current literature by graduate doctoral students, faculty or guest speakers.</td>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EEES8960</td>
<td>Doctoral Dissertation Research</td>
<td>1-15</td>
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<td></td>
<td>Research on a particular problem leading a written dissertation that must be presented and defended before a faculty committee.</td>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EEES8980</td>
<td>Advanced Topics In Ecology</td>
<td>2-4</td>
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<tr>
<td></td>
<td>Course covering some aspect of ecology not covered in the formal graduate curriculum. Students may repeat the course for different topics.</td>
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</tr>
</tbody>
</table>
Course Descriptions 2009-2010

EEES8990 Advanced Readings in Ecology  Credit Hours:  2-4
Faculty-directed readings or projects in a specific area of ecology. Students may repeat the course for different topics.

EET1010 Resistive Circuits  Credit Hours:  4
This course constitutes an introduction to electrical components, direct current circuit analysis, circuit theorems and basic electrical measurements. An introduction to sinusoidal waveforms, complex numbers, phasors and Pspice is also included.

Corequisite:MATH 1330

EET1020 Reactive Circuits  Credit Hours:  4
This course involves transient analysis of first order, reactive DC circuits and steady state analysis of reactive circuits under AC conditions. Frequency response, three-phase analysis, oscilloscope usage and PSpice simulation methods are included.

Prerequisites:(EET 1010 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 1330 FOR LEVEL UG WITH MIN. GRADE OF D-)

EET1410 Electrical Drafting  Credit Hours:  3
Use of electrical and electronic symbols, familiarization with industry standards and codes and familiarization with different kinds of schematics and other electrical drawings. Course work performed on personal computers using CAD software.

Prerequisites:CSET 1100 FOR LEVEL UG WITH MIN. GRADE OF D-

EET2010 Electronic Principles  Credit Hours:  4
Semiconductor devices and applications with emphasis on power supplies and amplifiers. AC/DC analysis of small-signal amplifiers using both bipolar junction and field effect transistors in various biasing configurations.

Prerequisites:EET 1020 FOR LEVEL UG WITH MIN. GRADE OF D-

EET2020 Electronic Device Applications  Credit Hours:  4
This course covers principles and applications of electronic circuits and devices such as oscillators, power supplies, thyristors regulators and op amps.

Prerequisites:EET 2010 FOR LEVEL UG WITH MIN. GRADE OF D-

EET2210 Digital Logic Fundamentals  Credit Hours:  4
This course covers the fundamentals of digital logic circuits. Topics include number systems, logic gates, Boolean algebra, logic simplification, Karnaugh maps, adders, multipliers, multiplexers and decoders. Elementary digital circuits including flip-f
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EET2230</td>
<td>Assembly Language Programming</td>
<td>4</td>
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<td></td>
<td>The study of machine and assembly language programming and circuit and system applications. Microprocessor architecture and organization are also presented.</td>
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<td></td>
<td>Prerequisites: (EET 2210 FOR LEVEL UG WITH MIN. GRADE OF D- AND CSET 1100 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
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<tr>
<td>EET2410</td>
<td>Programmable Controller Fundamentals</td>
<td>4</td>
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<td></td>
<td>A study of programmable controllers emphasizing program development, logic development and troubleshooting. Emphasis on relays, timers, counters, integer math and scan-dependent programming. Factory floor control concepts are stressed.</td>
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<td></td>
<td>Prerequisites: EET 2210 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>EET2420</td>
<td>Electrical Instrumentation Laboratory</td>
<td>1</td>
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<td>Provides an opportunity for freshman Computer Science and Engineering Technology students to gain laboratory experience with basic electrical instrumentation and basic computer components.</td>
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<td>Corequisite: CSET 1100</td>
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<tr>
<td>EET2980</td>
<td>Special Topics</td>
<td>1-4</td>
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<tr>
<td></td>
<td>Student performs work on a specialized project of an advanced nature under the supervision of an Electrical Engineering Technology faculty member.</td>
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<tr>
<td>EET3250</td>
<td>Network Analysis</td>
<td>4</td>
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<td>This course consists of analysis of electrical wave-forms and first order time domain circuits, transient analysis of reactive circuits using Laplace transforms, system transfer functions, Bode plots and the interpretations of Fourier series and transform</td>
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<td>Prerequisites: (EET 1020 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGT 3020 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
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<tr>
<td>EET3350</td>
<td>Digital Systems Design</td>
<td>4</td>
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<td>This course covers the design, analysis and applications of digital systems involving sequential circuits. Special attention is given to the formal analysis and design procedures for synchronous sequential logic circuits and bistable memory devices.</td>
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<td>Prerequisites: EET 2230 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>EET4150</td>
<td>Analog Systems Design</td>
<td>4</td>
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<td>This course emphasizes the design and analysis of transistor and integrated circuits using computer-aided engineering techniques.</td>
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<td>Prerequisites: EET 2020 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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</table>
EET4250  Microcomputer Architecture  Credit Hours:  4
This course covers microcomputer architecture and computer organizations. Topics include CPU interface design, system buses, interrupts, pipeline and parallel processing, computer arithmetic, input-output peripherals, memory management and multiprocessor
Prerequisites:EET 3350 FOR LEVEL UG WITH MIN. GRADE OF D-

EET4350  Electric Power Systems  Credit Hours:  4
This course constitutes a study of AC-DC machines, including transformers, power transmission and the regulations governing them as specified by industry and the National Electrical Code.
Prerequisites:EET 1020 FOR LEVEL UG WITH MIN. GRADE OF D-

EET4450  Automatic Control Systems  Credit Hours:  4
This course is an introduction to industrial controls, including the PID control of closed-loop servo and process systems, with emphasis placed on the electronic circuits of the closed-loop sub-systems.
Prerequisites:EET 3250 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGT 3050 FOR LEVEL UG WITH MIN. GRADE OF D-

EET4550  Programmable Controller Applications  Credit Hours:  4
Use of programmable controllers and computers in factory automation. Topics included are process control, supervisory software, PLC networking, PLC/CNC integration, device configuration, use of programming software and PLC languages standards.
Prerequisites:(EET 2410 FOR LEVEL UG WITH MIN. GRADE OF D- AND CSET 2200 FOR LEVEL UG WITH MIN. GRADE OF D-)

EFSB3480  Entrepreneurial Finance  Credit Hours:  3
Course focuses on basics of using financial tools to create and analyze financial statements in new ventures and to understand the sources and management of capital for start-ups and growing businesses.

EFSB3500  Introduction To Entrepreneurship for Non-Business Students  Credit Hours:  3
Course provides an extensive overview of issues and opportunities involved in starting new businesses. Focus is on the entrepreneurial environment and opportunities, technopreneurship, and the entrepreneurial mindset. (This course may not be taken with or

EFSB3590  Entrepreneurship And Small Business Management  Credit Hours:  3
A study of entrepreneurship and the process of starting and/or managing a new venture. Tools for developing and managing in all areas in a new or small business are applied in hands-on consulting with local companies and case analysis.
Prerequisites:EFSB 3480 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EFSB4010</td>
<td>Growing Family And Entrepreneurial Businesses</td>
<td>3</td>
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<tr>
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<td>Advanced study of issues pertaining to family and entrepreneurial businesses. Issues of family psychology, growth strategies, financing, valuation, and harvesting the business are studied using hands-on consulting and case analysis.</td>
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<td>Prerequisites: (EFSB 3480 FOR LEVEL UG WITH MIN. GRADE OF D- AND EFSB 3590 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D- AND EFSB 3590 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
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<tr>
<td>EFSB4940</td>
<td>Internship In Entrepreneurship And Family Business</td>
<td>3</td>
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<td>Receive practical entrepreneurship experience working in a family or small business.</td>
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<tr>
<td>EFSB4980</td>
<td>Special Topics In Entrepreneurship And Family Business</td>
<td>3</td>
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<td>This course is designed to focus on current issues in entrepreneurship and family business.</td>
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<tr>
<td>EFSB4990</td>
<td>Independent Study</td>
<td>1-3</td>
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<td></td>
<td>Individually supervised study in Entrepreneurship and Family Business. Student must submit a proposal to be approved by the Program Advisor or Chair prior to enrolling in the course.</td>
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<tr>
<td>EFSB6590</td>
<td>New Venture Creation</td>
<td>3</td>
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<td>Course addresses the issues faced in starting a new venture, including the identification of new business opportunities and the effective and efficient evaluation of the economic feasibility of these opportunities.</td>
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<tr>
<td>EFSB6690</td>
<td>Technology Commercialization</td>
<td>3</td>
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<td>Course addresses the entire technology commercialization process, from idea to market. A key feature of the course is a &quot;strategic opportunity evaluation&quot; of an actual early stage technology. (Prerequisite: EFSB 6590)</td>
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<td>Prerequisites: EFSB 6590 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>EFSB6790</td>
<td>Venture Capital Finance</td>
<td>3</td>
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<td>Course considers how potential entrepreneurial investments are evaluated, valued, structured, and enhanced. Primarily focuses on financing start-up and early stage firms, later stage investments, and buyouts. (Prerequisites: BUAD 6200 and EFSB 6590)</td>
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<td>Prerequisites: EFSB 6590 FOR LEVEL GR WITH MIN. GRADE OF D- AND BUAD 6200 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<td>Course Code</td>
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<tr>
<td>EFSB6890</td>
<td>Small Business Practicum</td>
<td>3</td>
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<td>This course offers the unique opportunity to act as a consultant to entrepreneurial ventures. Students will provide analyses and recommendations to prospective entrepreneurs. (Prerequisites: EFSB 6590, EFSB 6690, and Permission of Instructor)</td>
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<td></td>
<td>Prerequisites: EFSB 6590 FOR LEVEL GR WITH MIN. GRADE OF D- AND EFSB 6690 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>EMBA5500</td>
<td>Analytic Foundation For Executives</td>
<td>3</td>
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<td>This course provides managers with the analytical foundations in economics, computer skills and statistical methods. Internet exercises prior to class meetings provide the basis for continuous discussions of current economic events.</td>
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<tr>
<td>EMBA6010</td>
<td>Current Tech Developments</td>
<td>1</td>
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<tr>
<td>EMBA6020</td>
<td>Global Issues</td>
<td>1</td>
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<tr>
<td>EMBA6100</td>
<td>Global Competitive Challenge</td>
<td>3</td>
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<td>An overview of the competitive challenge faced by firms in today's global setting.</td>
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<td>Prerequisites: EMBA 5500 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>EMBA6120</td>
<td>Cultural, Legal, &amp; Operational Issues in Doing Business Abroad</td>
<td>3</td>
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<td>This course develops the executive's appreciation, knowledge and understanding of different cultures and legal systems as they impact on operational management.</td>
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<td>Prerequisites: EMBA 5500 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>EMBA6130</td>
<td>Global Competitive Response</td>
<td>3</td>
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</tbody>
</table>
EMBA6140  Accounting And Financial Foundations For Executives  Credit Hours:  3
Introduces the balance sheet, income statement, statement or retained earnings and statement of cash flows. Financial techniques, domestic and foreign markets are explored.
Prerequisites: EMBA 5500 FOR LEVEL GR WITH MIN. GRADE OF D-

EMBA6200  Personal Strategic Planning And Entrepreneurship  Credit Hours:  3
Executives assess their personal values, clarifying their personal goals and develop a career strategy. Identifying market opportunities and developing new businesses for today's technological and global environment are explored.
Prerequisites: EMBA 5500 FOR LEVEL GR WITH MIN. GRADE OF D-

EMBA6210  Processes for Ethical Business Decisions  Credit Hours:  3
Introduces executives to specific analytical processes for identifying the ethical dilemmas frequently experienced in business, resolving them and then justifying the course of action selected from multiple ethical perspectives. These processes are esse
Prerequisites: EMBA 5500 FOR LEVEL GR WITH MIN. GRADE OF D-

EMBA6220  Accounting Systems For Operational And Strategic Management  Credit Hours:  3
Emphasizes the preparation and use of financial statements, accounting for international transactions and tax consequences of U.S. and international operatives. Managerial accounting and control systems are examined. Focuses on the tax consequences of s
Prerequisites: EMBA 5500 FOR LEVEL GR WITH MIN. GRADE OF D-

EMBA6230  Market-Driven Analysis And Strategy  Credit Hours:  3
This course focuses on what it means to be market-oriented and provides individuals with a basic understanding of the market-based management practices needed to create superior customer value.
Prerequisites: EMBA 5500 FOR LEVEL GR WITH MIN. GRADE OF D-

EMBA6240  Entrepreneurial Financial Management  Credit Hours:  3
Studies the management of international financial activities, including financial planning and forecasting, capital budgeting and leasing, capital structure, working capital management, sources of funds, business valuation and risk management.
Prerequisites: EMBA 5500 FOR LEVEL GR WITH MIN. GRADE OF D-

EMBA6250  Leadership And Performance Management  Credit Hours:  3
Executives learn to be visionary leaders by understanding how change, culture and strategy link to vision and mission. Also focuses on employee motivation, development and empowerment.
Prerequisites: EMBA 5500 FOR LEVEL GR WITH MIN. GRADE OF D-
EMBA6290  Strategic Management In A Global Environment  Credit Hours:  3
The goal of the capstone course is for each executive to finish an integrated business plan creating value for his or her sponsoring firm. Strategic planning tools are studied.
Prerequisites: EMBA 5500 FOR LEVEL GR WITH MIN. GRADE OF D-

EMBA6300  Global Technology Management  Credit Hours:  3
This course focuses on the strategic and technical challenges facing executives who want to take advantage of today’s existing and emerging technological developments to enhance business opportunities. Best practices are reviewed and the focus is on how e-
Prerequisites: EMBA 5500 FOR LEVEL GR WITH MIN. GRADE OF D-

EMBA6310  Managing Global Supply Chains  Credit Hours:  3
Examines how e-business models, information technology and globalization have changed supply chain design and management. Effective information management for decision making is explored.
Prerequisites: EMBA 5500 FOR LEVEL GR WITH MIN. GRADE OF D-

EMBA6320  Product Development  Credit Hours:  3
This course is designed to provide an understanding of how new products/services and e-business initiatives are developed and managed and explores the tools and skills needed to manage these processes.
Prerequisites: EMBA 5500 FOR LEVEL GR WITH MIN. GRADE OF D-

EMBA6330  Customer Relationship Management  Credit Hours:  3
Strategies for integrating the customer centered areas of business (Sales, Marketing and Customer Services) to identify, attract and retain the best customers are discussed. Investigates customer relationship management.
Prerequisites: EMBA 5500 FOR LEVEL GR WITH MIN. GRADE OF D-

EMBA6470  Global/E-Business Field Trip  Credit Hours:  2
Visit pace-setting firms with best practices in global business or e-business. The destination of the trip changes each year, may be international or domestic and takes 7-9 days.
Prerequisites: EMBA 5500 FOR LEVEL GR WITH MIN. GRADE OF D-

EMBA6980  Special Topics in Business  Credit Hours:  3
Analysis of current issues in business, specialized industries, or specific markets. Syllabus determined jointly by EMBA office and faculty as special topics are identified.
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<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>EMBA6990</td>
<td>Independent Study</td>
<td>3</td>
<td>Independent research report on a business topics of interest to the student and faculty member. Students must work with a professor on this project. Permission of Instructor required.</td>
</tr>
<tr>
<td>EMHS1030</td>
<td>First Responder</td>
<td>3</td>
<td>This course is required by the State of Ohio for persons employed by police, fire, EMS, industrial and office personnel who as part of their normal duties respond for request for emergency first aid. Student must hold current certification in CPR/AHA.</td>
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<tr>
<td>EMHS1040</td>
<td>Prehospital Emergency Life Support</td>
<td>6</td>
<td>Topics covered include patient assessment, advanced airway management, bandaging/splinting. Adult, pediatric emergency medicine topics are covered. Successful completion leads to eligibility to sit for National Registry examination as EMT-B. Prerequisites: (KINE 2560 AND HEAL 1800)</td>
</tr>
<tr>
<td>EMHS2030</td>
<td>Paramedic Emergency Medicine I</td>
<td>6</td>
<td>Roles and responsibilities of the EMT-P, including history and patient assessment techniques. Pathophysiology of shock, cardiac, renal and respiratory emergencies.</td>
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<tr>
<td>EMHS2040</td>
<td>Advanced Clinical Practicum I</td>
<td>2</td>
<td>Clinical experiences are offered in patient assessment, airway management and venipuncture. Emphasis is on advanced assessment, ECG interpretation and skills needed to stabilize and manage critically ill patients. Prerequisites: EMHS 1040 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>EMHS2050</td>
<td>Paramedic Skills I</td>
<td>3</td>
<td>Presentation of intubation, intravenous skills, patient assessment skills, airway and ventilation management skills. Prerequisites: EMHS 1040 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>EMHS2060</td>
<td>Disaster Planning And Response</td>
<td>2</td>
<td>A systems approach to multiple casualties incidents will be presented. Topics include planning, organization and control, triage principles and incident command procedures.</td>
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</table>
EMHS2070  Advanced Skills For Paramedics  
Advanced physician extender skills for the paramedic. Lecture and laboratory include advanced assessment, suturing, critical care techniques, 12-lead EKGs. The evolving role of paramedics in primary care will be discussed.

Prerequisites: EMHS 1040 FOR LEVEL UG WITH MIN. GRADE OF D-

EMHS2080  Current Trends And Practices In Emergency Medicine  
Integration of practice with current issues in EMS designed to blend field work with up-to-date knowledge base. Research project required.

EMHS2160  Paramedic Emergency Medicine II  
Advanced techniques and knowledge required to manage trauma and pediatric patients is the major emphasis. Also discussed are obstetric and gynecological behavioral and environmental emergencies.

Prerequisites: (EMHS 2030 FOR LEVEL UG WITH MIN. GRADE OF D- AND EMHS 2040 FOR LEVEL UG WITH MIN. GRADE OF D- AND EMHS 2050 FOR LEVEL UG WITH MIN. GRADE OF D-)

EMHS2170  Advanced Clinical Practicum II  
Clinical experiences emphasize the initial stabilization and management of the acutely ill and/or injured patient. A wide range of exposure to patients in hospital and in prehospital setting.

Prerequisites: (EMHS 2030 FOR LEVEL UG WITH MIN. GRADE OF D- AND EMHS 2040 FOR LEVEL UG WITH MIN. GRADE OF D- AND EMHS 2050 FOR LEVEL UG WITH MIN. GRADE OF D-)

EMHS2180  Paramedic Skills II  
Presentation of trauma assessment and management skills. Including adult invasive airway procedures. Emergency childbirth skills presentation.

Prerequisites: (EMHS 2030 FOR LEVEL UG WITH MIN. GRADE OF D- AND EMHS 2040 FOR LEVEL UG WITH MIN. GRADE OF D- AND EMHS 2050 FOR LEVEL UG WITH MIN. GRADE OF D-)

EMHS2190  Prehospital Externship  
Clinical experience is offered providing concentrated experience in the prehospital care of the acutely ill/injured patient. Vehicle-based experience. Includes preparation for national certification examinations.

Prerequisites: (EMHS 2160 FOR LEVEL UG WITH MIN. GRADE OF D- AND EMHS 2170 FOR LEVEL UG WITH MIN. GRADE OF D- AND EMHS 2180 FOR LEVEL UG WITH MIN. GRADE OF D-)

EMHS2200  Paramedic Emergency Medicine III  
Integration of pathophysiological principles and assessment findings to formulate a field impression and implement treatment plan for neonatal, pediatric, geriatric patients and physically or mentally challenged, chronically ill patients.

Prerequisites: (EMHS 2160 FOR LEVEL UG WITH MIN. GRADE OF D- AND EMHS 2170 FOR LEVEL UG WITH MIN. GRADE OF D- AND EMHS 2180 FOR LEVEL UG WITH MIN. GRADE OF D-)
EMHS2210 Paramedic Emergency Skills III  Credit Hours: 1
Properly perform the various psychomotor skills utilized by paramedics. Evaluation of psychomotor skills. Preparation of students for the National Registry written and practical EMT-Paramedic examinations.

Prerequisites: (EMHS 2160 FOR LEVEL UG WITH MIN. GRADE OF D- AND EMHS 2170 FOR LEVEL UG WITH MIN. GRADE OF D- AND EMHS 2180 FOR LEVEL UG WITH MIN. GRADE OF D-)

EMHS2990 Independent Study  Credit Hours: 1-3
A course designed to provide educational opportunities in a specialized academic area under the direct supervision of a faculty member.

EMS1200 First Responder  Credit Hours: 3
An Emergency Medical Services (EMS) course that prepares students to provide medical care at the scene of an emergency. Completion of course makes student eligible for state certification.

EMS1210 EMT - Basic  Credit Hours: 7
A course providing fundamental knowledge and training across the breadth of Emergency Medical Services (EMS). Completion of course makes student eligible for state certification.

EMS1310 Paramedic I  Credit Hours: 8
First three courses that provide training for students to become certified paramedics. The course covers roles, responsibilities, legal considerations, well-being, assessment, pharmacology, venous access, medication administration, EKG interpretation, as

EMS1320 Paramedic II  Credit Hours: 8
Second of three courses that provide training for students to become certified paramedics. This course covers obstetric and gynecological emergencies, childbirth and neonatology, assessment and management of both medical and traumatic situations that inv

Prerequisites: EMS 1310 FOR LEVEL UG WITH MIN. GRADE OF D-

EMS1330 Paramedic III  Credit Hours: 7
Third of three courses that provide training for students to become certified paramedics. This course completes all clinical and EMS internship requirements required by students to take the National Registry Practical examination for Paramedics and affo

Prerequisites: EMS 1310 FOR LEVEL UG WITH MIN. GRADE OF D- AND EMS 1320 FOR LEVEL UG WITH MIN. GRADE OF D-
ENGL1020  Writing And Grammar For Students Of English As A Second Language  Credit Hours:  3
Course work focuses on the major grammatical patterns of academic writing in English as well as accuracy in the mechanics of academic writing. The primary emphasis is on these features in the context of the students' own written work. Eligibility by p
Prerequisites:ENLG FOR MIN. SCORE OF 1020

ENGL1100  Composition I With Workshop  Credit Hours:  5
Explanatory and persuasive writing in both personal and public genres; instruction and practice in generating, focusing, developing, researching and presenting ideas in ways consistent with one's subject, purposes and intended audiences. Placement throug

ENGL1110  College Composition I  Credit Hours:  3
Explanatory and persuasive writing in both personal and public genres; instruction and practice in generating, focusing, developing, researching and presenting ideas in ways consistent with one's subject, purposes and intended audience. Placement through
Prerequisites:ENLG FOR MIN. SCORE OF 1110 OR A01 FOR MIN. SCORE OF 20 OR S01 FOR MIN. SCORE OF 480 OR ENLG FOR MIN. SCORE OF 1120 OR ENLG FOR MIN. SCORE OF 1118

ENGL1120  College Composition I Laboratory For Students Of English As A Second Language  Credit Hours:  2
The corequisite of ENGL 1120 is an ESL section of 1110. Graded PS/NC. Writing laboratory using students' writings from ENGL 1110 as well as other supplementary materials. May be required based on placement exam or ENGL 1020 final exam score. (Note: A
Prerequisites:ENLG FOR MIN. SCORE OF 1120
Corequisite:ENGL 1110

ENGL1130  College Composition II: Academic Disciplines And Discourse  Credit Hours:  3
Reading and analyzing the documents from multiple disciplines to synthesize results from different perspectives and produce disciplinarily appropriate writing. Web enhanced. Critical reading, research papers required.
Prerequisites:ENGL 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR HON 1010 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENLG FOR MIN. SCORE OF 1130

ENGL1140  College Composition II: Writing The Community  Credit Hours:  3
Reading and analytical writing growing from the study of and participation in specific communities. Web enhanced. Critical reading, research papers required.
Prerequisites:ENGL 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR HON 1010 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENLG FOR MIN. SCORE OF 1130

ENGL1150  College Composition II: Language And Identity  Credit Hours:  3
Reading and analyzing the ways languages construct identities through interactions of race, class, gender, sexual orientation, disability, age and religion. Web enhanced. Critical reading; research paper required.
Prerequisites:ENGL 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR HON 1010 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENLG FOR MIN. SCORE OF 1130
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ENGL1930</td>
<td>Technical Writing For Engineers</td>
<td>3</td>
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<tr>
<td></td>
<td>Instruction and practice in writing technical reports and documents for the field of engineering. Students will compose on the computer.</td>
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<tr>
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<td>Prerequisites: (MIME 1000 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGL 1100 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (MIME 1000 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGL 1110 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
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<tr>
<td>ENGL2010</td>
<td>Advanced Composition</td>
<td>3</td>
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<tr>
<td></td>
<td>Instruction and practice in writing expository and persuasive prose for a variety of audiences with particular attention to the effect of content and style upon readers.</td>
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<td>Prerequisites: ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG WITH MIN. GRADE OF D- OR H</td>
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<tr>
<td>ENGL2710</td>
<td>Reading Fiction</td>
<td>3</td>
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<tr>
<td></td>
<td>Exploration of various kinds of fiction with goals of literary appreciation and analytical insight. (not for major credit)</td>
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<td>Prerequisites: ENGL 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR HON 1010 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR EN</td>
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<tr>
<td>ENGL2720</td>
<td>Reading Drama</td>
<td>3</td>
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<tr>
<td></td>
<td>Exploration of various kinds of drama with goals of literary appreciation and analytical insight. (not for major credit)</td>
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<tr>
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<td>Prerequisites: ENGL 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR HON 1010 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR EN</td>
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<tr>
<td>ENGL2730</td>
<td>Reading Poetry</td>
<td>3</td>
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<tr>
<td></td>
<td>Exploration of various kinds of poetry with goals of literary appreciation and analytical insight. (not for major credit)</td>
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<td>Prerequisites: ENGL 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR HON 1010 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR EN</td>
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<tr>
<td>ENGL2740</td>
<td>British Literature: Readings And Analysis</td>
<td>3</td>
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<td></td>
<td>This course offers students an opportunity to study British literature in a lecture/discussion format. Lectures provide historical and critical background, while discussion sections provide in-depth study of individual works.</td>
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<td>Prerequisites: ENGL 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR HON 1010 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR EN</td>
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<tr>
<td>ENGL2760</td>
<td>American Literature: Readings And Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>This course offers students an opportunity to study American literature in a lecture/discussion format. Lectures provide historical and critical background, while discussion sections provide in-depth study of individual works.</td>
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<td>Prerequisites: ENGL 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR HON 1010 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR EN</td>
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</table>
**Course Descriptions 2009-2010**

**ENGL2800  Writing About Literature**  Credit Hours: 3
A writing-intensive (WAC) course introducing the process of writing various types of papers and analyzing literary works. Special emphasis on discovering a topic and on revision and structure in expository writing.

Prerequisites: ENGL 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR HON 1010 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR EN

**ENGL2950  Science And Technical Report Writing**  Credit Hours: 3
Instruction and practice in writing informational and analytical reports to varied audiences in medical, scientific or technical fields.

Prerequisites: ENGL 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR HON 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

**ENGL2960  Organizational Report Writing**  Credit Hours: 3
Instruction and practice in report writing within an organizational context. Emphasis on the analytical report based on research.

Prerequisites: ENGL 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR HON 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

**ENGL3000  Human Language**  Credit Hours: 3
A non-technical overview of the nature of human language, including issues relating to spoken and written language, language change and language development, and other aspects of language use in a variety of contexts.

**ENGL3010  Creative Writing**  Credit Hours: 3
A basic introduction to creative writing. Students write poems, stories or creative nonfiction which serve as the basis for classroom discussion and for conferences with instructor.

Prerequisites: ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG WITH MIN. GRADE OF D- OR H

**ENGL3050  Persuasive Writing**  Credit Hours: 3
Analysis of and practice in the techniques of persuasive writing. Emphasis varies from writing about legal issues to writing about issues of public controversy.

Prerequisites: ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG WITH MIN. GRADE OF D- OR H

**ENGL3060  Screenwriting**  Credit Hours: 3
This course involves practical analysis of screenplays, emphasizing story structure and characterization. Students plan, write and refine story lines before writing actual scripts.
ENGL3080  The Art And Process Of The Book  Credit Hours:  3
This course examines all aspects of the printed book - from scrolls to Gutenberg to contemporary publishing - as students work towards designing, printing and binding a finely printed edition.
Prerequisites: ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG WITH MIN. GRADE OF D- OR H

ENGL3150  Linguistic Principles  Credit Hours:  3
An introduction to modern linguistic theories about the nature and structure of language with emphasis on English.

ENGL3250  The Detective Story  Credit Hours:  3
A survey of the genre, giving special attention to differences in the British and American versions of the genre. Includes Poe, Doyle, Christie, Sayers, Hammett and Chandler. Recommended: ENGL 2700, 2710, or 2800.

ENGL3280  Contemporary Poetry  Credit Hours:  3
A study of recent trends in contemporary poetry. Recommended: ENGL 2730, 2800, or 3790.

ENGL3600  American Literary Traditions  Credit Hours:  3

ENGL3610  British Literary Traditions  Credit Hours:  3
Introduction to literary history, and the terminology and techniques of the historical study of British literature, intended as preparation for the English major. Texts may include works from the Medieval period to the 21st-century.
Prerequisites: ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D-

ENGL3650  Science Fiction And Fantasy Literature  Credit Hours:  3
This course examines literary works of science fiction and fantasy, and related scholarship, from a variety of perspectives. Readings are selected from prominent writers in both genres.
Prerequisites: ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG WITH MIN. GRADE OF D- OR H
ENGL3710  Literature Of The Old Testament  Credit Hours:  3
A study of the Old Testament from the literary point of view, including ancient poetry, history, romance, short story, hymn, prophecy and wisdom writing. Recommended: ENGL 2800.

ENGL3720  Literature And Mythology  Credit Hours:  3
Study of classical and biblical mythologies in modern Western literature, private mythologies and literary adaptations of patterns from legend and folklore. Recommended: ENGL 2800.

ENGL3730  Folklore  Credit Hours:  3
A survey of the field of folklore with an emphasis on folk narrative, folk music and material culture in America. Recommended: Consent of instructor and/or Composition II.
Prerequisites: ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG WITH MIN. GRADE OF D- OR H

ENGL3750  Women And Literature  Credit Hours:  3
Offered as Writing Across the Curriculum (WAC) course. Examines literary works in light of major issues raised by feminist criticism. Specific emphasis varies. Recommended: ENGL 2800 or 3790.

ENGL3760  European Literature To The Renaissance  Credit Hours:  3
The literary European heritage from its Biblical and Classical origins to the 16th century (in English translation). Includes such writers as Homer, Virgil and Dante. Recommended: ENGL 2800 or 3790.

ENGL3770  World Literature And Cultures  Credit Hours:  3
This course examines texts and cultures form around the world (and in particular the non-western world). The genres examined include autobiography, poetry, short fiction, novels, plays and histories.
Prerequisites: ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG WITH MIN. GRADE OF D- OR H

ENGL3780  Modern European Literature  Credit Hours:  3
Continental European literature from the 17th to the early 19th century. (In English translation.) Includes such writers as Dostoyevsky, Baudelaire and Rilke. Recommended: ENGL 2800, or 3790.
### Course Descriptions 2009-2010

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<tbody>
<tr>
<td>ENGL3790</td>
<td>Foundations Of Literary Study</td>
<td>3</td>
<td>Writing Across the Curriculum Course An overview and introduction to the discipline of literary study, its history, its methods, and its specialized languages. Humanities Core Course. Prerequisites: ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG WITH MIN. GRADE OF D- OR H</td>
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<tr>
<td>ENGL3810</td>
<td>Shakespeare I</td>
<td>3</td>
<td>A careful examination of several of Shakespeare's plays and a rapid reading of others. Recommended: ENGL 2720, 2800 or 3790.</td>
</tr>
<tr>
<td>ENGL3980</td>
<td>Special Topics in Literature</td>
<td>3</td>
<td>Group study of a period, genre, author or special literary topic. May be repeated with change of specialty number. Topics will be announced in the semester Time Schedules. Recommended: ENGL 2800 or 3790.</td>
</tr>
<tr>
<td>ENGL4030</td>
<td>Writing Workshop In Nonfictional Prose</td>
<td>3</td>
<td>Directed study of nonfiction genres, rhetorical forms and elements of style; extensive practice in the writing and critical evaluation of prose. Prerequisites: ENGL 2010 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 3010 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>ENGL4060</td>
<td>Screenwriting II</td>
<td>3</td>
<td>For students familiar with the fundamentals of screenplays, this course devotes attention to writing a complete script. Students are expected to come to the class with a planned story line. Prerequisites: ENGL 3060 FOR LEVEL UG WITH MIN. GRADE OF D- OR FILM 3350 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>ENGL4070</td>
<td>Writing Workshop In Poetry</td>
<td>3</td>
<td>An advanced workshop in writing poetry emphasizing a wider range of readings, craft and technique. Prerequisites: ENGL 3010 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
</tbody>
</table>
ENGL4080 Writing Workshop In Fiction Credit Hours: 3
An advanced workshop emphasizing a wider range of readings, craft and technique. May be repeated once for credit.

Prerequisites: ENGL 3010 FOR LEVEL UG WITH MIN. GRADE OF D-

ENGL4090 Current Writing Theory Credit Hours: 3
A study of current theory and research connecting reading, critical thinking and writing with applications of theory to students' writing practice.

Prerequisites: ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG WITH MIN. GRADE OF D- OR H

ENGL4100 The History Of English Credit Hours: 3
Description of the changes that have taken place in the English language from the earliest days to the present.

Prerequisites: ENGL 3150 FOR LEVEL UG WITH MIN. GRADE OF D- OR LING 3150 FOR LEVEL UG WITH MIN. GRADE OF D-

ENGL4110 Old English Credit Hours: 3
A study of phonology, morphology and syntax with representative readings in verse and prose.

ENGL4120 Middle English Credit Hours: 3
Study of the phonology, morphology and syntax of Middle English, with special attention to literary and cultural background. Representative readings in verse and prose.

ENGL4150 Applied Linguistics Research And Theory I Credit Hours: 3
Focus on the methods of applied linguistics in the broad sense, including their use in studies of first and second language acquisition, language teaching, the teaching of reading and writing, and other related areas.

Prerequisites: ENGL 3150 FOR LEVEL UG WITH MIN. GRADE OF D- OR LING 3150 FOR LEVEL UG WITH MIN. GRADE OF D-

ENGL4170 Applied Linguistics Research And Theory II Credit Hours: 3
Focuses on theories of second/foreign language acquisition, especially, but not exclusively, as they relate to English as a Second Language.

Prerequisites: ENGL 4150 FOR LEVEL UG WITH MIN. GRADE OF D- OR LING 4150 FOR LEVEL UG WITH MIN. GRADE OF D-
ENGL4200  British Fiction: 18th Century  
Credit Hours: 3  
The development and achievement of British fiction in the 18th Century, including Defoe, Richardson, Fielding, Smollett and Sterne. Recommended: ENGL 2710, 2800, or 3790.

ENGL4240  British Fiction: 20th Century  
Credit Hours: 3  
A study of the major trends in 20th century British fiction with particular emphasis on changes in technique and approach. Includes Woolf, Joyce, Lawrence and Conrad. Recommended: ENGL 2710, 2800, or 3790.

ENGL4280  American Fiction: 20th Century  
Credit Hours: 3  
Major developments in content and form of the 20th-century American short story and novel. Writers studied include Hemingway, Faulkner, Fitzgerald and Steinbeck. Recommended: ENGL 2710, 2800 or 3790.

ENGL4310  British Drama To 1642  
Credit Hours: 3  
A study of the drama in England to the closing of the theaters, excluding Shakespeare but including Marlowe, Jonson and Webster. Recommended: ENGL 2710, 2800, or 3790.

ENGL4340  Modern Drama  
Credit Hours: 3  
A study of Western Drama from the 1870's to the 1930's. Special emphasis on Ibsen, Strindberg, Chekhov, Brecht, O'Neill, Beckett, Pinter and Shepard. Recommended: ENGL 2710, 2720, 2800, or 3790.

ENGL4400  British Literature: The Medieval Period  
Credit Hours: 3  
The study of British literature before 1500, often in translation. Topics vary and may include Anglo-Saxon, Norse, and Celtic literature; Norman, English, and Scots literature; or specific themes or genres. Recommended: ENGL 2800 or 3790.

ENGL4420  British Literature: Renaissance  
Credit Hours: 3  
Poetry and prose of the English Renaissance. Authors may include Spenser, Sidney, Shakespeare (nondramatic works), More, Ralegh, Queen Elizabeth I and others. Recommended: ENGL 2730, 2800, or 3790.
ENGL4440 Early 17th Century English Literature  
Poetry and prose from 1603 to 1660 and beyond, including such authors as Milton, Donne, Jonson, Herrick, Herbert, Bacon, Cary, Lanyer, Marvell and others. Recommended: ENGL 2730, 2800, or 3790.

ENGL4460 British Literature: Restoration And 18th Century  
Drama, poetry, and essays of the Restoration, neo-classical and pre-Romantic periods. Recommended: ENGL 2730, 2800, or 3790.

ENGL4500 British Literature: The Romantic Period  
Study of major authors and genres of the Romantic period: approximately 1789 to 1837.

ENGL4520 British Literature: The Victorian Period  
Study of major authors, genres and ideas of the Victorian period: approximately 1837 to 1901.

ENGL4540 British Literature: The 20th Century  
Twentieth century British poetry and criticism with particular attention to the works of Hardy, Woolf, Yeats, Lawrence, Auden and Thomas. Recommended: ENGL 2730, 2800, or 3790.

ENGL4600 Early American Literature  
The poetry and theology of the New England Puritans, especially Bradstreet and Taylor, the literature of the American Enlightenment, the beginnings of American Romanticism in Bryant and Cooper. Recommended: ENGL 2800, or 3790.

ENGL4620 American Romanticism  
This course focuses on the literature of the United States from the early nineteenth century through about 1865, with concentration on the literary production between 1840 and 1865. Recommended: ENGL 2800, or 3790.
ENGL4630 American Literary Realism  Credit Hours:  3
American literature from the post-Civil War period to the early 20th Century, particularly the fiction of Twain, James, Howells and Stephen Crane; some attention to humor, "naturalism" (in Kate Chopin or Dreiser) and poetry.  Recommended: ENGL 2710, 2800

ENGL4640 Early 20th Century American Poetry  Credit Hours:  3
Significant developments in American poetry 1900-50 from the perspective of other literary and intellectual movements; includes, among others, such major writers as Frost, Pound, Eliot, Stevens, H. Crane and Williams.  Recommended: ENGL 2730, 2800, or 379

ENGL4650 African American Writers Before The 20th Century  Credit Hours:  3
A survey of African-American prose, poetry, drama and fiction from 1760 to 1915.  Recommended: ENGL 2800, or 3790.

ENGL4660 African American Literature In The 20th Century  Credit Hours:  3
Study of the literary achievement of major African-American writers beginning with DuBois and ending with Gwendolyn Brooks and Ed Bullins.  Recommended: ENGL 2800, or 3790.

ENGL4680 American Literature Since World War II  Credit Hours:  3
The postwar literary sensibility in poetry and fiction; the influence of existentialism and naturalism; includes such writers as Albee, Barthelme, Bellow, Lowell, Plath and Updike.  Recommended: ENGL 2800, or 3790.

ENGL4690 Native American Literature And Culture  Credit Hours:  3
Native American literature interrogates a selection of texts by and about Native Americans, including the oral traditions of storytelling and mythology.

ENGL4730 World Cinemas And Cultures  Credit Hours:  3
World Cinema focuses on the question of representation across cultures in terms of the relations between film, its subjects and the camera.

Prerequisites: ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG WITH MIN. GRADE OF D- OR E
ENGL4780 Principles Of Literary Criticism
Credit Hours: 3
A comparative study of the principles of literary criticism, including readings from representative critics of all ages, and of basic aesthetic theories underlying the major approaches to literature. Recommended: ENGL 2800, or 3790.

ENGL4800 Chaucer
Credit Hours: 3
A study of Chaucer's major works and historical contexts, with emphasis on Troilus and Criseyde and the dream visions or on The Canterbury Tales in their entirety. Recommended: ENGL 2730, 2800, or 3790.

ENGL4810 Shakespeare II
Credit Hours: 3
A study of Shakespeare's plays with emphasis on his development as a dramatist. Recommended: ENGL 3810.

ENGL4820 Milton
Credit Hours: 3
A study of the poetry and selected prose of Milton. Recommended: ENGL 2730, 2800, or 3790.

ENGL4850 Studies In The Work Of A British Author
Credit Hours: 3
Author changes with each offering. Consult Time Schedules for authors to be studied. Recommended: ENGL 2800, 3790.

ENGL4860 Studies In The Work Of An American Author
Credit Hours: 3
Author changes with each offering. Consult Time Schedules for authors to be studied. Recommended: ENGL 2800, or 3790.

ENGL4890 Capstone: Senior Seminar In Writing
Credit Hours: 3
Focusing on a single topic which varies term-by-term, this capstone course offers students the opportunity to demonstrate the ability to write in a variety of genres, e.g. personal essay, poem, documented paper, reportage.

Prerequisites: ENGL 3010 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL4900</td>
<td>English Honors Seminar</td>
<td>2</td>
<td>The Honors Seminar is taken in conjunction with the Honors Thesis (English 4960). Required of all candidates for departmental honors.</td>
</tr>
<tr>
<td>ENGL4940</td>
<td>Internship In English</td>
<td>1-4</td>
<td>Internship with an approved program, company or agency employing research, writing editing or linguistics expertise. Student must submit proposal for approval by advisory and a departmental committee. (Repeatable for a maximum of 4 hours credit.)</td>
</tr>
<tr>
<td>ENGL4950</td>
<td>Special Topics For Writers</td>
<td>3</td>
<td>An advanced course in genre writing. Content varies with each offering. May be repeated once for credit.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prerequisites: ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG WITH MIN. GRADE OF D- OR H</td>
</tr>
<tr>
<td>ENGL4960</td>
<td>English Honors Thesis</td>
<td>1-4</td>
<td>Research and writing of a thesis on a topic in English or linguistics required of all candidates for departmental honors.</td>
</tr>
<tr>
<td>ENGL4980</td>
<td>Special Topics In Literature</td>
<td>3</td>
<td>An undergraduate course on a special topic. Consult Time Schedules for topic to be studied and semester offered. Recommended: ENGL 2800, or 3790.</td>
</tr>
<tr>
<td>ENGL4990</td>
<td>Independent Study</td>
<td>1-3</td>
<td>Supervised independent study in special topics of British and American language and literature. Courses may be repeated more than once for credit.</td>
</tr>
<tr>
<td>ENGL5010</td>
<td>Writer's Workshop</td>
<td>3</td>
<td>Students present their poetry and/or creative prose for peer critique and discussion. Readings in primary texts. Portfolio.</td>
</tr>
</tbody>
</table>
Course Descriptions 2009-2010

ENGL5090  Current Writing Theory  Credit Hours:  3
An intensive study of current theories and research connecting reading, critical thinking and writing with applications of theory to students' literate practices and research.

ENGL5100  History Of The English Language  Credit Hours:  3
Study of the origins and development of the English language.

Prerequisites:ENGL 3150 FOR LEVEL UG WITH MIN. GRADE OF D- OR LING 3150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 5150 FOR LEVEL GR WITH MIN. GRADE OF D- OR LING 5150 FOR LEVEL GR WITH MIN. GRADE OF D- OR ENGL 7150 FOR LEVEL GR WITH MIN. GRADE OF D- OR L

ENGL5110  Old English  Credit Hours:  3
Study of the phonology, morphology and syntax of Old English, with special attention to literary and cultural backgrounds. Representative readings in verse and prose.

ENGL5120  Middle English  Credit Hours:  3
Study of the phonology, morphology and syntax of Middle English, with special attention to literary and cultural background. Representative readings in verse and prose.

ENGL5150  Linguistic Principles  Credit Hours:  3
Intensive study of modern linguistic theories about the nature and structure of language, with emphasis on English.

ENGL5200  British Fiction: 18th Century  Credit Hours:  3
A course in 18th Century fiction with emphasis on the novels of Defoe, Richardson, Fielding, Smollett, and Sterne and their relation to historical background and literary theory.

ENGL5240  British Fiction: 20th Century  Credit Hours:  3
Major developments in British fiction from Conrad to the present, with particular emphasis on changes in technique and approach.
ENGL5280  American Fiction: 20th Century  Credit Hours: 3
A study of the chief developments in content and form of the American short story and novel since World War I, partly through intensive analysis of works by selected major writers.

ENGL5310  British Drama: 1580-1642  Credit Hours: 3
A study of early British drama exclusive of Shakespeare, with particular attention to Elizabethan drama and its background.

ENGL5340  Modern Drama  Credit Hours: 3
A study of Western Drama from the 1870's to the 1980's, concentrating on Ibsen, Strindberg, Chekhov, Brecht, O'Neill, Williams, Pinter, Shepard and other dramatists, with special attention to modern theories of theater and performance.

ENGL5410  Old And Middle English Literature  Credit Hours: 3
Study of Old and Middle English Literature, using translations where necessary, with emphasis on major works and genres, cultural, philosophical, and historical contexts and backgrounds.

ENGL5420  English Renaissance  Credit Hours: 3
Poetry and prose of the English Renaissance, including the sonnet tradition; "Spenser's Faerie Queene"; Shakespeare's longer poems; the prose of Ralegh, Hoby, Ascham, and Elyot; "Defense of Poesy"; More's "Utopia."

ENGL5440  Early 17th Century English Literature  Credit Hours: 3
Early and mid-17th Century non-dramatic texts. Including such authors as Milton, Donne, Jonson, Herrick, Herbert, Marvell, Bacon and Browne. Non-canonical writing by women and figures of historical as well as literary importance.

ENGL5460  Restoration And 18th Century British Literature  Credit Hours: 3
Drama, poetry, and prose of the Restoration, Neo-classical and pre-Romantic periods, focusing on literary strategies and themes, political and cultural contexts.
ENGL5500  British Literature: The Romantic Period  Credit Hours:  3
Study of major authors and genres of the Romantic period: approximately 1789 to 1837.

ENGL5520  British Literature: The Victorian Period  Credit Hours:  3
Study of major authors, genres and ideas of the Victorian period: approximately 1837 to 1901.

ENGL5540  20th Century British Literature  Credit Hours:  3
British poetry of the early 20th century, including the works of such poets as Hopkins, Housman, Hardy, Yeats, Owen, Lawrence, Auden and Thomas, and the research and criticism relevant to them.

ENGL5600  Early American Literature  Credit Hours:  3

ENGL5620  American Literary Romanticism  Credit Hours:  3
American literature from 1798 to 1865, from the beginnings of Romanticism in Bryant and Cooper through the Transcendental movement, with emphasis on Hawthorne, Melville, Stowe and Douglass.

ENGL5630  American Literary Realism  Credit Hours:  3
American literature from the post-Civil War period to the early 20th century: some emphasis on naturalism and humor; such writers as Twain, James, Howells, Dreiser and Wharton.

ENGL5640  Early 20th Century American Literature  Credit Hours:  3
Study of American literature from 1900 to World War II, focusing on literary modernism and its social, political and philosophical contexts.
ENGL5650  African American Writing Before The 20th Century  Credit Hours:  3
Study of African American prose, poetry, drama and fiction from 1760 to 1915.

ENGL5660  African American Writing In The 20th Century  Credit Hours:  3
A literary, historical and social consideration of the achievement of black American writers since 1915.

ENGL5680  American Literature Since World War II  Credit Hours:  3
Major trends in postwar American literature, including traditional and uncanonical writers. Emphasis may be on poetry or prose by instructor's option.

ENGL5690  Native American Literature And Culture  Credit Hours:  3
Native American literature interrogates a selection of texts by and about Native Americans, including the oral traditions of storytelling and mythology.

ENGL5730  World Cinemas And Cultures  Credit Hours:  3
World Cinema focuses on the question of representation across cultures in terms of the relations between film, its subjects and the camera.

ENGL5750  History Of Literary Criticism  Credit Hours:  3
A chronological examination of literary criticism, analyzing the variety of claims and practices which contribute to the current frameworks used to interpret and analyze literary texts.

ENGL5780  Contemporary Literary Theories And Criticism  Credit Hours:  3
An intensive examination of contemporary literary theories and criticism, focusing on selected issues and on representative theorists and critics.
ENGL5790  Approaches To Research In English  Credit Hours:  3
An introduction to the discipline(s) of English, the methods and resources of scholarship in the field.

ENGL5800  Chaucer  Credit Hours:  3
A study of Chaucer's major works and historical contexts, with emphasis on either Troilus and Criseyde and the dream visions, or on The Canterbury Tales in their entirety.

ENGL5810  Shakespeare  Credit Hours:  3
A study of Shakespeare's plays with emphasis on his development as a dramatist and with readings in major Shakespearean criticism.

ENGL5820  Milton  Credit Hours:  3
A study of the poetry and selected prose. Particular attention is given to biography and criticism.

ENGL5850  Studies In The Work Of A British Author  Credit Hours:  3
Author changes with each offering. Consult Time Schedules for authors to be studied.

ENGL5860  Studies In The Work Of An American Author  Credit Hours:  3
Author changes with each offering. Consult Time Schedules for authors to be studied.

ENGL5950  Topics In Comparative And General Literature  Credit Hours:  3
A seminar in which special problems, specific authors, the foreign relations of English literature, and other subjects can be considered from a comparative perspective.
ENGL5980  Special Topics  Credit Hours:  3
Consideration of a special topic in literature and language.

ENGL6010  Seminar In English Instruction: Composition  Credit Hours:  3
For prospective college instructors of composition. Includes supervised teaching of composition. Graded S/U only.

ENGL6060  Seminar In English Instruction: English As A Second Language  Credit Hours:  4

Prerequisites: ENGL 5190 FOR LEVEL GR WITH MIN. GRADE OF D-

ENGL6150  Applied Linguistics I  Credit Hours:  3
Focus on the methods of "applied linguistics" in the broad sense, through case studies including research on first and second language acquisition, language teaching, the teaching of reading and writing, and other related areas.

Prerequisites: ENGL 5150 FOR LEVEL GR WITH MIN. GRADE OF D- OR LING 5150 FOR LEVEL GR WITH MIN. GRADE OF D-

ENGL6160  Applied Linguistics Lab  Credit Hours:  1
Computer lab for Applied Linguistics Research and Theory I.

Corequisite: ENGL 6150

ENGL6170  Applied Linguistics Research And Theory II  Credit Hours:  3
Focuses on theories of second/foreign language acquisition, especially, but not exclusively, as they relate to English as a Second Language.

Prerequisites: ENGL 6150 FOR LEVEL GR WITH MIN. GRADE OF D- OR LING 6150 FOR LEVEL GR WITH MIN. GRADE OF D-

ENGL6180  Methods In Composition Research, Course Design And Assessment  Credit Hours:  3
Students will learn to use rhetorical analysis, discourse analysis and ethnographic research methodologies to write a substantial research proposal, and to design a course and write criteria for assessment of student writing accomplished in such a course.

Prerequisites: ENGL 4090 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 5090 FOR LEVEL GR WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ENGL6190</td>
<td>Environments For ESL Learning</td>
<td>3</td>
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<tr>
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<td>In the course, students learn how to identify</td>
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<td>English as a Second Language learners' linguistic</td>
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<td>needs and to design and evaluate environments</td>
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<td>for ESL learning.</td>
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<td></td>
<td>Prerequisites: ENGL 3150 FOR LEVEL UG WITH MIN.</td>
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<td>GRADE OF D- OR ENGL 5150 FOR LEVEL GR WITH MIN.</td>
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<td>GRADE OF D- OR ENGL 7150 FOR LEVEL GR WITH MIN.</td>
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<td>GRADE OF D- OR L</td>
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<tr>
<td>ENGL6410</td>
<td>Seminar: Studies In Early English Literature</td>
<td>3</td>
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<tr>
<td></td>
<td>Seminar on a specialized topic in Old and/or</td>
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<tr>
<td></td>
<td>Middle English literature.</td>
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<tr>
<td>ENGL6420</td>
<td>Seminar: Studies In English Renaissance Literature</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Seminar on a specialized topic in English</td>
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<tr>
<td></td>
<td>Renaissance literature.</td>
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<tr>
<td>ENGL6500</td>
<td>Seminar: Studies In British Romantic Literature</td>
<td>3</td>
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<td></td>
<td>Seminar on a specialized topic in British</td>
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<td></td>
<td>Romantic literature.</td>
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<tr>
<td>ENGL6520</td>
<td>Seminar: Studies In Victorian Literature</td>
<td>3</td>
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<td></td>
<td>Seminar on a specialized topic in Victorian</td>
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<td>literature.</td>
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<tr>
<td>ENGL6620</td>
<td>Seminar: Studies In American Literary Romanticism</td>
<td>3</td>
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<td>Seminar on a specialized topic in American</td>
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<td>literary Romanticism.</td>
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<tr>
<td>ENGL6640</td>
<td>Seminar: Studies In 20th Century American</td>
<td>3</td>
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<tr>
<td></td>
<td>Literature.</td>
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<td>Seminar on a specialized topic in 20th century</td>
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<td></td>
<td>American literature.</td>
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<td>Course Code</td>
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<tr>
<td>ENGL6890</td>
<td>Certificate Capstone</td>
<td>3</td>
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<td>This course completes the certificate program. Students will fulfill research on writing piloted in ENGL 6180, culminating in a research essay that will be submitted for publication to an appropriate scholarly journal.</td>
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<tr>
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<td>Prerequisites: (ENGL 5090 FOR LEVEL GR WITH MIN. GRADE OF D- AND ENGL 5780 FOR LEVEL GR WITH MIN. GRADE OF D- AND ENGL 6010 FOR LEVEL GR WITH MIN. GRADE OF D- AND ENGL 6180 FOR LEVEL GR WITH MIN. GRADE OF D-)</td>
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<tr>
<td>ENGL6940</td>
<td>Externship in English as a Second Language</td>
<td>4</td>
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<tr>
<td></td>
<td>Supervised practice teaching in the form of a community-service externship in English as a Second Language. Graded S/U only.</td>
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<tr>
<td>ENGL6960</td>
<td>Master's Research</td>
<td>1-3</td>
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<tr>
<td></td>
<td>Research on, and writing of the master's paper or thesis.</td>
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<tr>
<td>ENGL6980</td>
<td>Seminar: Literary Types And Special Topics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Seminar on a specialized topic in English studies.</td>
<td></td>
</tr>
<tr>
<td>ENGL6990</td>
<td>Independent Study</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>By permission of department; may be repeated for additional credit.</td>
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<tr>
<td>ENGL7100</td>
<td>History Of The English Language</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Study of the origins and development of the English language.</td>
<td></td>
</tr>
<tr>
<td>ENGL7120</td>
<td>Middle English</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Study of the phonology, morphology and syntax of Middle English, with special attention to literary and cultural background. Representative readings in verse and prose.</td>
<td></td>
</tr>
</tbody>
</table>
ENGL7150 Linguistic Principles  
Intensive study of modern linguistic theories about the nature and structure of language, with emphasis on English.  

ENGL7850 Studies In The Work Of A British Author  
Author changes with each offering. Consult Time Schedules for authors to be studied.  

ENGL7960 Doctoral Readings  
Graded S/U only.  

ENGL7980 Special Topics  
Consideration of a special topic in literature and language.  

ENGL8150 Applied Linguistics I  
Focus on the methods of "applied linguistics" in the broad sense, through case studies including research on first and second language acquisition, language teaching, the teaching of reading and writing and other related areas.  

ENGL8160 Applied Linguistics Lab  
Computer lab for Applied Linguistics Research and Theory I.  

ENGL8170 Applied Linguistics Research And Theory II  
Focuses on theories of second/foreign language acquisition, especially, but not exclusively, as they relate to English as a Second Language.  

Prerequisites: ENGL 8150 FOR LEVEL GR WITH MIN. GRADE OF D- OR LING 8150 FOR LEVEL GR WITH MIN. GRADE OF D-
ENGL8190  Environments For Esl Learning  Credit Hours:  3
In this course, students learn how to identify English as a Second Language learners' linguistic needs and to design and evaluate environments for ESL learning.

Prerequisites: ENGL 3150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 5150 FOR LEVEL GR WITH MIN. GRADE OF D- OR ENGL 7150 FOR LEVEL GR WITH MIN. GRADE OF D- OR LING 3150 FOR LEVEL UG WITH MIN. GRADE OF D- OR LING 5150 FOR LEVEL GR WITH MIN. GRADE OF D- OR L.

ENGL8940  Externship in English as a Second Language  Credit Hours:  4
Supervised practice teaching in the form of a community-service externship in English as a Second Language. Graded S/U only.

ENGL8960  Dissertation Research  Credit Hours:  1-15
Graded S/U only Maximum of 30 hours.

ENGL8990  Independent Study  Credit Hours:  1-3
By permission of department; may be repeated for additional credit.

ENGT1000  Engineering Technology Orientation  Credit Hours:  1
Overview of careers in engineering technology, information about each program in Engineering Technology, and skills required for success in technological fields, such as computer skills.

ENGT1050  Computers For Engineering Technology  Credit Hours:  3
Concepts and techniques on the application of computers to the solution of manufacturing and engineering technology problems. Provides an introduction to computer operating systems, programming language and technical software.

ENGT2000  Professional Development  Credit Hours:  1
An introduction to the performance expectations of the engineering profession. Topics covered include resume writing, public speaking, interviewing skills, ethics, social responsibilities and the value of continuing education and professional registration.

Prerequisites: ENGT 1000 FOR LEVEL UG WITH MIN. GRADE OF D-
ENGT2500  Technical Project Management  Credit Hours: 3
General methodology of managing a technical project from concept to operational use. Emphasis is on the functions and responsibilities of the project manager related to maintaining project control and team management.

ENGT3010  Applied Statistics And Design Of Experiments  Credit Hours: 4
Introduction to probability, statistical inference and design of experiments. Topics include confidence intervals, tests of hypothesis, regression, analysis of variance, factorial experimental designs and propagation of experimental errors.

ENGT3020  Applied Engineering Mathematics  Credit Hours: 3
Prerequisites:MATH 2460 FOR LEVEL UG WITH MIN. GRADE OF D-

ENGT3030  Applied Statics and Dynamics  Credit Hours: 4

ENGT3040  Applied Materials Science  Credit Hours: 4
Study of the relationships between structures and properties for common engineering materials, including metals, polymers, ceramics and composites. Mechanical behavior, temperature effects, heat treatment, corrosion and electrical properties are covered.
Prerequisites:(ENGT 3010 FOR LEVEL UG WITH MIN. GRADE OF D- AND MET 2120 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1230 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (ENGT 3010 FOR LEVEL UG WITH MIN. GRADE OF D- AND MET 2120 FOR LEVEL UG WITH MIN. GRADE OF D-

ENGT3050  Fundamentals Of Electricity  Credit Hours: 4
An introduction to basic analytical techniques for resistive and reactive DC and AC electric circuits, and an introduction to electronic devices, including diodes and transistors. No credit towards EET degree.
Prerequisites:MATH 1340 FOR LEVEL UG WITH MIN. GRADE OF D-

ENGT3940  Co-Op Experience  Credit Hours: 1
Approved co-op work experience. Course may be repeated.
Prerequisites:ENGT 2000 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>ENGT3950</td>
<td>Co-op Experience</td>
<td>1</td>
<td>Approved co-op work experience beyond third required co-op experience. Course may be repeated.</td>
</tr>
<tr>
<td>ENGT4050</td>
<td>Senior Technology Capstone</td>
<td>3</td>
<td>A comprehensive problem in engineering technology is assigned to a group of students who work together as a team to present a solution in a formal written and oral report.</td>
</tr>
<tr>
<td>ENGT4900</td>
<td>Engineering Review For Professional Certification</td>
<td>3</td>
<td>A review and application of general engineering principles and procedures in preparation for the Fundamentals of Engineering (FE) exam. Offered for students preparing to take the exam and for those considering it.</td>
</tr>
<tr>
<td>ENGT4980</td>
<td>Special Topics In Engineering Technology</td>
<td>2-4</td>
<td>Selected topics in engineering technology with emphasis on intensive investigation of recent literature in areas of special interest.</td>
</tr>
<tr>
<td>ENGT5400</td>
<td>Applied Heat Transfer</td>
<td>3</td>
<td>Fundamentals of applied heat transfer by conduction, laminar and turbulent convection, condensation and boiling, radiation exchange between surfaces, and heat exchangers. Finite Element Analysis software is used for solving practical heat transfer problem</td>
</tr>
<tr>
<td>ENGT5500</td>
<td>Applications Of Engineering Analysis</td>
<td>3</td>
<td>A course in analysis for engineers. Topics include: Linear differential equations, continuous and discrete series representations. Laplace transforms, matrix methods, eigenvalues and eigenvectors, systems of equations.</td>
</tr>
<tr>
<td>ENGT6920</td>
<td>Special Projects In Engineering Technology</td>
<td>1-6</td>
<td>A special project is intended for the graduate student to investigate or solve a problem in an area of mechanical, electrical, construction or computer science engineering technology. The scope of the project is defined by the instructor in the area of interest.</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
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<tr>
<td>ENGT6980</td>
<td>Special Topics In Engineering Technology</td>
<td>1-6</td>
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<tr>
<td></td>
<td>A special topic in advanced engineering or technology emphasizing investigation of literature and/or methods in areas of special interest to the class and the instructor.</td>
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<tr>
<td>ENTS701</td>
<td>Otolaryngology</td>
<td>0-6</td>
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<tr>
<td>ENTS703</td>
<td>Otolaryngology Research</td>
<td>6</td>
<td></td>
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<tr>
<td>ENTS705</td>
<td>Otolaryngology Preceptorship</td>
<td>6</td>
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<tr>
<td>ENTS710</td>
<td>Otolaryngology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENTS711</td>
<td>Otolaryngology Research</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENTS712</td>
<td>Otolaryngology Preceptorship</td>
<td>3</td>
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</tr>
</tbody>
</table>
ENTS750  Otolaryngology Away Elective  Credit Hours:  3-6

ENTS751  Otolaryngology Away Elective  Credit Hours:  3

ENTS755  International Health Care  Credit Hours:  0-3

ENTS789  Ind Study in Otolaryngology  Credit Hours:  0-6

ERMD710  Emergency Med Core Elective  Credit Hours:  6

ERMD715  Emergency Medicine  Credit Hours:  0-6

ERMD745  MD/PhD Emergency Med Clinical  Credit Hours:  1-2

In the summer after the second year of medical school, MD/PhD students will identify a clinical mentor who will be responsible for overseeing clinical training for the student during a portion of his/her graduate school phase of the program, and will prov
Course Descriptions 2009-2010

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ERMD750</td>
<td>Emergency Medicine Away Elec</td>
<td>3-6</td>
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<tr>
<td>ERMD751</td>
<td>Emergency Medicine Away Elec</td>
<td>3</td>
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<tr>
<td>ERMD755</td>
<td>International Health Care</td>
<td>6</td>
</tr>
<tr>
<td>ERMD789</td>
<td>Indep. Study in ER Medicine</td>
<td>0-6</td>
</tr>
<tr>
<td>ETPT2020</td>
<td>Technology And Multimedia In Educational Environments</td>
<td>3</td>
</tr>
<tr>
<td>ETPT4200</td>
<td>Computer Skills For Instructional Professionals</td>
<td>3</td>
</tr>
<tr>
<td>ETPT4400</td>
<td>Training And Human Performance Technology</td>
<td>3</td>
</tr>
</tbody>
</table>

ETPT2020 Emphasizes the development of computing skills with a focus on productivity tools in organizing, managing, multimedia authoring, homepage development, software evaluation and presenting lessons for professional communication in K-12.

ETPT4200 Emphasizes developing skills in the use of this common productivity software and the use of computer technology in solving typical classroom problems.

ETPT4400 Provides an introduction to human performance technology (HPT), with an emphasis on the use of training as an HPT intervention.
ETPT4950  Workshop In Educational Technology & Performance Technology  Credit Hours: 1-5
Workshops are developed around topics of interest in all areas of educational technology and performance technology. Students should discuss specific content for each offering with educational technology faculty.

ETPT4990  Independent Study In Educational Technology & Performance Technology  Credit Hours: 1-5
Individual study designed to provide a student the opportunity to work individually on professional problems under the direction of educational technology & performance technology faculty.

ETPT5000  Introduction To Educational Technology  Credit Hours: 3
Introduces the field of Educational Technology and its relevant competencies. Examines current trends in Educational Technology.

ETPT5100  Instructional Systems Design Principles  Credit Hours: 3
An introduction to various ISD models and approaches for designing effective systems of instruction. Students will begin to acquire experience in the actual analysis, design, development and evaluation of instruction.

ETPT5200  Computer Skills For Instructional Professionals  Credit Hours: 3
Emphasizes developing skills in the use of this common productivity software and the use of computer technology in solving typical instructional problems.

ETPT5210  Introduction To Multimedia And Web Design  Credit Hours: 3
An introduction to the software, hardware and processes involved in the design and development of multimedia and Web-based instructional materials.

ETPT5270  Instructional Video Production  Credit Hours: 3
An introduction to all facets of producing video for use in various instructional settings.
ETPT5550 Using The Internet In The Classroom Credit Hours: 3
An introduction to effective use of Internet resources in instruction.

ETPT5950 Workshop In Educational Technology & Performance Technology Credit Hours: 1-5
Workshops are developed around topics of interest in all areas of educational technology and performance technology. Students should discuss specific content for each offering with educational technology faculty.

ETPT5980 Special Topics In Educational Technology And Performance Technology Credit Hours: 1-5
Special offerings are of interest to graduate students in educational technology and performance technology. Students should discuss specific content for each offerings with ETPT faculty.

ETPT5990 Graduate Independent Study In Educational Technology & Performance Technology Credit Hours: 1-5
Individual study designed to provide a student the opportunity to work individually on professional problems under the direction of educational technology & performance technology faculty.

ETPT6110 Instructional Systems Design Applications Credit Hours: 3
Based on the knowledge and skills acquired in ETPT 6100/8100, students design, develop and evaluate multimedia-based instructional modules and systems.
Prerequisites:(ETPT 5100 FOR LEVEL GR WITH MIN. GRADE OF D- AND ETPT 5210 FOR LEVEL GR WITH MIN. GRADE OF D-)

ETPT6150 Designing Instruction For Diverse Learner Populations Credit Hours: 3
Focuses on instructional designer's role in assessing and addressing such differences as performance environment, culture, ethnicity, physical attributes, age/experience and socioeconomic factors to maximize learning.
Prerequisites:ETPT 5100 FOR LEVEL GR WITH MIN. GRADE OF D-  

ETPT6220 Developing Computer-Based Instructional Materials Credit Hours: 3
Teaches design and development of instructional software, using multimedia development environments and strategies.
Prerequisites:(ETPT 5100 FOR LEVEL GR WITH MIN. GRADE OF D- AND ETPT 5210 FOR LEVEL GR WITH MIN. GRADE OF D-)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETPT6230</td>
<td>Developing Web-Based Instructional Materials</td>
<td>3</td>
<td>Students apply previously acquired skills in multimedia and Web design to develop instructional materials for delivery via the World Wide Web.</td>
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<tr>
<td></td>
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<td></td>
<td>Prerequisites: (ETPT 5100 FOR LEVEL GR WITH MIN. GRADE OF D- AND ETPT 5210 FOR LEVEL GR WITH MIN. GRADE OF D-)</td>
</tr>
<tr>
<td>ETPT6300</td>
<td>Technology Management In K-16 Education</td>
<td>3</td>
<td>Provides teachers and technology coordinators with the knowledge and skills necessary to manage instructional computer laboratories and services in K-16 settings.</td>
</tr>
<tr>
<td>ETPT6400</td>
<td>Human Performance Technology</td>
<td>3</td>
<td>Provides an introduction to human performance technology (HPT) for the graduate educational technology major.</td>
</tr>
<tr>
<td>ETPT6410</td>
<td>Performance Improvement Interventions</td>
<td>3</td>
<td>Investigates the options available to the human performance technology (HPT) professional for improving performance.</td>
</tr>
<tr>
<td>ETPT6420</td>
<td>Assessing Needs In Improving Performance</td>
<td>3</td>
<td>Focuses on the theoretical foundations and techniques for assessing gaps in results at individual, group and organizational levels in order to improve performance.</td>
</tr>
<tr>
<td>ETPT6430</td>
<td>Human Performance Technology Theory And Practice</td>
<td>3</td>
<td>Students investigate current trends in human performance technology (HPT) and assist one another in pursuing detailed individual study of one major topic area in HPT.</td>
</tr>
<tr>
<td>ETPT6440</td>
<td>Consulting For Performance Improvement</td>
<td>3</td>
<td>Addresses relevant models, practices and concepts of both internal and external consulting in human performance improvement (HPT) contexts in all types of organizations.</td>
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</tbody>
</table>
Course Descriptions 2009-2010

ETPT6470  Performance Intervention Analysis  Credit Hours:  3
Focus is on the conceptual framework and procedures involved in the analysis of various HRD interventions (including training) for improving performance and, ultimately, organizational results.

ETPT6510  Teaching And Learning At A Distance  Credit Hours:  3
Investigates various applications of distance learning for education and training.

ETPT6710  Systemic Change Principles And Applications  Credit Hours:  3
Examines the process of change in the diffusion and adoption of innovations in education as well as business and industry. Adoption theory is analyzed.

ETPT6810  Research And Theory In Educational Technology And Performance Technology  Credit Hours:  3
Investigates current major research trends and topics in various areas of educational technology and performance technology. Students develop and present a research proposal.

ETPT6900  Master's Seminar In Educational Technology And Performance Technology  Credit Hours:  3
This course is the culminating experience in the ETPT master's program. Students complete a project under supervision of an educational technology faculty member.
Prerequisites:(ETPT 5000 FOR LEVEL GR WITH MIN. GRADE OF D- AND ETPT 6110 FOR LEVEL GR WITH MIN. GRADE OF D-)

ETPT6930  Master's Research Project In Educational Technology And Performance Technology  Credit Hours:  1-3
Student will complete an individual research project under the orientation of a committee of at least two faculty members in ETPT, ordinarily including the faculty adviser.

ETPT6940  Practicum In Educational Technology And Performance Technology  Credit Hours:  3
Students apply ETPT course work to solve an instructional and/or performance problem for a client organization under the supervision of educational technology faculty.
ETPT6960  Master's Thesis In Educational Technology And Performance Technology  Credit Hours:  3
Students who elect this option will complete a thesis under the direction of committee of at least two faculty members from ETPT, ordinarily including the faculty adviser.

Prerequisites: ETPT 5100 FOR LEVEL GR WITH MIN. GRADE OF D-

ETPT7000  Introduction To Educational Technology  Credit Hours:  3
Introduces the field of educational technology and its relevant competencies. Examines current trends in educational technology.

ETPT7100  Instructional Systems Design Principles  Credit Hours:  3
An introduction to various ISD models and approaches for designing effective systems of instruction. Students will begin to acquire experience in the actual analysis, design, development and evaluation of instruction.

ETPT7210  Introduction To Multimedia And Web Design  Credit Hours:  3
An introduction to the software, hardware and processes involved in the design and development of multimedia and Web-based instructional materials.

ETPT7270  Instructional Video Production  Credit Hours:  3
An introduction to all facets of producing video for use in various instructional settings.

ETPT7550  Using The Internet In The Classroom  Credit Hours:  3
An introduction to effective use of Internet resources in instruction.

ETPT7940  Specialist Practicum In Educational Technology And Performance Technology  Credit Hours:  3
Observation and supervised experience in an appropriate setting. Students will be assigned to work as interns under the joint supervision of school and University personnel.

Prerequisites: ETPT 7100 FOR LEVEL GR WITH MIN. GRADE OF D-
ETPT7980  Special Topics In Educational Technology And Performance Technology  Credit Hours: 1-5
Special offerings are of interest to graduate students in educational technology and performance technology. Students should discuss specific content for each offering with ETPT faculty.

ETPT7990  Independent Study in ETPT  Credit Hours: 1-5
Individual study designed to provide a student the opportunity to work individually on professional problems under the direction of Educational Technology faculty.

ETPT8110  Instructional Systems Design Applications  Credit Hours: 3
Based on the knowledge and skills acquired in ETPT 6100/8100, students design, develop and evaluate multimedia-based instructional modules and systems.
Prerequisites: (ETPT 7100 FOR LEVEL GR WITH MIN. GRADE OF D- AND ETPT 7210 FOR LEVEL GR WITH MIN. GRADE OF D-)

ETPT8150  Designing Instruction For Diverse Learner Populations  Credit Hours: 3
Focuses on instructional designer's role in assessing and addressing such differences as performance environment, culture, ethnicity, physical attributes, age/experience and socioeconomic factors to maximize learning.
Prerequisites: ETPT 7100 FOR LEVEL GR WITH MIN. GRADE OF D-

ETPT8220  Developing Computer-Based Instructional Materials  Credit Hours: 3
Teaches design and development of instructional software, using multimedia development environments and strategies.
Prerequisites: (ETPT 7100 FOR LEVEL GR WITH MIN. GRADE OF D- AND ETPT 7210 FOR LEVEL GR WITH MIN. GRADE OF D-)

ETPT8230  Developing Web-Based Instructional Materials  Credit Hours: 3
Students apply previously acquired skills in multimedia and Web design to develop instructional materials for delivery via the World Wide Web.
Prerequisites: (ETPT 7100 FOR LEVEL GR WITH MIN. GRADE OF D- AND ETPT 7210 FOR LEVEL GR WITH MIN. GRADE OF D-)

ETPT8300  Technology Management In K-16 Education  Credit Hours: 3
Provides teachers and technology coordinators with the knowledge and skills necessary to manage instructional computer laboratories and services in K-16 settings.
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<tr>
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<tbody>
<tr>
<td>ETPT8400</td>
<td>Human Performance Technology</td>
<td>3</td>
<td>Provides an introduction to human performance technology (HPT) for the graduate educational technology major.</td>
</tr>
<tr>
<td>ETPT8410</td>
<td>Performance Improvement Interventions</td>
<td>3</td>
<td>Investigates the options available to the human performance technology (HPT) professional for improving performance.</td>
</tr>
<tr>
<td>ETPT8420</td>
<td>Assessing Needs In Improving Performance</td>
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<td>Focuses on the theoretical foundations and techniques for assessing gaps in results at individual, group and organizational levels in order to improve performance.</td>
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<td>ETPT8430</td>
<td>Human Performance Technology Theory And Practice</td>
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<td>Students investigate current trends in human performance technology (HPT) and assist one another in pursuing detailed individual study of one major topic area.</td>
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<td>ETPT8470</td>
<td>Performance Intervention Analysis</td>
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<td>Focus is on the conceptual framework and procedures involved in the analysis of various HRD interventions (including training) for improving performance and, ultimately, organizational results.</td>
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<tr>
<td>ETPT8510</td>
<td>Teaching And Learning At A Distance</td>
<td>3</td>
<td>Investigates various applications of distance learning systems for education and training.</td>
</tr>
</tbody>
</table>
ETPT8710  Systemic Change Principles And Applications  Credit Hours:  3
Examines the process of change in the diffusion and adoption of innovations in education as well as business and industry. Adoption theory is analyzed.

ETPT8810  Research And Theory In Educational Technology And Performance Technology  Credit Hours:  3
Investigates current major research trends and topics in various areas of educational technology and performance technology. Students develop and present a research proposal.

ETPT8900  Doctoral Seminar In Educational Technology And Performance Technology  Credit Hours:  3
This seminar will consider problems and provide advanced study for doctoral students in educational technology and performance technology.

Prerequisites: ETPT 7100 FOR LEVEL GR WITH MIN. GRADE OF D-

ETPT8920  Interdisciplinary Seminar In Educational Technology And Performance Technology  Credit Hours:  3
Considers issues and problems in various areas of educational technology and performance technology. Intended for advanced ETPT doctoral students.

ETPT8930  Advanced Research In Educational Technology And Performance Technology  Credit Hours:  1-5
Individual study is designed to provide the doctoral student opportunity to work individually on professional problems under the direction of educational technology and performance technology faculty.

ETPT8940  Practicum In Educational Technology And Performance Technology  Credit Hours:  3
Students apply ETPT course work to solve an instructional and/or performance problem for a client organization under the supervision of educational technology faculty.

ETPT8960  Dissertation In Educational Technology And Performance Technology  Credit Hours:  1-12
Original research in an area of educational technology and performance technology.
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>FACD620</td>
<td>Educ Res Health/Med Science</td>
<td>3</td>
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<tr>
<td>FACD625</td>
<td>Learning/Instruct Theories</td>
<td>3</td>
</tr>
<tr>
<td>FACD635</td>
<td>Teach/Learn Hlth Med Sci</td>
<td>3</td>
</tr>
<tr>
<td>FACD636</td>
<td>Teach/Learn Health Science II</td>
<td>1</td>
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<tr>
<td>FACD637</td>
<td>Teach/Learn Health Science III</td>
<td>1</td>
</tr>
<tr>
<td>FACD670</td>
<td>Teach Improve Practicum</td>
<td>1</td>
</tr>
<tr>
<td>FACD671</td>
<td>Teach Improvement Practicum II</td>
<td>1</td>
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</tbody>
</table>

FACD625: Introduction to the fundamental principles of curriculum development and assessment of learning outcomes. Application of the theoretical concepts to the development of curriculum and instructional strategies. The concept of instructional alignment will be discussed.

FACD635: Introduction to various theories of teaching and learning. Explores current issues in medical and health science education relative to the theoretical foundations of teaching. Current challenges faced by educators in the health sciences will be discussed.

FACD670: Students evaluate their own teaching and reflect on how they integrate concepts presented in FACD 635 and FACD 625 into their own performance.

Prerequisites: FACD 635 FOR LEVEL GR WITH MIN. GRADE OF S
Course Descriptions 2009-2010

FACD697  Teaching/Learning Project  Credit Hours:  3
Students are provided with the opportunity to synthesize the concepts presented and discussed in FACD 625 and FACD 635 into a unique curriculum development or educational research project.

Prerequisites:(FACD 635 FOR LEVEL GR WITH MIN. GRADE OF S AND FACD 625 FOR LEVEL GR WITH MIN. GRADE OF S)

FACD698  Teaching and Learning Proj II  Credit Hours:  2

FACD699  Teaching and Learning Proj III  Credit Hours:  2

FDNU521  Intro to Dietetic Internship  Credit Hours:  1-3

FDNU535  Nutrition thru Lifestyle: Preg  Credit Hours:  3
Nutrition of infants and young children in health and disease, from prenatalperiod to adolescence (BGSU).

FDNU536  Nutrition thru Lifestyle: Mid  Credit Hours:  3
Psychological, physiological and socioeconomic factors affecting dietary practices and nutritional needs of the elderly in group and individual situations(BGSU). Prerequisite: F&N 535.

FDNU607  Family and Community Nutrition  Credit Hours:  3
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>FDNU609</td>
<td>Micronutrients</td>
<td>3</td>
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<tr>
<td></td>
<td>Emphasis on human needs and food sources of vitamins and minerals during health and disease conditions. Identification and discussion of the chemical and physical properties of these micronutrients in foods and human systems (BGSU).</td>
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<tr>
<td>FDNU610</td>
<td>Macronutrients for Human Nutri</td>
<td>3</td>
</tr>
<tr>
<td>FDNU611</td>
<td>Clinical Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>FDNU621</td>
<td>Dietetic Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>FDNU680</td>
<td>Seminar in Food and Nutrition</td>
<td>1-3</td>
</tr>
<tr>
<td>FDNU682</td>
<td>Topics in Food and Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>FDNU685</td>
<td>Dir Rdg in Food-Nutrition</td>
<td>1-3</td>
</tr>
<tr>
<td>Course Code</td>
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<tr>
<td>FILM1310</td>
<td>Introduction To Film</td>
<td>3</td>
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<tr>
<td>FILM2310</td>
<td>Film I</td>
<td>3</td>
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<tr>
<td></td>
<td>Prerequisites:FILM 2340 FOR LEVEL UG</td>
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<tr>
<td>FILM2320</td>
<td>Video I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Prerequisites:FILM 2340 FOR LEVEL UG</td>
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<tr>
<td>FILM2340</td>
<td>Critical Approaches To Cinema</td>
<td>3</td>
</tr>
<tr>
<td>FILM2350</td>
<td>Cinema History</td>
<td>3</td>
</tr>
<tr>
<td>FILM2980</td>
<td>Cinema Studies Topic I</td>
<td>3</td>
</tr>
<tr>
<td>FILM2990</td>
<td>Special Projects</td>
<td>1-3</td>
</tr>
</tbody>
</table>
FILM3310  Film II  Credit Hours:  4
Intermediate 16mm filmmaking workshop. Emphasis on sync-sound and narrative film, advanced lighting and exposure techniques, and camera
movement. Individual and group projects. Students are required to purchase supplies.
Prerequisites: FILM 2310 FOR LEVEL UG WITH MIN. GRADE OF C AND FILM 2320 FOR LEVEL UG WITH MIN. GRADE OF C

FILM3320  Video II  Credit Hours:  4
Intermediate video production; emphasis on personal and political uses of the medium. Individual and group projects. Students are required to purchase
supplies.
Prerequisites: FILM 2320 FOR LEVEL UG WITH MIN. GRADE OF C AND FILM 2310 FOR LEVEL UG WITH MIN. GRADE OF C

FILM3350  Screenwriting  Credit Hours:  3
This course involves practical analysis of screenplays, emphasizing story structure and characterization. Students plan, write and refine story lines before
writing actual scripts.
Prerequisites: ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL
1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG
WITH MIN. GRADE OF D- OR H

FILM3360  Production Topic  Credit Hours:  4
Topics of Film or Video production including Animation, Sound, Lighting, Editing, etc. Individual and group projects. Students must purchase supplies.
Prerequisites: FILM 2310  OR FILM 2320

FILM3370  Documentary Film  Credit Hours:  3
A study of the major movements and authors of Documentary Film. Screenings included in class.
Prerequisites: (ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL
1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG
WITH MIN. GRADE OF D-) AN

FILM3380  Experimental Film  Credit Hours:  3
A study of the major movements and authors of Experimental Film. Screenings included in class.
Prerequisites: (ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL
1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG
WITH MIN. GRADE OF D-) AN

FILM3390  History Of Video Art  Credit Hours:  3
A study of the major movements of the History of Video Art and Installation. Screenings included in class.
Prerequisites: ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL
1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG
WITH MIN. GRADE OF D- OR F
FILM3410 European Cinema  
A study of the major movements and authors of European cinema. Screenings included in class.
Prerequisites: ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG WITH MIN. GRADE OF D- OR F

FILM3420 Third Cinema  
A study of the major movements and authors of Third World Cinema. Screenings included in class. FILM 2350 is recommended before taking this class.
Prerequisites: (ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG WITH MIN. GRADE OF D-) AN

FILM3730 Directing For Camera  
Directing dramatic scenes for camera with emphasis on effective director/actor communication and the creation of dramatically meaningful camera and actor blocking.
Prerequisites: FILM 2310 FOR LEVEL UG WITH MIN. GRADE OF C AND FILM 2320 FOR LEVEL UG WITH MIN. GRADE OF C

FILM3980 Cinema Studies Topic II  
A non-historical approach to specific topics of cinema studies, concentrating on problems of film theory and individual research projects. Topics vary. (May be repeated to 12 hours.)
Prerequisites: ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG WITH MIN. GRADE OF D- OR F

FILM4320 Film/Video Workshop  
Advanced independent production projects, including screenwriting. Weekly critiques of work in progress. Requires proposal for admission. Larger projects may be completed over successive semesters. May be repeated up to 8 hours.
Prerequisites: FILM 3310 FOR LEVEL UG WITH MIN. GRADE OF D- OR FILM 3320 FOR LEVEL UG WITH MIN. GRADE OF D- OR FILM 3350 FOR LEVEL UG WITH MIN. GRADE OF D- OR FILM 3360 FOR LEVEL UG WITH MIN. GRADE OF D-

FILM4340 Topics In Feminist Cinema Studies  
Crosslistings of film classes with the Department of Women's and Gender Studies. Specific topics vary. Check Course Schedule for specific subject and prerequisites.

FILM4350 Screenwriting II  
For students familiar with the fundamental elements of screenplays, this course devotes attention to writing a complete script. Students are expected to come to the class with a planned story line.
Prerequisites: FILM 3350 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 3060 FOR LEVEL UG WITH MIN. GRADE OF D-
FILM4360  Le Cinema Francais  Credit Hours:  3
A study of the development of French film and its place in world cinema.

FILM4370  Cinema Studies Seminar (topics)  Credit Hours:  3-4
A research oriented seminar concerning a specific topic of cinema studies, emphasizing original research culminating in an individual research project.

Prerequisites: (ENGL 1130 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1140 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2950 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 2960 FOR LEVEL UG WITH MIN. GRADE OF D-) AN

FILM4940  Internship  Credit Hours:  3
Internship with an approved program, company, or agency in Film. Video or television. (repeatable for 6 credit hours)

FILM4950  Honors Thesis  Credit Hours:  3
Research or a creative project on a topic in Film or Video. Required of all BA candidates seeking department honors. (Repeatable for 6 credit hours.)

FILM4990  Special Projects  Credit Hours:  1-3
Individual study provides the student an opportunity to work independently on a problem of special interest in Film/Video under the direction of the faculty. For Junior and senior students.

FINA2000  Personal Investing  Credit Hours:  3
Learn about common stocks and other securities, how to invest, and how to build financial security, using a real time stock market simulation. Not applicable toward Finance major.

FINA3060  Personal Finance  Credit Hours:  3
Designed for the non-business major, encompasses personal financial planning such as credit, insurance, home ownership, stocks, bonds, mutual funds, income tax planning and strategies. Not applicable toward Finance major.
FINA3480 Investments  Credit Hours: 3

Prerequisites: BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D-

FINA3500 International Business Finance  Credit Hours: 3
Examines the role of a financial manager in international transactions. The international environment and the role of international asset markets are emphasized.

Prerequisites: BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D-

FINA3600 Risk Management  Credit Hours: 3
Investigates non-speculative risks and the methods used to deal with them. Emphasizes on the insurance mechanism. Explores the functional aspect of the insurance operations.

Prerequisites: BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D-

FINA3610 Life And Health Insurance  Credit Hours: 3
Combines a discussion of the economic aspects of life and health insurance with basic analysis on life insurance, health and annuity contracts. Includes investigation of major functional aspects.

Prerequisites: BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D-

FINA3660 Real Estate Principles, Practices And Finance  Credit Hours: 3
A basic discussion in real estate economics, valuation theory, transfer procedures, legal characteristics, brokerage, taxation and financing techniques. Emphasis on residential properties. A term project is required.

Prerequisites: BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D-

FINA3670 Real Estate Valuation  Credit Hours: 3
Methodology of appraising large and small commercial real properties and the theory underlying appraisal techniques and valuation. A term project is required.

Prerequisites: BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D-

FINA3680 Real Estate Law, Insurance And Taxes  Credit Hours: 3
An integrative analysis of real estate, insurance, taxes and legislation as they impact commercial real estate ownership returns and risk. A term project is required.

Prerequisites: BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D-
FINA3890      Quantitative Applications In Finance  Credit Hours:  3
The financial applications of economic forecasting, economic model building, univariate and multivariate analysis, hypothesis testing and probability theory. Uses statistical package for analysis. Applications come from all areas of finance.
Prerequisites:(BUAD 2070 FOR LEVEL UG WITH MIN. GRADE OF D- AND BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D-)

FINA4080      Intermediate Financial Management  Credit Hours:  3
Explores financial decision making in depth, using case studies and computer projects. Topics include cost of capital, capital budgeting, leasing, financial planning, financial statement analysis, leverage and capital structure.
Prerequisites:BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D-

FINA4090      Financial Markets And Institutions  Credit Hours:  3
The operation and function of financial institutions and markets are examined. Emphasis on interest rate theory, institutions management and the role of e-commerce, internationalization, and the role of government through regulation and monetary policy.
Prerequisites:BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D-

FINA4100      Security Analysis & Portfolio Management  Credit Hours:  3
Emphasizes the importance of portfolio management techniques and evaluation. Techniques of financial statement analysis, economic analysis, industry analysis, theoretical issues of efficient markets, technical analysis and fundamental analysis.
Prerequisites:(BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D- AND FINA 3480 FOR LEVEL UG WITH MIN. GRADE OF D-)

FINA4480      Student Managed Portfolio Practicum  Credit Hours:  1-3
Course provides selected students active portfolio management training utilizing an endowed portfolio. Student Portfolio Managers apply equity selection analysis and portfolio risk analytics, with fiduciary responsibilities.
Prerequisites:FINA 3480 FOR LEVEL UG WITH MIN. GRADE OF D-

FINA4670      Advanced Financial Management  Credit Hours:  3
Applies financial analysis techniques and outside information through case studies of small, medium, and large companies to formulate policies, practices and funding approaches that resolve their problems and/or achieve their goals.
Prerequisites:(FINA 3480 FOR LEVEL UG WITH MIN. GRADE OF D- AND FINA 4080 FOR LEVEL UG WITH MIN. GRADE OF D-)

FINA4840      Small Business Financial Policies And Practices  Credit Hours:  3
Financial management and planning in small and medium-sized firms. Course focuses on the financial analysis and management of their problems, policies, practices and funding requirements.
Prerequisites:BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D-
FINA4870  Advanced Financial Institutions & Markets  
Seminar focusing on current issues in financial institutions and services management.

FINA4880  Real Estate Property Management  
Methodology of managing large and small commercial properties and buildings to maximize current earnings, earnings potential and asset value for the property owners.

Prerequisites: (BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D- AND FINA 3670 FOR LEVEL UG WITH MIN. GRADE OF D- AND FINA 3680 FOR LEVEL UG WITH MIN. GRADE OF D-)

FINA4890  Financial And Estate Planning  

Prerequisites: BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D-

FINA4900  Seminar In Finance  
Seminar course in advanced and specialized topics. Current readings from finance journals. Written paper required.

Prerequisites: (FINA 3480 FOR LEVEL UG WITH MIN. GRADE OF D- AND FINA 4080 FOR LEVEL UG WITH MIN. GRADE OF D-)

FINA4940  Finance Internship  
A prearranged work-study program where students gain on-the-job experience while learning some basic concepts and techniques. A written report is required.

Prerequisites: BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D-

FINA4990  Independent Study: Readings And Research In Finance  
An independent, professor supervised, course dealing with an in depth investigation of a financial area not covered adequately in another listed course.

Prerequisites: (FINA 3480 FOR LEVEL UG WITH MIN. GRADE OF D- AND FINA 4080 FOR LEVEL UG WITH MIN. GRADE OF D- AND FINA 4090 FOR LEVEL UG WITH MIN. GRADE OF D-)

FINA5160  Fundamentals Of Health Care Finance  
Information about accounting and the financial environment of the health care industry provide a foundation for financial concepts and techniques necessary for health care administrators. For non-business students only.
FINA5310  Managerial Finance  Credit Hours:  3
A course that focuses on how firms raise capital and how they allocate this capital in a manner consistent with the maximization of a firm's value.

Prerequisites: ACCT 5000 FOR LEVEL GR WITH MIN. GRADE OF D-

FINA6130  Managerial Finance  Credit Hours:  3
Emphasizes integrated financial decision making tools, techniques and theory. Stresses interpretation and analysis of data to manage long and short-term capital expenditure and financing decisions.

FINA6140  Investments And Security Analysis  Credit Hours:  3
Includes investment alternatives, risk-reward trade-offs, index models, strategies of using common stock, bonds and derivative securities, and portfolio evaluation criteria. Investment policy and strategies illustrated through a portfolio simulation.

Prerequisites: FINA 5310 FOR LEVEL GR WITH MIN. GRADE OF D- OR BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D-

FINA6150  Financial Institutions And Markets  Credit Hours:  3
Operations of financial institutions and financial markets. Topics include financial institutions as intermediaries, interest rate theory, financial instrument characteristics, institution management, internationalization and government regulation.

Prerequisites: FINA 5310 FOR LEVEL GR WITH MIN. GRADE OF D- OR BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D-

FINA6160  Advanced Health Care Finance  Credit Hours:  3
Information about the health care industry provides a foundation for knowledge of financial management theory, principles and concepts required for analysis and decision-making by health care administrators.

Prerequisites: FINA 5310 FOR LEVEL GR WITH MIN. GRADE OF D-

FINA6330  Seminar In Financial Management Problems And Policies  Credit Hours:  3
An in-depth analysis of capital budgeting, capital structure, cost of capital, valuation, dividend policy, mergers and acquisitions, agency theory, options and corporate finance, immunization, duration, swaps and risk management.

Prerequisites: FINA 6130 FOR LEVEL GR WITH MIN. GRADE OF D-

FINA6340  Seminar In Portfolio Management  Credit Hours:  3
An in-depth analysis of individual and institutional portfolios, active portfolio management, derivative security analysis, hedging techniques, international diversification and financial innovations.

Prerequisites: FINA 6140 FOR LEVEL GR WITH MIN. GRADE OF D-
FINA6350  Financial Institution Management  Credit Hours:  3
Topics include current issues in financial institution management, such as interest rate risk measurement and management, credit and liquidity risk, capital adequacy, institution marketing banking structures.
Prerequisites: FINA 6150 FOR LEVEL GR WITH MIN. GRADE OF D-

FINA6370  Mba International Financial Management  Credit Hours:  3
Techniques and theory of financial management in an international environment. The role of international markets in risk reduction and profit maximization are emphasized.
Prerequisites: FINA 5310 FOR LEVEL GR WITH MIN. GRADE OF D- OR BUAD 3040 FOR LEVEL UG WITH MIN. GRADE OF D-

FINA6380  Financial Institutions Management  Credit Hours:  3
Topics include investment and liquidity management, lending policies, bank marketing, liability management, capital management and banking structure. Cases and PC applications are used.
Prerequisites: FINA 6150 FOR LEVEL GR WITH MIN. GRADE OF D-

FINA6480  Student Managed Portfolio  Credit Hours:  3
Course provides selected students active portfolio management training utilizing an endowed portfolio. Student Portfolio Managers apply equity selection analysis and portfolio risk analytics, with fiduciary responsibilties.
Prerequisites: FINA 5310 FOR LEVEL GR WITH MIN. GRADE OF D-

FINA6750  Research In Finance  Credit Hours:  1-3
Independent research, professor supervised, on a specific topic in finance that is not covered adequately in another listed course.
Prerequisites: FINA 6130 FOR LEVEL GR WITH MIN. GRADE OF D-

FINA6840  Small Business Financial Management  Credit Hours:  3
In depth financial management and planning in small and medium-sized firms. Course focuses on the financial analysis and management of their problems, policies, practices and funding requirements.
Prerequisites: FINA 6130 FOR LEVEL GR WITH MIN. GRADE OF D-

FINA7310  Managerial Finance  Credit Hours:  3
A course that focuses on how firms raise capital and how they allocate this capital in a manner consistent with the maximization of a firm's value.
Prerequisites: ACCT 5000 FOR LEVEL GR WITH MIN. GRADE OF D-
### Course Descriptions 2009-2010

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLAN3440</td>
<td>Intercultural Communication: Principles And Practice</td>
<td>4</td>
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<tr>
<td></td>
<td>This course offers a survey of major concepts in intercultural communication. It emphasizes a balance between theoretical and practical learning opportunities and seeks to promote intercultural understanding.</td>
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<tr>
<td>FLEX001</td>
<td>Flex Time</td>
<td>0</td>
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<tr>
<td>FLEX002</td>
<td>Flex Time</td>
<td>0</td>
</tr>
<tr>
<td>FLEX003</td>
<td>Flex Time</td>
<td>0</td>
</tr>
<tr>
<td>FLEX100</td>
<td>MED REG TEST COURSE</td>
<td>0</td>
</tr>
<tr>
<td>FMMD701</td>
<td>Family Medicine</td>
<td>9</td>
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<tr>
<td></td>
<td>Family Medicine (6 weeks)</td>
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</tr>
<tr>
<td></td>
<td>Corequisite: OBGY 701 PEDS 701 PSCH 701</td>
<td></td>
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<tr>
<td>FMMD702</td>
<td>Family Medicine Elective</td>
<td>0-6</td>
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<tr>
<td></td>
<td>Inpatient, outpatient or mixed rotation experiences are available. The Toledo Hospital Family Medicine Residency offers a four-week ambulatory experience or a combination of both inpatient and ambulatory family medicine experiences. The ambulatory experie</td>
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<tr>
<td>Course Code</td>
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<tr>
<td>FMMD703</td>
<td>Family Medicine AHEC</td>
<td>0-6</td>
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<tr>
<td>FMMD705</td>
<td>Medical Education Research</td>
<td>6</td>
</tr>
<tr>
<td>FMMD707</td>
<td>Health Ed Migrant Workers</td>
<td>0-6</td>
</tr>
<tr>
<td>FMMD708</td>
<td>Acting Internship Family Med</td>
<td>0-6</td>
</tr>
<tr>
<td>FMMD709</td>
<td>Sports Medicine</td>
<td>6</td>
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<tr>
<td>FMMD710</td>
<td>Family Medicine Elective</td>
<td>2-6</td>
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<tr>
<td>FMMD711</td>
<td>Family Medicine Elective</td>
<td>2-6</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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<tr>
<td>FMMD719</td>
<td>Complementary Alternative Medicine</td>
<td>6</td>
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<td></td>
<td>The purpose of the Complementary and Integrative Medicine (CIM) rotation is to prepare medical students to communicate knowledgeably and effectively with patients in regards to their use of these modalities. The format of the rotation will consist of bot</td>
<td></td>
</tr>
<tr>
<td>FMMD720</td>
<td>Family Medicine Elective</td>
<td>0-3</td>
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<tr>
<td>FMMD721</td>
<td>Community Outreach Elective</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>This elective provides students with an opportunity to participate in the care of ambulatory patients in an underserved community setting. Students will also have the opportunity to precept first and second year students who volunteer for the Community C</td>
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</tr>
<tr>
<td>FMMD722</td>
<td>Community Outreach Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>This elective provides students with an opportunity to participate in the care of ambulatory patients in an underserved community setting. Students will also have the opportunity to precept first and second year students who volunteer for the Community C</td>
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</tr>
<tr>
<td>FMMD723</td>
<td>Law and Medicine: Intercollegiate Seminar (Informed Consent) Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Law and Medicine: Intercollegiate Seminar (Informed Consent) is an interdisciplinary case-based elective that will provide medical students the opportunity to join with law students to review, analyze, and discuss legal cases (appellate court opinions) ap</td>
<td></td>
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<tr>
<td></td>
<td>Prerequisites: FMMD 701 FOR LEVEL MD WITH MIN. GRADE OF P AND PEDS 701 FOR LEVEL MD WITH MIN. GRADE OF P AND PSCH 701 FOR LEVEL MD WITH MIN. GRADE OF P AND OBGY 701 FOR LEVEL MD WITH MIN. GRADE OF P AND MEDI 703 FOR LEVEL MD WITH MIN. GRADE OF P AND SURG 7</td>
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<tr>
<td>FMMD724</td>
<td>Fundamentals of Teaching for Medical Students Elective</td>
<td>6</td>
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<td></td>
<td>This elective provides upper level medical students with an introduction to teaching in various settings. The content of the elective will focus on (1) giving presentations, (2) facilitating small group discussions, (3) teaching and giving feedback in cli</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prerequisites: FMMD 701 FOR LEVEL MD WITH MIN. GRADE OF P AND PEDS 701 FOR LEVEL MD WITH MIN. GRADE OF P AND PSCH 701 FOR LEVEL MD WITH MIN. GRADE OF P AND OBGY 701 FOR LEVEL MD WITH MIN. GRADE OF P AND MEDI 703 FOR LEVEL MD WITH MIN. GRADE OF P AND SURG 7</td>
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<tr>
<td>FMMD725</td>
<td>Healthcare Systems: Issues, Trends, and Perspectives</td>
<td>6</td>
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<tr>
<td></td>
<td>Healthcare Systems: Issues, Trends, and Perspectives explores and analyzes the organization, delivery, financing, and evaluation of health care in the United States. The elective focuses on contemporary issues in healthcare policy including access, cost</td>
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</tbody>
</table>

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMMD726</td>
<td>Law and Med: Intercol. Seminar</td>
<td>6</td>
</tr>
<tr>
<td>FMMD740</td>
<td>Family Med: Req Remediation</td>
<td>6</td>
</tr>
<tr>
<td>FMMD745</td>
<td>MD/PhD Family Med Elective</td>
<td>1-2</td>
</tr>
<tr>
<td></td>
<td>In the summer after the second year of medical school, MD/PhD students will identify a clinical mentor. This faculty member will be responsible for the clinical training program of the student, and will provide formative and summative feedback concerning</td>
<td></td>
</tr>
<tr>
<td>FMMD750</td>
<td>Family Medicine Away Elective</td>
<td>0-6</td>
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<tr>
<td>FMMD751</td>
<td>Family Medicine Away Elective</td>
<td>0-3</td>
</tr>
<tr>
<td>FMMD755</td>
<td>International Health</td>
<td>0-6</td>
</tr>
<tr>
<td>FMMD789</td>
<td>Independent Study Family Med</td>
<td>0-6</td>
</tr>
</tbody>
</table>
### Course Descriptions 2009-2010

**FREN1090  French & Francophone Culture In The Modern World**  
Credit Hours: 3  
This course focuses on modern French and Francophone culture and their historical and geographical sources. Taught in English. (Not for major credit.)

**FREN1110  Elementary French I**  
Credit Hours: 4  
A comprehensive introductory course in French language and culture through the four basic skills: aural comprehension, reading, speaking and writing. Laboratory practice required. (not for major credit)

**FREN1120  Elementary French II**  
Credit Hours: 4  
A comprehensive introductory course in French language and culture through the four basic skills: aural comprehension, reading, speaking and writing. Laboratory practice required. (not for major credit)

**FREN1500  Review Of Elementary French**  
Credit Hours: 4  
Review of first-year college French for students who studied the language in high school and who need to strengthen communication skills, vocabulary, grammar and pronunciation before study at the 2000 level. (not for major credit)

**FREN2140  Intermediate French I**  
Credit Hours: 3  
Review and further development of command of the French language and culture through the four basic skills: aural comprehension, reading, speaking and writing. Laboratory practice required. (not for major credit)

**FREN2150  Intermediate French II**  
Credit Hours: 3  
Further review and development of command of the French language and culture through the four basic skills: aural comprehension, reading, speaking and writing. Laboratory practice required. (not for major credit)

**FREN2190  Study Abroad**  
Credit Hours: 1-3  
This course is designed to permit and encourage non-majors to spend time in a country where French is spoken. Credit granted in accordance with established departmental procedures. (Not for major credit.)

Prerequisites: FREN 2150 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNFR FOR MIN. SCORE OF 2150
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREN3010</td>
<td>Conversation And Composition I</td>
<td>3</td>
<td>Idiomatic conversation practice, dictation and pronunciation drill as well as development of practical writing skills.</td>
<td>FREN 2150 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNFR FOR MIN. SCORE OF 3000</td>
</tr>
<tr>
<td>FREN3020</td>
<td>Conversation And Composition II</td>
<td>3</td>
<td>Further aural/oral development with emphasis on the mechanics of writing in French and the organization of ideas. A writing-intensive course.</td>
<td>FREN 3010 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>FREN3170</td>
<td>Business French</td>
<td>3</td>
<td>An introduction to the language of the French-speaking world, with emphasis on business and commerce.</td>
<td>FREN 2150 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>FREN3210</td>
<td>Survey Of French Literature I</td>
<td>3</td>
<td>French literature from its origins through the eighteenth century.</td>
<td>FREN 2150 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>FREN3220</td>
<td>Survey Of French Literature II</td>
<td>3</td>
<td>French and Francophone literature from the 19th and 20th centuries.</td>
<td>FREN 2150 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>FREN3400</td>
<td>Cross-Cultural Understanding</td>
<td>3</td>
<td>An examination of the notions of culture, multiculturalism and Francophone cultures. Course content emphasizes issues of race, class and gender in U.S. and Francophone contexts.</td>
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</tr>
<tr>
<td>FREN3410</td>
<td>Survey Of French Civilization I</td>
<td>3</td>
<td>A study of the many ways in which France has contributed to world culture through architecture, painting, sculpture, music, literature, folklore, science, philosophy and education.</td>
<td>FREN 2150 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
</tbody>
</table>
FREN3420  Survey Of French And Francophone Civilization II
An introductory study of selected sociological, political, cultural and economic issues of contemporary France and Francophone areas.

Prerequisites:FREN 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

FREN3710  French Phonetics
Introduction to phonetic theory and practice in pronunciation.

Prerequisites:FREN 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

FREN4010  French Syntax And Stylistics I
A thorough study of syntax, morphology, phonetic principles and grammatical structure of French. Emphasizes various writing activities and styles.

Prerequisites:FREN 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

FREN4020  French Syntax And Stylistics II
Emphasizes various writing activities and styles. Includes a research component and basic literary criticism as well as a review of syntax and grammar. A writing-intensive and capstone course.

Prerequisites:FREN 4010 FOR LEVEL UG WITH MIN. GRADE OF D-

FREN4070  French Translation
Practice in translation of texts from French into English and English into French. Subject matter area will include commerce, natural, physical, and social sciences and the humanities.

FREN4160  Teaching Colloquium
A course in the theory and practice of teaching French and of second language acquisition in general.

FREN4190  Study Abroad
Designed to permit and encourage the French major to pursue study in a country where French is spoken. Credit granted in accordance with established departmental procedures.

Prerequisites:FREN 3020 FOR LEVEL UG WITH MIN. GRADE OF D-
FREN4200  Contemporary French And Francophone Civilization  Credit Hours: 3
A study of contemporary France and/or Francophone cultures including discussion of economics, daily life, the family, social groups, industry, politics and education.

FREN4810  French & Francophone Literature Of The 20th Century I  Credit Hours: 3
Literature of all genres from the period before World War I to the present.
Prerequisites:(FREN 3210 FOR LEVEL UG WITH MIN. GRADE OF D- AND FREN 3220 FOR LEVEL UG WITH MIN. GRADE OF D-)

FREN4820  French & Francophone Literature Of The 20th Century II  Credit Hours: 3
Literature of all genres from the period before World War I to the present.
Prerequisites:(FREN 3210 FOR LEVEL UG WITH MIN. GRADE OF D- AND FREN 3220 FOR LEVEL UG WITH MIN. GRADE OF D-)

FREN4850  Le Cinema Francais  Credit Hours: 3
A study of the development of French film and its place in world cinema.
Prerequisites:(FREN 3210 FOR LEVEL UG WITH MIN. GRADE OF D- AND FREN 3220 FOR LEVEL UG WITH MIN. GRADE OF D-)

FREN4860  La Production Feminine  Credit Hours: 3
A study of texts produced by women in the French language in various fields (for example, literary theory, film, literature, philosophy, psychoanalysis, semiotics, post-colonial theory).
Prerequisites:(FREN 3210 FOR LEVEL UG WITH MIN. GRADE OF D- AND FREN 3220 FOR LEVEL UG WITH MIN. GRADE OF D-)

FREN4910  Honors Research In French  Credit Hours: 3
Independent research in special topics. May be repeated once for additional credit.

FREN4980  Special Topics In French Studies  Credit Hours: 1-3
Study of a selected topic in French or Francophone language, literature, or culture. May be repeated when topic varies.
FREN4990 Independent Study In French
Independent research in special topics. May be repeated once for additional credit.

Credit Hours: 1-3

FREN5010 Advanced French Stylistics I
A study of structural and stylistic principles of French with emphasis on various writing activities.

Credit Hours: 3

FREN5020 Advanced French Stylistics II
A study of structural and stylistic principles of French with emphasis on various writing activities.

Credit Hours: 4

FREN5070 French Translation
Practice in translation of texts from French into English and English into French. Subject matter area will include commerce, natural, physical, and social sciences and the humanities.

Credit Hours: 3

FREN5160 Teaching Colloquium I
A course in the theory and practice of teaching French and of second language acquisition in general.

Credit Hours: 3

FREN5190 Study Abroad
Graduate credit may be granted for foreign study on the basis of credentials that certify the nature of the student's academic achievements in a French-speaking country.

Credit Hours: 1-12

FREN5200 Contemporary French And Francophone Civilization
A study of contemporary France and/or Francophone cultures including discussion of economics, daily life, the family, social groups, industry, politics and education.

Credit Hours: 3
FREN5210  French For Reading Knowledge I  
Course designed to develop sufficient reading proficiency to conduct and process research in French. (Not for majors)  
Credit Hours: 3

FREN5220  French For Reading Knowledge II  
Course designed to develop sufficient reading proficiency to conduct and process research in French. (Not for majors)  
Credit Hours: 3

FREN5310  Medieval Studies  
Introduction to Old French and readings in the major genres from the twelfth through fifteenth centuries.  
Credit Hours: 3

FREN5410  Renaissance Studies  
Literature reflecting major currents of the Renaissance.  
Credit Hours: 3

FREN5510  17th Century French Literature  
A study of the development of French Classicism.  
Credit Hours: 3

FREN5610  18th Century French Literature  
Readings from the novels, plays and prose of the major writers of the Enlightenment.  
Credit Hours: 3

FREN5710  19th Century French Literature I  
Literary and intellectual trends from Romanticism to Symbolism.  
Credit Hours: 3
FREN5810  Contemporary French & Francophone Literature I  Credit Hours:  3
Literature of all genres from the period before World War I to the present.

FREN5850  Le Cinema Francais  Credit Hours:  3
A study of the development of French film and its place in world cinema.

FREN5860  La Production Feminine  Credit Hours:  3
This course deals with examples of feminine production which have influenced French culture in the areas of film, literary criticism, literature, philosophy, psychoanalysis and semiotics.

FREN5980  Special Topics In French Studies  Credit Hours:  3
Study of a selected topic in French or Francophone language, literature, or culture. May be repeated when topic varies.

FREN5990  Independent Study In French  Credit Hours:  1-3
Independent research in special topics. May be repeated once for additional credit.

FREN6900  Research In French  Credit Hours:  1-3
Independent research of a selected topic in French or Francophone language, literature, or culture. May be repeated once for additional credit.

GEPL1010  Human Geography  Credit Hours:  3
Presentations of major approaches to geographic thought: the natural environment, regional studies, human ecology, development issues and spatial interrelationships. (not for major credit)
GEPL1100  Environmental Geography
Credit Hours: 3
While gaining a fundamental understanding of the world's physical environment, students explore issues regarding humanity's interaction with the earth. Current issues such as global warming, acid rain, ozone depletion, deforestation and desertification a

GEPL2010  Fundamentals Of Geography
Credit Hours: 3
An introduction to basic geographic concepts of both physical and human geography, with emphasis on the interrelationships of people with their physical and cultural environments.

GEPL2030  Cultural Geography
Credit Hours: 3
A learning-through-writing course. Systematic applications of the concept of cultural to geographic themes: culture areas, cultural landscapes, culture history, cultural ecology and cultural diversity.

GEPL2040  World Regional Geography
Credit Hours: 3
The course examines the geographical distribution of urban, cultural, economic and demographic phenomena in several contrasting regions of the world.

GEPL2200  Climate Change
Credit Hours: 3
An overview of the understanding of climate change and role of human activities, including atmospheric processes, greenhouse effect, carbon cycling, physical evidence, impacts, and proposed global actions in response.

GEPL2980  Selected Topics In Geography
Credit Hours: 3
Explores a topic representing a contemporary and significant issue of interest to geographers, the study of which reveals appropriate geographical principles, concepts and methodologies.

GEPL3030  Geography Of Europe
Credit Hours: 3
A detailed study of several regions. Special consideration of agriculture, industry and commerce from a regional viewpoint. Russia excluded.
GEPL3050  Geography Of U.s. And Canada  Credit Hours:  3
Systematic and regional survey of physical, social and economic geography of the region. Emphasis on the region with respect to worldwide/continental problems and prospects in economic development, management of resources and population adjustment.

GEPL3120  Geography Of Asia  Credit Hours:  3
Compares and contrasts physical and human aspects of Asian countries and peoples in relation to economic development.

GEPL3220  Geography Of Africa  Credit Hours:  3
Course begins with a general overview of Africa's physical environment, its colonial history and its people and cultures. It then examines a variety of themes associated with development, population, urban and political geography.

GEPL3300  Geography Of Latin America  Credit Hours:  3
Survey and analysis of the physical and cultural characteristics of Latin America.

GEPL3420  Quantitative Methods And Mapping  Credit Hours:  4
The presentation of quantitative methods and statistics in a spatial context with an emphasis on cartographic display of results.

GEPL3610  Conservation And Resources  Credit Hours:  3
An examination of the basic philosophies, principles and ethics of conservation and resource use. Case studies of selected resource management and environmental problems.

GEPL3650  Industrial Geography  Credit Hours:  3
An introduction to industrial geography; including industrial location theory, competing production systems, and shifts from manufacturing to service-based economies.
GEPL3860  Gender Issues In Geography  Credit Hours:  3
Traces the development and institutionalization of gender roles and how these influence spatial decisions and the formation of perceptual landscapes.

GEPL3890  Geographic Research & Natural Disasters  Credit Hours:  3
Analysis and evaluation of all types of natural disasters within a geographic framework. Some discussion of physical processes, but focus is on social/economic implications of natural hazards and disasters on a worldwide scale.

GEPL3900  Environmental Planning  Credit Hours:  3
GEPL 1100, 3550 or 3540 recommended. Explores history, goals, methods, ethics and social dilemmas encountered when trying to achieve environmentally sensitive planning. Presents case studies of environmental planning successes and failures, both within

GEPL4040  Geography Education Strategies  Credit Hours:  3
Use of geographic inquiry in the emerging integrated social studies and standard geography education curricula for K-12 instruction.

GEPL4110  Geographic Information Systems  Credit Hours:  4
Introduction to computerized methods for the capture, storage, management, analysis and display of spatially-referenced data for the solution of planning, management and research problems.

GEPL4160  Patterns Of World Development  Credit Hours:  3
An examination of contemporary global economic patterns and trends. Compares and contrasts population problems; the diffusion of multinational corporations, and the emergence of post-industrial economies.

GEPL4180  Geographic Information Systems Applications  Credit Hours:  4
Advanced applications in geographic information systems (GIS) with an emphasis on advanced GIS analysis techniques, Global Positioning System applications in GIS, database design, and a survey of vector- and raster-based GIS software and databases.

Prerequisites:GEPL 4110 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>GEPL4210</td>
<td>Land Use Planning</td>
<td>3</td>
<td>A broad review of urban and regional planning in the US and Western Europe, introducing land use planning concepts and practices and their role in shaping the direction of urban development.</td>
</tr>
<tr>
<td>GEPL4310</td>
<td>Geography Of Gypsies (Romanies) And Travelers</td>
<td>3</td>
<td>Explorations into identities and distributions of Gypsies (Romanies) and Travelers (GR&amp;T peoples) worldwide and the challenges that their study presents to Geography and to other social science disciplines.</td>
</tr>
<tr>
<td>GEPL4420</td>
<td>Quantitative Methods in Geographic</td>
<td>4</td>
<td>The presentation of quantitative methods and statistics in a spatial context with an emphasis on cartographic display of results.</td>
</tr>
<tr>
<td>GEPL4490</td>
<td>Remote Sensing Of The Environment</td>
<td>4</td>
<td>Introduction to theory, methods and techniques used to gather and analyze remote sensor data. Topics range from low altitude air photo interpretation through satellite image acquisition. Recommended: GEPL 3550.</td>
</tr>
<tr>
<td>GEPL4500</td>
<td>Digital Image Analysis</td>
<td>4</td>
<td>Explores digital image analysis techniques such as classification and principle component analysis. Terrestrial and coastal applications of satellite image analysis are performed in intensive laboratory sessions. Prerequisites: GEPL 4490 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>GEPL4520</td>
<td>Analytical And Computer Cartography</td>
<td>4</td>
<td>The theoretical and mathematical foundations of the mapping process in a digital environment. An introduction to the structure and manipulation of graphic and nongraphic geographical data to produce maps. Prerequisites: GEPL 4510 FOR LEVEL UG WITH MIN. GRADE OF D- OR GEPL 4110 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>GEPL4530</td>
<td>Principles Of Urban Planning</td>
<td>3</td>
<td>An introduction to planning theory. the planner's role in land use regulation economic development, housing and social service delivery is reviewed.</td>
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<td>Course Code</td>
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<tr>
<td>GEPL4540</td>
<td>Weather And Climate</td>
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<td></td>
<td>A survey analysis of meteorology and climatology. The physical processes of weather and the pattern of climate provide the basis for this course.</td>
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<tr>
<td>GEPL4550</td>
<td>Community Economic Development Planning</td>
<td>3</td>
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<td></td>
<td>This course explores community-based alternatives and bottom-up development as a response to economic and social difficulties. The specific issues, strategies and applications of this approach are discussed.</td>
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<tr>
<td>GEPL4570</td>
<td>Land Development And Planning</td>
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<td></td>
<td>The exploration of theoretical location analysis, pragmatic land development issues and analytic feasibility tools, and the consequences of land use policies that affect development.</td>
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<tr>
<td>GEPL4580</td>
<td>Location Analysis</td>
<td>4</td>
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<td></td>
<td>The application of geographic location theory, spatial interaction modeling, optimization techniques and geographic information system processing to the solution of facility location problems.</td>
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<tr>
<td>GEPL4600</td>
<td>Urban Design</td>
<td>3</td>
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<td></td>
<td>Concepts and procedures for the organization, design and development of public and private urban forms and spaces at the micro level, including a survey of intraurban elements, cultural, ecological and aesthetic considerations, and interdisciplinary colla</td>
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<tr>
<td>GEPL4650</td>
<td>Physical Geography</td>
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<td></td>
<td>The development, characteristics and distribution of landforms, soils, vegetation, water resources and climates are presented.</td>
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<tr>
<td>GEPL4700</td>
<td>Community Planning Workshop</td>
<td>3</td>
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<td></td>
<td>This course introduces the skills and techniques used by practitioners in the planning process. Assignments will focus on the collection, analysis and communication of information by following community planning approaches.</td>
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<td>Course Code</td>
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<tr>
<td>GEPL4710</td>
<td>Urban Environments</td>
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<td>Social, political and economic</td>
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<td>functions of cities. Geographic</td>
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<td>perspectives on land use,</td>
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<td>residential and consumer</td>
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<td>behavior, health care,</td>
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<td>recreation and criminal</td>
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<td>justice systems in contemporary</td>
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<td>and future cities.</td>
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<td>GEPL4750</td>
<td>Transportation Geography</td>
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<td>The role of transportation and</td>
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<td>communication in the economic</td>
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<td>development of places. Theories</td>
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<td>of geographic interaction,</td>
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<td>location of transport routes</td>
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<td>implications of transport</td>
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<td>investments are explored.</td>
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<tr>
<td>GEPL4810</td>
<td>Political Geography</td>
<td>3</td>
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<tr>
<td></td>
<td>An examination of geopolitical</td>
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<td>and geostrategic issues at the</td>
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<td>nation-state and international</td>
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<td>GEPL4900</td>
<td>Proseminar in Geography</td>
<td>3</td>
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<tr>
<td>GEPL4910</td>
<td>Research in Geography</td>
<td>1-4</td>
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<tr>
<td>GEPL4920</td>
<td>Readings in Geography</td>
<td>1-3</td>
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<tr>
<td>GEPL4960</td>
<td>Honors Thesis in Geography</td>
<td>4</td>
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</tbody>
</table>
Course Descriptions 2009-2010

GEPL5040  Geography Education Strategies  Credit Hours: 3
Graduate level preparation for K - 12 educators with geography specialization. Integrates social studies and standard geography curricula in response to state and federal mandates.

GEPL5110  Geographic Information Systems  Credit Hours: 4
Introduction to computerized methods for the capture, storage, management, analysis and display of spatially-referenced data for the solution of planning, management and research problems.

GEPL5160  Patterns Of World Development  Credit Hours: 3
Examination of contemporary global economic patterns and trends. Topics receiving special attention include population problems, the spread of multinational corporations, and the causes and consequences of the emergence of postindustrial economics.

GEPL5180  Geographic Information Systems Applications  Credit Hours: 4
Advanced applications in geographic information systems (GIS) with an emphasis on advanced GIS analysis techniques, Global Positioning System applications in GIS, database design, and a survey of vector- and raster-based GIS software and databases. Resear
Prerequisites:GEPL 5110 FOR LEVEL GR WITH MIN. GRADE OF D-

GEPL5210  Land Use Planning  Credit Hours: 3
A broad review of urban and regional planning in the US and Western Europe, introducing land use planning concepts and practices and their role in shaping the direction of urban development.

GEPL5310  Geography of Gypsies (Romanies) and Travelers  Credit Hours: 3
Explorations into identities and distributions of Gypsies (Romanies) and Travelers (GR&T peoples) worldwide and the challenges that their study presents to Geography and to other social science disciplines.

GEPL5420  Quantitative methods in geographic research  Credit Hours: 4
use existing description for GEPL 3420 (modified to course number GEPL 4420)
GEPL5490  Remote Sensing Of The Environment  Credit Hours:  4
Immersion in theory, methods and techniques used to gather and analyze remote sensor data. Topics range from low altitude air photo interpretation through satellite image acquisition.

GEPL5500  Digital Image Analysis  Credit Hours:  4
Explores digital image analysis techniques such as classification and principal components analysis. Terrestrial and coastal applications of satellite image analysis are performed in intensive laboratory sessions.

Prerequisites:GEPL 4490 FOR LEVEL UG WITH MIN. GRADE OF D- OR GEPL 5490 FOR LEVEL GR WITH MIN. GRADE OF D-

GEPL5520  Analytical And Computer Cartography  Credit Hours:  4
The theoretical and mathematical foundations of the mapping process in a digital environment. An introduction to the structure and manipulation of graphic and nongraphic geographical data to produce maps.

Prerequisites:GEPL 5510 FOR LEVEL GR WITH MIN. GRADE OF D-

GEPL5530  Principles Of Urban Planning  Credit Hours:  3
Elaborations on planning theory. The planner's role in land use regulation, economic development, housing and social service delivery is reviewed.

GEPL5540  Weather And Climate  Credit Hours:  3
Survey analysis of meteorology and climatology. The physical processes of weather and the pattern of climate provide the basis for this course.

GEPL5550  Community Economic Development Planning  Credit Hours:  3
This course explores community-based alternatives and bottom-up development as a response to economic and social difficulties. The specific issues, strategies and applications of this approach are discussed.

GEPL5570  Land Development And Planning  Credit Hours:  4
The exploration of theoretical location analysis, pragmatic land development issues and analytic feasibility tools, and the consequences of land use policies that affect development.
GEPL5580  Location Analysis  Credit Hours:  4
The application of geographic location theory, spatial interaction modeling, optimization techniques and geographic information system processing to the solution of facility location problems.

Prerequisites: GEPL 5570 FOR LEVEL GR WITH MIN. GRADE OF D-

GEPL5600  Urban Design  Credit Hours:  3
Concepts and procedures for the organization, design and development of public and private urban forms and spaces at the micro-level, including a survey of intraurban elements, cultural, ecological and aesthetic considerations, historic preservation, and

GEPL5650  Physical Geography  Credit Hours:  3
This course will introduce you to the fundamental aspects of physical geography: the understanding of the physical elements and processes which comprise the environment and the spatial patterns of these elements and processes.

GEPL5700  Planning Workshop  Credit Hours:  3
This course introduces the skills and techniques used by practitioners in the planning process. Assignments will focus on the collection, analysis and communication of information by following community planning approaches.

Prerequisites: GEPL 4600 FOR LEVEL UG WITH MIN. GRADE OF D-

GEPL5710  Urban Environments  Credit Hours:  3
Examines urban areas, the approaches to studying them, and explanations offered for urban processes and forms.

GEPL5750  Transportation Geography  Credit Hours:  3
The role of transportation and communication in the economic development of places. Theories of geographic interaction, location of transport routes and the developmental implications of transport investments are explored.

GEPL5810  Political Geography  Credit Hours:  3
Space and place facets of population size, growth, migration, distribution and composition with emphasis on the population trends and patterns in both developing and developed nations.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>GEPL5910</td>
<td>Directed Research</td>
<td>1-3</td>
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<tr>
<td>GEPL5920</td>
<td>Readings in Geography</td>
<td>1-3</td>
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<tr>
<td>GEPL6100</td>
<td>Philosophy &amp; General Methodology</td>
<td>3</td>
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<tr>
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<td>Past and current trends in geographic thought and related methodological implications, with elaborations by current faculty members.</td>
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<tr>
<td>GEPL6150</td>
<td>Seminar In Research Methods</td>
<td>4</td>
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<td>A computer-based course in geographic research methodology. The course includes an introduction to research design, data measurement, spatial sampling and multivariate approaches to the study of areal networks and spatial distributions.</td>
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<tr>
<td>GEPL6160</td>
<td>Seminar In Spatial Analysis</td>
<td>4</td>
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<td>A computer-based laboratory course in multivariate spatial analysis methodologies. The course includes the study of spatial graphics and mapping, computerized regionalization, areal forecasting and predictive modeling techniques. Prerequisites: GEPL 6150 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>GEPL6190</td>
<td>Advanced Geographic Information Systems Seminar</td>
<td>4</td>
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<tr>
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<td>Seminar in advanced GIS topics which include database design, spatial analysis and specialized application to spatial problems. Prerequisites: GEPL 5180 FOR LEVEL GR WITH MIN. GRADE OF D- OR GEPL 6180 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>GEPL6200</td>
<td>Earth System Science Through Inquiry-Based Learning</td>
<td>3</td>
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<td>The course is geared towards in-service teachers. Teachers will explore four natural events affecting the earth as a system, using inquiry-based learning and lesson plan development.</td>
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</tbody>
</table>
**GEPL6300**  Seminar In Resource Management  
Credit Hours: 3  
Intensive group study of major themes in the resource management literature. Primary emphasis is placed on individual student research projects oriented toward resource management problems.

**GEPL6530**  Seminar-Urban/Regional Planning Applications  
Credit Hours: 3  
The course applies forecasting and projection techniques to urban and regional problems. Population, economic base, land use, retail and fiscal impact analyses are examined.

**GEPL6550**  Seminar In Environment Planning  
Credit Hours: 3  
Intensive group study of major goals and methodologies of environmental planning. Major emphasis is placed upon individual student research projects oriented toward specific environmental planning problems.

**GEPL6570**  Seminar In Neighborhood Revitalization  
Credit Hours: 3  
Intensive group study of major themes in the revitalization of urban neighborhoods, both residential and commercial. Major emphasis is placed upon individual residential and commercial. Major emphasis is placed upon individual student research projects or

**GEPL6580**  Urban Development And Housing  
Credit Hours: 3  
Course examines the changing land use and functions of metropolitan regions. City suburban linkages, urban restructuring, urban policy and metropolitan planning issues are examined.

**GEPL6700**  Teaching Practicum In Geography  
Credit Hours: 1-6  
Methods of teaching geography in a university of college setting. Supervision of labs or discussion.

**GEPL6910**  Comprehensive Exam Preparation  
Credit Hours: 2  
The course is used for the completion of the comprehensive exam requirement for M.A candidates.

Prerequisites: (GEPL 6100 FOR LEVEL GR WITH MIN. GRADE OF D- AND GEPL 6150 FOR LEVEL GR WITH MIN. GRADE OF D-)
GEPL6920  Research Design  
Credit Hours: 3
The course will have students prepare all the main components of a thesis proposal leading to the completion presentation of the proposal to their thesis advisory committee.

Prerequisites: (GEPL 6100 FOR LEVEL GR WITH MIN. GRADE OF D- AND GEPL 6150 FOR LEVEL GR WITH MIN. GRADE OF D- AND GEPL 6910 FOR LEVEL GR WITH MIN. GRADE OF D-)

GEPL6930  General Seminar  
Credit Hours: 3

GEPL6940  Internship In Planning  
Credit Hours: 1-6
Professional work experience with a Greater Toledo planning organization related to academic education.

GEPL6950  Applied Geographic Workshop  
Credit Hours: 3
Capstone course for GIS/Applied Geographics certificate program to provide hands-on experience in applying GIS, remote sensing and desktop mapping systems to spatially-oriented problems that are unique to their individual disciplines.

GEPL6960  Thesis  
Credit Hours: 1-6
Work on a thesis is the culmination of graduate education and occupies most of the second year.

GERM1080  German Culture And Commerce  
Credit Hours: 3
Study of German culture and society with emphasis on business and economics. Taught in English. (Not for major credit.)

GERM1090  Introduction To Modern German Culture  
Credit Hours: 3
An introduction to principal social, artistic and literary aspects of modern German culture. Taught in English. (Not for major credit.)
GERM1110  Elementary German I  Credit Hours: 4
An introduction to German language and culture through listening, speaking, reading and writing. Laboratory practice required.

GERM1120  Elementary German II  Credit Hours: 4
An introduction to German language and culture through listening, speaking, reading and writing. Laboratory practice required.

Prerequisites: GERM 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNGE FOR MIN. SCORE OF 1120

GERM1500  Review Of Elementary German  Credit Hours: 4
Review of first-year college German for students who studied the language in high school and who need to strengthen communication skills, vocabulary, grammar and pronunciation before study at the 2000 level. (not for major credit)

GERM2140  Intermediate German I  Credit Hours: 3
Practice of the four language skills with grammar review and readings of a literary-cultural nature. Laboratory practice required. (not for major credit)

Prerequisites: GERM 1120 FOR LEVEL UG WITH MIN. GRADE OF D- OR GERM 1500 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNGE FOR MIN. SCORE OF 2140

GERM2150  Intermediate German II  Credit Hours: 3
Further practice of the four language skills with grammar review and readings of a literary-cultural nature. Laboratory practice required. (Not for major credit)

Prerequisites: GERM 2140 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNGE FOR MIN. SCORE OF 2150

GERM2190  Study Abroad  Credit Hours: 1-3
The course permits beginning students of German to study or work in a country where German is spoken. Credit will be awarded in accordance with established departmental procedures. (Not for major credit.)

Prerequisites: GERM 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

GERM3010  Conversation And Composition I  Credit Hours: 3
Work on advanced listening, speaking, reading and writing skills through intensive work with authentic texts that deal with contemporary issues relating to the German-speaking world.

Prerequisites: GERM 2150 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNGE FOR MIN. SCORE OF 3000
GERM3020  Conversation And Composition II  Credit Hours:  3
Work on advanced speaking, listening, reading and writing skills through intensive work with authentic texts that deal with contemporary issues relating to the German-speaking world. A writing-intensive course.
Prerequisites: GERM 3010 FOR LEVEL UG WITH MIN. GRADE OF D-

GERM3170  Business German  Credit Hours:  3
An introduction to the language and practices of German business and commerce.
Prerequisites: GERM 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

GERM3200  Survey Of German Literature  Credit Hours:  3
A survey of German literature from its origins to the present, with emphasis on literature after 1750.
Prerequisites: GERM 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

GERM3410  Survey Of German Civilization I  Credit Hours:  3
A study of different aspects of German culture and civilization such as fine arts, history, science and philosophy.
Prerequisites: GERM 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

GERM3420  Survey Of German Civilization II  Credit Hours:  3
A study of different aspects of German culture and civilization such as fine arts, history, science and philosophy.
Prerequisites: GERM 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

GERM4010  German Syntax And Stylistics I  Credit Hours:  3
Refinement of conversation and composition skills through the analysis of texts and written and oral exercises.
Prerequisites: GERM 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

GERM4020  Advanced Conversation And Composition II  Credit Hours:  4
A practical application of language skills in the preparation of a German-related project chosen, developed and presented by the student. A writing-intensive and capstone course.
Prerequisites: GERM 3020 FOR LEVEL UG WITH MIN. GRADE OF D-
Course Descriptions 2009-2010

GERM4160  Teaching Colloquium
A course in the theory and practice of teaching German and of second language acquisition in general.

GERM4190  Study Abroad
The course permits the German major or minor to study or work in a country where German is spoken. Credit awarded in accordance with established departmental procedures.

Prerequisites: GERM 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

GERM4200  German Culture And Civilization
Study of major trends and current developments in German Landeskunde. May be repeated when topic varies.

GERM4500  History Of The German Language
The course traces the emergence of the German language from its Indo-European roots to its present-day form with regard to phonological, morphological, semantic and syntactic developments.

GERM4710  German Literature Of The 19th Century
Study of selected works by authors from Bchter to Fontane.

GERM4720  German Romanticism
Study of Romantic writers of Germany such as Novalis, Eichendorff, E.T.A. Hoffmann and Bettina Brentano.

GERM4850  Genre Studies
Study of a selected literary or film genre, its development, and its influence on German culture. May be repeated for credit when topic varies.
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<th>Course Code</th>
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<tr>
<td>GERM4900</td>
<td>Studies In The Works Of An Author Or Authors</td>
<td>1-3</td>
<td>Readings of the works of a major author or authors of German literature. May be repeated when topic varies.</td>
</tr>
<tr>
<td>GERM4910</td>
<td>Honors Research In German</td>
<td>3</td>
<td>Independent research in special topics. May be repeated once for additional credit.</td>
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<tr>
<td>GERM4940</td>
<td>Work Experience Abroad</td>
<td>1-12</td>
<td>Educational work experience in a selected professional field. Experience must be carried out in a German-speaking country. Maximum of 3 hours may be applied to the German major or minor program.</td>
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<td>Prerequisites: GERM 3020 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>GERM4980</td>
<td>Special Topics In German Studies</td>
<td>1-3</td>
<td>Study of a selected topic in German language, literature, or culture. May be repeated for credit when topic varies.</td>
</tr>
<tr>
<td>GERM4990</td>
<td>Independent Study In German</td>
<td>1-3</td>
<td>Independent research in special topics. May be repeated once for additional credit.</td>
</tr>
<tr>
<td>GERM5010</td>
<td>German Syntax And Stylistics I</td>
<td>3</td>
<td>A review of German stylistic structures through the analysis of texts and written and oral exercises.</td>
</tr>
<tr>
<td>GERM5160</td>
<td>Teaching Colloquium</td>
<td>3</td>
<td>A practical course in the theories, methods and specific techniques of teaching German. May be repeated once for additional credit.</td>
</tr>
</tbody>
</table>
GERM5210  German For Reading Knowledge I  Credit Hours:  3
Elements of pronunciation, structure and vocabulary most appropriate to preparing graduate students to read effectively in German. (Not for major credit).

GERM5500  History Of The German Language  Credit Hours:  3
The course traces the emergence of the German language from its Indo-European roots to its present-day form with regard to phonological, morphological, semantic and syntactic developments.

GERM5710  German Literature Of The 19th Century  Credit Hours:  3
Study of selected works by authors from Böchner to Fontane.

GERM5980  Special Topics In German Studies  Credit Hours:  1-3
Study of a selected topic in German language, literature, or culture. May be repeated for credit when topic varies.

GERM5990  Independent Study In German  Credit Hours:  1-3
Independent research in special topics. May be repeated once for additional credit.

GERM6930  Seminar: Selected Topics  Credit Hours:  1-3
Study of selected topics in German language, literature, or culture. May be repeated once for additional credit.

GERO540  Health and Aging  Credit Hours:  3
This course is designed to investigate health-related issues in older adults. The psychosocial aspects of disability and disease will be explored. Practical application of material will be emphasized.
GERO541  Issues Contemp Gerontol Pract  Credit Hours:  3
Designed to explore introductory issues in older adults. Biological, psychological and sociological perspectives of aging will be addressed. Practical application of the material will be emphasized.

GERO542  Grief and Bereavement Issues  Credit Hours:  3
Grief and bereavement issues related to loss in later life will be explored. The role of the health care professional in facilitating the grief process will be introduced.

GERO543  Funding and Resource Generation for Older Adult Programming  Credit Hours:  3
Funding opportunities and resource generation for older adult programming will be introduced. Students will be taught basic needs assessment, grant writing and proposal development skills.

GERO544  Independent Study Gerontology  Credit Hours:  3
Intensive discipline specific study in geriatrics and gerontology, including theoretical and experimental work. May be repeated for credit.

GIFT4100  Educating Young Talented And Gifted Children  Credit Hours:  3
Examination of major topics about the development of talents and gifts with an emphasis on developmentally appropriate practices with young children.

GIFT5100  Introduction To Talented And Gifted Education  Credit Hours:  3
Survey of major topics about the education and development of talents and gifts, including history, identification, social-emotional development, curriculum, creativity, intelligence, programming and evaluation.

GIFT5200  Assessment And Evaluation In Talented And Gifted Education  Credit Hours:  3
The study of assessment and evaluation as it pertains to the special educational needs of talented and gifted persons. Theoretical and practical issues in assessing talent domains and educational programs are emphasized.
### Course Descriptions 2009-2010

**GIFT5300 Socioemotional Development Of The Talented And Gifted**  
Credit Hours: 3  
Examination of the social and emotional needs of talented and gifted persons within the context of roles in family, school and society. Attention to issues of guidance, parenting, special populations and underachievement.

**GIFT5400 Creativity In The Classroom**  
Credit Hours: 3  
Explores existing theories about creativity; examination of approaches and their implementation within various educational settings.

**GIFT5500 Curriculum I: Differentiation For The Talented And Gifted**  
Credit Hours: 3  
The study of curriculum models, theories and trends, principles and practices of differentiation, and application of content within various educational settings.

**GIFT5600 Curriculum II: Integrating & Implementing Service Plans For The Talented & Gifted**  
Credit Hours: 3  
The study, development and implementation of curriculum models across content areas both vertically and horizontally within various educational settings. Focuses on multi-exceptionalities and implications of varied service delivery plans.

**GIFT5700 Practicum In Talented And Gifted Education**  
Credit Hours: 3-6  
Provides opportunities for field experience to use and refine the strategies for persons with talented and gifted abilities.

**GIFT6000 Issues & Trends In Talented And Gifted Education**  
Credit Hours: 3  
The course examines the current theoretical and practical issues that are dominating the literature in the field. Perennial issues such as identification and intelligence will be discussed, as well as emergent topics such as the biological bases of advan

**GIFT6100 Advanced Development In Social, Cultural & Political Context In Talented & Gifted Education**  
Credit Hours: 3  
The course explores social, cultural and political contexts related to advanced development or expression of talents. Emphasizes personal reflection and recognition of hegemony related to gifted individuals' past, present and future.

Prerequisites: (GIFT 5100 FOR LEVEL GR WITH MIN. GRADE OF D- AND GIFT 5300 FOR LEVEL GR WITH MIN. GRADE OF D-)
GIFT6900  Advanced Seminar In Teaching, Learning & Curriculum Theory In Talented & Gifted Education  Credit Hours: 3
The course studies teaching, learning and curriculum from theoretical and historical perspectives to establish defensible lines of scholarly inquiry in gifted education.

GIFT6910  Seminar In Talent & Advanced Development I: Academic Talents  Credit Hours: 3
The course studies the theoretical and research basis of development of specific academic domains, such as science, mathematics, language and literature, etc. Attention is paid to tacit as well as more public kinds of knowledge.

GIFT6920  Seminar In Talent & Advanced Development II: Aesthetic Talents  Credit Hours: 3
The course studies development and expression of aesthetic abilities and talents such literacy, theatrical and/or musical expressiveness, visual and performing arts, emotional giftedness, movement and dance.

GIFT6930  Seminar In Talent & Advanced Development III: Practical, Folk & Sport  Credit Hours: 3
The course studies the theoretical and research basis for development of talents in folk, practical and athletic domains. Attention is paid to tacit, esoteric and public forms of knowledge.

GIFT6950  Master’s Research Project In Talented And Gifted Education  Credit Hours: 3
Independent research project that integrates and synthesizes concepts and practices in gifted and talented education with implementation of action research and practical inquiry study.

GIFT6980  Special Topics About Advanced Development In The Talented And Gifted  Credit Hours: 3-6
Collaborative inquiry into emerging topics in the field. This course is open to advanced graduate students in the master's or doctoral program.

GIFT6990  Independent Study In The Development Of The Talented & Gifted  Credit Hours: 1-6
Directed readings and/or study on a topic selected in conjunction with a faculty mentor.
Course Descriptions 2009-2010

GIFT7100  Introduction To Talented And Gifted Education  Credit Hours:  3
Survey of major topics about the education and development of talents and gifts, including history, identification, social-emotional development, curriculum, creativity, intelligence, programming and evaluation.

GIFT7200  Assessment And Evaluation In Talented And Gifted Education  Credit Hours:  3
The study of assessment and evaluation as it pertains to the special educational needs of talented and gifted persons. Theoretical and practical issues in assessing talent domains and educational programs are emphasized.

GIFT7300  Socioemotional Development Of The Talented And Gifted  Credit Hours:  3
Examination of the social and emotional needs of talented and gifted persons within the context of roles in family, school and society. Attention to issues of guidance, parenting, special populations and underachievement.

GIFT7400  Creativity In The Classroom  Credit Hours:  3
Explores existing theories about creativity; examination of approaches and their implementation within various educational settings.

GIFT7500  Curriculum I: Differentiation For The Talented And Gifted  Credit Hours:  3
The study of curriculum models, theories and trends, principles and practices of differentiation, and application of content within various educational settings.

GIFT7600  Curriculum II: Integrating & Implementing Service Plans For The Talented & Gifted  Credit Hours:  3
The study, development and implementation of curriculum models across content areas both vertically and horizontally within various educational settings. Focuses on multi-exceptionalities and implications of varied service delivery plans.

GIFT7700  Practicum In Talented And Gifted Education  Credit Hours:  3-6
Provides opportunities for field experience to use and refine the strategies for persons with talented and gifted abilities.
GIFT8000 Issues & Trends In Talented And Gifted Education Credit Hours: 3
The course examines the current theoretical and practical issues that are dominating the literature in the field. Perennial issues such as identification and intelligence will be discussed, as well as emergent topics such as the biological bases of advanced development.

GIFT8100 Advanced Development In Social, Cultural & Political Context In Talented & Gifted Education Credit Hours: 3
The course explores social, cultural and political contexts related to advanced development or expression of talents. Emphasizes personal reflection and recognition of hegemony related to gifted individuals' past, present and future.

GIFT8900 Advanced Seminar In Teaching, Learning & Curriculum Theory In Talented & Gifted Education Credit Hours: 3
The course studies teaching, learning and curriculum from theoretical and historical perspectives to establish defensible lines of scholarly inquiry in gifted education.

GIFT8910 Seminar In Talent & Advanced Development I: Academic Talents Credit Hours: 3
The course studies the theoretical and research basis of development of specific academic domains, such as science, mathematics, language and literature, etc. Attention is paid to tacit as well as more public kinds of knowledge.

GIFT8920 Seminar In Talent & Advanced Development II: Aesthetic Talents Credit Hours: 3
The course studies development and expression of aesthetic abilities and talents such literacy, theatrical and/or musical expressiveness, visual and performing arts, emotional giftedness, movement and dance.

GIFT8930 Seminar In Talent & Advanced Development III: Practical, Folk & Sport Credit Hours: 3
The course studies the theoretical and research basis for development of talents in folk, practical and athletic domains. Attention is paid to tacit, esoteric and public forms of knowledge.

GIFT8940 Internship In Gifted Studies Credit Hours: 3-6
Supervised internship in college teaching, or administration/leadership in agencies, or research and evaluation for advanced graduate students to practice skills and knowledge within settings relevant to career goals in talented and gifted education.
Course Descriptions 2009-2010

GIFT8960  Doctoral Dissertation  Credit Hours:  1-15
Developing, conducting analyzing and writing the dissertation.

GIFT8980  Special Topics About Advanced Development In The Talented And Gifted  Credit Hours:  3-6
Collaborative inquiry into emerging topics in the field. This course is open to advanced graduate students in the master's or doctoral program.

GIFT8990  Independent Study In The Development Of The Talented & Gifted  Credit Hours:  1-6
Directed readings and/or study on a topic selected in conjunction with a faculty mentor.

GLST2000  Principles Of Global Studies  Credit Hours:  3
A multidisciplinary exploration of the world. Global processes will be examined using many viewpoints, such as culture, politics, economics, geography and philosophy.

GLST2980  Topics In Global Studies  Credit Hours:  3
An exploration of a specific global issue. Approaches will be explicitly multidisciplinary and will make use of a variety of perspectives. May be repeated for credit.

GLST4900  Senior Seminar In Global Studies  Credit Hours:  3
Theories and research methods in global studies will be examined. A major component of the course will be a research project on some aspect of global studies.
Prerequisites:GLST 2000 FOR LEVEL UG WITH MIN. GRADE OF D-

GLST4980  Advanced Topics In Global Studies  Credit Hours:  3
An advanced multidisciplinary exploration of a specific issue in global studies. May be repeated for credit.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>GRAD600</td>
<td>Wkshp Instr Higher Education</td>
<td>2</td>
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<tr>
<td>HCAR4360</td>
<td>Quality Improvement In Health Care</td>
<td>3</td>
</tr>
<tr>
<td>HCAR4500</td>
<td>Health Care Informatics</td>
<td>4</td>
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<tr>
<td>HCAR4510</td>
<td>Medical And Legal Aspects Of Health Care</td>
<td>3</td>
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<tr>
<td>HCAR4530</td>
<td>Problem Solving In Health Care Environment</td>
<td>4</td>
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<tr>
<td>HCAR4540</td>
<td>Internship In Health Management</td>
<td>3</td>
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<tr>
<td>HCAR4550</td>
<td>Health Care Finance</td>
<td>3</td>
</tr>
</tbody>
</table>

Purpose and philosophy of quality assessment and system design. Selection/application of tools for data collection, analysis and problem resolution. Incorporates requirements of Joint Commission on the Accreditation of Healthcare Organizations.

Case study approach to application and evaluation of health care-related information systems. Includes different information systems used in health care organizations. Basic systems concepts and interrelation between departments and entire organizations.

Coverage of historical development of legal controls in health care facilities, contemporary legal medical analysis and strategy. Also involves major factors influencing education in the allied health professions.

An investigation and study of problem solving and effective decision making within the dynamics of current health care organizations.

Internship in institutional health care focusing on mid-management.

Study of financial problems and current sources of reimbursement to health care organizations. Emphasis on departmental financial management as integrated with financial management of organizations.

Prerequisites: BUAD 2050 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>HDSC501</td>
<td>Organ Transplant Procurement</td>
<td>3</td>
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<tr>
<td></td>
<td>This course introduces the student to the</td>
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<td></td>
<td>history of organ procurement and</td>
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<td>transplantation, the role of the organ</td>
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<td></td>
<td>procurement coordinator, consent,</td>
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<td>privacy issues, diversity and multicultural</td>
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<td>issues related to death and other issues</td>
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<tr>
<td>HDSC502</td>
<td>Scholarly Proj Hum Donation Sc</td>
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<tr>
<td>HDSC511</td>
<td>Clinical Practicum I</td>
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<tr>
<td></td>
<td>This course provides students with clinical</td>
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<tr>
<td></td>
<td>information, cases and experiences to</td>
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<td></td>
<td>compliment HDSC 521. Students also will</td>
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<td></td>
<td>observe organ procurement coordinators and</td>
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<td></td>
<td>will be assigned &quot;on call&quot; rotations.</td>
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<td>Corequisite: HDSC</td>
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<tr>
<td>HDSC512</td>
<td>Clinical Practicum II</td>
<td>2</td>
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<tr>
<td></td>
<td>Enables the learner to develop proficiency</td>
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<td>in the practice of human donation science</td>
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<td>in a clinical setting under the supervision</td>
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<td>of a professional organ procurement</td>
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<td>coordinator.</td>
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<td>HDSC513</td>
<td>Human Donation Sci Internship</td>
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<tr>
<td></td>
<td>Supervised full-time clinical experience</td>
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<td>in organ procurement organizations to</td>
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<td>prepare students for clinical practice.</td>
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<td>Builds upon classroom and practicum</td>
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<td>coursework.</td>
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<tr>
<td>HDSC521</td>
<td>Clin Foundation Organ Donation</td>
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<td>This course provides the foundation of the</td>
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<td>basic science and medical/surgical</td>
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<td>information required for the organ</td>
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<td>procurement coordinator. Topics include</td>
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<td>structure, normal and pathological function</td>
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<td>pharmacology, brain death, and approaches</td>
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<td>to medical and</td>
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<td></td>
<td>Corequisite: HDSC</td>
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<tr>
<td>HDSC531</td>
<td>Clinical Aspects Procurement</td>
<td>4</td>
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<tr>
<td></td>
<td>Builds upon the foundations of the basic</td>
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<td></td>
<td>science and medical-surgical information</td>
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<td>required for the organ procurement</td>
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<td></td>
<td>coordinator.</td>
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</table>
HDSC541 Human Donation Science Seminar  Credit Hours: 2
Selected topics that integrate learning and practice in human donation science.

HEAL1500 First Aid  Credit Hours: 2
Provides knowledge, skills and confidence of care for victims of sudden illnesses and injuries. CPR for Professional Rescuer and First Responder certification (NSC) upon successful course completion.

HEAL1700 Introduction to Health Careers  Credit Hours: 3
An introduction to health and human service careers through an examination of the health care system, health career educational requirements, job outlook, and professional settings in which they operate.

HEAL1800 Medical Terminology  Credit Hours: 3
Study of the origin and structure of medical words, their prefixes, suffixes, special endings and singular to plural forms. Medical terms relating to the body and to clinical procedures will be explored.

HEAL2000 Foundations Of Health Education  Credit Hours: 3
Designed to acquaint students with basic information, history, philosophy and competencies unique to health educators in both the school and community setting. The Competencies for Entry-Level Health Educators will be introduced in this course and a portf

HEAL2400 General Safety  Credit Hours: 3
An analysis of accident causation and disasters occurring in the home, workplace and community, and the presentation of a framework for developing accident counter-measures.

HEAL2500 Personal Health  Credit Hours: 3
Information is presented on the prevention and control of health problems including heart disease, cancer, infectious diseases, mental health, nutrition, human sexuality and other pertinent personal health issues.
HEAL2600 Mental Health
Credit Hours: 3
An examination of the principles of mental health, mental illnesses, mental health professionals and mental health facilities.

HEAL2700 Community Health
Credit Hours: 3
Introduces students to the structure, organization and methods of public health including an emphasis on protecting and improving the health of populations via research, needs assessment, program planning, program implementation, and program evaluation.

HEAL2750 Introduction to Epidemiology
Credit Hours: 3
This course provides students with a basic understanding of epidemiologic methods and study design and of the place of epidemiology in preventive and clinical medicine, disease investigation, program evaluation and public policy.

HEAL2800 Principles Of Nutrition
Credit Hours: 3
Students learn basic nutrition concepts. Personal nutritional practices are analyzed and evaluated to plan improvements. Encourages making informed decisions about nutrition by critically analyzing nutrition information which abounds in popular media.

HEAL2900 Health Education Linking Seminar
Credit Hours: 2
In this course, health education major students will discuss the information learned in health content courses and teaching.

HEAL2940 Practicum In Community Health
Credit Hours: 1
Supervised field experience with community health agency. Students work under direct supervision of the agency's staff and a University supervisor.

HEAL3000 Global Health
Credit Hours: 3
This is an introductory course focused on applying public health principles in developing as well as developed countries designed to fulfill a global studies distribution requirement.
HEAL3100  Health Education For Early Childhood Educators  Credit Hours:  2
This course will focus on developmentally integrated learning experiences in basic health, safety and nutrition, health appraisal procedures, and utilization of community resources.

HEAL3200  Consumer Health  Credit Hours:  3
An examination of responsible and fraudulent practices in the health field. Evaluation of selected health services, products, fads and types of quackery.

Prerequisites:HEAL 2500 FOR LEVEL UG WITH MIN. GRADE OF D-

HEAL3300  Drug Awareness  Credit Hours:  3
Focuses on the impact of drug abuse and misuse on the individual and society. Explores physiological, psychological and rehabilitative aspects of drug misuse and abuse. Prevention strategies are discussed.

HEAL3400  Health Education In Elementary Schools  Credit Hours:  3
Provides students with an introduction to comprehensive school health education programs and to the health information and skills necessary to teach health education.

HEAL3500  Environmental Health  Credit Hours:  3
An overview of the environmental effects of factors such as population growth, pollution, energy use, agriculture practices and waste disposal on the environment. Consideration will be given to solutions.

HEAL3600  Prevention And Control Of Disease  Credit Hours:  3
An examination of the etiology, pathogenesis, prevention and control of acute and chronic diseases. Current techniques of prevention, control and detection are examined.

HEAL3700  Foundations Of Human Sexuality  Credit Hours:  3
The course is designed to provide an introduction to the scientific study of human sexuality. The topic is approached from a variety of perspectives, including the historical, psychological, sociological, biological, ethical and legal.
HEAL3800  Death And Dying  Credit Hours: 3
The course is designed to analyze the relationship between death and health with emphasis upon the biological, psychological, bioethical and legal aspects of death in contemporary society.

HEAL4100  Health Behavior  Credit Hours: 3
Examines the major theories and models of health behavior and explores how those theories/models can be used to promote health and wellness in individuals, groups and populations.
Prerequisites:(HEAL 2000 FOR LEVEL UG WITH MIN. GRADE OF D- AND HEAL 2500 FOR LEVEL UG WITH MIN. GRADE OF D-)

HEAL4200  Methods And Materials In Community Health  Credit Hours: 3
Introduces students to resource materials and methods appropriate for community health education. Students will use various mediums of instruction in direct application to community health programs.

HEAL4300  Instructional Programs In Health  Credit Hours: 4
A course emphasizing theory, methods, materials and curriculum in health instruction. Required prior to student teaching.
Prerequisites:HEAL 4400 FOR LEVEL UG WITH MIN. GRADE OF D-

HEAL4350  Instructional Programs In Health: Field Experience  Credit Hours: 2
This field experience allows school health education majors the opportunity to observe and practice teaching health education in a secondary school setting.
Corequisite:HEAL 4300

HEAL4400  Health Problems Of Youth  Credit Hours: 3
Designed to provide education majors with the knowledge and skills to help identify, understand and prevent preadolescent and adolescent health problems which directly impact school and future success.

HEAL4500  Women's Health Care  Credit Hours: 3
The course is designed to consider personal health topics of special interest and applicability to women. The focus is upon the role of self-understanding and self-help in promotion of health and well-being.
HEAL4560 Health Problems Of Aging  
Acquaints students with physical changes and socio-psychological problems that occur with aging. Focus is on personal adjustment important in maintaining health throughout the aging process.

Credit Hours: 3

HEAL4600 School Health Programs  
Acquaints students with the organization, administration and evaluation of the eight components of a coordinated school health program.

Credit Hours: 3

HEAL4700 Nutritional Science  
Introduces basic human nutritional needs. Examines the role of diet and health and disease throughout the lifestyle, including weight control and fitness issues. Personal nutritional practices are analyzed and evaluated.

Prerequisites: KINE 2530 FOR LEVEL UG WITH MIN. GRADE OF D- OR KINE 2560 FOR LEVEL UG WITH MIN. GRADE OF D- OR KINE 2570 FOR LEVEL UG WITH MIN. GRADE OF D- OR HHS 2570 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3

HEAL4750 Obesity And Eating Disorders  
Examines the issues of obesity and eating disorders. Consideration of effects on the individual as well as the public health implications. Explores causes, health and emotional impact, and treatment approaches.

Prerequisites: HEAL 2800 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3

HEAL4800 Public Health Research And Statistics  
An examination of research and statistical techniques commonly employed in the health field. Topics will include research design, ethics of research, hypothesis testing and critiques of published research in health journals.

Credit Hours: 3

HEAL4900 Health Education Seminar  
Seminars are developed around selected topics of interest and allow in-depth consideration of the subject. They provide the student with advanced study in the area.

Credit Hours: 1-3

HEAL4920 Student Teaching Seminar: Health Education  
This course will focus on reflection and feedback on student teaching, portfolio development, interviewing and resume writing.

Credit Hours: 1-2

Corequisite: HEAL 4930
**HEAL4930  Student Teaching In Health Education**  
Credit Hours: 6-12  
Planned field experience in public school health education classroom under the direction of a university supervisor. Observation of an experienced teacher followed by full responsibility by the student teacher.  
Prerequisites: UPDV FOR MIN. SCORE OF 1

**HEAL4940  Senior Field Experience**  
Credit Hours: 1-9  
Planned supervised field experience with a health related agency. Students will work under direct supervision of staff personnel of the specific agency and a university supervisor.

**HEAL4950  Workshop In Health Education**  
Credit Hours: 1-4  
A workshop developed around topics of interest and concern for preservice teachers and other educational personnel.

**HEAL4990  Independent Study In Health Education**  
Credit Hours: 1-3  
Directed individual study. Specialty title, seminar sheet and permission of instructor are required.

**HEAL5200  Teaching Elementary Health Education**  
Credit Hours: 3  
Designed to provide information, skills and materials that are needed to teach elementary health education.

**HEAL5400  Professional Issues In School Nursing**  
Credit Hours: 3  
Examination of the roles and standards of school nursing, legal and ethical issues faced by school nurses, and techniques commonly employed by school nurses.

**HEAL5500  Reproductive Epidemiology**  
Credit Hours: 3  
The course is designed to consider personal health topics of special interest and applicability to women. The focus is upon the role of self-understanding and self-help in promotion of health and well-being.
HEAL5750  Obesity And Eating Disorders  Credit Hours:  3
Examines the issues of obesity and eating disorders. Consideration of effects on the individual as well as the public health implications. Explores causes, health and emotional impact, and treatment approaches.

HEAL5930  General Seminar In Health Education  Credit Hours:  1-3
A seminar to consider health problems and provide advanced study in health education. A graduate student may register for this seminar two or more times with permission of the adviser.

HEAL5940  School Health Internship  Credit Hours:  1-4
A field internship designed to supplement classroom experience by providing direct insights into the operation of a comprehensive school health education program in public schools.

HEAL5950  Workshop In Health Education  Credit Hours:  1-4
Topical workshops developed around areas of interest and concern to health professionals. Credit cannot be applied towards a degree program.

HEAL6000  Professional Issues In Health Education  Credit Hours:  2
This course will examine the historical and philosophical foundations underlying the health education profession. Occupational and ethical issues specific to the field of health education will be explored.

HEAL6100  College Teaching In Health Education  Credit Hours:  2
This course is designed to provide an overview of the issues surrounding teaching at the college level.

HEAL6280  Health Communication  Credit Hours:  3
Designed to help students identify, analyze, and apply concepts, theories and methodologies related to health communication in various settings and at various levels of influence. Emphasis will be placed on learning how to design, communicate and evaluate

Prerequisites:HEAL 6600 FOR LEVEL GR WITH MIN. GRADE OF D-
HEAL6300 Community Health Organization
Credit Hours: 3
Focuses on techniques to bring about change in a community's health status through assessment, public advocacy, coalition building, decision making, planning, policy development and political influence. Application will be emphasized.

HEAL6360 Applied Survey Research In Health
Credit Hours: 3
An examination of applied survey research techniques essential in conducting health-related surveys. Topics will include standard health survey instruments, sample selection, quality instruments, response rates and data presentation for publication.

Prerequisites: HEAL 6700 FOR LEVEL GR WITH MIN. GRADE OF D-

HEAL6420 Sports Nutrition
Credit Hours: 3
Examines basic nutritional needs as applied to physical activity and athletic performance. Focuses on the application of current research in sports nutrition to determine the nutritional needs of athletes.

HEAL6500 Issues In School Health
Credit Hours: 3
Acquaints students with problems and issues in school health education and with today's youth. The coordinated school health program is examined as a possible solution to many of these problems.

HEAL6530 Drug Use And Misuse
Credit Hours: 3
Focuses on impact of drug abuse and misuse on the individual and society. Explores physiological, psychological, societal and rehabilitative aspects of substance abuse. Prevention strategies are addressed.

HEAL6540 Human Sexuality
Credit Hours: 3
The course examines the historical, physiological, psychological, sociological and ethical aspects of human sexuality in health and illness. Extensive emphasis is placed on reviewing the pertinent periodical literature.

HEAL6590 Epidemiology Of Aging
Credit Hours: 3
An examination of major health problems and health care delivery needs of the older adult.

Prerequisites: HEAL 6700 FOR LEVEL GR WITH MIN. GRADE OF D-
HEAL6600  Health Behavior  Credit Hours:  3
Examines the role of behaviors on health status and how to influence and understand behavior through use of cognitive models and change theory. Applications through projects are emphasized.
Prerequisites: RESM 5110 FOR LEVEL GR WITH MIN. GRADE OF D-

HEAL6700  Epidemiology  Credit Hours:  3
An examination of the process utilized in determining the distribution of disease and in analyzing factors related to disease occurrence. The course focuses on measurements used in the surveillance and investigation of diseases.

HEAL6720  Issues In Minority Health  Credit Hours:  3
This course will be an examination of the demographic trends of racial/ethnic minorities and social, political and economic factors affecting the physical and mental well-being of minorities.

HEAL6750  Applied Biostatistics  Credit Hours:  3
Fundamental statistical concepts related to the practice of public health. Topics include: descriptive statistics; probability; sampling theory; hypothesis testing; life tables; and applied statistical methods, including basic non-parametric analyses.

HEAL6820  Epidemiologic Methods  Credit Hours:  3
This course covers advanced concepts in epidemiologic methods with an emphasis on statistical considerations of both observational and experimental designs.
Prerequisites: (HEAL 6700 FOR LEVEL GR WITH MIN. GRADE OF D- AND HEAL 6750 FOR LEVEL GR WITH MIN. GRADE OF D-)

HEAL6880  Scientific Writing In Health  Credit Hours:  3
This course is designed to integrate research methods with the writing of a five-chapter thesis or dissertation, including: selecting a topic, literature reviews; research hypotheses; selecting participants; data analysis; instrument development; institu
Prerequisites: (HEAL 6600 FOR LEVEL GR WITH MIN. GRADE OF D- AND HEAL 6800 FOR LEVEL GR WITH MIN. GRADE OF D-)

HEAL6900  Grant Writing In Health Sciences  Credit Hours:  3
Consideration is given to funding sources, proposal guidelines, procedures for support, budgetary requirements and evaluation procedures. Students examine different types of funded projects, develop a research prospectus and grant proposal, and explore t
Prerequisites: (RESM 6320 FOR LEVEL GR WITH MIN. GRADE OF D- AND HEAL 6800 FOR LEVEL GR WITH MIN. GRADE OF D-)
HEAL6920  Master's Research Project In Health Education  
Credit Hours: 1-4  
Open to graduate students who elect the completion of a master's project in fulfilling the research elective of the master's program. Students may register for the credits in more than one semester.

HEAL6930  Interdisciplinary Seminar In Health Education  
Credit Hours: 1-3  
A seminar to consider problems and provide advanced study in several fields of education and other disciplines related to health education. Open only to advanced graduate students.

HEAL6940  Public Health Internship  
Credit Hours: 1-4  
A field internship designed to supplement classroom experience by providing direct insight into the operation of a public health agency through participant-observer experience.

HEAL6960  Master's Research Thesis In Health Education  
Credit Hours: 1-4  
Open to graduate students who elect the completion of a master's thesis in fulfilling the research elective of the master's program. Students may register for the credits in more than one semester.

HEAL6990  Independent Study In Health Education  
Credit Hours: 1-3  
The student will participate in independent readings, laboratory research, field experience and other activities not suited for class instruction. May be repeated for course credit.

HEAL7500  Reproductive Epidemiology  
Credit Hours: 3  
This course is designed to consider personal health topics of special interest and applicability to reproductive health. The focus is on the etiology, pathology and prevention sex-specific health problems.

Prerequisites: HEAL 6700 FOR LEVEL GR WITH MIN. GRADE OF D-

HEAL7930  General Seminar In Health Education  
Credit Hours: 1-3  
A seminar to consider health problems and provide advanced study in health education. A graduate student may register for this seminar two or more times with permission of the adviser.
HEAL7940  School Health Internship  
A field internship designed to supplement classroom experience by providing direct insights into the operation of a comprehensive school health education program in public schools.

Credit Hours: 1-4

HEAL7950  Workshop In Health Education  
Topical workshops developed around areas of interest and concern to health professionals. Credit cannot be applied towards a degree program.

Credit Hours: 1-4

HEAL8000  Professional Issues In Health Education  
This course will examine the historical and philosophical foundations underlying the health education profession. Occupational and ethical issues specific to the field of health education will be explored.

Credit Hours: 2

HEAL8100  College Teaching In Health Education  
This course is designed to provide an overview of the issues surrounding teaching at the college level.

Credit Hours: 2

HEAL8280  Health Communication  
Designed to help students identify, analyze, and apply concepts, theories and methodologies related to health communication in various settings and at various levels of influence. Emphasis will be placed on learning how to design, communicate and evaluate

Credit Hours: 3

Prerequisites:HEAL 8600 FOR LEVEL GR WITH MIN. GRADE OF D-

HEAL8300  Community Health Organization  
Focuses on techniques to bring about change in a community's health status through assessment, public advocacy, coalition building, decision making, planning, policy development and political influence. Application will be emphasized.

Credit Hours: 3

HEAL8360  Applied Survey Research In Health  
An examination of applied survey research techniques essential in conducting health-related surveys. Topics will include standard health survey instruments, sample selection, quality instruments, response rates and data presentation for publication.

Credit Hours: 3

Prerequisites:HEAL 6700 FOR LEVEL GR WITH MIN. GRADE OF D-
HEAL8420  Sports Nutrition  Credit Hours:  3
Examines basic nutritional needs as applied to physical activity and athletic performance. Focuses on the application of current research in sports nutrition to determine the nutritional needs of athletes.

HEAL8460  Health Promotion Programs  Credit Hours:  3
An examination of current issues and research associated with health promotion in the workplace. This course will focus on the implementation and evaluation of health promotion programs appropriate to the workplace.

HEAL8500  Issues In School Health  Credit Hours:  3
Acquaints students with problems and issues in school health education and with today's youth. The coordinated school health program is examined as a possible solution to many of these problems.

HEAL8520  Public Health Nutrition  Credit Hours:  3
Explore the interdisciplinary and entrepreneurial approaches that lead to effective community nutrition programs. Investigates the impact of these programs to alleviate national and international nutritional problems.

HEAL8530  Drug Use And Misuse  Credit Hours:  3
Focuses on impact of drug abuse and misuse on the individual and society. Explores physiological, psychological, societal and rehabilitative aspects of substance abuse. Prevention strategies are addressed.

HEAL8540  Human Sexuality  Credit Hours:  3
The course examines the historical, physiological, psychological, sociological and ethical aspects of human sexuality in health and illness. Extensive emphasis is placed on reviewing the pertinent periodical literature.

HEAL8590  Epidemiology Of Aging  Credit Hours:  3
An examination of major health problems and health care delivery needs of the older adult.

Prerequisites:HEAL 8700 FOR LEVEL GR WITH MIN. GRADE OF D-
HEAL8600  Health Behavior  Credit Hours:  3
Examines the role of behaviors on health status and how to influence and understand behavior through use of cognitive models and change theory. Applications through projects are emphasized.
Prerequisites: RESM 5110 FOR LEVEL GR WITH MIN. GRADE OF D-

HEAL8700  Epidemiology  Credit Hours:  3
An examination of the process utilized in determining the distribution of disease and in analyzing factors related to disease occurrence. The course focuses on measurements used in the surveillance and investigation of diseases.

HEAL8720  Issues In Minority Health  Credit Hours:  3
This course will be an examination of the demographic trends of racial/ethnic minorities and social, political and economic factors affecting the physical and mental well-being of minorities.

HEAL8750  Applied Biostatistics  Credit Hours:  3
Fundamental statistical concepts related to the practice of public health. Topics include: descriptive statistics; probability; sampling theory; hypothesis testing; life tables; and applied statistical methods, including basic non-parametric analyses.

HEAL8800  Evaluation Of Health Programs  Credit Hours:  3
An exploration of types of program evaluation, evaluation models, data collection, types of data, data quality, evaluation reports, standard data collection instruments and ethical issues in health program evaluation.
Prerequisites: HEAL 8460 FOR LEVEL GR WITH MIN. GRADE OF D-

HEAL8820  Epidemiologic Methods  Credit Hours:  3
This course covers advanced concepts in epidemiologic methods with an emphasis on statistical considerations of both observational and experimental designs.
Prerequisites: (HEAL 6700 FOR LEVEL GR WITH MIN. GRADE OF D- AND HEAL 6750 FOR LEVEL GR WITH MIN. GRADE OF D-)

HEAL8880  Scientific Writing In Health  Credit Hours:  3
This course is designed to integrate research methods with the writing of a five-chapter thesis or dissertation, including: selecting a topic, literature reviews; research hypotheses; selecting participants; data analysis; instrument development; institution
Prerequisites: (HEAL 8600 FOR LEVEL GR WITH MIN. GRADE OF D- AND HEAL 8800 FOR LEVEL GR WITH MIN. GRADE OF D-)
HEAL8900  Grant Writing In Health Sciences  Credit Hours:  3
Consideration is given to funding sources, proposal guidelines, procedures for support, budgetary requirements and evaluation procedures. Students examine different types of funded projects, develop a research prospectus and grant proposal, and explore t
Prerequisites:(RESM 8320 FOR LEVEL GR WITH MIN. GRADE OF D- AND HEAL 8800 FOR LEVEL GR WITH MIN. GRADE OF D-)

HEAL8930  Interdisciplinary Seminar In Health Education  Credit Hours:  1-3
A seminar to consider problems and provide advanced study in several fields of education and other disciplines related to health education. Open only to advanced graduate students.

HEAL8940  Public Health Internship  Credit Hours:  1-4
A field internship designed to supplement classroom experience by providing direct insight into the operation of a public health agency through participant-observer experience.

HEAL8960  Doctoral Research Dissertation  Credit Hours:  1-12
Graduate students may register for credit in more than one semester. Dissertation credit toward the degree program may not exceed 16 hours.

HEAL8990  Independent Study In Health Education  Credit Hours:  1-3
The student will participate in independent readings, laboratory research, field experience and other activities not suited for class instruction. May be repeated for course credit.

HED5920  Introduction to Master's Studies in Higher Education  Credit Hours:  1-3
This course explores the expectations and challenges of graduate education. We will look at the role of the graduate student, faculty, adviser, and other university offices that support your journey.

HED5930  Interdisciplinary Seminar  Credit Hours:  3
This seminar formatted course will provide the opportunity to explore problems and issues from the perspectives of the various fields of education and of other disciplines related to higher education.
HED5950  Workshop In Higher Education  Credit Hours:  1-3
Each workshop is developed on a topic of interest to faculty members and administrators of higher education institutions. Practical applications of the workshop topic will be emphasized.

HED5980  Special Topics In Higher Education  Credit Hours:  1-3
This seminar formatted course will provide advanced study in special topics of interest to faculty and administrators in higher education.

HED6010  History Of Higher Education  Credit Hours:  3
Introduction to the historical development of American higher education from colonial times to the 20th century. Emphasis on the major historical events that contributed to the diversity of higher education.

HED6210  The Community College  Credit Hours:  3
A study of the history, distinguishing characteristics (mission, functions, organization, curriculum, finances) and current issues facing community colleges, including marginalization of students and institutions, and transfer and articulation policy.

HED6250  Technical Higher Education  Credit Hours:  3
Technical, occupational and career education account for over 40 percent of community college enrollments. This course examines the development, mission, functions and assessment of technical education, including community needs assessment.

HED6270  Learning and Teaching in Higher Education  Credit Hours:  3
Course facilitates application of theory to practice of teaching in higher education. Students explore diverse pedagogical approaches, professional faculty roles effective learning and teaching.

HED6410  College & University Curriculum  Credit Hours:  3
Introduction to patterns of curriculum development and organization in post-secondary education. Addresses issues governing curriculum planning, including social, economic, political, historical and philosophical contexts influencing curriculum formation.
HED6440  General Education In Higher Education  Credit Hours:  3
This course will examine the meaning and purposes of general education in the United States. Students will become acquainted with the design, analysis and evaluation of general education curricula.

HED6510  The American College Student  Credit Hours:  3
This course explores the character and nature of student populations in contemporary American colleges and universities and considers the impact of campus environments and experiences on development, interaction and learning.

HED6520  Organization & Management Of Student Affairs  Credit Hours:  3
A brief overview of functional areas and philosophies is followed by a comprehensive examination of student affair's organization and management from the perspective of the Chief Student Affairs Officer.

HED6530  Theories Of Student Development  Credit Hours:  3
Students will critically examine traditional and contemporary theories of college student development, identify methods of assessing that development, and explore ways to apply the theories to everyday practice.

HED6610  Issues Of Access In Higher Education  Credit Hours:  3
This course explores access issues that result from the changing educational needs of society and analyzes the application of democratic ideals of American education to current educational policies affecting access.

HED6630  Faculty Issues in Higher Ed  Credit Hours:  3

HED6640  Governance And Administration In Higher Education  Credit Hours:  3
Course focuses on internal administrative organization and governance that supports the academic enterprise. Purposes and development of mission and functions, centralization and decentralization, accreditation, appraisal, accountability, and assessment
HED6660  Building Academic Culture
Credit Hours:  3
An examination of institutional culture and the interplay of student, faculty and administrative subcultures. Critical perspectives are used to analyze and understand cultural inquiry, conflict and collaboration in post secondary institutions.

HED6700  Finance Of Higher Education
Credit Hours:  3
This course discusses issues related to the expenditure of funds for higher education within institutions and systems. Issues addressed include capital funding, endowment management and budget preparation.

HED6710  Economics Of Higher Education
Credit Hours:  3
This course discusses issues related to the revenue sources of higher education and discussion of the social worth of public and private sector investment in higher education. Issues include the connection of educational outcomes to educational budget mak

HED6730  Legal Aspects Of Higher Education
Credit Hours:  3
Law, its history, philosophy and practical application to and effect on the creation and administration of public and private higher education is examined in the context of court decisions.

HED6750  Strategic Planning And Decision Making
Credit Hours:  3
Engages students in development of model strategic plans applicable to academic and nonacademic programs. Students learn how "big strategic decisions are made right," by focusing on strategic mission, analysis, goals, objectives, implementation and evalu

HED6770  Evaluation And Outcomes Assessment In Higher Education
Credit Hours:  3
Historical concepts and basis for evaluation of college and university programs, emphasizing criteria and procedure and how evaluation and outcomes assessment through regional accrediting bodies, state and federal agencies contribute to public confidence.

HED6790  Managing College And University Personnel
Credit Hours:  3
This course acquaints students with key concepts regarding how to effectively manage human resources within large, medium-sized, small, public and private institutions of higher education. Topics covered will include collective bargaining in higher educat
HED6810 Women In Higher Education  Credit Hours:  3
This course will study the history of women's college education in the United States with special emphases on the influence of cultural and social events that shape this history.

HED6820 Institutional Advancement In Higher Education  Credit Hours:  3
Overview of the field of development and introduction to the knowledge, research and theory emerging in the field. Focus on practical skill enhancement as it applies to building development programs.

HED6830 The Independent College  Credit Hours:  3
This course details the role, place and function of the four year independent colleges, focusing on their development, organization, funding and evaluation.

HED6840 Adult Continuing Education  Credit Hours:  3
Course assists student in interpreting the highly diversified field of adult continuing education from the point of view of the student's current or anticipated involvement. Intended for teachers of adults.

HED6850 Critical Issues In Higher Education  Credit Hours:  3
Focus on critical issues facing administrators in post-secondary education in the United States. Issues discussed change yearly. Students will read widely and prepare a research paper or a project.

HED6870 Economic Development And Higher Education  Credit Hours:  3
How do institutions of higher education impact their local economies? This course examines various roles and methods by which institutions of higher education add to economic development.

HED6920 Master's Project In Higher Education  Credit Hours:  1-3
Open to graduate students who elect the completion of a research project in fulfilling the research requirements of the master's program.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>HED6940</td>
<td>Master's Practicum In Higher Education</td>
<td>1-3</td>
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<td>This course provides students with the opportunity to develop specialized skills working in an area of college student personnel administration. Students will work under the supervision of an experienced administrator.</td>
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<tr>
<td>HED6960</td>
<td>Master's Thesis In Higher Education</td>
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<td>Open to graduate students who elect the completion of a research thesis in fulfilling the research requirements of the master's program.</td>
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<tr>
<td>HED6980</td>
<td>Master's Capstone Seminar</td>
<td>1-3</td>
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<td>This course aims to strengthen students', academic and professional skills and to apply them in different student affairs contexts. As the culminating requirement, students develop an electronic academic learning portfolio.</td>
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<tr>
<td>HED6990</td>
<td>Independent Study In Higher Education-Masters</td>
<td>1-3</td>
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<tr>
<td></td>
<td>Provides student the opportunity to work independently on professional problem under direction of Higher Education Program faculty member. Student meets individually with instructor rather than through formal class meetings.</td>
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<tr>
<td>HED7930</td>
<td>Interdisciplinary Seminar</td>
<td>3</td>
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<td>This seminar formatted course will provide the opportunity to explore problems and issues from the perspectives of the various fields of education and of other disciplines related to higher education.</td>
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<td>HED7950</td>
<td>Workshop In Higher Education</td>
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<td>Each workshop is developed on a topic of interest to faculty members and administrators of higher education institutions. Practical applications of the workshop topic will be emphasized.</td>
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<td>HED7980</td>
<td>Special Topics In Higher Education</td>
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<td>This seminar formatted course will provide advanced study in special topics of interest to faculty and administrators in higher education.</td>
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**HED8010 History Of Higher Education**  
Credit Hours: 3  
Introduction to the historical development of American higher education from colonial times to the 20th century. Emphasis on the major historical events that contributed to the diversity of higher education.

**HED8020 Advanced Seminar In Historiography Hied**  
Credit Hours: 3  
Historical methods applied to research in higher education discussed. Course focuses on in-depth readings of primary source material on liberal arts colleges, universities and community colleges. Research paper required.

**HED8030 Federal And State Policy Analysis**  
Credit Hours: 3  
Designed for those interested in federal and state policy as related to higher education. Students will investigate specific federal and state legislation and regulatory issues.

**HED8210 The Community College**  
Credit Hours: 3  
A study of the history, distinguishing characteristics (mission, functions, organization, curriculum, finances), and current issues facing community colleges, including marginalization of students and institutions, and transfer and articulation policy.

**HED8250 Technical Higher Education**  
Credit Hours: 3  
Technical, occupational and career education account for over 40 percent of community college enrollments. This course examines the development, mission, functions and assessment of technical education, including community needs assessment.

**HED8270 Learning and Teaching in Higher Education**  
Credit Hours: 3  
Course facilitates application of theory to practice of teaching in higher education. Students explore diverse pedagogical approaches, professional faculty roles effective learning and teaching.

**HED8410 College & University Curriculum**  
Credit Hours: 3  
Introduction to patterns of curriculum development and organization in post-secondary education. Addresses issues governing curriculum planning, including social, economic, political, historical and philosophical contexts influencing curriculum formation.
HED8440 General Education In Higher Education  Credit Hours:  3
This course will examine the meaning and purposes of general education in the United States. Students will become acquainted with the design, analysis and evaluation of general education curricula.

HED8510 The American College Student  Credit Hours:  3
This course explores the character and nature of student populations in contemporary American colleges and universities and considers the impact of campus environments and experiences on development, interaction and learning.

HED8520 Org & Mgmt Of Student Affairs  Credit Hours:  3
A brief overview of functional areas and philosophies is followed by a comprehensive examination of student affair's organization and management from the perspective of the Chief Student Affairs Officer.

HED8530 Theories Of Student Development  Credit Hours:  3
Students will critically examine traditional and contemporary theories of college student development, identify methods of assessing that development, and explore ways to apply the theories to everyday practice.

HED8570 Research In Higher Education  Credit Hours:  3
Introduces students to the research literature in higher education; historical, qualitative and sociological research approaches are discussed. Introduces students to many of the major scholarly figures and modern research controversies within the field of

HED8580 Leadership Theory  Credit Hours:  3
Focuses on historical and philosophical aspects of leadership theory, as well as on personalized models for the students' future leadership roles in higher education. Other emphases include the importance of vision and values in the leadership process and

HED8610 Issues Of Access In Higher Education  Credit Hours:  3
This course explores access issues that result from the changing educational needs of society and analyzes the application of democratic ideals of American education to current educational policies affecting access.
HED8630 Faculty Issues In Higher Education  
Course focuses on faculty issues in higher education, and addresses academic and student freedom, developing effective promotion and tenure policies appropriate to different types of institutions, and faculty development programs.

HED8640 Governance And Administration In Higher Education  
Course focuses on internal administrative organization and governance that supports the academic enterprise. Purposes and development of mission and functions, centralization and decentralization, accreditation, appraisal, accountability, and assessment.

HED8660 Building Academic Culture  
An examination of institutional culture and the interplay of student, faculty and administrative subcultures. Critical perspectives are used to analyze and understand cultural inquiry, conflict and collaboration in post secondary institutions.

HED8700 Finance Of Higher Education  
This course discusses issues related to the expenditure of funds for higher education within institutions and systems. Issues addressed include capital funding, endowment management and budget preparation.

HED8710 Economics Of Higher Education  
This course discusses issues related to the revenue sources of higher education and discussion of the social worth of public and private sector investment in higher education. Issues include the connection of educational outcomes to educational budget mak

HED8730 Legal Aspects Of Higher Education  
Law, its history, philosophy and practical application to and effect on the creation and administration of public and private higher education is examined in the context of court decisions.

HED8750 Strategic Planning And Decision Making  
Engages students in development of model strategic plans applicable to academic and nonacademic programs. Students learn how "big strategic decisions are made right," by focusing on strategic mission, analysis, goals, objectives, implementation and evalu
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<td>HED8770</td>
<td>Evaluation And Outcomes Assessment In Higher Education</td>
<td>3</td>
<td>Historical concepts and basis for evaluation of college and university programs, emphasizing criteria and procedure and how evaluation and outcomes assessment through regional accrediting bodies, state and federal agencies contribute to public confidence.</td>
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<td>HED8790</td>
<td>Managing College And University Personnel</td>
<td>3</td>
<td>This course acquaints students with key concepts regarding how to effectively manage human resources within large, medium-sized, small, public and private institutions of higher education. Topics covered will include collective bargaining in higher education.</td>
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<td>HED8810</td>
<td>Women In Higher Education</td>
<td>3</td>
<td>This course will study the history of women's college education in the United States with special emphases on the influence of cultural and social events that shape this history.</td>
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<td>HED8820</td>
<td>Institutional Advancement In Higher Education</td>
<td>3</td>
<td>Overview of the field of development and introduction to the knowledge, research, and theory emerging in the field. Focus on practical skill enhancement as it applies to building development programs.</td>
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<td>HED8830</td>
<td>The Independent College</td>
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<td>This course details the role, place and function of the four year independent colleges, focusing on their development, organization, funding and evaluation.</td>
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<td>Course assists student in interpreting the highly diversified field of adult continuing education from the point of view of the student's current or anticipated involvement. Intended for teachers of adults.</td>
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<td>HED8850</td>
<td>Critical Issues In Higher Education</td>
<td>3</td>
<td>Focus on critical issues facing administrators in post-secondary education in the United States. Issues discussed change yearly. Students will read widely and prepare a research paper or a project.</td>
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<td>HED8870</td>
<td>Economic Development And Higher Education</td>
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<td>How do institutions of higher education impact their local economies? This course examines various roles and methods by which institutions of higher education add to economic development.</td>
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<td>HED8920</td>
<td>Advanced Seminar</td>
<td>3</td>
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<td>An in-depth review of key issues related to campus leadership are discussed in seminar form. Students may work with professor on cutting-edge research project.</td>
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<tr>
<td>HED8930</td>
<td>Doctoral Research Seminar In Higher Education</td>
<td>3</td>
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<td>This course examines research findings and research methodology in Higher Education as they are pertinent to the development of dissertation proposals. Dissertation proposal development is encouraged.</td>
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<tr>
<td>HED8940</td>
<td>Doctoral Internship In Higher Education</td>
<td>1-3</td>
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<td>Designed specifically for doctoral students in the higher education program who are interested in an actual supervised experience in teaching or administration.</td>
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<tr>
<td>HED8960</td>
<td>Dissertation</td>
<td>1-12</td>
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<td>Original and specific research problem of a scholarly nature, requiring the application of advanced research skills and techniques to study. Students must take a minimum of 10 semester dissertation hours and may count a maximum of 12 hours towards the degree.</td>
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<tr>
<td>HED8990</td>
<td>Independent Study In Higher Education</td>
<td>1-3</td>
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<td>Provides student the opportunity to work independently on professional problem under direction of Higher Education Program faculty member. Student meets individually with instructor rather than through formal class meetings.</td>
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<tr>
<td>HHS1000</td>
<td>Health And Human Services/College Orientation</td>
<td>1</td>
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<td></td>
<td>Acquaints the new student with the services, policies, procedures and layout of the university, college and department. Establishes relationships between new students, full-time professors and peer mentors during this time of adjustment. Must be taken f</td>
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</tbody>
</table>
HHS2980  Special Topics In Health & Human Services  Credit Hours: 1-3
Selected subjects in the field of Health and/or Human Service of special interest to the class and the professor - lower division.

HHS4980  Special Topics In Health & Human Services  Credit Hours: 1-3
Selected subjects in the field of Health and/or Human Service of special interest to the class and the professor - upper division.

HIM1110  Basic Medical Terminology  Credit Hours: 3
This course introduces medical word building, prefixes, suffixes and special endings. The medical terms relating to body structure are presented. The following systems are explored in detail: musculoskeletal, respiratory, cardiovascular, genitourinary and

HIM1220  Ambulatory Office Practices  Credit Hours: 3
Course addresses service and quality in ambulatory medical office policies and standards, personnel, patient satisfaction and financial management. Course focuses on office management, problem solving and effectiveness of office systems.
Prerequisites:HEAL 1800 FOR LEVEL UG WITH MIN. GRADE OF D-

HIM2200  Ambulatory Documentation & Billing  Credit Hours: 3
Course covers documentation in an ambulatory medical office and focuses on accurate billing for payment of services, as well as compliance to federal regulations and electronic submission of claims.
Prerequisites:HEAL 1800 FOR LEVEL UG WITH MIN. GRADE OF D-

HIM2210  Medical Linguistics In Ancillary Services  Credit Hours: 3
Expanded medical linguistics utilized in coding, classification systems and ancillary services, especially surgery, medical imaging, anesthesiology, medical tests and laboratory procedures. Linguistics of pharmacology, pathophysiology and infectious/paras
Prerequisites:HEAL 1800 FOR LEVEL UG WITH MIN. GRADE OF D-

HIM2940  Professional Ambulatory Office Practice  Credit Hours: 3
Guided professional practice experience in an ambulatory setting, such as a physician's office, hospital, clinic, etc.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM3200</td>
<td>Healthcare Resources, Payers, And Consumers</td>
<td>3</td>
<td>Introduction to roles of professionals in meeting standards of regulatory agencies and voluntary organizations in healthcare delivery systems. Data collection, quality, access, retention, technology and impact on healthcare financing.</td>
</tr>
<tr>
<td>HIM3210</td>
<td>Acute Care Clinical Classification Systems And Services</td>
<td>3</td>
<td>Principles of coding diseases, conditions and procedures with the International Classification of Disease System. Practice in the assignment of codes using both computerized and manual methods. Prerequisites: HIM 2210 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>HIM3220</td>
<td>Ambulatory Clinical Classifications Systems And Services</td>
<td>3</td>
<td>Principles of coding with the HCPCS classification system. Practice in the assignment of codes using both computerized and manual methods. Prerequisites: HEAL 1800 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>HIM3230</td>
<td>Healthcare Documentation</td>
<td>3</td>
<td>Inpatient and ambulatory health care data requirements will be identified and analyzed, including collection, analysis and implementation. Form design and screen design will be developed and reviewed. Prerequisites: HEAL 1800 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>HIM3240</td>
<td>Health Information Administration Practices</td>
<td>4</td>
<td>Theory and principles related to facilities, organizations and agencies in healthcare. Focus on HIM strategic planning, departmental responsibilities, marketing, training and development, privacy and security, compliance, and research and epidemiology.</td>
</tr>
<tr>
<td>HIM3940</td>
<td>Professional Practice Experience I</td>
<td>4</td>
<td>Generalized health information administrative duties in regards to staffing, managing, record release, storage and retrieval, coding, abstracting, utilization management, quality improvement, computer applications in health information practice.</td>
</tr>
<tr>
<td>HIM4200</td>
<td>Reimbursement Methodologies And Compliance</td>
<td>2</td>
<td>DRGs, APCs, RBRVs and reimbursement methods used by federal, state and private insurance. Compliance issues and case mix reviewed. Processes explored for providing and improving healthcare cost containment and quality. Prerequisites: HIM 3210 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND HIM 3220 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)</td>
</tr>
<tr>
<td>Course Code</td>
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<td>Credit Hours</td>
<td>Description</td>
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</tr>
<tr>
<td>HIM4210</td>
<td>Healthcare Statistics, Registries, Research</td>
<td>3</td>
<td>Various procedures specific to health information practice will be addressed including medical information, calculation and interpretation of health care statistics, tumor registry and health care records.</td>
</tr>
<tr>
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<td></td>
<td>Prerequisites: MATH 2600 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)</td>
</tr>
<tr>
<td>HIM4220</td>
<td>Project Management In Healthcare</td>
<td>3</td>
<td>This course provides an integrated approach to management of diverse projects encountered in acute care and ambulatory healthcare facilities. Software is utilized to simulate actual project management planning and development.</td>
</tr>
<tr>
<td>HIM4240</td>
<td>Topics in HIM: Professional Domains</td>
<td>3</td>
<td>Topics of interest in health information management stressing solution/resolution of issues related to healthcare delivery, data management, statistics, biomedical research, information technology systems, quality and organizational management, and health</td>
</tr>
<tr>
<td>HIM4260</td>
<td>Legal And Ethical Issues In Healthcare Services</td>
<td>3</td>
<td>Medicolegal practice and professional ethics in healthcare. Overview of the legal system, identification of medicolegal topics, and related ethical concerns. Hardcopy and electronic health record legal issues examined in detail.</td>
</tr>
<tr>
<td>HIM4910</td>
<td>Integrative Capstone Experience</td>
<td>3</td>
<td>Course consists of demonstrating proficiencies and competencies in HIM core course through project assignments.</td>
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<tr>
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<td>Prerequisites: HIM 4200 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>HIM4940</td>
<td>Professional Practice Experience II</td>
<td>4</td>
<td>Specialized administrative assignment within health information management in a facility, agency or organization. Students submit a major project for the site and members of the related HIM community of practice.</td>
</tr>
<tr>
<td>HIST1010</td>
<td>Europe To 1600</td>
<td>3</td>
<td>A survey of western Europe, including its ancient Jewish, Greco-Roman and Christian roots; the Middle Ages, Renaissance and Reformation.</td>
</tr>
<tr>
<td>Course Code</td>
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<td>Description</td>
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<tr>
<td>HIST1020</td>
<td>Europe From 1600</td>
<td>3</td>
<td>A survey of European history from the 17th century to the present with emphasis on the major political, economic, social and cultural trends.</td>
</tr>
<tr>
<td>HIST1050</td>
<td>World History To 1500</td>
<td>3</td>
<td>A survey of the ancient world from the stone age to around 1500. Cultural and political topics are treated so as to compare the major civilizations.</td>
</tr>
<tr>
<td>HIST1060</td>
<td>World History From 1500</td>
<td>3</td>
<td>A survey of world history from 1500 to the present. Cultural and political topics are treated so as to draw comparisons between the most significant modern societies.</td>
</tr>
<tr>
<td>HIST1070</td>
<td>The Contemporary World</td>
<td>3</td>
<td>This thematic survey of the 20th century from a historical and global perspective emphasizes the origins of the world in which we live and discusses some of our alternative futures.</td>
</tr>
<tr>
<td>HIST1080</td>
<td>East Asia To 1800</td>
<td>3</td>
<td>Multidisciplinary introduction to traditional East Asia (origins-1800) with emphasis on the historical development, political traditions, socio-economic patterns, religious and philosophical values, and cultural accomplishments of China and Japan.</td>
</tr>
<tr>
<td>HIST1090</td>
<td>East Asia From 1800</td>
<td>3</td>
<td>Multidisciplinary introduction to the history, civilization, political organization, international relations, social and economic patterns, and cultural trends of China and Japan since 1800.</td>
</tr>
<tr>
<td>HIST1100</td>
<td>Latin American Civilizations</td>
<td>3</td>
<td>A thematic survey from pre-Columbian times to the present. Covers Native American cultures, European colonial policies and institutions, independence movements, the emergence of new nations and twentieth-century problems.</td>
</tr>
<tr>
<td>Course Code</td>
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<td>Description</td>
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<tr>
<td>HIST1110</td>
<td>African Civilization</td>
<td>3</td>
<td>General cultural and historical survey of Africa south of the Sahara from earliest times to the 20th century. Includes topics on art, literature, philosophy, religion and society.</td>
</tr>
<tr>
<td>HIST1120</td>
<td>Middle East Civilization</td>
<td>3</td>
<td>General cultural and historical survey of the Middle East and Islam from 600 to the 20th century. Includes topics in historical movements, literature, religion, and social and intellectual history.</td>
</tr>
<tr>
<td>HIST1130</td>
<td>Introduction To Historical Thinking</td>
<td>3-4</td>
<td>(Not for major credit) An introduction to the nature, concepts and skills of the discipline of history designed to improve historical awareness and the ability to think historically. Occasionally offered as a writing intensive course.</td>
</tr>
<tr>
<td>HIST1200</td>
<td>Main Themes In American History</td>
<td>3</td>
<td>This thematic survey introduces students to historical theory, methods, and the primary sub-fields of American history from colonial conquest to the present day.</td>
</tr>
<tr>
<td>HIST2000</td>
<td>Methods Seminar</td>
<td>4</td>
<td>Research techniques, writing of term papers and book reviews. Introduction to historiography. Offered as a writing intensive course.</td>
</tr>
<tr>
<td>HIST2010</td>
<td>America To 1865</td>
<td>3</td>
<td>The development of the United States from its Native American and immigrant roots through the Civil War.</td>
</tr>
<tr>
<td>HIST2020</td>
<td>America From 1865</td>
<td>3</td>
<td>Survey of American history since the Civil War, with special attention to political, social, economic and cultural developments.</td>
</tr>
</tbody>
</table>
HIST2030  Great Americans  Credit Hours: 3
The careers of selected Americans in politics, business, science, religion and literature.

HIST2040  Ancient Near East  Credit Hours: 3
Survey of the Sumerian, Babylonian, Hittite, Assyrian, Egyptian, Palestinian and Persian worlds.

HIST2050  Ancient Greece  Credit Hours: 3
Survey of the Greek and Hellenistic world.

HIST2060  Ancient Rome  Credit Hours: 3
Survey of the Roman Republic and Empire.

HIST2070  Ancient Jewish History  Credit Hours: 3
Institutions, culture and religion from earliest times through the Biblical Period and the fall of the Temple in the 1st century.

HIST2090  Modern Jewish History  Credit Hours: 3
Background to the contemporary Jewish community. Ghetto, emancipation, Zionism, Holocaust and third Jewish commonwealth in Israel.

HIST2170  Great Britain To 1714  Credit Hours: 3
An introductory course on British history from the Roman conquest to 1714. Emphasis on Anglo-Saxon and Norman invasions, the rise of Parliament, common law, and Puritan Revolution.
HIST2180    Great Britain From 1714 To The Present
An introductory course on British history from the Hanoverian dynasty to the present. Emphasis on English maritime power, the industrial revolution and two world wars.

HIST2190    Britain And Ireland
From the 17th to the 20th century, the mutual influences in literature and history of colony and colonizer are examined.

HIST2250    World War I
World War I from origins to conclusion and its effect on the course of the 20th century. Political and diplomatic background, conduct, termination, technology, and the war's effect on society and the 20th century.

HIST2260    World War II On Film
Analysis of contemporary and retrospective documentary film treatments of major aspects of World War II, with emphasis on their historical accuracy and authenticity.

HIST2280    Toledo: Emergence Of A City, 1750-1880
Early history of Toledo and the Maumee River Valley, including Indian settlement, imperial rivalries, Maumee Valley towns, economic growth, immigrant arrivals and the creation of neighborhoods.

HIST2290    Toledo: Metropolitan Era, 1880-1980
The growth of Toledo in the 20th century, including suburbanization, the city's leadership in the national Progressive Movement, Depression and New Deal, organized labor, individual suburbs, and recent problems.

HIST2340    American Indian History
An introduction to Indian-White relations from pre-Columbian times to present. Emphasizes tribes of the United States, Mexico and Canada.
**HIST2640  Medieval Russia**  
Russia from the 9th century to 1700, including Kievan and Moscovite Russia. 

**HIST2650  Modern Russia**  
Russia from 1700 to the present, including Imperial and Soviet Russia. 

**HIST2700  Japan And World War II**  
A study of the factors behind Japan's entry into World War II with the United States and the Allied Powers and an in-depth treatment of Japan at war. 

**HIST2710  Postwar Japan**  
This course examines the development of Japan since the war. It focuses on the political, economic, social and cultural changes since 1945 and relates these factors to Japan's international relations. 

**HIST2720  History Of Tokyo**  
An examination of Japanese urban social and cultural history. Treats the foundations of Edo, transition to Tokyo, the modern rise, the great earthquake, the war, the Olympics and the present. 

**HIST2730  The Chinese Revolution**  
This course examines the process by which Mao Zedong and the Chinese Communist Party came to power. It treats the political, economic and social forces behind the Chinese revolution (1900-49). 

**HIST2980  Special Topics**  
Topics selected by various instructors. May be repeated when the topic varies.
<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credit Hours</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>HIST3100</td>
<td>European Middle Ages I</td>
<td>3</td>
<td>The history of Western Europe from its beginnings to the eve of the First Crusade.</td>
</tr>
<tr>
<td>HIST3110</td>
<td>European Middle Ages II</td>
<td>3</td>
<td>Europe from the First Crusade to the late 13th century.</td>
</tr>
<tr>
<td>HIST3130</td>
<td>Tudor England</td>
<td>3</td>
<td>Tudor England from 1485 to the end of the reign of Elizabeth I, emphasizing political, economic and social developments.</td>
</tr>
<tr>
<td>HIST3160</td>
<td>The American West</td>
<td>3</td>
<td>Settlement since the Civil War; mining rushes and Indian wars; violence and outlaws; farming and cattle ranching. Twentieth-century politics; ethnicity; and economics. Growth of California and the Sunbelt states.</td>
</tr>
<tr>
<td>HIST3190</td>
<td>Britain From 1763 To 1832</td>
<td>3</td>
<td>An intensive examination of the slave trade, factory system, radicalism, Parliamentary Reform, insurrection, by means of reading primary sources such as Tom Paine.</td>
</tr>
<tr>
<td>HIST3200</td>
<td>Colonial Latin America</td>
<td>3</td>
<td>Latin American history to 1825. Covers pre-Columbian Indian civilizations; Spanish and Portuguese conquests, colonial policies and institutions; colonial life and independence movements.</td>
</tr>
<tr>
<td>HIST3210</td>
<td>Modern Latin America</td>
<td>3</td>
<td>Major economic, political and social developments from independence to the present. In spite of the region's tremendous diversity, there is a shared &quot;Latin American&quot; experience.</td>
</tr>
<tr>
<td>Course Code</td>
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<tr>
<td>HIST3250</td>
<td>African-American History To 1865</td>
<td>3</td>
<td>An examination of the historical experiences of African-Americans in the United States from 1619 to 1865.</td>
</tr>
<tr>
<td>HIST3260</td>
<td>African-American History From 1865</td>
<td>3</td>
<td>An examination of the historical experiences of African-Americans in the United States since 1865.</td>
</tr>
<tr>
<td>HIST3270</td>
<td>The City In American History, 1607-1850</td>
<td>3</td>
<td>Urbanization and the city in world history. The growth, planning and problems of American cities from colonial times until the mid-19th century.</td>
</tr>
<tr>
<td>HIST3280</td>
<td>City And Metropolis In Modern America, 1850 To The Present</td>
<td>3</td>
<td>The growth of the 19th-century city and the emergence of the 20th-century American metropolis. Urban problems of the 20th century.</td>
</tr>
<tr>
<td>HIST3290</td>
<td>Ohio History</td>
<td>3</td>
<td>From colonial times to the present.</td>
</tr>
<tr>
<td>HIST3310</td>
<td>Ethnic America</td>
<td>3</td>
<td>American ethnic diversity from the colonial era to recent decades. A study of individuals and groups. Topics include American identity and Americanization, migration, legislation, nativism.</td>
</tr>
<tr>
<td>HIST3360</td>
<td>American Intellectual History I</td>
<td>3</td>
<td>Development and influence of major ideas from the colonial period to 1865. Topics include Puritanism, the Enlightenment, Democracy and Transcendentalism.</td>
</tr>
</tbody>
</table>
Course Descriptions 2009-2010

HIST3370  American Intellectual History II  Credit Hours:  3
Major developments in American thought from 1865, including Social Darwinism, pragmatism, ideological conflict, modern science, education.

HIST3380  Business And American Society  Credit Hours:  3
The growth of American business enterprise and its relationship to culture, politics, technological developments and economic change.

HIST3400  American Social And Cultural History To 1850  Credit Hours:  3
American social and cultural patterns, institutions and forces from the colonial period to the mid-19th century.

HIST3410  American Social And Cultural History, 1850-The Present  Credit Hours:  3
American social and cultural patterns, institutions and forces from the mid-19th century to the present.

HIST3420  American Military History  Credit Hours:  3
The development of the strategy, tactics, organization, operation and policies of the armed forces of the U.S.; the interaction with technological factors, foreign policy goals, international problems and American society.

HIST3430  American Military History In The 20th Century  Credit Hours:  3
Intensive examination of the history of land, sea, air and intelligence factors. Emphasizes the historical development of the strategy and tactics of wars, peacetime planning, technological developments and military-societal relationships.

HIST3440  American Radicalism  Credit Hours:  3
Origins and development of radical social movements and their ideologies from the American Revolution to the New Left of the 1960s. Abolitionism, Feminism, Communitarianism, Marxism, Anarchism, Populism, Communism and the Peace Movement are among the topi
**Course Descriptions 2009-2010**

**HIST3480  American Labor And Working Class History**  
Development of working class communities, cultures, organizations and ideology from colonial era to the present. Topics include industrialization, unionization, labor law, gender and race constructions.  

**Credit Hours: 3**

**HIST3500  European Diplomacy 1648-1815**  
The foreign policies and foreign relations of the great powers from 1648 to the Congress of Vienna, 1815.  

**Credit Hours: 3**

**HIST3510  European Diplomacy, 1815 To The Present**  
The foreign policies and foreign relations of the great powers from the Congress of Vienna until the present.  

**Credit Hours: 3**

**HIST3520  Development Of Modern Germany To 1918**  
Development of modern German history from the late Middle Ages to the end of World War I with emphasis on the emergence of German nationalism and a united German state in the 18th-19th centuries.  

**Credit Hours: 3**

**HIST3530  20th Century Germany**  
Germany's development from the end of World War I to the present with emphasis on the rise of Nazism, World War II, and the division and new unification of Germany.  

**Credit Hours: 3**

**HIST3550  History Of The Middle East Since 1500**  
History of the Middle East from the collapse of the Medieval Muslim States and the rise of the Ottoman Empire in the 16th century through the period of European intervention to the development of independent Middle Eastern states in the 20th century.  

**Credit Hours: 3**

**HIST3600  Women In American History**  
This course presents American history from early settlement to the present by examining the contributions of women, in interaction with men, to the immensely complex fabric of American life.  

**Credit Hours: 3**
HIST3630  Africa To 1800  
Africa south of the Sahara from antiquity to 1800. Topics include the peopling of the continent, growth of centralized political institutions, stateless societies, Islamic penetration, African slave trade.

HIST3640  Africa Since 1800  
Africa south of the Sahara from 1800 to the present. Subjects include 19th century, colonial and independent Africa. Specific topics: the rise of South Africa, imperialism, African resistance and nationalism and independent African political, cultural and

HIST3770  American Foreign Relations To The Early 20th Century  
The foreign policy and international relations of the U.S. from the founding of the republic to the early 20th century.

HIST3780  American Foreign Relations From The Late 19th Century To The Present  
The foreign policy and international relations of the U.S. from the late 19th century to the present.

HIST3870  Junior Honors Research I  
Independent research on specific historical topics.

HIST3880  Junior Honors Research II  
Independent research on specific historical topics.

HIST3980  Special Topics  
Topics selected by various instructors. May be repeated when the topic varies.
HIST4010 Greek History  
Credit Hours: 3  
Selected topics on the political and social institutions of Greece in the classical and Hellenistic periods.

HIST4020 Roman History  
Credit Hours: 3  
Selected topics on the political and social institutions of Rome during the Republic and Empire.

HIST4030 Europe In The 14th-15th Centuries  
Credit Hours: 3  
The waning of the Middle Ages and the development of the Renaissance in Western Europe with emphasis on Italy.

HIST4040 Europe In The 16th-17th Centuries  
Credit Hours: 3  
Society, culture and politics in early modern Europe with emphasis on culture north of the Alps, the Reformation and the nation-state.

HIST4060 Age Of Absolutism  
Credit Hours: 3  
The growth and decline of the absolute monarchies in Europe and the development of a world market economy, c.1550-1715.

HIST4080 Age Of Revolution  
Credit Hours: 4  
The age of the French Revolution and Napoleon, c.1785-1848.

HIST4090 Europe, 1850-1918  
Credit Hours: 3  
Internal and international development of the major European states from the mid-19th century to World War I with emphasis on nationalism, industrialization, imperialism, the origins and course of war.
HIST4100  Europe Since World War I  Credit Hours: 3
Internal and international development of the major European states from World War I to the end of the twentieth century.

HIST4150  Critics Of Victorian Society  Credit Hours: 3
Principal critics of society like Ruskin, Carlyle, Cobbett, Marx, Engels, Morris, Mill are read with a view to understanding capitalism, industrialism and England.

HIST4170  The British Empire: For And Against  Credit Hours: 3
The emergence of England as a maritime power, as an empire, and as a financial force, with emphasis upon resistances and decolonization.

HIST4180  Topics In English Social And Economic History  Credit Hours: 3
Selected topics of modern English society and economy will be covered, such as urbanization, family and gender relations, enclosures, work and crafts.

HIST4200  Colonial Foundations Of U.s.  Credit Hours: 3
This course analyzes the colonial experience of the United States prior to 1763. It stresses the various cultures and social groups in America and how they related with one another.

HIST4210  Women In Early America  Credit Hours: 3
A survey of the history of women in America up to 1860. Special focus on the divergent experiences of Native American, European American and African American women, including the forced and voluntary migrations of women to and across North America.

HIST4220  The American Revolution  Credit Hours: 3
The background and progress of the War for Independence.
Course Descriptions 2009-2010

HIST4230    The Early Republic
American politics and culture in the Federalist and Jeffersonian periods, 1789-1819.

HIST4240    The Age Of Jackson
Jacksonian democracy in politics and as a reform movement; the sectional controversy; the Mexican-American War.

HIST4250    Civil War And Reconstruction
Slavery and the Constitution in the sectional controversy, the political and military events of the Civil War, and the impact of the war on American society, 1848-1876.

HIST4260    Emergence Of Modern America, 1876-1919
American society in the late 19th and early 20th centuries including industrialization, urbanization, immigration, agrarian and labor revolts, politics, economic expansion, overseas initiatives, Progressive reform and involvement in World War I.

HIST4270    20th Century America, 1920-1945
Social, political and economic development of the United States, 1920-1945. The Republican ascendancy, the car culture, Great Depression, New Deal and World War II.

HIST4280    U.s. Since 1945: Affluence And Anxiety
Social, economic and political development of the United States since 1945. The Cold War, McCarthyism, Eisenhower Equilibrium, the New Frontier and the Great Society, civil rights, Watergate and the Reagan Revolution.

HIST4310    History Of Native American Religious Movements
History of Native American revitalization movements as a response to European colonization and Indian dispossession.
HIST4340  Far Western Frontier  Credit Hours:  3
Native Americans; Spanish conquistadors and missionaries; American scientific and military exploration; mountain men and fur trade; international rivalries and Mexican War; gold rush of '49.

HIST4430  Slavery In America  Credit Hours:  3
Stresses the African continuum among slaves within the context of variations in goals and policies of slaveowners, slave trade, slave economics, demographics, slave labor and formation of slave culture.

HIST4450  The United States And Latin America  Credit Hours:  3
Examines the 19th and 20th centuries: emphasizing events and movements defining political, economic, migratory, military, and cultural relations and the emergence of Latinos as largest minority group in the US.

HIST4470  People And Politics In Mexico  Credit Hours:  3
Mexican history from pre-Hispanic times to the present. Emphasis on the political, social and economic changes imposed by the Spaniards; the legacy of colonialism on the modern nation; the Mexican Revolution and the "Mexican Miracle."

HIST4490  Witchcraft And Magic In Medieval And Early Modern Europe  Credit Hours:  3
Witchcraft, religion and magic in western Europe from the 12th through 17th centuries, focusing on the origins of witchcraft belief, diabolical magic, the witchcraze and its decline.

HIST4620  Central Europe  Credit Hours:  3
Central Europe from medieval times to the present. The Habsburg Empire, Poland, the Balkans, twentieth-century changes.

HIST4660  Imperial Russia, 1700-1917  Credit Hours:  3
Rise and fall of the Russian Empire. Politics and society from the time of Peter the Great to the 1917 Revolution.
Course Descriptions 2009-2010

HIST4680 20th Century Russia
Russia from the 1917 Revolution to the present. Topics include Marxism, Communism, Stalinism, Cold War.

HIST4720 Modern Chinese History
China in transition under the impact of the West; forces leading to the revolution of 1911, the Nationalists' struggle, the emergence of the People's Republic of China and aspects of post-revolutionary China.

HIST4740 Modern Japanese History
Japan in transition under Western influence, forces leading to the Meiji Restoration, the modernization of Japan, Japan's rise as a world power, war and postwar developments.

HIST4750 Europe And Asia: Exploration And Exchange, 1415-1800
Motivation and process of European expansion to Africa and Asia from 1415-1800.

HIST4760 Colonialism And Imperialism In The 19th-20th Centuries
The imposition of European political, cultural and economic hegemony over Africa and Asia in the 19th and 20th centuries; the resistance and reaction of indigenous non-western people to colonialism.

HIST4790 The Holocaust
This advanced course deals with selected aspects of the history and memory of Nazi genocide against the Jews of Europe, with special emphasis on visual and survivor sources.

HIST4830 Theory Of Public History
The definition, philosophy and evolution of public history as well as the current literature and debates within the field. Public history is the application of historical knowledge and methodology beyond academe.
HIST4840  Public History Practicum  Credit Hours:  3
Course provides students with hands-on experience in the practice of public history by completing a project using specialized techniques, client-oriented research and teamwork. May be repeated for credit.

HIST4870  Senior Honors Research I  Credit Hours:  3
Open to College Honors students, to History Honors students and to Honors students from other departments. Independent research in specific topics.

HIST4880  Senior Honors Research II  Credit Hours:  3
Open to College Honors students, to History Honors students and to Honors students from other departments. Independent research in specific topics.

HIST4940  Public History Internship  Credit Hours:  2-4
Supervised practical experience in the field of public history.

Prerequisites:(HIST 2000 FOR LEVEL UG WITH MIN. GRADE OF D- AND HIST 4830 FOR LEVEL UG WITH MIN. GRADE OF D-)

HIST4980  Special Topics  Credit Hours:  1-4
Topics selected by various instructors.

HIST4990  Independent Studies  Credit Hours:  1-4
Research and writing on topics designed to meet individual needs.

HIST5010  Greek History  Credit Hours:  3
Selected topics on the political and social institutions of Greece in the classical and Hellenistic periods.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>HIST5020</td>
<td>Roman History</td>
<td>3</td>
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<tr>
<td></td>
<td>Selected topics on the political and social institutions of Rome during the Republic and Empire.</td>
<td></td>
</tr>
<tr>
<td>HIST5030</td>
<td>Europe In The 14th-15th Centuries</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>The waning of the Middle Ages and the development of the Renaissance in Western Europe with emphasis on Italy.</td>
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</tr>
<tr>
<td>HIST5040</td>
<td>Europe In The 16th-17th Centuries</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Society, culture and politics in early modern Europe with emphasis on culture north of the Alps, the Reformation and the nation-state.</td>
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</tr>
<tr>
<td>HIST5060</td>
<td>Age Of Absolutism</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>The growth and decline of the absolute monarchies in Europe and the development of a world market economy, c. 1550-1715.</td>
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<tr>
<td>HIST5080</td>
<td>Age Of Revolution</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>The age of the French Revolution and Napoleon, c. 1785-1848.</td>
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<tr>
<td>HIST5090</td>
<td>Europe, 1850-1918</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Internal and international development of the major European states from the mid-19th century to World War I with emphasis on nationalism, industrialization, imperialism, and the origins and course of war.</td>
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<tr>
<td>HIST5100</td>
<td>Europe Since World War I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Internal and international development of the major European states from World War I to the end of the twentieth century.</td>
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</tr>
</tbody>
</table>
HIST5150 Critics Of Victorian Society  
Principal critics of society like Ruskin, Carlyle, Cobbett, Marx, Engels, Morris and Mill are read with a view to understanding capitalism, industrialism and England.

HIST5170 The British Empire: For And Against  
The emergence of England as a maritime power, as an empire, and as a financial force, with emphasis upon resistances and decolonization.

HIST5200 Colonial Foundations Of The U.s.  
This course analyzes the colonial experience of the United States prior to 1763. It stresses the various cultures and social groups in America and how they related with one another.

HIST5220 The American Revolution  
The background and progress of the War for Independence.

HIST5230 The Early Republic  
American politics and culture in the Federalist and Jeffersonian periods, 1789-1819.

HIST5240 The Age Of Jackson  
Jacksonian democracy in politics and as a reform movement; the sectional controversy; the Mexican-American War.

HIST5250 Civil War And Reconstruction  
Slavery and the Constitution in the sectional controversy, the political and military events of the Civil War, and the impact of the war on American society, 1848-1876.
HIST5260  Emergence Of Modern America, 1876-1919  
American society in the late 19th and early 20th centuries, including industrialization, urbanization, immigration, agrarian and labor revolts, politics, economic expansion, overseas initiatives, Progressive reform and involvement in World War I.

HIST5270  20th Century America, 1920-1945  
Social, political and economic development of the United States, 1920-1945. The Republican ascendancy, the car culture, Great Depression, New Deal and World War II.

HIST5280  U.S. Since 1945: Affluence And Anxiety  
Social, economic and political development of the United States since 1945. The Cold War, McCarthyism, Eisenhower Equilibrium, the New Frontier and the Great Society, civil rights, Watergate and the Reagan Revolution.

HIST5300  History Of Native American Religious Movements  
History of Native American revitalization movements as a response to European colonization and Indian dispossession.

HIST5320  Indians In Eastern North America  
Native Americans in Eastern North America from prehistoric times through Jacksonian Indian Removal. Emphasis on intercultural interactions.

HIST5330  Western American Indians  
Native Americans of the Far West from prehistoric times through recent years. Emphasis on European contact and governmental policies.

HIST5340  Far Western Frontier  
Native Americans; Spanish conquistadors and missionaries; American scientific and military exploration; mountain men and fur trade; international rivalries and Mexican War; gold rush of ’49.
<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST5360</td>
<td>American Intellectual History I</td>
<td>3</td>
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<tr>
<td></td>
<td>Development and influence of major ideas from the colonial period to 1865. Topics include Puritanism, the Enlightenment, Democracy and Transcendentalism.</td>
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<tr>
<td>HIST5370</td>
<td>American Intellectual History II</td>
<td>3</td>
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<tr>
<td></td>
<td>Major developments in American thought from 1865, including Social Darwinism, pragmatism, ideological conflict, modern science, education.</td>
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<tr>
<td>HIST5380</td>
<td>Business And American Society</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>The growth of American business enterprise and its relationship to culture, politics, technological developments and economic change.</td>
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<tr>
<td>HIST5390</td>
<td>American Foreign Relations To The Early 20th Century</td>
<td>3</td>
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<tr>
<td></td>
<td>The foreign policy and international relations of the U.S. from the founding of the republic to the early 20th century.</td>
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<tr>
<td>HIST5400</td>
<td>American Foreign Relations From The Late 19th Century To The Present</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>The foreign policy and international relations of the U.S. from the late 19th century to the present.</td>
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<tr>
<td>HIST5430</td>
<td>Slavery In America</td>
<td>3</td>
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<tr>
<td></td>
<td>Stresses the African continuum among slaves within the context of variations in goals and policies of slaveowners, slave trade, slave economics, demographics, slave labor and formation of slave culture.</td>
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<tr>
<td>HIST5450</td>
<td>United States and Latin Amer</td>
<td>3</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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<tr>
<td>HIST5460</td>
<td>Women In American History</td>
<td>3</td>
</tr>
<tr>
<td>HIST5470</td>
<td>Mexico</td>
<td>3</td>
</tr>
<tr>
<td>HIST5480</td>
<td>American Labor And Working Class History</td>
<td>3</td>
</tr>
<tr>
<td>HIST5490</td>
<td>Witchcraft And Magic In Medieval And Early Modern Europe</td>
<td>3</td>
</tr>
<tr>
<td>HIST5500</td>
<td>European Diplomacy, 1648-1815</td>
<td>3</td>
</tr>
<tr>
<td>HIST5510</td>
<td>European Diplomacy, 1815 To The Present</td>
<td>3</td>
</tr>
<tr>
<td>HIST5530</td>
<td>History Of The Middle East Since 1500</td>
<td>3</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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<tr>
<td>HIST5570</td>
<td>Africa To 1800</td>
<td>3</td>
</tr>
<tr>
<td>HIST5580</td>
<td>Africa Since 1800</td>
<td>3</td>
</tr>
<tr>
<td>HIST5620</td>
<td>Central Europe</td>
<td>3</td>
</tr>
<tr>
<td>HIST5660</td>
<td>Imperial Russia, 1700-1917</td>
<td>3</td>
</tr>
<tr>
<td>HIST5680</td>
<td>20th Century Russia</td>
<td>3</td>
</tr>
<tr>
<td>HIST5720</td>
<td>Modern Chinese History</td>
<td>3</td>
</tr>
<tr>
<td>HIST5740</td>
<td>Modern Japanese History</td>
<td>3</td>
</tr>
</tbody>
</table>
HIST5750 Europe And Asia: Exploration And Exchange, 1415-1800
Motivation and process of European expansion to Africa and Asia from 1415-1800.

HIST5760 Colonialism And Imperialism In The 19th-20th Centuries
The imposition of European political, cultural and economic hegemony over Africa and Asia in the 19th and 20th centuries; the resistance and reaction of indigenous non-western people to colonialism.

HIST5790 The Holocaust
This advanced course deals with selected aspects of the history and memory of Nazi genocide against the Jews of Europe, with special emphasis on visual and survivor sources.

HIST5830 Theory Of Public History
The definition, philosophy and evolution of public history as well as the current literature and debates within the field. Public history is the application of historical knowledge and methodology beyond academe.

HIST5840 Public History Practicum
Course provides students with hands-on experience in the practice of public history by completing a project using specialized techniques, client-oriented research and teamwork. May be repeated for credit.

HIST5940 Public History Internship
Supervised practical experience in the field of public history.

HIST5980 Special Topics
Topics selected by various instructors.
HIST6600  Historiography  Credit Hours:  4
The nature of historical writing. Concepts of the historical method. The history of the writing of history from the beginning to the present.

HIST6930  Seminar  Credit Hours:  4
Focus on primary research and writing in various fields: 01: 17th and 18th century America, 05: 19th century America, 06: American Urban, 07: American West, 08: American Intellectual, 10: Local History, 11: American Labor, 12: American Foreign Relations,

HIST6960  Thesis  Credit Hours:  1-16
M.A. thesis topic to be selected by the student with the approval of the thesis adviser.

HIST6990  Independent Study  Credit Hours:  1-4

HIST7980  Special Topics  Credit Hours:  1-4

HIST8600  Historiography  Credit Hours:  4
The nature of historical writing. Concepts of the historical method. The history of the writing of history from the beginning to the present: 01: America 02: Asia 03: Europe 04: Latin America 05: Africa 06: Special Topics

HIST8930  Seminar  Credit Hours:  4
Focus on primary research and writing in various fields: 01: 17th and 18th century America, 05: 19th century America, 06: American Urban, 07: American West, 08: American Intellectual, 10: Local History, 11: American Labor, 12: American Foreign Relations,
HIST8960  Dissertation  Credit Hours:  1-16
Ph.D. dissertation topic to be selected by the student with the approval of the dissertation adviser.

HIST8990  Independent Study  Credit Hours:  1-4

HON1010  Honors Readings Conference I  Credit Hours:  3
This reading, writing and discussion course examines Great Books and formative ideas, primarily from the Western tradition. Readings Conference 1010 focuses on selected works from ancient times through the Middle Ages.

HON1020  Honors Readings Conference II  Credit Hours:  3
This reading, writing and discussion course examines Great Books and formative ideas, primarily from the Western tradition. Readings Conference 1020 focuses on selected works from the Renaissance through the 20th Century.

HON2020  Multicultural Literatures: The North American Experience-Honors-WAC  Credit Hours:  3
This reading, writing and discussion course examines selected literatures of the North American experience: for example, texts by African American, Arab American, Asian American, Hispanic or Native American authors.

HON2030  Multicultural Literatures: The Non-European World-Honors-WAC  Credit Hours:  3
This reading, writing and discussion course examines selected non-European literatures.

HON2990  Independent Study  Credit Hours:  1-5
Supervised independent study.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HON4950</td>
<td>Honors Seminar</td>
<td>3</td>
<td>These interdisciplinary seminars are organized around a variety of subjects and intellectual concerns.</td>
</tr>
<tr>
<td>HON4960</td>
<td>Honors Seminar</td>
<td>3</td>
<td>These interdisciplinary seminars are organized around a variety of subjects and intellectual concerns.</td>
</tr>
<tr>
<td>HON4990</td>
<td>Independent Study</td>
<td>1-5</td>
<td>Supervised independent study.</td>
</tr>
<tr>
<td>HSHS6000</td>
<td>Statistics and Research for Health Science and Human Service Professions</td>
<td>3-5</td>
<td>An interdisciplinary course covering basic statistics and related research design with specific applications in various health sciences and human service professions.</td>
</tr>
<tr>
<td>HSHS8000</td>
<td>Statistics and Research for Health Science and Human Service Professions</td>
<td>3-5</td>
<td>An interdisciplinary course covering basic statistics and related research design with specific applications in various health sciences and human service professions.</td>
</tr>
<tr>
<td>HUM1010</td>
<td>Classical Humanities</td>
<td>3</td>
<td>An introduction to the civilization of the Greeks and Romans in which history, literature, mythology, art and philosophy are interrelated and interpreted.</td>
</tr>
<tr>
<td>HUM1200</td>
<td>Framing Cultures, Building Communities</td>
<td>3</td>
<td>This interdisciplinary course examines cultures and community difference and group identity through reading and discussing major texts from various world traditions, mainly Western civilization from antiquity to the present.</td>
</tr>
</tbody>
</table>
### HUM2010  World Humanities Traditions I

<table>
<thead>
<tr>
<th>Credit Hours: 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study of major works of world literature, philosophy and the arts from ancient times to c. 1600. Inter-relationships among history, ideas and the arts are explored in lectures and discussions.</td>
</tr>
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</table>

### HUM2020  World Humanities Traditions II

<table>
<thead>
<tr>
<th>Credit Hours: 3</th>
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</thead>
<tbody>
<tr>
<td>Study of major works of world-literature, philosophy and the arts from c. 1600 to the present day. Inter-relationships among history, ideas and the arts will be explored in lectures and discussions.</td>
</tr>
</tbody>
</table>

### HUM2220  Telling Stories, Valuing Lives

<table>
<thead>
<tr>
<th>Credit Hours: 3</th>
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</thead>
<tbody>
<tr>
<td>Drawing connections between literature and philosophy, this course examines issues of self-representation, human values in literature, canon formation and the cultural contexts of literature.</td>
</tr>
</tbody>
</table>

### HUM2980  Special Topics In The Humanities

<table>
<thead>
<tr>
<th>Credit Hours: 1-4</th>
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<tbody>
<tr>
<td>This course is devoted to any topic or topics in the humanities that the instructor sees fit. The instructor and topic will alternate from semester to semester according to student and departmental interest in certain topics.</td>
</tr>
</tbody>
</table>

### HUM3010  The Transformation Of Memory

<table>
<thead>
<tr>
<th>Credit Hours: 3</th>
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<tbody>
<tr>
<td>This course explores a range of private, public and professional memory and how these contribute to a sense of historical literacy and to the structures of the larger American experience.</td>
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</table>

### HUM3020  Reason's Culture

<table>
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<tr>
<th>Credit Hours: 3</th>
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<tbody>
<tr>
<td>An examination of what education has meant and can mean in our present context. Topics will include the nature of culture, how it is evaluated and what the cultivation of critical reasoning involves.</td>
</tr>
</tbody>
</table>

### HUM3100  Classical Mythology

<table>
<thead>
<tr>
<th>Credit Hours: 3</th>
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<tbody>
<tr>
<td>A survey of Greek and Roman mythology in classical literature, sculpture and art.</td>
</tr>
</tbody>
</table>
HUM4950  Humanities Senior Thesis I  Credit Hours: 4
This seminar provides senior humanities majors with an opportunity to pursue creative/research projects and to discuss them with their adviser and their peers.

HUM4960  Humanities Senior Thesis II  Credit Hours: 4
This seminar provides senior humanities majors with the opportunity to pursue creative/research projects and to discuss them with their adviser and their peers.

HURM3220  Human Resource Management  Credit Hours: 3
Introduction to the field of human resource management. It is designed for students planning careers in human resources or those who simply wish to supplement their skills in personnel matters commonly of concern to all managers.
Prerequisites: BUAD 3030 FOR LEVEL UG WITH MIN. GRADE OF D-

HURM3630  Conflict Management: Mediation & Negotiations  Credit Hours: 3
Course is designed to develop negotiation and conflict management skills. Students will learn to apply these skills in distributive and integrative negotiation situations using cases, role-plays and exercises.

HURM4640  Benefits, Health & Wellness  Credit Hours: 3
Includes planning and administering mandatory and voluntary benefit programs, cost containment strategies and benefit communication programs. Development and administration of Employee Assistance Programs and employee wellness programs are also covered.
Prerequisites: HURM 3220 FOR LEVEL UG WITH MIN. GRADE OF D-

HURM4650  Compensation  Credit Hours: 3
Design and administration of compensation systems, including job evaluation, skill-based pay, salary surveys, pay level decisions, pay structures, executive and special employee group compensation programs, and budget and administrative issues.
Prerequisites: HURM 3220 FOR LEVEL UG WITH MIN. GRADE OF D-

HURM4660  Planning, Selection, And Recruitment  Credit Hours: 3
Covers aspects of human resource planning, including Affirmative Action and succession planning, developing legally defensible selection and recruitment methods, and career development.
Prerequisites: HURM 3220 FOR LEVEL UG WITH MIN. GRADE OF D-
HURM4710 Training And Evaluation
Credit Hours: 3
Theory, research, and practice related to the design and implementation of employee training programs and formal performance evaluation systems. Includes development of specific training programs.
Prerequisites: HURM 3220 FOR LEVEL UG WITH MIN. GRADE OF D-

HURM6700 Human Resource Management
Credit Hours: 3
A survey of the functions and current trends in human resources management. Special emphasis on research methods, tools and techniques for in-depth understanding of problems and challenges faced by medium-sized firms.

HURM6710 Employment And Labor Law
Credit Hours: 3
This course introduces the objectives, activities and practices involved in employment and labor law. It is designed for those pursuing careers in human resources or managers wishing to understand their responsibilities in this area.

HURM6720 Employer-Employee Relations
Credit Hours: 3
This course equips students to make more effective decisions in employee relations. Course emphasis is on active analysis of employee-employer relationships in terms of procedures, costs, and ramifications to both organizations and people.

HURM6730 Performance Management
Credit Hours: 3
This course is designed to provide practical working knowledge of the processes of setting expectations, monitoring performance, coaching and developing employees, and assessing and rewarding good performance in rapidly changing organizations.

HURM6740 Human Resource Strategy And Metrics
Credit Hours: 3
This course focuses on the integration of human resource strategies with the strategies of the firm. Students will learn how to assess and measure human resource processes, programs and outcomes.

HURM6750 Current Topics In Human Resource Management
Credit Hours: 3
This course is designed to provide students with current viewpoints, challenges, practices and theories in human resource management. Conducted in a seminar format, the course will emphasize different aspects of HR management each time it is offered.
HURM6760 Recruitment and Retention  Credit Hours:  3
Provides an in-depth analysis of the methods used in designing, administering, revising, and evaluating recruitment, selection, and retention programs that comply with government regulation as well as add value to the organization.
Prerequisites:HURM 6700 FOR LEVEL GR WITH MIN. GRADE OF D-

HURM6800 Tools And Techniques In Human Resource Management  Credit Hours:  3
Course covers issues and techniques related to human resource planning, identifying and predicting HRM problems, and demonstrating the relationship between effective HRM practices and the bottom-line of the organization.
Prerequisites:(MGMT 5110 FOR LEVEL GR WITH MIN. GRADE OF D- AND HURM 6700 FOR LEVEL GR WITH MIN. GRADE OF D-)

HURM8700 Human Resource Management  Credit Hours:  3
Introduces the objectives, activities, and practices involved in human resource management. Designed for both those pursuing careers in human resources or managers who wish to supplement their skills in this area. (Prerequisite: None)

HURM8710 Employment and Labor Law  Credit Hours:  3
Introduces the objectives, activities, and practices involved in employment and labor law. Designed for those pursuing careers in human resources or managers wishing to understand their responsibilities in this area.

HURM8720 Employer-Employee Relations  Credit Hours:  3
The course equips students to make more effective decisions in employee relations. Course emphasis is on active analysis of employee-employer relationships in terms of procedures, costs, and ramifications to both organizations and people. (Prerequisite:

HURM8730 Performance Management  Credit Hours:  3
Course is designed to provide practical working knowledge of the processes of setting expectations, monitoring performance, coaching and developing employees, and assessing and rewarding good performance in rapidly changing organizations.
Prerequisites:HURM 6700 FOR LEVEL GR WITH MIN. GRADE OF D- AND HURM 8700 FOR LEVEL GR WITH MIN. GRADE OF D-

HURM8740 Human Resource Strategy and Metrics  Credit Hours:  3
Focuses on the integration of human resource strategies with the strategies of the firm. Students will learn how to assess and measure human resource processes, programs, and outcomes.
Prerequisites:HURM 6700 FOR LEVEL GR WITH MIN. GRADE OF D- AND HURM 8700 FOR LEVEL GR WITH MIN. GRADE OF D-
HURM8750  Current Topics in Human Resource Management  Credit Hours:  3
Course is designed to provide students with current viewpoints, challenges, practices, and theories in human resource management. Conducted in a seminar format, the course will emphasizes different aspects of HR management each time it is offered.

Prerequisites:HURM 6700 FOR LEVEL GR WITH MIN. GRADE OF D- AND HURM 8700 FOR LEVEL GR WITH MIN. GRADE OF D-

HURM8760  Recruitment and Retention  Credit Hours:  3
Provides an in-depth analysis of the methods used in designing, administering, revising, and evaluating recruitment, selection and retention programs that comply with government regulation as well as add value to the organization.

Prerequisites:HURM 8700 FOR LEVEL GR WITH MIN. GRADE OF D-

IBUS3150  Understanding Cultural Differences For Business  Credit Hours:  3
Course focuses on understanding cultures and managing cultural differences for competitive advantage.

IBUS3600  International Management  Credit Hours:  3
An overview of management in different geographic regions of the world. Case studies will be used to compare and contrast national models of management.

Prerequisites:BUAD 3030 FOR LEVEL UG WITH MIN. GRADE OF D-

IBUS3940  Internship In International Business I  Credit Hours:  3
A course in which the student receives practical business experience working in a organization involved in International Business.

IBUS4100  Study Abroad Program  Credit Hours:  3
Program includes travel abroad, study and written report of an industry, company, or issues of interest, cultural immersion, and visits to manufacturing, service and government organizations.

IBUS4180  North American Business Practices  Credit Hours:  3
This course will examine the business environment in North America and compare business practices and trade relationships between Canada, Mexico and the United States.
IBUS4360  Global Business  Credit Hours: 3
Students will learn to integrate international business functions, develop strategies that respond to environmental changes, and understand the challenges faced by small, mid-sized and multinational firms operating in a global environment.

IBUS4490  Global Management Systems  Credit Hours: 3
A study of how management systems in various world regions evolve in response to the emerging global context. Focus will be on analyzing the determinants of similarities and contrasts in management systems.
Prerequisites: BUAD 3030 FOR LEVEL UG WITH MIN. GRADE OF D-

IBUS4940  Internship In International Business II  Credit Hours: 3
A course in which the student receives practical International Business experience working in a global organization either within the U.S. or overseas.

IBUS4980  Special Topics In International Business  Credit Hours: 3
Analysis of current issues in International Business.

IBUS4990  Independent Study  Credit Hours: 1-3
An individually supervised study in International Business. Students must submit a proposal to be approved by a department faculty member prior to enrolling in the course.

IBUS6100  Study Abroad Program  Credit Hours: 3
Program includes travel abroad, study and written report of an industry, company, or issues of interest, cultural immersion, and visits to manufacturing, service and government organizations.

IBUS6360  Management Of Multinational Firms  Credit Hours: 3
Analysis of the multinational firm, emphasizing the differences with domestic enterprises, with respect to strategic planning and capital allocation, marketing, production, supply, personnel and contract negotiation.
IBUS6490  Global Management Systems  Credit Hours:  3
Compares the management philosophies, systems and methods of U.S. firms with those of firms from other countries, particularly the management systems of Japanese, German and other nationality firms that are competitors of U.S. firms.
Prerequisites: MGMT 5110 FOR LEVEL GR WITH MIN. GRADE OF D- OR BUAD 3030 FOR LEVEL UG WITH MIN. GRADE OF D-

IBUS6980  Special Topics  Credit Hours:  3
Current issues/developments in international business are discussed.

IBUS6990  Independent Study  Credit Hours:  1-3
Independent study in international business. A proposal for the independent study must be approved by faculty member and department chair.

IBUS8360  Management of Multinational Firms  Credit Hours:  3
Analysis of the multinational firm, emphasizing the differences with domestic enterprises, with respect to strategic planning and capital allocation, marketing, production, supply, personnel and contract negotiation. Ph.D. students are assigned additiona

IBUS8490  Global Management Systems  Credit Hours:  3
Compares the management philosophies, systems and methods of U.S. firms with those of firms from other countries, particularly the management system of Japanese, German and other nationality firms that are competitors of U.S. firms. Ph.D. students are ass

IBUS8790  International Business Research Seminar  Credit Hours:  3
A seminar in selected topics in International Business. PhD. students are assigned readings from the International Business academic literature. They will complete several research papers focusing on specific topics that advance the field and that are su

IDS1000  Arts Living And Learning Forum  Credit Hours:  1
This course will provide a framework for and supplement to the activities and objectives of the UT Arts Living and Learning Community. It is required for participation in the Arts Living-Learning Community.
IDS2010 Interdisciplinary Studies
Credit Hours: 1-4

IITP601 Infection Immunity Transplanta
Credit Hours: 1
The course will introduce fundamental knowledge of the immune system and its defense mechanisms and the nature and role of microbial pathogens in human and animal diseases.

IITP602 Advanced Immunology
Credit Hours: 1
Student led discussion of recent literature supporting key concepts in the human immune response. Discussions will focus on how current research impacts our understanding of specific responses.

IITP603 Current Topics IIT
Credit Hours: 1
This course includes attendance at biweekly seminars given by invited speakers and, on an alternating biweekly basis, the presentation of papers related to the seminar topics. May be repeated for credit.

IITP689 Independent Study in IITP
Credit Hours: 1-15

IITP699 Thesis Research in Infect, Immun, Transplant
Credit Hours: 1-15

IITP801 Infection Immunity Transplanta
Credit Hours: 1
The course will introduce fundamental knowledge of the immune system and its defense mechanisms and the nature and role of microbial pathogens in human and animal diseases.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>IITP802</td>
<td>Advanced Immunology</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Student led discussion of recent literature</td>
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<td></td>
<td>supporting key concepts in the human immune</td>
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<td>research impacts our understanding of specific</td>
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<td></td>
<td>responses.</td>
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<tr>
<td>IITP803</td>
<td>Current Topics in IIT</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>This course includes attendance at biweekly</td>
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<td>seminars given by invited speakers and, on an</td>
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<td>papers related to the seminar topics. May be</td>
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<td>repeated for credit.</td>
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<tr>
<td>IITP889</td>
<td>Independent Study in IITP</td>
<td>1-15</td>
</tr>
<tr>
<td>IITP999</td>
<td>Dissertation Research in Infect, Immun, Transplant</td>
<td>1-15</td>
</tr>
<tr>
<td>INDI000</td>
<td>Transfer Free Elective</td>
<td>0-15</td>
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<tr>
<td>INDI500</td>
<td>Struct/Funct Normal Individual</td>
<td>8</td>
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<tr>
<td>INDI504</td>
<td>Contemporary Issues Comm Hlth</td>
<td>0</td>
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<tr>
<td></td>
<td>Through community service, this course will</td>
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<tr>
<td></td>
<td>expose graduate healthcare professional students</td>
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</tr>
<tr>
<td></td>
<td>to contemporary issues in community health care.</td>
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<tr>
<td></td>
<td>The students will work under the direct</td>
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<td></td>
<td>supervision of a qualified preceptor. May be</td>
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<tr>
<td></td>
<td>repeated.</td>
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</tr>
</tbody>
</table>
INDI505  Medical Science Practicum  Credit Hours: 0-10
Practical applications of theory in basic and clinical medical sciences. Practicum experience will be under the guidance of a faculty preceptor. May be repeated for credit.

INDI509  Acute Care Preceptorship  Credit Hours: 0-4

INDI510  Complementary Care Intervention  Credit Hours: 2
An interdisciplinary course that focuses on the holistic model integrating scientific knowledge and complementary modalities into clinical practice.

INDI515  Intro Anatomy and Physiology  Credit Hours: 6
This course provides basic knowledge of anatomy and physiology.

INDI520  Cellular and Molecular Biology  Credit Hours: 11
This course includes an introduction to cell structure, function and pathological changes, information about molecular structure of proteins, carbohydrates and lipids, basic human genetics.

INDI525  Human Physiology  Credit Hours: 3

INDI527  Health Care Aspect Human Sex  Credit Hours: 3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDI532</td>
<td>Statistical Methods I</td>
<td>3</td>
</tr>
<tr>
<td>INDI555</td>
<td>Anatomy and Pathophysiology</td>
<td>3</td>
</tr>
<tr>
<td>INDI600</td>
<td>Intro to Biostatistical Method</td>
<td>3</td>
</tr>
<tr>
<td>INDI601</td>
<td>Advanced Cardiac Life Support</td>
<td>1</td>
</tr>
<tr>
<td>INDI602</td>
<td>&quot;On Being a Scientist&quot;</td>
<td>1</td>
</tr>
<tr>
<td>INDI605</td>
<td>Bioethics I and II</td>
<td>3</td>
</tr>
<tr>
<td>INDI608</td>
<td>Science Enrich Middle Sch Educ</td>
<td>3</td>
</tr>
</tbody>
</table>

INDI532 Statistical Methods I
Introduction to statistical methods with emphasis on problems in the biomedical sciences. Included are descriptive statistics, probability theory, statistical inference, experimental design and simple statistical tests.

INDI555 Anatomy and Pathophysiology
Introductory and foundational course designed to cover selected topics in human anatomy, embryology, physiology and pathophysiology.

INDI600 Intro to Biostatistical Method
Focuses on descriptive and beginning inferential statistics, including normal and log normal distributions, hypothesis testing, confidence intervals, correlation, regression, ANOVA, and selected non-parametric procedures; with emphasis on the conceptualiz

INDI601 Advanced Cardiac Life Support
The objectives of the course are to study nervous system development, organization and structure and of nervous system-related diseases.

INDI602 "On Being a Scientist"
A series of one-hour lectures dealing with the ethics, regulations, and issues facing a modern, biomedical research scientist.

INDI605 Bioethics I and II
Basic ethics course for medical and graduate students with an interest in primarily clinical issues.

INDI608 Science Enrich Middle Sch Educ
Course is designed to introduce the student to problem-based learning facilitation for science education/instruction. May be repeated for credit.
INDI609  Chemical Phys Prop Macromolec  Credit Hours:  3
Topics covered will include spectroscopy, thermodynamics, magnetic resonance, sedimentation, diffusion protein sequence defernmacation analysis of protein secondary structure and nucleic acid structure.

INDI611  Human Genetics  Credit Hours:  0-3
This course will provide an introduction to human genetics with an emphasis on medical aspects including common genetic disorders, cytogenetics, molecular genetics, cancer genetics, prenatal diagnosis, and genetic counseling.

INDI611M  Human Genetics  Credit Hours:  3

INDI614  HIV and AIDS  Credit Hours:  3
Immunological, biomedical, testing, transmission, prevention, psychosocial and legal issues of HIV/AIDS.

INDI616  Lab Exercises in Enzymology  Credit Hours:  3
Laboratory exercises will be conducted in the research laboratory of the instructor. The course will consist of training in the methods used to purify, to characterize and to determine the activity of enzymes.

INDI617  Behavioral Science  Credit Hours:  5
This course considers the biological, cognitive and emotional aspects of human behavior. It focuses on normal and abnormal behavior throughout the life cycle and includes an introduction to psychopathology.

INDI621  Advanced Biostatistics  Credit Hours:  3
Focus on advanced statistics, including: multiple regression, multi-factor analysis of variance and covariance, repeated measures, MANOVA, logistic regression, discriminant function analysis, and survival analysis. Computer data analysis is emphasized.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDI627</td>
<td>Fundamentals of Oncology</td>
<td>2</td>
<td>A discussion of: cancer epidemiology; the role of chemicals, viruses, and radiation in cancer induction; and mechanism(s) of conversion of normal cells to cancer cells including the activation of cellular proto-oncogenes, autocrine secretion of growth fa</td>
</tr>
<tr>
<td>INDI629</td>
<td>Fundamentals of Oncology</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>INDI651</td>
<td>Basic Science Interdepartment</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>INDI660</td>
<td>Computer Apps Biomed Research</td>
<td>3</td>
<td>Hands-on experience with desktop computer applications in biomedical research including: an introduction to computers; Macintosh and Windows operating systems; word processing, spreadsheets; illustration, scientific, and presentation graphics; and searchi</td>
</tr>
<tr>
<td>INDI665</td>
<td>Trans Lead in Health Care</td>
<td>3</td>
<td>This course is designed for leaders within democratic society. Functional, transactional, and transformative leadership are examined. Students work independently and together, online and in person, to learn about individual and group behavior in the cre</td>
</tr>
<tr>
<td>INDI673</td>
<td>Research Biomedical Science</td>
<td>0-15</td>
<td>Intensive study in field of interest, including theoretical and experimental work. May be repeated for credit.</td>
</tr>
<tr>
<td>INDI679</td>
<td>Basic and Adv Light Microscopy</td>
<td>4</td>
<td>A lecture/laboratory course in the standard theories and techniques in histology and light microscopy. The emphasis is on preparation of samples, including histocytochemistry, immunocytochemistry and special staining for photo microscopy. Brightfield, flu</td>
</tr>
</tbody>
</table>
INDI684 Molecular Cell Biology I  
Credit Hours: 4
An introduction to the molecular basis of cell function. Topics include structure of proteins and nucleic acids, genetic analysis, gene regulation, cell structure and organization, and intercellular communication.

INDI686 Electron Microscopy  
Credit Hours: 4
A lecture/laboratory course in the standard theories and techniques employed in biological transmission and scanning electron microscopy.

INDI689 Preclinical Independent Study  
Credit Hours: 0-6

INDI694 Res Mole Cell  
Credit Hours: 0-15

INDI695 MCB Independent Study  
Credit Hours: 0-15

INDI696 Readings in MCB  
Credit Hours: 1

INDI697 Methods in MCB  
Credit Hours: 3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>INDI698</td>
<td>Scholarly Project</td>
<td>0-10</td>
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<tr>
<td></td>
<td>Option to develop an in-depth scholarly project to fulfill the research requirements of the MSBS Degree Program. May be repeated for credit.</td>
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</tr>
<tr>
<td>INDI699</td>
<td>Thesis Research</td>
<td>1-15</td>
</tr>
<tr>
<td></td>
<td>Research in biomedical sciences or interdisciplinary investigation of significant problems at the master level, leading to the preparation of a scientific project for presentation as a thesis. May be repeated for credit.</td>
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<tr>
<td>INDI711</td>
<td>Categorical Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>INDI713</td>
<td>Molecular Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>INDI715</td>
<td>Intro Anatomy + Physiology</td>
<td>6</td>
</tr>
<tr>
<td>INDI732</td>
<td>Statistical Methods I</td>
<td>3</td>
</tr>
<tr>
<td>INDI735</td>
<td>Statistical Methods in Bioinfo</td>
<td>3</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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<tr>
<td>INDI740</td>
<td>Health and Aging</td>
<td>3</td>
</tr>
<tr>
<td>INDI741</td>
<td>Issues in Contemporary Geronto</td>
<td>3</td>
</tr>
<tr>
<td>INDI755</td>
<td>International Health</td>
<td>0-6</td>
</tr>
<tr>
<td>INDI775</td>
<td>Cellular and Molecular Biology</td>
<td>0-14</td>
</tr>
<tr>
<td>INDI776</td>
<td>Physician, Patient and Society I</td>
<td>5</td>
</tr>
<tr>
<td>INDI777</td>
<td>Integrative Pathophysiology I</td>
<td>8</td>
</tr>
<tr>
<td>INDI778</td>
<td>Clinical Decision Making 1</td>
<td>7</td>
</tr>
</tbody>
</table>

This longitudinal course includes a range of instructional strategies and experiences designed to provide medical students with fundamental knowledge and skills for clinical decision making.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>INDI780</td>
<td>Organ Systems</td>
<td>0-25</td>
</tr>
<tr>
<td></td>
<td>(Organ Systems (Block 7))</td>
<td></td>
</tr>
<tr>
<td>INDI781</td>
<td>Integrative Pathophysiology</td>
<td>0-8</td>
</tr>
<tr>
<td></td>
<td>(Integrative Pathophysiology (Block 8))</td>
<td></td>
</tr>
<tr>
<td>INDI782</td>
<td>Physician, Patient + Society II</td>
<td>1-8</td>
</tr>
<tr>
<td>INDI783</td>
<td>Immunity and Infection</td>
<td>14</td>
</tr>
<tr>
<td>INDI784</td>
<td>Clinical Decision Making II</td>
<td>0-10</td>
</tr>
<tr>
<td>INDI785</td>
<td>Ind Study for USMLE Step 1</td>
<td>4</td>
</tr>
<tr>
<td>INDI786</td>
<td>Fundamentals Clinical Practice</td>
<td>0-6</td>
</tr>
<tr>
<td></td>
<td>(Fundamentals of Clinical Practice (Block 5))</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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<td>-------------</td>
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<tr>
<td>INDI789</td>
<td>Independent Study - Clinical</td>
<td>0-6</td>
</tr>
<tr>
<td>INDI790</td>
<td>Ind Study in Basic Science</td>
<td>0-15</td>
</tr>
<tr>
<td>INDI792</td>
<td>Fundamentals Clinical Prac II</td>
<td>0-8</td>
</tr>
<tr>
<td></td>
<td>Fundamentals of Clinical Practice (Block 9)</td>
<td></td>
</tr>
<tr>
<td>INDI802</td>
<td>&quot;On Being a Scientist&quot;</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>A series of one-hour lectures dealing with the ethics, regulations, and issues facing a modern, biomedical research scientist.</td>
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<tr>
<td>INDI809</td>
<td>Chem Physical Prop Macromolec</td>
<td>3</td>
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<tr>
<td></td>
<td>Topics covered will include spectroscopy, thermodynamics, magnetic resonance, sedimentation, diffusion protein sequence deermication analysis of protein secondary structure and nucleic acid structure.</td>
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<tr>
<td>INDI811</td>
<td>Human Genetics</td>
<td>3</td>
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<tr>
<td></td>
<td>This course will provide an introduction to human genetics with an emphasis on medical aspects including common genetic disorders, cytogenetics, molecular genetics, cancer genetics, prenatal diagnosis, and genetic counseling.</td>
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<tr>
<td>INDI814</td>
<td>HIV and Aids</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Immunological, biomedical, testing, transmission, prevention, psychosocial and legal issues of HIV/AIDS.</td>
<td></td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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</tr>
<tr>
<td>INDI816</td>
<td>Lab Exercises in Enzymology</td>
<td>3</td>
</tr>
<tr>
<td>INDI817</td>
<td>Behavioral Science</td>
<td>5</td>
</tr>
<tr>
<td>INDI821</td>
<td>Advanced Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>INDI827</td>
<td>Fundamentals of Oncology</td>
<td>2</td>
</tr>
<tr>
<td>INDI829</td>
<td>Fundamentals of Oncology</td>
<td>3</td>
</tr>
<tr>
<td>INDI850</td>
<td>Molecular Basis of Disease Lab</td>
<td>4</td>
</tr>
<tr>
<td>INDI860</td>
<td>Computer Apps Biomed Research</td>
<td>3</td>
</tr>
</tbody>
</table>

Laboratory exercises will be conducted in the research laboratory of the instructor. The course will consist of training in the methods used to purify, to characterize and to determine the activity of enzymes.

This course considers the biological, cognitive and emotional aspects of human behavior. It focuses on normal and abnormal behavior throughout the life cycle and includes an introduction to psychopathology.

Focus on advanced statistics, including: multiple regression, multi-factor analysis of variance and covariance, repeated measures, MANOVA, logistic regression, discriminant function analysis, and survival analysis. Computer data analysis is emphasized.

A discussion of: cancer epidemiology; the role of chemicals, viruses, and radiation in cancer induction; and mechanism(s) of conversion of normal cells to cancer cells including the activation of cellular proto-oncogenes, autocrine secretion of growth fa

Hands-on experience with desktop computer applications in biomedical research including: an introduction to computers; Macintosh and Windows operating systems; word processing, spreadsheets; illustration, scientific, and presentation graphics; and searchi
INDI873 Research Biomedical Sciences
Intensive study in field of interest, including theoretical and experimental work. May be repeated for credit.

INDI879 Basic and Adv Light Microscopy
A lecture/laboratory course in the standard theories and techniques in histology and light microscopy. The emphasis is on preparation of samples, including histocytochemistry, immunocytochemistry and special staining for photo microscopy. Brightfield, flu

INDI884 Molecular Cell Biology I
An introduction to the molecular basis of cell function. Topics include structure of proteins and nucleic acids, genetic analysis, gene regulation, cell structure and organization, and intercellular communication.

INDI885 Trans Lead in Health Care
This course is designed for leaders within democratic society. Functional, transactional, and transformative leadership are examined. Students work independently and together, online and in person, to learn about individual and group behavior in the cre

INDI886 Electron Microscopy
A lecture/laboratory course in the standard theories and techniques employed in biological transmission and scanning electron microscopy.

INDI894 Res Molec Cell

INDI895 MCB Independent Study
INDI896    Readings in MCB    Credit Hours:  1

INDI897    Methods in MCB    Credit Hours:  3

INDI999    Dissertation Research    Credit Hours:  1-15
disciplinary or interdisciplinary investigation of significant problems at the doctoral level under the guidance of a member of the Graduate Faculty, leading to the preparation of a scientific project for presentation as a dissertation. May be repeated.

INFS3150    Principles Of Structured Computer Programming And Problem Solving    Credit Hours:  3
major topics include problem solving, event driven programming, control structures, data types, data structures, objects, properties, events and methods. Subroutines, functions, file processing, menu and application development will also be covered.

Prerequisites: BUAD 1020 FOR LEVEL UG WITH MIN. GRADE OF D- OR CMPT 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR BUSC FOR MIN. SCORE OF 39

INFS3160    Business Application Development    Credit Hours:  3
building on programming skills developed in INFS3150 this course emphasizes database connectivity, data retrieval, and business application development. The course will also survey an object oriented language like C++, Java.

Prerequisites: (INFS 3150 FOR LEVEL UG WITH MIN. GRADE OF D- AND INFS 3770 FOR LEVEL UG WITH MIN. GRADE OF D-)

INFS3240    Business Intelligence Systems    Credit Hours:  3
building data warehouses and using data mining techniques, the course focuses on extracting business intelligence and knowledge discovery from existing data sources to support decision-making in functional areas of business.

Prerequisites: (INFS 3770 FOR LEVEL UG WITH MIN. GRADE OF D- AND BUAD 3050 FOR LEVEL UG WITH MIN. GRADE OF D-)

INFS3250    Software Applications In Business    Credit Hours:  3
this course is designed to acquaint students with the application of integrated software to business decisions, report writing and presentations. Student will gain hands-on experience with popular business software packages.

Prerequisites: BUAD 1020 FOR LEVEL UG WITH MIN. GRADE OF D- OR CMPT 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR BUSC FOR MIN. SCORE OF 39
INFS3370  Business Data Communications  Credit Hours:  3
An introduction to data communications in business. Topics include local-area and wide-area networks, including the Internet; hardware and media; network topologies; client-server networks; and network operating system software.
Prerequisites:BUAD 1020 FOR LEVEL UG WITH MIN. GRADE OF D- OR CMPT 1100 FOR LEVEL UG WITH MIN. GRADE OF D- OR BUSC FOR MIN. SCORE OF 39

INFS3380  Web Application Development I  Credit Hours:  3
An introduction to business application program development on the web using contemporary technologies with emphasis on client-side applications. Implications of information technology projects on organizations will be discussed.
Prerequisites:BUAD 1020 FOR LEVEL UG WITH MIN. GRADE OF D- OR CMPT 1100 FOR LEVEL UG WITH MIN. GRADE OF D-

INFS3770  Small Business Database Systems  Credit Hours:  3
The design and implementation of database management systems are studied. Develop significant skills in form based input, report writing and data modeling. Students will work in teams developing database applications.
Prerequisites:BUAD 1020 FOR LEVEL UG WITH MIN. GRADE OF D- OR CMPT 1100 FOR LEVEL UG WITH MIN. GRADE OF D-

INFS3780  Enterprise Wide Information Systems Management  Credit Hours:  3
Introduction to ERP, Roles of SCM and CRM in Business Environment, Major Business Processes relating to functional areas of Business in an integrated software environment. Extensive hands-on exercises using an ERP software.
Prerequisites:(BUAD 3050 FOR LEVEL UG WITH MIN. GRADE OF D- AND INFS 3770 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (BUAD 3050 FOR LEVEL UG WITH MIN. GRADE OF D- AND INFS 3250 FOR LEVEL UG WITH MIN. GRADE OF D-)

INFS3980  Contemporary Topics  Credit Hours:  3
Selected current topics in Information Systems practice, trends and technology.
Prerequisites:BUAD 3050 FOR LEVEL UG WITH MIN. GRADE OF D-

INFS4300  Web Application Development II  Credit Hours:  3
Address web architecture, web server administration and security issues; analyze, design, develop, and implement extensive database oriented business processes using server-side and client-side processing.
Prerequisites:(INFS 3770 FOR LEVEL UG WITH MIN. GRADE OF D- AND INFS 3380 FOR LEVEL UG WITH MIN. GRADE OF D-

INFS4320  Information Systems Planning And Outsourcing Management  Credit Hours:  3
Issues of planning, control, outsourcing management, and the organizational impact of computer systems will be studied. Challenges and opportunities in outsourcing will also be the focus of the course.
Prerequisites:BUAD 3050 FOR LEVEL UG WITH MIN. GRADE OF D-
INFS4510  Business Systems Analysis & Design With Erp  
Analysis, design and implementation of business information systems will be studied using Case tools and ERP systems. Will also emphasize management of organizational change brought about by information technology projects.

Prerequisites: (BUAD 3050 FOR LEVEL UG WITH MIN. GRADE OF D- AND INFS 3770 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (BUAD 3050 FOR LEVEL UG WITH MIN. GRADE OF D- AND INFS 3250 FOR LEVEL UG WITH MIN. GRADE OF D-)

INFS4620  Enterprise Database Systems  
In-depth exposure to database concepts including relational and Object Data Models, normalization, logical design, stored functions, procedures, triggers, forms and reports will be explored using a business database package.

Prerequisites: (INFS 3770 FOR LEVEL UG WITH MIN. GRADE OF D- AND BUAD 3050 FOR LEVEL UG WITH MIN. GRADE OF D-)

INFS4810  Enterprise Database Administration  

Prerequisites: (INFS 3770 FOR LEVEL UG WITH MIN. GRADE OF D- AND INFS 4510 FOR LEVEL UG WITH MIN. GRADE OF D- AND INFS 4620 FOR LEVEL UG WITH MIN. GRADE OF D-)

INFS4940  Infs Internship  
A prearranged work-study program where students specializing in computer systems, operations management or decision sciences obtain on-the-job experience while learning and applying the basic concepts and techniques of their respective areas.

INFS4990  Independent Study: Readings And Research  
Individual student study of a topic of interest to both the faculty member and student. Students are responsible for finding a faculty member to sponsor readings and research.

INFS5400  Information Technology And Computer Programming  
Intensive exposure to technologies and concepts of business oriented information systems. Computer programming in a contemporary programming language. Applications development through programming projects.

INFS6460  Management Information Systems  
This course is designed for end-users of computers to understand and appreciate the role of information technology and end-user's role in the management of this technology in organizations.
INFS6470  Information Technology  Credit Hours:  3
Discussion topics will be: Fundamentals of Information Technology, decision support systems, knowledge based/expert systems, data communication, database management and their applications in manufacturing. Will include implementation issues of Informatio

INFS6560  Systems Analysis And Design  Credit Hours:  3
Concepts, tools, and techniques for information systems analysis, design and development will be discussed. Contemporary methodologies for systems development including CASE tools, prototyping and RAD project work will be included.

Prerequisites: INFS 3150 FOR LEVEL UG WITH MIN. GRADE OF D- OR INFS 5400 FOR LEVEL GR WITH MIN. GRADE OF D-

INFS6570  Information Systems Policy And Administration  Credit Hours:  3
This course is designed for those who aspire to become managers of Information Technology (IT). Various aspects of IT Management will be discussed with real world examples/cases. PhD. Students enrolled in 8570 will be assigned additional Readings and re

Prerequisites: INFS 6560 FOR LEVEL GR WITH MIN. GRADE OF D-

INFS6610  Information Storage And Retrieval Structures  Credit Hours:  3
This course will analyze the concepts and methods used in the management of organizational data resources. Covers data modeling, database design, administration and architecture. Hands-on applications of database development are provided.

INFS6750  Research In Information Systems, Operations Management Or Decision Sciences  Credit Hours:  1-3
Individual study of topics of common interest to both student and faculty member.

INFS6810  Network Communications  Credit Hours:  3
Applications of business data communication, basic electronic communications concepts, public networks, computer networks, the Internet, network management, regulatory environment.

INFS6930  Contemporary Topics Seminar - Outsourcing  Credit Hours:  3
This seminar will focus on current topics in the fields of Information Systems and Operations Management.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>INFS8460</td>
<td>Management Information Systems</td>
<td>3</td>
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<tr>
<td></td>
<td>This course is designed for end-users of computers to understand and appreciate the role of information technology and end-user's role in the management of this technology in organizations.</td>
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<tr>
<td>INFS8470</td>
<td>Information Technology</td>
<td>3</td>
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<tr>
<td></td>
<td>Discussion topics will be: Fundamentals of Information Technology, decision support systems, knowledge based/expert systems, data communication, database management and their applications in manufacturing. Will include implementation issues of Information Technology.</td>
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<tr>
<td>INFS8480</td>
<td>Information Systems Issues In Manufacturing</td>
<td>4</td>
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<td>This course examines theoretical frameworks and recent empirical research of information and manufacturing technology. Emphasis will be on developing an integrative perspective of both technologies.</td>
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<tr>
<td>INFS8570</td>
<td>Information Systems Policy and Administration</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>This course is designed for those who aspire to become managers of Information Technology (IT). Various aspects of IT Management will be discussed with real world examples/cases. PhD. Students enrolled in 8570 will be assigned additional Readings and re</td>
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<tr>
<td>INFS8930</td>
<td>Contemporary Topics Seminar-Outsourcing</td>
<td>3</td>
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<tr>
<td></td>
<td>The course will address issues in planning for, implementing and managing or just working in, outsourcing projects. PhD. students enrolled in 8930 will be assigned additional readings and required to complete a research paper.</td>
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</tr>
<tr>
<td>INFS8990</td>
<td>Integrative Seminar in IT</td>
<td>3</td>
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<td></td>
<td>The seminar will investigate managerial issues in the field of information systems and technology management.</td>
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<tr>
<td>JAPN1080</td>
<td>Japanese Culture And Commerce</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Study of Japanese culture and society with emphasis on business and economics. Taught in English. (not for major credit).</td>
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</tbody>
</table>
JAPN1090  Introduction To Japanese Culture  Credit Hours: 3
An introduction to principal social, artistic and literary aspects of modern Japanese culture. Taught in English. (Not for major credit)

JAPN1110  Elementary Japanese I  Credit Hours: 4
An introduction to Japanese language and culture through aural comprehension, speaking, reading and writing. Laboratory practice required. (not for major credit)

JAPN1120  Elementary Japanese II  Credit Hours: 4
An introduction to Japanese language and culture through listening, speaking, reading and writing. Laboratory practice required. (not for major credit)

Prerequisites: JAPN 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNJP FOR MIN. SCORE OF 1120

JAPN2140  Intermediate Japanese I  Credit Hours: 3
Further practice of the four language skills with grammar review and readings of a literary-cultural nature. Laboratory practice required. (not for major credit)

Prerequisites: JAPN 1120 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNJP FOR MIN. SCORE OF 2140

JAPN2150  Intermediate Japanese II  Credit Hours: 3
Further practice of the four language skills with grammar review and readings of a literary-cultural nature. Laboratory practice required. (not for major credit)

Prerequisites: JAPN 2140 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNJP FOR MIN. SCORE OF 2150

JAPN2190  Study Abroad  Credit Hours: 1-3
The course permits beginning students of Japanese to spend time in a country where Japanese is spoken. Credit awarded in accordance with established departmental procedures.

Prerequisites: JAPN 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

JAPN3010  Conversation And Composition I  Credit Hours: 3
Work on advanced aural comprehension, speaking, reading and writing skills through intensive work with authentic texts dealing with contemporary issues relating to Japan. Laboratory practice required.

Prerequisites: JAPN 2150 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNJP FOR MIN. SCORE OF 3000
JAPN3020  Conversation And Composition II  Credit Hours:  3
Further work on advanced aural comprehension, speaking, reading and writing skills through intensive work with authentic texts dealing with contemporary issues relating to Japan. Laboratory practice required. A writing-intensive course.

Prerequisites: JAPN 3010 FOR LEVEL UG WITH MIN. GRADE OF D-

JAPN3170  Business Japanese  Credit Hours:  3
An introduction to the language and practices of Japanese business and commerce.

JAPN3410  Survey Of Japanese Civilization I  Credit Hours:  3
A study of different aspects of Japanese culture and civilization such as fine arts, history, science and philosophy.

Prerequisites: JAPN 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

JAPN4010  Japanese Syntax And Stylistics I  Credit Hours:  3
A review of Japanese stylistic structures through the analysis of texts and written and oral exercises in Japanese.

Prerequisites: JAPN 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

JAPN4020  Japanese Syntax And Stylistics II  Credit Hours:  4
Further review of Japanese stylistic structures through the analysis of texts and written and oral exercises in Japanese. The course includes an introduction to Japanese calligraphy. A writing-intensive course.

Prerequisites: JAPN 4010 FOR LEVEL UG WITH MIN. GRADE OF D-

JAPN4050  Advanced Conversation I  Credit Hours:  3
Practice in speaking idiomatic Japanese.

JAPN4060  Advanced Conversation II  Credit Hours:  3
Continued practice in speaking idiomatic Japanese.
JAPN4190  Study Abroad  
Credit Hours: 1-12
The course permits the student minoring in Japanese to spend time in a country where Japanese is spoken. Credit awarded in accordance with established departmental procedures.
Prerequisites: JAPN 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

JAPN4980  Special Topics In Japanese Studies  
Credit Hours: 1-3
Study of a selected topic in Japanese language, literature, or culture. May be repeated for credit when topic varies.

JAPN4990  Independent Study In Japanese  
Credit Hours: 1-3
Independent research on special topics. May be repeated once for additional credit.

KINE1080  Exercise And Health  
Credit Hours: 2
The scientific basis and the health benefits of exercise and wellness activities are presented in lecture. Students undertake individualized exercise programs designed to improve physical fitness.

KINE1110  Introduction To Athletic Training  
Credit Hours: 2
Introduction to the profession of athletic training, practice settings, members of the sports medicine team; environmental issues; common athletic injuries; and the academic program at UT.

KINE1650  Care And Prevention Of Injuries  
Credit Hours: 3
Injury prevention; inflammation and tissue repair, physical conditioning; injury recognition; emergency procedures; protective equipment; ethical and legal considerations, and therapeutic modalities relating to athletic training.
Prerequisites: KINE 1110 FOR LEVEL UG WITH MIN. GRADE OF D-

KINE1660  Athletic Training Taping Techniques  
Credit Hours: 1
Intended for those intending to be athletic training concentration majors. Taping, wrapping, and bracing techniques to support various areas of the human body.
Corequisite: KINE 1650
**KINE1700 Introduction To Exercise Science**
Credit Hours: 2
An introduction to the professions involving exercise science; sports science, rehabilitation therapy and physical education. Emphasis is on basic concepts of physiological, biomechanical and psychological function in human movement. Programmatic and care

**KINE2460 Human Anatomy And Physiology I Lab**
Credit Hours: 1
Laboratory exercises in histology, dissection, identification, and physiology of the axial and appendicular skeletal system, the skeletal muscle system, the central and peripheral nervous system, tissues, the eye, and cell transport.

Corequisite: KINE 2560

**KINE2470 Human Anatomy And Physiology II Lab**
Credit Hours: 1
Laboratory exercises in endocrine, cardiovascular, respiratory, digestive, lymphatic, urinary, and reproductive anatomy, histology, physiology, including computer assisted experiments.

Corequisite: KINE 2570

**KINE2510 Human Anatomy**
Credit Hours: 3
An integrated study of both regional anatomy and musculoskeletal, cardiovascular, lymphatic, respiratory, neurologic, digestive, renal, endocrine and reproductive systems. Required for students in exercise science and allied health professional programs.

Corequisite: KINE 2520

**KINE2520 Human Anatomy Laboratory**
Credit Hours: 1
Laboratory exercises in musculoskeletal, neurological, cardiovascular and respiratory anatomy.

Corequisite: KINE 2510

**KINE2530 Human Physiology**
Credit Hours: 3
An integrated study of physiology with emphasis on musculoskeletal, cardiovascular, lymphatic, respiratory, neurologic, digestive, renal, endocrine and reproductive systems. Required for students in exercise science and allied health professional program.

Prerequisites: (KINE 2510 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1090 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 2150 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (KINE 2510 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1230 FOR LEVEL UG WITH MIN. GRADE OF D

**KINE2540 Human Physiology Laboratory**
Credit Hours: 1
Laboratory exercises in musculoskeletal, neurological, cardiovascular and respiratory physiology.

Corequisite: KINE 2530
KINE2560  Anatomy And Physiology I  
Structure and function of the human body. Study of cells, tissues, special senses, and the skeletal, muscle, and nervous systems. Natural science core course.
Corequisite: KINE 2460

KINE2570  Human Anatomy And Physiology II  
Structure and function of human endocrine, blood, cardiovascular, lymphatic, respiratory, digestive, urinary and electrolyte, and reproductive systems.
Corequisite: KINE 2470

KINE2580  Human Pathophysiology For Health Care  
Topics include the cellular perspective and fluid environment, genetic disorders, and pathophysiology of organ systems, concentrating on cardiovascular, respiratory, renal-urinary, endocrine, gastrointestinal and nervous.

KINE2590  Microbiology And Infectious Diseases  
Structure and function of bacteria and viruses; antigen-antibody reactions, immunology, serology, growth and inhibition of microorganisms. Pathologic responses to infection; pathogenesis and disease, principal infectious diseases of man.
Prerequisites: KINE 2560 FOR LEVEL UG WITH MIN. GRADE OF D-

KINE2610  Evaluation Of Lower Extremity Injuries  
Study of the pathology, etiology and physiology of lower extremity injuries common in athletics as well as life-threatening head and neck injuries. Signs, symptoms and specific tests will be discussed.
Prerequisites: KINE 1650 FOR LEVEL UG WITH MIN. GRADE OF D-

KINE2620  Evaluation Of Upper Extremity Injuries  
Study of the pathology, etiology and physiology of Upper extremity injuries common in athletics as well as non-life-threatening head and neck injuries. Signs, symptoms and specific tests for the upper extremity and trunk will be discussed.
Prerequisites: KINE 2610 FOR LEVEL UG WITH MIN. GRADE OF D-

KINE2650  Modalities-Athletic Trainers  


KINE2670  Modalites-Athletic Trng Lab  Credit Hours: 1

KINE2710  Clinical Skills Development I  Credit Hours: 2
Laboratory experience to review and test the clinical skills taught during the first year of the athletic training curriculum and clinical skill development experiences provided in the athletic training room with intercollegiate athletic teams.
Prerequisites: KINE 1650 FOR LEVEL UG WITH MIN. GRADE OF D-

KINE2720  Clinical Skills Development II  Credit Hours: 2
Laboratory experience to review and test the clinical skills taught during the lower extremity evaluation course in the athletic training curriculum and clinical skill development experiences provided in the athletic training room with intercollegiate ath
Prerequisites: KINE 2610 FOR LEVEL UG WITH MIN. GRADE OF D-

KINE2960  Growth, Development And Motor Learning  Credit Hours: 4
Lecture, discussion and laboratory based course concerning growth and development characteristics spanning birth through elderly life. Theory and practical applications of motor skill acquisition will be stressed.

KINE3200  Advanced Human Anatomy  Credit Hours: 2
An elective course that applies musculoskeletal anatomy to human movement, function, injury evaluation and rehabilitation through in cadaver observation and dissection.
Prerequisites: KINE 2510 FOR LEVEL UG WITH MIN. GRADE OF D- AND KINE 2530 FOR LEVEL UG WITH MIN. GRADE OF D-

KINE3510  Introduction To Kinesiotherapy  Credit Hours: 3
This course is designed to introduce the student to the scope of practice for kinesiotherapy. Emphasis will be placed on standards of practice for the registered kinesiotherapist. Practicum hours included.
Prerequisites: (KINE 2510 FOR LEVEL UG WITH MIN. GRADE OF D- AND KINE 2520 FOR LEVEL UG WITH MIN. GRADE OF D- AND HEAL 1500 FOR LEVEL UG WITH MIN. GRADE OF D-)

KINE3520  Applied Exercise Physiology  Credit Hours: 3
This course will provide information related to the physiological responses of the human organism to exercise and exercise training. Emphasis will also be placed on the role exercise plays in health and disease prevention.
Prerequisites: KINE 2510 FOR LEVEL UG WITH MIN. GRADE OF D- OR KINE 2530 FOR LEVEL UG WITH MIN. GRADE OF D- OR KINE 2570 FOR LEVEL UG WITH MIN. GRADE OF D-
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>KINE3530</td>
<td>Applied Exercise Physiology Laboratory</td>
<td>1</td>
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<tr>
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<td>This course is the laboratory component of the applied exercise physiology course. Emphasis will be placed on the concepts learned in lecture. This will occur through hands-on activities and experiments involving various forms of exercise testing and th</td>
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<td>Corequisite: KINE 3520</td>
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<tr>
<td>KINE3610</td>
<td>General Medical Conditions For Athletic Trainers</td>
<td>2</td>
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<td>Knowledge and skills that entry-level athletic trainers must possess to recognize, treat and refer, when appropriate, the general medical conditions and disabilities of people involved in physical activity.</td>
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<td>Prerequisites: KINE 2620 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>KINE3630</td>
<td>Therapeutic Modalities For Athletic Trainers</td>
<td>3</td>
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<td>Physiological, mechanical and bio-electrical principles and techniques of application for electrical, thermal, high frequency radiation and traction modalities used in the treatment of athletic injuries.</td>
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<td>Prerequisites: KINE 2620 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>KINE3640</td>
<td>Modalities For Athletics Training Laboratory</td>
<td>1</td>
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<tr>
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<td>Techniques of application for electrical, thermal, high frequency radiation and mechanical modalities used in the treatment of injuries to physically active individuals.</td>
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<td>Prerequisites: KINE 1650 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>KINE3650</td>
<td>Athletic Injury Evaluation</td>
<td>3</td>
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<tr>
<td>KINE3660</td>
<td>Rehabilitation Of Athletic Injuries</td>
<td>3</td>
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<td>A systematic approach to exercise program development, techniques, indications and contraindications of exercise, and exercise progression as related to athletic injuries, prevention, reconditioning and return to play guidelines.</td>
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<td>Prerequisites: KINE 3630 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>KINE3670</td>
<td>Rehabilitation Of Athletic Injuries Laboratory</td>
<td>1</td>
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<td>Application of rehabilitation techniques for injuries to physically active individuals.</td>
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<td>Prerequisites: KINE 2680 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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</tbody>
</table>
KINE3710       Clinical Skills Development III       Credit Hours:  3
Laboratory experience to review and test the clinical skills taught during the upper extremity evaluation course in the athletic training curriculum and clinical skill development experiences provided in the athletic training room with intercollegiate athletes.
Prerequisites:KINE 2620 FOR LEVEL UG WITH MIN. GRADE OF D-

KINE3720       Clinical Skills Development IV       Credit Hours:  3
Laboratory experience to review and test the clinical skills taught during the therapeutic modalities course in the athletic training curriculum and clinical skill development experiences provided in the athletic training room with intercollegiate athletes.
Prerequisites:(KINE 3610 FOR LEVEL UG WITH MIN. GRADE OF D- AND KINE 3630 FOR LEVEL UG WITH MIN. GRADE OF D-)

KINE3730       Fitness Assessment And Programming       Credit Hours:  2
This course is designed to provide students with the knowledge and skills used in the development and implementation of fitness programming for school and community environments.

KINE3820       Sports Medicine For Coaches       Credit Hours:  3
Survey of athletic training dealing with the care and prevention, evaluation and treatment of athletic injuries. Emphasis on orthopedic evaluation and physician involvement. Preventive taping techniques.
Prerequisites:KINE 2510 FOR LEVEL UG WITH MIN. GRADE OF D- OR KINE 2570 FOR LEVEL UG WITH MIN. GRADE OF D-

KINE3900       Seminar In Athletic Training       Credit Hours:  1
Psychomotor skill development and assessment of NATA required student athletic trainer competencies in the athletic training room.

KINE4540       Applied Biomechanics       Credit Hours:  3
This course focuses on the application of biomechanics concepts to the acquisition and refinement of fundamental movement patterns, basic functional skills and sport activities. Such topics as locomotion, balance and the biomechanical basis of injury are
Prerequisites:KINE 2510 FOR LEVEL UG WITH MIN. GRADE OF D- OR KINE 2530 FOR LEVEL UG WITH MIN. GRADE OF D-

KINE4550       Applied Biomechanics Laboratory       Credit Hours:  1
This course is the laboratory component of the applied biomechanics course. Emphasis will be placed on the application of the concepts learned in lecture to rehabilitation and sport situations. This will occur through hands-on activities and experiments
Corequisite:KINE 4540
KINE4560  Laboratory Techniques In Exercise Physiology  Credit Hours:  3
This course covers theoretical and practical knowledge for the assessment of exercise metabolism, cardiorespiratory function, body composition, thermoregulation, and skeletal muscle function. Hands-on data collection will be emphasized.
Prerequisites:(KINE 3520 FOR LEVEL UG WITH MIN. GRADE OF D- AND KINE 3530 FOR LEVEL UG WITH MIN. GRADE OF D-)

KINE4570  Theory And Practice Of Kinesiotherapy  Credit Hours:  3
Kinesiotherapy principles underlying exercise prescription for those with physical disabilities. Emphasis will be placed on manual and active exercise and physical assessment of the musculoskeletal system.
Prerequisites:(KINE 1700 FOR LEVEL UG WITH MIN. GRADE OF D- AND KINE 2510 FOR LEVEL UG WITH MIN. GRADE OF D-)

KINE4580  Kinesiotherapy Lab  Credit Hours:  1
The focus of this course is on gaining hands-on experience by assessment of a range of motion, strength, joint stabilization and functional movement of the musculoskeletal system. Students will emphasize manual exercise programming.
Prerequisites:KINE 2510 FOR LEVEL UG WITH MIN. GRADE OF D-

KINE4620  Therapeutic Kinesiology  Credit Hours:  3
A lecture, discussion and laboratory course designed to prepare students to work with patients on land and in the water. Emphasis will be placed on the rehabilitation and geriatric populations.
Prerequisites:(KINE 2510 FOR LEVEL UG WITH MIN. GRADE OF D- AND KINE 2530 FOR LEVEL UG WITH MIN. GRADE OF D-)

KINE4640  Neurological And Pathological Foundations Of Rehabilitation  Credit Hours:  3
Study of neurological control of normal movement and the implications of various medical pathologies for rehabilitation. Emphasis on inflammatory processes, metabolic and vascular disturbances, traumatic injuries, nutritional deficiencies, neoplasms, dege
Prerequisites:KINE 2510 FOR LEVEL UG WITH MIN. GRADE OF D-

KINE4650  Organization And Administration Of Athletic Training Programs  Credit Hours:  3
Administration of athletic training programs including athletic training room management, budgeting, staffing, insurance, medical records, emergency care planning, preparticipation physical examinations, athletic training room design, legal issues and pub
Prerequisites:KINE 3660 FOR LEVEL UG WITH MIN. GRADE OF D-

KINE4680  Physiological Psychology Of Motor Behavior  Credit Hours:  3
Study of the relationship of sensory input and motor activities, motor learning and other aspects of movement behavior through an integration of physiological and psychological principles.
Prerequisites:KINE 2510 FOR LEVEL UG WITH MIN. GRADE OF D-
KINE4710  Clinical Skills Development V  Credit Hours:  3
Laboratory experience to review and test the clinical skills taught during the rehabilitation of sports injuries course in the athletic training curriculum and clinical skill development experiences provided in the athletic training room with intercollegi
Prerequisites: KINE 3660 FOR LEVEL UG WITH MIN. GRADE OF D-

KINE4720  Clinical Skills Development Vi  Credit Hours:  4
Emphasis on clinical experience in athletic training off-campus. Also includes a laboratory experience to review clinical skills.
Prerequisites: KINE 4650 FOR LEVEL UG WITH MIN. GRADE OF D-

KINE4850  Exercise Testing And Programming  Credit Hours:  3
The design and conduct of exercise testing and fitness programs for healthy subjects and those with pathologies will be the subject matter of the course.
Prerequisites: KINE 3520 FOR LEVEL UG WITH MIN. GRADE OF D-

KINE4860  Exercise Testing And Programming Laboratory  Credit Hours:  1
The practical techniques for administering tests and developing fitness programs for healthy subjects and those with pathologies will be the subject matter of the course.
Prerequisites: KINE 3520 FOR LEVEL UG WITH MIN. GRADE OF D-

KINE4870  Exercise Biology  Credit Hours:  3
Examination of the cellular and molecular responses to changes in physical activity. Emphasis on exercise and disease; skeletal muscle growth and repair; and exercise metabolism.
Prerequisites: (KINE 3520 FOR LEVEL UG WITH MIN. GRADE OF D- AND KINE 3530 FOR LEVEL UG WITH MIN. GRADE OF D-)  

KINE4900  Human Performance Seminar  Credit Hours:  1-3
Classroom and laboratory analysis of current research in varied topic areas.

KINE4910  Senior Research Project  Credit Hours:  4
Senior level students in exercise science will, with the assistance of their adviser, develop, plan and conduct a research project on a current problem in exercise science.
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<tr>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>KINE4920</td>
<td>Readings In Exercise Biology</td>
<td>3</td>
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<td></td>
<td>Faculty and student directed readings of original research in Exercise Biology. Readings will focus on how changes in physical activity influence the biology of skeletal muscle.</td>
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<tr>
<td>KINE4940</td>
<td>Internship/Practicum</td>
<td>2-15</td>
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<td>Clinical experience in locations both inside and outside the university setting. Placement depends on area of study.</td>
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<tr>
<td>KINE4990</td>
<td>Independent Study In Exercise Science/Physical Education</td>
<td>1-3</td>
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<td>Directed individual study. Specialty title, seminar sheet and permission of instructor required.</td>
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<tr>
<td>KINE5010</td>
<td>Fitness And Conditioning Programs</td>
<td>3</td>
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<td></td>
<td>Theory and practice in development and administration of comprehensive fitness programs with special emphasis on the use of exercise as a health maintenance strategy.</td>
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<tr>
<td>KINE5110</td>
<td>Measurement And Statistical Inference In Human Performance</td>
<td>3</td>
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<td>Application of measurement and statistical inference to human performance testing and research. Includes descriptive and inferential statistics, principles of test construction and introduction to authentic assessment in public schools.</td>
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<tr>
<td>KINE5250</td>
<td>Readings In Exercise Biology</td>
<td>3</td>
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<tr>
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<td>Faculty and student directed readings of original research in Exercise Biology. Readings will focus on how changes in physical activity influence the biology of skeletal muscle.</td>
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<tr>
<td>KINE5560</td>
<td>Laboratory Techniques In Exercise Physiology</td>
<td>3</td>
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<td>This course covers theoretical and practical knowledge for the assessment of exercise metabolism, cardiopulmonary function, body composition, thermoregulation, and skeletal muscle function. Hands-on data collection will be emphasized.</td>
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<td>Prerequisites: KINE 3520 FOR LEVEL UG WITH MIN. GRADE OF D- AND KINE 3530 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
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<tr>
<td>KINE5950</td>
<td>Workshop In Exercise Science</td>
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<tr>
<td>KINE6100</td>
<td>Physiology Of Exercise</td>
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<tr>
<td>KINE6130</td>
<td>Biomechanics Of Human Motion</td>
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<td>KINE6200</td>
<td>Biomechanical Instrumentation</td>
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<td>KINE6230</td>
<td>Scientific Writing And Research Methods</td>
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<td>KINE6300</td>
<td>Human Locomotion</td>
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<tr>
<td>KINE6400</td>
<td>Kinesiological Electromyography</td>
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Prerequisites: KINE 6130 FOR LEVEL GR WITH MIN. GRADE OF D-
KINE6420  Cardiopulmonary Exercise Physiology  
Credit Hours: 3
The responses and adaptations of the cardiovascular and pulmonary systems to exercise in healthy individuals.

Prerequisites: KINE 6100 FOR LEVEL GR WITH MIN. GRADE OF D-

KINE6440  Exercise Metabolism And Endocrinology  
Credit Hours: 3
This course will provide the student with an advanced understanding of various concepts of cellular metabolism in response to exercise. Emphasis will be placed on biochemical, molecular and endocrinological mechanisms regulating human metabolism.

Prerequisites: KINE 6100 FOR LEVEL GR WITH MIN. GRADE OF D-

KINE6500  Biomechanics Of Posture And Balance  
Credit Hours: 3
Focus on the mechanical and sensory-motor factors involved in the control of balance and posture. Emphasis on the theories, the influence of pathology and techniques for the assessment of balance.

Prerequisites: KINE 6130 FOR LEVEL GR WITH MIN. GRADE OF D-

KINE6520  Clinical Kinesiology  
Credit Hours: 3
Kinesiological principles underlying the assessment and treatment of individuals with normal and pathological conditions. Emphasis will be placed on clinical applications of mechanical principles, motor control and muscle activity to improve performance a

KINE6530  Prevention, Evaluation, And Emergency Care Of Athletic Injuries  
Credit Hours: 3
Advanced study of prevention, evaluation and care of athletic injuries with an emphasis on orthopedic and neurological problems and guidelines for return to competition.

KINE6540  Laboratory Techniques In Exercise Physiology  
Credit Hours: 3
This course covers theoretical and practical knowledge for the assessment of exercise metabolism, cardiorespiratory function, body composition, thermoregulation and skeletal muscle function. Hands-on data collection will be emphasized.

KINE6550  Lab Techniques In Exercise Biology  
Credit Hours: 3
The course provides students with theoretical and practical knowledge for assessing cellular and molecular responses to exercise and inactivity. Emphasis will be placed on laboratory safety, reagent preparation, cell culture techniques, and tissue analysis.

Prerequisites: (KINE 6100 FOR LEVEL GR WITH MIN. GRADE OF D- AND KINE 6540 FOR LEVEL GR WITH MIN. GRADE OF D-)
KINE656  Skeletal Muscle Biology  Credit Hours:  3
This course is designed to provide students with advanced instruction of the cellular and molecular adaptations in skeletal muscle following changes in physical activity.
Prerequisites: KINE 6100 FOR LEVEL GR WITH MIN. GRADE OF D-

KINE6590  Treatment, Rehabilitation And Reconditioning Of Athletic Injuries  Credit Hours:  3
Psychological, mechanical and bioelectrical principles for modifying the inflammatory response in athletic injuries. Various rehabilitation techniques to return an athlete to competition and the relationship with modalities.

KINE6600  Issues And Management In Athletic Training  Credit Hours:  3
This course addresses current issues that affect the profession of Athletic Training. Topics cover issues that influence clinical practice as well as political issues related to the profession.

KINE6660  Evidence-Based Approach To Physical Rehabilitation  Credit Hours:  3
An investigation into the science and theories of therapeutic rehabilitation and its impact of clinical practice using current literature and databases from areas of evidence based medicine.

KINE6670  Pathomechanics Of Musculoskeletal Injury  Credit Hours:  3
An in-depth investigation into the basic structure and mechanisms of injury of various musculoskeletal tissue applied to the recognition and prevention of specific orthopedic injuries and conditions.

KINE6680  Interventions in Ath Train/SM  Credit Hours:  3
Students will be introduced to advanced techniques that impact clinical practice in Athletic Training, including manual therapy, advanced orthopedic evaluation s, and advanced management and planning related to emergency medicine.
KINE6710  Organization And Administration Of Athletic Training Programs  Credit Hours:  3
Administration of athletic training programs including legal issues, athletic training room management, budgeting, staffing, insurance, medical records, emergency care planning, preparticipation physical examinations, athletic training room design and pub

KINE6930  Kinesiology Seminar  Credit Hours:  1-4
Seminar course on a selected topic in exercise physiology. Course will typically involve a review of current research and will include laboratory experiences/assignments.

KINE6940  Internship In Exercise Science  Credit Hours:  1-12
A field internship designed to supplement classroom experience by providing participation in the area of exercise science through participant-observer experience.

KINE6960  Masters Thesis In Exercises Science  Credit Hours:  1-4
Independence research in Exercise Science completed as part of the requirements for the Master of Science in Exercise Science degree.

KINE6990  Independent Study In Exercise Science  Credit Hours:  1-4
Faculty supervised independent reading, laboratory research, field experience and other activities not suited for class instruction.

KINE7010  Fitness And Conditioning Programs  Credit Hours:  3
Theory and practice in development and administration of comprehensive fitness programs with special emphasis on the use of exercise as a health maintenance strategy.

KINE7110  Measurement And Statistical Inference In Human Performance  Credit Hours:  3
Application of measurement and statistical inference to human performance testing and research. Includes descriptive and inferential statistics, principles of test construction and introduction to authentic assessment in public schools.
KINE7250    Readings In Exercise Biology
Faculty and student directed readings of original research in Exercise Biology. Readings will focus on how changes in physical activity influence the biology of skeletal muscle.

KINE7950    Workshop In Exercise Science
Topical workshops developed around areas of interest and concern to those involved in academic programs and careers that relate to exercise science. May not be included in a graduate plan of study without prior approval of the student's adviser.

KINE8100    Physiology Of Exercise
This course is designed to provide an understanding mechanisms of the physiological responses to exercise. Emphasis will be placed on adaptations to exercise training and the role of exercise in health and disease.

KINE8130    Biomechanics Of Human Motion
This course provides a basic overview of the principles of biomechanics as they apply to human movement. In-depth discussion and lab activities focus on the application of these principles to such topics as muscle function, locomotion, balance, mechanisms

KINE8200    Biomechanical Instrumentation
Provides students with experience in the research and clinical use of videography, force and pressure plates, electromyography and other systems in applied biomechanics. Emphasis on hands-on lab experience and topics related to data collection and signal

KINE8230    Scientific Writing And Research Methods
Principles and issues involved in the design and conduct of research in exercise science: critical evaluation, research design, development of a research proposal, grant acquisition, and compliance with institutional and federal guidelines on the use of h

KINE8300    Human Locomotion
This course focuses on an examination of the characteristics of normal locomotion and the effects on locomotion of common pathologies and disabilities. The role of biomechanics in evaluating locomotion, and the appropriate techniques for accomplishing th

Prerequisites: KINE 8130 FOR LEVEL GR WITH MIN. GRADE OF D-
KINE8400  Kinesiological Electromyography  Credit Hours:  3
This focus of this course is on the principles involved in the generation and control of muscle contraction, and the electromyographical techniques used to evaluate muscle function. Emphasis is placed on gaining hands-on experience with contemporary EMG.
Prerequisites: KINE 8130 FOR LEVEL GR WITH MIN. GRADE OF D-

KINE8420  Cardiopulmonary Exercise Physiology  Credit Hours:  3
The responses and adaptations of the cardiovascular and pulmonary systems to exercise in healthy individuals.
Prerequisites: KINE 8100 FOR LEVEL GR WITH MIN. GRADE OF D-

KINE8440  Exercise Metabolism And Endocrinology  Credit Hours:  3
This course will provide the student with an advanced understanding of various concepts of cellular metabolism in response to exercise. Emphasis will be placed on biochemical, molecular and endocrinological mechanisms regulating human metabolism.
Prerequisites: KINE 8100 FOR LEVEL GR WITH MIN. GRADE OF D-

KINE8500  Biomechanics Of Posture And Balance  Credit Hours:  3
Focus on the mechanical and sensory-motor factors involved in the control of balance and posture. Emphasis on the theories, the influence of pathology, and techniques for the assessment of balance.
Prerequisites: KINE 8130 FOR LEVEL GR WITH MIN. GRADE OF D-

KINE8520  Clinical Kinesiology  Credit Hours:  3
Kinesiological principles underlying the assessment and treatment of individuals with normal and pathological conditions. Emphasis will be placed on clinical applications of mechanical principles, motor control and muscle activity to improve performance a

KINE8540  Laboratory Techniques In Exercise Physiology  Credit Hours:  3
This course covers theoretical and practical knowledge for the assessment of exercise metabolism, cardiorespiratory function, body composition, thermoregulation and skeletal muscle function. Hands-on data collection will be emphasized.

KINE8550  Lab Techniques In Exercise Biology  Credit Hours:  3
The course provides students with theoretical and practical knowledge for assessing cellular and molecular responses to exercise and inactivity. Emphasis will be placed on laboratory safety, reagent preparation, cell culture techniques, and tissue analy.
Prerequisites: (KINE 8100 FOR LEVEL GR WITH MIN. GRADE OF D- AND KINE 8540 FOR LEVEL GR WITH MIN. GRADE OF D-)
Course Descriptions 2009-2010

KINE8560  Skeletal Muscle Biology  Credit Hours:  3
This course is designed to provide students with advanced instruction of the cellular and molecular adaptations in skeletal muscle following changes in physical activity.
Prerequisites: KINE 8100 FOR LEVEL GR WITH MIN. GRADE OF D-

KINE8600  Issues And Management In Athletic Training  Credit Hours:  3
This course addresses current issues that affect the profession of Athletic Training. Topics cover issues that influence clinical practice as well as political issues related to the profession.

KINE8660  Evidence Based Approach To Physical Rehabilitation  Credit Hours:  3
An investigation into the science and theories of therapeutic rehabilitation and its impact on clinical practice using current literature and databases from the areas of evidence based medicine.

KINE8670  Pathomechanics Of Musculoskeletal Injury  Credit Hours:  3
An in-depth investigation into the basic structure and mechanisms of injury of various musculoskeletal tissue applied to the recognition and prevention of specific orthopedic injuries and conditions.

KINE8930  Kinesiology Seminar  Credit Hours:  1-4
Seminar course on a selected topic in exercise physiology. Course will typically involve a review of current research and will include laboratory experiences/assignments.

KINE8940  Internship In Exercise Science  Credit Hours:  1-12
A field internship designed to supplement classroom experience by providing participation in the area of exercise science through participant-observer experience.

KINE8960  Doctoral Dissertation In Exercise Science  Credit Hours:  1-12
Directed research towards completion of the doctoral degree. Students may register for credit in more than one semester. Total dissertation credit toward the degree may not exceed 16 hours.
KINE8990 Independent Study In Exercise Science Credit Hours: 1-4
Faculty supervised independent reading, laboratory research, field experience and other activities not suited for class instruction.

LAT1110 Elementary Latin I Credit Hours: 4
Study of the fundamentals of Latin vocabulary, grammar and syntax. Translation of elementary readings. (not for major credit)

LAT1120 Elementary Latin II Credit Hours: 4
Continued study of fundamental Latin vocabulary, grammar and syntax. Translation of elementary readings. (not for major credit)

Prerequisites: LAT 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNLT FOR MIN. SCORE OF 1120

LAT2140 Intermediate Latin I Credit Hours: 3
Brief review of vocabulary, grammar and syntax. Readings in Latin prose by such authors as Sallust, Livy and Cicero. (not for major credit)

Prerequisites: LAT 1120 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNLT FOR MIN. SCORE OF 2140

LAT2150 Intermediate Latin II Credit Hours: 3
Intermediate level Latin poetry of the Republic and Augustan periods. (not for major credit)

Prerequisites: LAT 2140 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNLT FOR MIN. SCORE OF 2150

LAT3050 Survey of Latin Lit I Credit Hours: 3

LAT5210 Latin For Reading Knowledge I Credit Hours: 3
Elements of grammar and vocabulary appropriate to preparing graduate students to read effectively in Latin.
LAT5220  Latin For Reading Knowledge II  Credit Hours: 3
Elements of pronunciation, structure and vocabulary most appropriate to preparing graduate students to read effectively in Latin.

LAWA6000  Legal Ethics And Professional Responsibility  Credit Hours: 2-3
An introduction to legal and ethical principles governing lawyers, the legal profession and the practice of law. The course considers the principal ways in which lawyers are regulated through bar admission, professional codes, lawyer disciplinary actions.
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWA6120  Constitutional Law II  Credit Hours: 3
Constitutional Law II will cover issues of individual rights protected by the Equal Protection Clause of the Fourteenth Amendment. It will also cover First Amendment protections against governmental restrictions of speech and the press, with some coverage.
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWA6310  Evidence  Credit Hours: 3-4
The rules and policies governing a trial court's fact-finding process, as exemplified by the Federal Rules of Evidence. Topics cover the full range of evidentiary issues at trial, including the content of admissible proof, the matter of presenting it and
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWA9000  Legal Ethics And Professional Responsibility  Credit Hours: 2-3
An introduction to legal and ethical principles governing lawyers, the legal profession and the practice of law. The course considers the principal ways in which lawyers are regulated through bar admission, professional codes, lawyer disciplinary actions.

LAWA9120  Constitutional Law II  Credit Hours: 3
Constitutional Law II will cover issues of individual rights protected by the Equal Protection Clause of the Fourteenth Amendment. It will also cover First Amendment protections against governmental restrictions of speech and the press, with some coverage.

LAWA9310  Evidence  Credit Hours: 3-4
The rules and policies governing a trial court's fact-finding process, as exemplified by the Federal Rules of Evidence. Topics cover the full range of evidentiary issues at trial, including the content of admissible proof, the matter of presenting it and
LAWA9400  Advanced Research and Writing
Independent study course involving intensive legal research and drafting under faculty supervision.

LAWC3FA  Consortium - Full Time
Credit Hours: 0-5

LAWC4FA  Consortium - Part Time
Credit Hours: 0-5

LAWC6010  International/Domestic Arbitration
Arbitration permeates domestic dispute resolution and is the principal means of international commercial dispute resolution. To prepare students as advocates and/or arbitrators in the domestic and international arena, this course conveys a thorough under
Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWC9010  International/Domestic Arbitration
Arbitration permeates domestic dispute resolution and is the principal means of international commercial dispute resolution. To prepare students as advocates and/or arbitrators in the domestic and international arena, this course conveys a thorough under

LAWD6010  Civil Procedure -- Jurisdiction
The rules controlling the jurisdiction of courts and forum selection for civil litigation in state and federal systems are covered.
Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWD6020  Civil Procedure -- Pleading And Practice
The rules controlling conduct and management of civil litigation in federal and state courts from the complaint to final judgment as well as issues involving the effect of judgments on subsequent litigation are covered.
Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
LAWD6110  Constitutional Law I  Credit Hours:  3
Constitutional Law I will cover structural issues focusing on the Supreme Court's interpretation of the nature and distribution of power within the federal government, the relationship between the federal government and the states in regulating commerce,

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWD6210  Contracts I  Credit Hours:  3
A survey of the law of contracts including the creation, modification and termination of contract rights and obligations, the roles of reliance and restitution, capacity, conditions, third party rights and duties, and the effect of changed circumstances o

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWD6220  Contracts II  Credit Hours:  3
A continued survey of the law of contracts including the creation, modification and termination of contract rights and obligations, the roles of reliance and restitution, capacity, conditions, third party rights and duties, and the effect of changed circu

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWD6300  Criminal Law  Credit Hours:  3
Substantive criminal law, focusing on general principles of liability and defenses, the definitional elements of certain crimes, particularly homicide, and principles of accessorial liability.

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWD6410  Property I  Credit Hours:  2-4
An introduction to the law of personal property and comprehensive coverage of the law of real property as it relates to estates and interests in land, landlord-tenant relationships, real estate transactions, private agreements respecting the use of land a

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWD6420  Property II  Credit Hours:  2-4
Continued study of the law of personal property and comprehensive coverage of the law of real property as it relates to estates and interests in land, landlord-tenant relationships, real estate transactions, private agreements respecting the use of land a

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWD6510  Torts  Credit Hours:  4
Torts explores civil claims for a variety of intentional harms and offenses to people and property, negligent harms and theories of strict liability (including products liability). The course studies both traditional principles and modern concepts.

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
Course Descriptions 2009-2010

LAWD6750  Legal Research, Writing And Appellate Advocacy I  
Credit Hours:  2-3
A foundation course providing intensive instruction in three major areas: using research resources and techniques of research; developing skills of legal analysis; presenting legal analysis in predictive and persuasive formats, both written and oral.  In

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWD6760  Legal Research, Writing And Appellate Advocacy II  
Credit Hours:  1-2
A continuation of Legal Research, Writing and Appellate Advocacy I, this course provides intensive instruction in three major areas: using research resources and techniques of research; developing skills of legal analysis; presenting legal analysis in pre

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWD9010  Civil Procedure -- Jurisdiction  
Credit Hours:  2-4
The rules controlling the jurisdiction of courts and forum selection for civil litigation in state and federal systems are covered.

LAWD9020  Civil Procedure -- Pleading And Practice  
Credit Hours:  2-4
The rules controlling conduct and management of civil litigation in federal and state courts from the complaint to final judgment as well as issues involving the effect of judgments on subsequent litigation are covered.

LAWD9110  Constitutional Law I  
Credit Hours:  3
Constitutional Law I will cover structural issues focusing on the Supreme Court's interpretation of the nature and distribution of power within the federal government, the relationship between the federal government and the states in regulating commerce,

LAWD9210  Contracts I  
Credit Hours:  3
A survey of the law of contracts including the creation, modification and termination of contract rights and obligations, the roles of reliance and restitution, capacity, conditions, third party rights and duties, and the effect of changed circumstances o

LAWD9220  Contracts II  
Credit Hours:  3
A continued survey of the law of contracts including the creation, modification and termination of contract rights and obligations, the roles of reliance and restitution, capacity, conditions, third party rights and duties, and the effect of changed circu
LAWD9300  Criminal Law
Credit Hours: 3
Substantive criminal law, focusing on general principles of liability and defenses, the definitional elements of certain crimes, particularly homicide, and principles of accessorial liability.

LAWD9410  Property I
Credit Hours: 2-4
An introduction to the law of personal property and comprehensive coverage of the law of real property as it relates to estates and interests in land, landlord-tenant relationships, real estate transactions, private agreements respecting the use of land.

LAWD9420  Property II
Credit Hours: 2-4
Continued study of the law of personal property and comprehensive coverage of the law of real property as it relates to estates and interests in land, landlord-tenant relationships, real estate transactions, private agreements respecting the use of land.

LAWD9510  Torts
Credit Hours: 4
Torts explores civil claims for a variety of intentional harms and offenses to people and property, negligent harms and theories of strict liability (including products liability). The course studies both traditional principles and modern concepts.

LAWD9750  Legal Research, Writing And Appellate Advocacy I
Credit Hours: 2-3
A foundation course providing intensive instruction in three major areas: using research resources and techniques of research; developing skills of legal analysis; presenting legal analysis in predictive and persuasive formats, both written and oral.

LAWD9760  Legal Research, Writing And Appellate Advocacy II
Credit Hours: 1-2
A continuation of Legal Research, Writing and Appellate Advocacy I, this course provides intensive instruction in three major areas: using research resources and techniques of research; developing skills of legal analysis; presenting legal analysis in pre

LAWG6010  Business Associations
Credit Hours: 3-4
Business Associations focuses on the legal entities commonly used to operate business enterprises, with an emphasis on closely held businesses. The course explores the major issues involved in formation and operation of agency relationships, corporations.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
LAWG6030 Administrative Law  
Credit Hours: 3
The law and operation of administrative agencies, including agency adjudication, rulemaking and other forms of policy implementation. The course covers agencies' place in the constitutional structure, legislative and executive controls on agency action.
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWG6110 Commercial Paper  
Credit Hours: 2-3
A study of payment systems. Initial emphasis is upon commercial paper (Article 3 of the Uniform Commercial Code) and bank deposits and collections (Article 4 of the Uniform Commercial Code), followed by credit cards (Truth in Lending, Consumer Credit Pro
Prerequisites: LAWD 6210 FOR LEVEL GR WITH MIN. GRADE OF D- AND LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWG6210 Criminal Procedure-Investigations  
Credit Hours: 2-3
A study of the constitutional and statutory limitations on the conduct of criminal investigations and related matters. Includes a discussion of the Fourth Amendment prohibition against unreasonable searches and seizures, the Fifth Amendment privilege aga
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWG6500 Federal Income Taxation  
Credit Hours: 4
After a brief consideration of the federal income taxation system, this course examines the conceptual problems in defining "income." A detailed treatment of the more significant personal and business deductions, exemptions and credits follows. Statutor
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWG6610 Secured Transactions  
Credit Hours: 3
The creation, enforcement, perfection and priority of security interests in personal property under Article Nine of the Uniform Commercial Code and the federal Bankruptcy Code.
Prerequisites: LAWD 6210 FOR LEVEL GR WITH MIN. GRADE OF D- AND LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWG6710 Trusts And Estates  
Credit Hours: 3-4
The study of decedents' estates and trust law. Intestate succession, the law of wills, estate administration, formation and administration of trusts and future interests are studied. Common law approaches are contrasted with Ohio and Uniform Probate Cod
Prerequisites: LAWD 6410 FOR LEVEL GR WITH MIN. GRADE OF D- AND LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWG9010 Business Associations  
Credit Hours: 3-4
Business Associations focuses on the legal entities commonly used to operate business enterprises, with an emphasis on closely held businesses. The course explores the major issues involved in formation and operation of agency relationships, corporations
LAWG9030  Administrative Law
Credit Hours: 3
The law and operation of administrative agencies, including agency adjudication, rulemaking and other forms of policy implementation. The course covers agencies' place in the constitutional structure, legislative and executive controls on agency action.

LAWG9110  Commercial Paper
Credit Hours: 2-3
A study of payment systems. Initial emphasis is upon commercial paper (Article 3 of the Uniform Commercial Code) and bank deposits and collections (Article 4 of the Uniform Commercial Code), followed by credit cards (Truth in Lending, Consumer Credit Pro

Prerequisites: LAWD 9210 FOR LEVEL LW WITH MIN. GRADE OF D

LAWG9210  Criminal Procedure-Investigations
Credit Hours: 2-3
A study of the constitutional and statutory limitations on the conduct of criminal investigations and related matters. Includes a discussion of the Fourth Amendment prohibition against unreasonable searches and seizures, the Fifth Amendment privilege aga

LAWG9500  Federal Income Taxation
Credit Hours: 4
After a brief consideration of the federal income taxation system, this course examines the conceptual problems in defining "income." A detailed treatment of the more significant personal and business deductions, exemptions and credits follows. Statutor

LAWG9610  Secured Transactions
Credit Hours: 3
The creation, enforcement, perfection and priority of security interests in personal property under Article Nine of the Uniform Commercial Code and the federal Bankruptcy Code.

Prerequisites: LAWD 9210 FOR LEVEL LW WITH MIN. GRADE OF D

LAWG9710  Trusts And Estates
Credit Hours: 3-4
The study of decedents' estates and trust law. Intestate succession, the law of wills, estate administration, formation and administration of trusts and future interests are studied. Common law approaches are contrasted with Ohio and Uniform Probate Cod

Prerequisites: LAWD 9410 FOR LEVEL LW WITH MIN. GRADE OF D

LAWI6000  International Comparative Law
Credit Hours: 2-3
This course introduces students to the major legal systems of the world. The first third of the course provides an overview of the major families of law encountered in various nations of the world today: common law (as exemplified by California and Engl

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
LAWI6010 Accounting And Financial Statements
Credit Hours: 1-3
An introduction for students without prior accounting experience to the terms and concepts necessary to an understanding of the financial affairs of a client and to the variety of legal contexts in which the lawyer is likely to encounter accounting proble
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6020 E-Commerce
Credit Hours: 1-3
This course will examine critical information technologies that provide a basis for electronic commerce. Topics include problems surrounding electronic commerce such as security, privacy, content selection and rating, intellectual property rights, authen
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6040 Civil And Political Rights
Credit Hours: 2-3
Civil and Political Rights focuses on a broad array of legal issues and rights in this area of law. Beginning with a history of the area, the course includes topics such as voting rights, religion, education, discrimination, police misconduct and prisone
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6050 Admiralty Law
Credit Hours: 2-3
This course surveys admiralty jurisdiction, rights and liabilities of commercial and pleasure boat owners, rights of injured maritime workers and passengers, collision, salvage, maritime liens, cargo claims, and limitation of liability.
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6060 Sales And Leases Of Goods
Credit Hours: 2-3
A detailed study of sales of goods under Article 2 of the Uniform Commercial Code and a survey of both Article 2A of the Uniform Commercial Code (leases of goods) and the U.N. Convention on Contracts for the International Sale of Goods. Topics include co
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6070 Antitrust
Credit Hours: 2-3
This course will cover the role of competition in a modern market economy, federal antitrust law, regulation and policies. Topics covered include horizontal restraints (price fixing, conspiracy, data dissemination, concerted refusals to deal, etc.); mono
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6080 Gender And The Law
Credit Hours: 2-3
This course covers issues of gender and the law with a primary focus on how the law addresses sex discrimination. Students will discuss constitutional and statutory protections against sex discrimination from a doctrinal and theoretical perspective. Sub
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
LAWI6100  International Law  
Credit Hours: 2-3
This course focuses on the legal processes of the international community. The creation of law among nation states, the law-making activities of international organizations, the enforcement (and non-enforcement) of international law in both national and

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6120  English Legal History  
Credit Hours: 2-3
A survey of the roots of American law, procedures, and such doctrines as real property, descents, contracts and corporations in the history of the English Common Law.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6130  Business Enterprise Tax  
Credit Hours: 2-3
An examination of the federal income tax treatment of business enterprises (including corporations, partnerships and limited liability companies) and their owners. The course considers the tax consequences of entity-owner transactions (formation and prop

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6140  Business Planning  
Credit Hours: 2-3
The course considers problems and transactions of business enterprises in a practical fashion. Projects requiring planning, drafting and negotiating, principally on behalf of smaller and closely held businesses, are an integral part of the course. Contr

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6160  Real Estate Finance  
Credit Hours: 1-3
The legal problems related to private financing and development of land. Emphasis is on the structuring of real estate transactions, tax considerations and problems of developers, lenders and other participants.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6170  Conflict Of Laws  
Credit Hours: 2-3
The problems encountered when a transaction or occurrence has a significant relationship to two or more states or countries. The jurisdiction of courts, the effect to be given to out-of-state judgments and the rules of decision in multi-state cases are s

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6180  Communications Law  
Credit Hours: 2-3
The class explores in detail legal and practical issues arising in connection with various media: newspaper, television and radio stations, cable television and other video providers, and the Internet, including Internet-service providers, web-hosting co

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>LAWI6200</td>
<td>Jurisprudence</td>
<td>2-3</td>
</tr>
<tr>
<td>LAWI6210</td>
<td>Copyright Law</td>
<td>2-3</td>
</tr>
<tr>
<td>LAWI6230</td>
<td>Corporate Finance</td>
<td>1-3</td>
</tr>
<tr>
<td>LAWI6260</td>
<td>Race &amp; The Law</td>
<td>2-3</td>
</tr>
<tr>
<td>LAWI6270</td>
<td>Creditor/Debtor Law</td>
<td>2-3</td>
</tr>
<tr>
<td>LAWI6280</td>
<td>Criminal Procedure-Adjudications</td>
<td>2-3</td>
</tr>
<tr>
<td>LAWI6290</td>
<td>Cyberspace Law</td>
<td>2-3</td>
</tr>
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Jurisprudence is the philosophy of law. The two primary goals of this class are 1) to give students a basic background and understanding of important legal thinkers and theory and 2) to stimulate critical thinking through assigned readings and rollicking.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

A substantive examination of the Copyright Act. This course will cover the fundamentals of copyright law and practice and the challenges to the existing copyright regime by new technologies.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

An advanced exploration of the legal and financial problems encountered in financing corporations, with emphasis on the corporate capital structure, including the rights of holders of various equity and debt securities; the valuation of businesses, as well

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Primarily focuses on cases that have helped shape the law and history of race in the U.S., from early 19th century cases concerning slave law to recent United States Supreme Court decisions. The topics will include slavery, citizenship, segregation, voting.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Explores creditors¿ rights under state law including judgment liens, execution liens, fraudulent conveyances, set off, assignments to benefit creditors and statutory liens. Debtor defenses under state and federal law including constitutional protections.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

A study of the criminal processes from arrest through sentencing and appeal. Topics covered include bail, preliminary hearing, grand jury, plea bargaining and guilty pleas, discovery, fair trial-free press, jury trial, sentencing and double jeopardy.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

This course will explore issues related to the regulation of cyberspace. It is not a course in computer law, copyright, trademark, patent, or other forms of intellectual property law, except as intellectual property law is sui generis in cyberspace. Instead

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
LAWI6300  Employment Discrimination  Credit Hours: 2-3
This course focuses on the main federal statutes prohibiting employment discrimination and the policies underlying these laws, with the majority of time spent on Title VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act and the A

Prerequisites: LAW 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6310  Employment Law  Credit Hours: 2-3
This course focuses on the major state and federal employment laws affecting individual employees, excluding laws on unions and employment discrimination. Coverage includes the legal regulation of the hiring and firing process, testing and privacy issues

Prerequisites: LAW 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6320  Environmental Law Practicum  Credit Hours: 2-4
The environmental law practicum allows students to choose their own semester-long, environmental law work project. Students are encouraged to find projects that allow them to participate directly in a legal or policy matter pending before an administrati

Prerequisites: LAW 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6330  Environmental Law  Credit Hours: 2-4
This course introduces students to U.S. environmental law by examining common law environmental standards, major federal statutes and the policy goals underlying such statutes. Statutes to be examined include the Clean Air Act, the Clean Water Act, the C

Prerequisites: LAW 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6350  Estate Planning  Credit Hours: 1-3
This course focuses on the practical aspects of will and trust drafting. Emphasis is placed on the application of estate planning and wealth preservation techniques to commonly encountered estate planning problems.

Prerequisites: LAW 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6360  Estate And Gift Tax  Credit Hours: 2-3
A study of the federal estate and gift tax structure and its impact on the transfer of property and of income taxation of trusts and estates. The redistribution of wealth through taxation, whether or not stated as a goal, is also studied.

Prerequisites: LAW 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6370  Family Law  Credit Hours: 3
The interaction of law and the family and the consequences of state intervention in family relationships. Some of the subjects surveyed are the marriage relationship, de facto marriage, adoption, the termination of marital status, economic consequences o

Prerequisites: LAW 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
LAWI6380  Federal Courts And Federal Rights  
Credit Hours: 2-4  
An intensive examination of the jurisdiction of federal courts, the role of the federal courts within the federal government, and within our federalist system. Topics surveyed include the law applied by federal courts in civil actions, the original and

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6390  Natural Resources Law  
Credit Hours: 2-3  
This course will provide an introduction to natural resource law, including public lands issues (forestry, mining, grazing, recreation and preservation), cultural resources (historic and sacred sites), wildlife, water rights and energy resources. Policies

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6400  American Legal History  
Credit Hours: 2-3  
(The American Legal Profession) This seminar/course (students may elect either to write a paper or to take an examination) follows the profession's development from the American Revolution through the 1920's and the emergence of university-based professio

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6410  Real Estate Transactions And Development  
Credit Hours: 2-3  
This course emphasizes aspects of real estate law, such as real estate brokers, lawyers' professional responsibility, land contract remedies, time of performance, tender, assignment, contract contingencies, equitable conversion, escrows and closings. In

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6420  Transactional Health Law  
Credit Hours: 1-2  
This course, taught by a medical doctor with a J.D., addresses the issues involved in providing legal services and counsel for a medical practice. Included among the issues are selection of the practice entity, selecting the legal structure for the pract

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6430  Legislation  
Credit Hours: 2-3  
This course explores the legislative process, statutory construction and the role of statutes as a source of public policy. Students will systematically examine principles and techniques used by courts and agencies to interpret statutes.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6440  Immigration Law  
Credit Hours: 2-3  
A study of United States citizenship and the admission and removal of noncitizens, including the bases for legal immigration, temporary presence, and the refugee and asylum system.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
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<tbody>
<tr>
<td>LAW6450</td>
<td>International Intellectual Property</td>
<td>2-3</td>
<td>This course reviews: the main international intellectual property instruments (such as TRIPS, Paris Convention, Patent Cooperation Treat, European Patent Convention; Madrid Agreement, Berne and Rome conventions, WIPO treaties), and European main legislati</td>
<td>LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)</td>
</tr>
<tr>
<td>LAW6460</td>
<td>Insurance Law</td>
<td>2-3</td>
<td>A study of property, liability and life insurance, and the insurer-insured relationship from a legal vantage point. Numerous concepts are examined during the course, including insurable interest, concealment and misrepresentation, the duty of good faith</td>
<td>LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)</td>
</tr>
<tr>
<td>LAW6470</td>
<td>Intellectual Property and Licensing</td>
<td>2-3</td>
<td>Focuses on managing an IP portfolio to maximize a client's return on investment in IP assets. Emphasizes the identification, valuation, and management of IP assets both as a source of revenue and as a part of a larger offensive or defensive litigation st</td>
<td>LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)</td>
</tr>
<tr>
<td>LAW6480</td>
<td>International Business Transactions</td>
<td>2-3</td>
<td>This course introduces students to the issues, problems and legal norms applicable to International Business Transactions. The course will examine various problems that occur in international business as a means of discerning that pitfalls for the unwary,</td>
<td>LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)</td>
</tr>
<tr>
<td>LAW6490</td>
<td>Juvenile Law</td>
<td>2-3</td>
<td>An examination of the relationship among children, the family and the state in the lives of delinquent, neglected, and abused children. The course includes consideration of the history and theory of the juvenile court system and the role of the attorney</td>
<td>LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)</td>
</tr>
<tr>
<td>LAW6500</td>
<td>Jewish Law</td>
<td>2-3</td>
<td>Jewish law is a dynamic, vibrant legal system that includes many of the specialties of modern law. It developed through over three millennia from the days of the Hebrew Bible and has areas that are still operative. It passed through every historic era and</td>
<td>LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)</td>
</tr>
<tr>
<td>LAW6510</td>
<td>Labor Law</td>
<td>2-3</td>
<td>This course focuses on the law governing and policy issues surrounding the major facets of union-management relations in the private sector under the National Labor Relations Act (NLRA). These include union organizing, collective bargaining, contract enf</td>
<td>LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)</td>
</tr>
</tbody>
</table>
LAWI6530  Consumer Law  Credit Hours:  1-3
Practical Consumer Law including student loan law, credit card and debt collection law, Fair Credit Reporting Act, Lemon Law, Predatory Lending, etc.

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6540  Air Pollution Law  Credit Hours:  1-3
Explore the legal and technical issues related to the regulation of air contaminant emissions. Navigate the Clean Air Act and the regulations adopted to implement the Act. Learn to recognize air contaminant sources, estimate emissions, and prepare permi

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6560  Land Transactions  Credit Hours:  2-4
Negotiating, structuring, performing, and closing the real estate transaction, remedies, methods of title assurance, the condominium and other forms of ownership. Course includes exercises in drafting, negotiating and closing a contract for the sale of l

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6580  Land Use Law  Credit Hours:  2-3
This course covers both the conservation and preservation-oriented environmental land use regulations that have emerged in the recent years as well as the more traditional, developmentally-oriented controls that have been with us for some time. The enviro

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6590  Homeland Security Law  Credit Hours:  3
This course addresses the legal aspects of homeland security policy. Particular attention will be paid to legal responses to terrorism, protection of classified information, and the regulation of contracting relationships with the government's various na

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6600  Law And Literature  Credit Hours:  2-3
A study of the relationship between literary development and criticism and the law. The class studies great works of literature and examines their meaning for the law in general and the lawyer in particular.

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6620  American Constitutional History  Credit Hours:  3
This course will address the period from the end of the Revolution through the post-Civil War era, with special emphasis on the Constitutional Convention in 1787 and the adoption of the Fourteenth Amendment in 1866.

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
LAWI6640  Criminal Justice And Homeland Security  Credit Hours:  3
Examines criminal justice under impact of post-9/11 law, e.g., the USA PATRIOT ACT, enemy combatants cases, and coercive interrogations. Students will read original sources as well as court decisions. Requires written briefs and arguments on two post-9/

Prerequisites:(LAWI 6280 FOR LEVEL GR WITH MIN. GRADE OF D- OR LAWG 6210 FOR LEVEL GR WITH MIN. GRADE OF D-) AND LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6680  State And Local Government Law And Taxation  Credit Hours:  2-3
An overview of the law relating to the administration of municipalities and their dealings with other local governmental units. Topics include the powers and problems of urban governmental units, federalism, corporate powers and police powers. Coverage

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6700  Patent Practice And Procedure  Credit Hours:  2-3
A hands-on course focusing on both regulatory requirements and attorney skills relating to representation of investors before the Patent and Trademark Office. The course will follow a patent attorney's relationship with an inventor and the written PTO, re

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6710  Patent Law  Credit Hours:  2-3
A survey of the legal protection of inventions. This course covers the requirements for obtaining and enforcing a patent and the rights of a patentee with respect to licensing, assignment and patent misuse.

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6720  Intellectual Property Survey  Credit Hours:  2-3
A preparatory course covering Copyright, Patent, Trademark and Trade Secret Law. A broad coverage of intellectual property law is useful for those students who want to learn the fundamentals of intellectual property law either as basis for more advanced c

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6730  Pension And Employee Benefits  Credit Hours:  2-3
A study of the law regarding employment benefits, such as ERISA, focusing on various forms of pension plans, and health and welfare plans. The law will address issues of plan qualification under the tax code and also applicable labor laws and regulations

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6740  Public Sector Labor Law  Credit Hours:  2-3
This course covers various models of public sector labor relations laws, including but not limited to the Ohio public sector labor statute. It focuses on the differing degrees to which public sector unions in different jurisdictions can bargain, resolve

Prerequisites:LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
LAWI6750 Products Liability
Credit Hours: 2-3
Essential elements of common law and statutory theories of recovery pertinent to product liability claims for both personal injury and economic loss. Some attention given to the integration of substantive law and the rules of procedure controlling the li
Prerequisites: LAW6220 FOR LEVEL GR WITH MIN. GRADE OF D- AND LAW6510 FOR LEVEL GR WITH MIN. GRADE OF D- AND LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6760 Publicly Held Corporations
Credit Hours: 2-3
This course focuses on legal issues that are commonly faced by larger corporations, and the special concerns involved in protecting widely scattered shareholder constituencies. Topics covered include directors' role in large corporations, social responsi
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6780 Remedies
Credit Hours: 2-3
The course in Remedies is about the bottom line. It is about what a court can do for a litigant who has been wronged or is about to be wronged. The two most common remedies are judgments for money and injunctions against defendants to prevent them from
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6800 Securities Regulation
Credit Hours: 2-3
This course focuses on the disclosure requirements of the federal securities laws which apply when businesses raise capital and when their shares are publicly traded. It examines the requirements of the Securities Act of 1933, selected provisions of the
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6810 Sentencing
Credit Hours: 2-3
A survey of the law relating to the disposition of individuals convicted of crimes. Topics include sentencing authority, ex post facto laws, factual bases for sentencing, probation, parole, the death penalty and state and federal sentencing guidelines.
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6830 Advanced Topics In Employment Law
Credit Hours: 1-3
This course is an opportunity for students to take a closer look at current topics facing employment law practitioners and their clients. Several current and recurring issues will be addressed in class sessions. Additional topics of interest and rele
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6850 Shakespeare And The Law
Credit Hours: 1-3
This course looks at the legal issues presented in seven of Shakespeare's plays. These issues are considered from both the standpoint of Elizabeth English Common Law and how these issues would be treated in the United States at this time. Shakespeare's
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
LAWI6860  Sports And Entertainment Law  Credit Hours: 2-3
A substantive examination of concepts and cases from legal disciplines which affect professional sports including antitrust law, labor law, contracts, tax and civil procedure. Course includes exercises in negotiating, drafting and tax planning.
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6870  Sports Law  Credit Hours: 1-3
This course surveys the law of sports, considering legal issues raised in high school, amateur, collegiate, professional, and international athletics.
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6890  Toxic Substances  Credit Hours: 2-3
This course addresses policies and law governing toxic substances and wastes. We will analyze federal statutes dealing with pesticides, chemical wastes and other toxic substances, as well as alternatives to the use of toxics, such as biotechnology and th
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6900  Trademark-Tradesecret Unfair Competition Law  Credit Hours: 2-3
A survey of business torts covering such topics as trademark infringement, trade secret misappropriation, product disparagement, right to publicity and false advertising. This course will also study the regulation of advertising by the Federal Trade Comm
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6930  Water Law  Credit Hours: 2-3
The study of surface and ground water allocation systems throughout the United States, including allocation issues that arise among states, and between the United States and other countries. This course will also address federal authority over water resou
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI6940  White Collar Crime  Credit Hours: 2-3
A survey of the federal criminal law relating to crimes committed by corporations and non-traditional criminals. Topics include corporate criminal liability, wire and mail fraud, RICO, money laundering, false claims and false statements, tax crimes, envi
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWI9000  International Comparative Law  Credit Hours: 2-3
This course introduces students to the major legal systems of the world. The first third of the course provides an overview of the major families of law encountered in various nations of the world today: common law (as exemplified by California and Engl
LAWI9010  Accounting And Financial Statements  Credit Hours:  1-3
An introduction for students without prior accounting experience to the terms and concepts necessary to an understanding of the financial affairs of a client and to the variety of legal contexts in which the lawyer is likely to encounter accounting proble

LAWI9020  E-Commerce  Credit Hours:  1-3
This course will examine critical information technologies that provide a basis for electronic commerce. Topics include problems surrounding electronic commerce such as security, privacy, content selection and rating, intellectual property rights, authen

LAWI9040  Civil And Political Rights  Credit Hours:  2-3
Civil and Political Rights focuses on a broad array of legal issues and rights in this area of law. Beginning with a history of the area, the course includes topics such as voting rights, religion, education, discrimination, police misconduct and prisone

LAWI9050  Admiralty Law  Credit Hours:  2-3
This course surveys admiralty jurisdiction, rights and liabilities of commercial and pleasure boat owners, rights of injured maritime workers and passengers, collision, salvage, maritime liens, cargo claims, and limitation of liability.

LAWI9060  Sales And Leases Of Goods  Credit Hours:  2-3
A detailed study of sales of goods under Article 2 of the Uniform Commercial Code and a survey of both Article 2A of the Uniform Commercial Code (leases of goods) and the U.N. Convention on Contracts for the International Sale of Goods. Topics include co

LAWI9070  Antitrust  Credit Hours:  2-3
This course will cover the role of competition in a modern market economy, federal antitrust law, regulation and policies. Topics covered include horizontal restraints (price fixing, conspiracy, data dissemination, concerted refusals to deal, etc.); mono

LAWI9080  Gender And The Law  Credit Hours:  2-3
This course covers issues of gender and the law with a primary focus on how the law addresses sex discrimination. Students will discuss constitutional and statutory protections against sex discrimination from a doctrinal and theoretical perspective. Sub
LAWI9100  International Law  
Credit Hours: 2-3
This course focuses on the legal processes of the international community. The creation of law among nation states, the law-making activities of international organizations, the enforcement (and non-enforcement) of international law in both national and

LAWI9120  English Legal History  
Credit Hours: 2-3
A survey of the roots of American law, procedures, and such doctrines as real property, descents, contracts and corporations in the history of the English Common Law.

LAWI9130  Business Enterprise Tax  
Credit Hours: 2-3
An examination of the federal income tax treatment of business enterprises (including corporations, partnerships and limited liability companies) and their owners. The course considers the tax consequences of entity-owner transactions (formation and prop

LAWI9140  Business Planning  
Credit Hours: 2-3
The course considers problems and transactions of business enterprises in a practical fashion. Projects requiring planning, drafting and negotiating, principally on behalf of smaller and closely held businesses, are an integral part of the course. Contr

LAWI9150  Bioethics And Law  
Credit Hours: 2-3
This course addresses the evolving relationship between medicine, law and ethics. The course focuses on individual topics including the definition of death, decision-making about death and dying, physician-assisted suicide, access to health care, researc

LAWI9160  Real Estate Finance  
Credit Hours: 1-3
The legal problems related to private financing and development of land. Emphasis is on the structuring of real estate transactions, tax considerations and problems of developers, lenders and other participants.

LAWI9170  Conflict Of Laws  
Credit Hours: 2-3
The problems encountered when a transaction or occurrence has a significant relationship to two or more states or countries. The jurisdiction of courts, the effect to be given to out-of-state judgments and the rules of decision in multi-state cases are s
LAW9180 Communications Law
Credit Hours: 2-3
The class explores in detail legal and practical issues arising in connection with various media: newspaper, television and radio stations, cable television and other video providers, and the Internet, including Internet-service providers, web-hosting co

LAW9200 Jurisprudence
Credit Hours: 2-3
Jurisprudence is the philosophy of law. The two primary goals of this class are 1) to give students a basic background and understanding of important legal thinkers and theory and 2) to stimulate critical thinking through assigned readings and rollicking

LAW9210 Copyright Law
Credit Hours: 2-3
A substantive examination of the Copyright Act. This course will cover the fundamentals of copyright law and practice and the challenges to the existing copyright regime by new technologies.

LAW9230 Corporate Finance
Credit Hours: 1-3
An advanced exploration of the legal and financial problems encountered in financing corporations, with emphasis on the corporate capital structure, including the rights of holders of various equity and debt securities; the valuation of businesses, as wel

LAW9260 Race & The Law
Credit Hours: 2-3
Primarily focuses on cases that have helped shape the law and history of race in the U.S., from early 19th century cases concerning slave law to recent United States Supreme Court decisions. The topics will include slavery, citizenship, segregation, voti

LAW9270 Creditor/Debtor Law
Credit Hours: 2-3
Explores creditors’ rights under state law including judgment liens, execution liens, fraudulent conveyances, set off, assignments to benefit creditors and statutory liens. Debtor defenses under state and federal law including constitutional protections,

LAW9280 Criminal Procedure-Adjudications
Credit Hours: 2-3
A study of the criminal processes from arrest through sentencing and appeal. Topics covered include bail, preliminary hearing, grand jury, plea bargaining and guilty pleas, discovery, fair trial-free press, jury trial, sentencing and double jeopardy.
LAWI9290  Cyberspace Law  Credit Hours:  2-3
This course will explore issues related to the regulation of cyberspace. It is not a course in computer law, copyright, trademark, patent, or other forms of intellectual property law, except as intellectual property law is sui generis in cyberspace. Inste

LAWI9300  Employment Discrimination  Credit Hours:  2-3
This course focuses on the main federal statutes prohibiting employment discrimination and the policies underlying these laws, with the majority of time spent on Title VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act and the A

LAWI9310  Employment Law  Credit Hours:  2-3
This course focuses on the major state and federal employment laws affecting individual employees, excluding laws on unions and employment discrimination. Coverage includes the legal regulation of the hiring and firing process, testing and privacy issues

LAWI9330  Environmental Law  Credit Hours:  2-4
This course introduces students to U.S. environmental law by examining common law environmental standards, major federal statutes and the policy goals underlying such statutes. Statutes to be examined include the Clean Air Act, the Clean Water Act, the C

LAWI9340  Intellectual Property Research  Credit Hours:  1
This course introduces students to print and digital information resources for researching patent, copyright, trademark and trade secret law.

LAWI9350  Estate Planning  Credit Hours:  1-3
This course focuses on the practical aspects of will and trust drafting. Emphasis is placed on the application of estate planning and wealth preservation techniques to commonly encountered estate planning problems.

LAWI9360  Estate And Gift Tax  Credit Hours:  2-3
A study of the federal estate and gift tax structure and its impact on the transfer of property and of income taxation of trusts and estates. The redistribution of wealth through taxation, whether or not stated as a goal, is also studied.
LAWI9370  Family Law  
Credit Hours:  3 
The interaction of law and the family and the consequences of state intervention in family relationships. Some of the subjects surveyed are the marriage relationship, de facto marriage, adoption, the termination of marital status, economic consequences o

LAWI9380  Federal Courts And Federal Rights  
Credit Hours:  2-4 
An intensive examination of the jurisdiction of federal courts, the role of the federal courts within the federal government, and within our federalist system. Topics surveyed include the law applied by federal courts in civil actions, the original and r

LAWI9390  Natural Resources Law  
Credit Hours:  2-3 
This course will provide an introduction to natural resource law, including public lands issues (forestry, mining, grazing, recreation and preservation), cultural resources (historic and sacred sites), wildlife, water rights and energy resources. Policies

LAWI9400  American Legal History  
Credit Hours:  2-3 
(The American Legal Profession) This seminar/course (students may elect either to write a paper or to take an examination) follows the profession's development from the American Revolution through the 1920's and the emergence of university-based professio

LAWI9410  Real Estate Transactions And Development  
Credit Hours:  2-3 
This course emphasizes aspects of real estate law, such as real estate brokers, lawyers' professional responsibility, land contract remedies, time of performance, tender, assignment, contract contingencies, equitable conversion, escrows and closings. In

LAWI9420  Transactional Health Law  
Credit Hours:  1-2 
This course, taught by a medical doctor with a J.D., addresses the issues involved in providing legal services and counsel for a medical practice. Included among the issues are selection of the practice entity, selecting the legal structure for the pract

LAWI9430  Legislation  
Credit Hours:  2-3 
This course explores the legislative process, statutory construction and the role of statutes as a source of public policy. Students will systematically examine principles and techniques used by courts and agencies to interpret statutes.
A study of United States citizenship and the admission and removal of noncitizens, including the bases for legal immigration, temporary presence, and the refugee and asylum system.

This course reviews: the main international intellectual property instruments (such as TRIPS, Paris Convention, Patent Cooperation Treat, European Patent Convention; Madrid Agreement, Berne and Rome conventions, WIPO treaties), and European main legislati

A study of property, liability and life insurance, and the insurer-insured relationship from a legal vantage point. Numerous concepts are examined during the course, including insurable interest, concealment and misrepresentation, the duty of good faith

Focuses on managing an IP portfolio to maximize a client's return on investment in IP assets. Emphasizes the identification, valuation, and management of IP assets both as a source of revenue and as a part of a larger offensive or defensive litigation st

This course introduces students to the issues, problems and legal norms applicable to International Business Transactions. The course will examine various problems that occur in international business as a means of discerning that pitfalls for the unwary,

An examination of the relationship among children, the family and the state in the lives of delinquent, neglected, and abused children. The course includes consideration of the history and theory of the juvenile court system and the role of the attorney

Jewish law is a dynamic, vibrant legal system that includes many of the specialties of modern law. It developed through over three millennia from the days of the Hebrew Bible and has areas that are still operative. It passed through every historic era and
LAW9510 Labor Law
Credit Hours: 2-3
This course focuses on the law governing and policy issues surrounding the major facets of union-management relations in the private sector under the National Labor Relations Act (NLRA). These include union organizing, collective bargaining, contract enf

LAW9530 Consumer Law
Credit Hours: 1-3
Practical Consumer Law including student loan law, credit card and debt collection law, Fair Credit Reporting Act, Lemon Law, Predatory Lending, etc.

LAW9540 Air Pollution Law
Credit Hours: 1-3
Explore the legal and technical issues related to the regulation of air contaminant emissions. Navigate the Clean Air Act and the regulations adopted to implement the Act. Learn to recognize air contaminant sources, estimate emissions, and prepare permi

LAW9560 Land Transactions
Credit Hours: 2-4
Negotiating, structuring, performing, and closing the real estate transaction, remedies, methods of title assurance, the condominium and other forms of ownership. Course includes exercises in drafting, negotiating and closing a contract for the sale of l

LAW9580 Land Use Law
Credit Hours: 2-3
This course covers both the conservation and preservation-oriented environmental land use regulations that have emerged in the recent years as well as the more traditional, developmentally-oriented controls that have been with us for some time. The enviro

LAW9590 Homeland Security Law
Credit Hours: 3
This course addresses the legal aspects of homeland security policy. Particular attention will be paid to legal responses to terrorism, protection of classified information, and the regulation of contracting relationships with the government's various na

LAW9600 Law And Literature
Credit Hours: 2-3
A study of the relationship between literary development and criticism and the law. The class studies great works of literature and examines their meaning for the law in general and the lawyer in particular.
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<td>LAWI9620</td>
<td>American Constitutional History</td>
<td>3</td>
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<td>This course will address the period from the end of the Revolution through the post-Civil War era, with special emphasis on the Constitutional Convention in 1787 and the adoption of the Fourteenth Amendment in 1866.</td>
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<td>LAWI9640</td>
<td>Criminal Justice And Homeland Security</td>
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<td>Examines criminal justice under impact of post-9/11 law, e.g., the USA PATRIOT ACT, enemy combatants cases, and coercive interrogations. Students will read original sources as well as court decisions. Requires written briefs and arguments on two post-9/</td>
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<td>Prerequisites: LAWI 9280 FOR LEVEL LW WITH MIN. GRADE OF D OR LAWG 9210 FOR LEVEL LW WITH MIN. GRADE OF D</td>
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<td>LAWI9680</td>
<td>State And Local Government Law And Taxation</td>
<td>2-3</td>
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<td>An overview of the law relating to the administration of municipalities and their dealings with other local governmental units. Topics include the powers and problems of urban governmental units, federalism, corporate powers and police powers. Coverage</td>
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<td>LAWI9700</td>
<td>Patent Practice And Procedure</td>
<td>2-3</td>
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<td>A hands-on course focusing on both regulatory requirements and attorney skills relating to representation of investors before the Patent and Trademark Office. The course will follow a patent attorney's relationship with an inventor and the written PTO, re</td>
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<td>LAWI9710</td>
<td>Patent Law</td>
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<td>A survey of the legal protection of inventions. This course covers the requirements for obtaining and enforcing a patent and the rights of a patentee with respect to licensing, assignment and patent misuse.</td>
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<td>LAWI9720</td>
<td>Intellectual Property Survey</td>
<td>2-3</td>
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<td>A preparatory course covering Copyright, Patent, Trademark and Trade Secret Law. A broad coverage of intellectual property law is useful for those students who want to learn the fundamentals of intellectual property law either as basis for more advanced c</td>
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<td>LAWI9730</td>
<td>Pension And Employee Benefits</td>
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<td>A study of the law regarding employment benefits, such as ERISA, focusing on various forms of pension plans, and health and welfare plans. The law will address issues of plan qualification under the tax code and also applicable labor laws and regulations</td>
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</table>
LAWI9740   Public Sector Labor Law                      Credit Hours:  2-3
This course covers various models of public sector labor relations laws, including but not limited to the Ohio public sector labor statute. It focuses on the differing degrees to which public sector unions in different jurisdictions can bargain, resolve

LAWI9750   Products Liability                           Credit Hours:  2-3
Essential elements of common law and statutory theories of recovery pertinent to product liability claims for both personal injury and economic loss. Some attention given to the integration of substantive law and the rules of procedure controlling the li

Prerequisites:(LAWD 9510 FOR LEVEL LW WITH MIN. GRADE OF D AND LAWD 9220 FOR LEVEL LW WITH MIN. GRADE OF D)

LAWI9760   Publicly Held Corporations                   Credit Hours:  2-3
This course focuses on legal issues that are commonly faced by larger corporations, and the special concerns involved in protecting widely scattered shareholder constituencies. Topics covered include directors' role in large corporations, social responsi

LAWI9780   Remedies                                    Credit Hours:  2-3
The course in Remedies is about the bottom line. It is about what a court can do for a litigant who has been wronged or is about to be wronged. The two most common remedies are judgments for money and injunctions against defendants to prevent them from

LAWI9800   Securities Regulation                       Credit Hours:  2-3
This course focuses on the disclosure requirements of the federal securities laws which apply when businesses raise capital and when their shares are publicly traded. It examines the requirements of the Securities Act of 1933, selected provisions of the

LAWI9810   Sentencing                                 Credit Hours:  2-3
A survey of the law relating to the disposition of individuals convicted of crimes. Topics include sentencing authority, ex post facto laws, factual bases for sentencing, probation, parole, the death penalty and state and federal sentencing guidelines.

LAWI9830   Advanced Topics In Employment Law          Credit Hours:  1-3
This course is an opportunity for students to take a closer look at current topics facing employment law practitioners and their clients. Several current and recurring issues will be addressed in class sessions. Additional topics of interest and relevan
LAWI9850  Shakespeare And The Law
This course looks at the legal issues presented in seven of Shakespeare's plays. These issues are considered from both the standpoint of Elizabeth English Common Law and how these issues would be treated in the United States at this time. Shakespeare's

LAWI9860  Sports And Entertainment Law
A substantive examination of concepts and cases from legal disciplines which affect professional sports including antitrust law, labor law, contracts, tax and civil procedure. Course includes exercises in negotiating, drafting and tax planning.

LAWI9870  Sports Law
This course surveys the law of sports, considering legal issues raised in high school, amateur, collegiate, professional, and international athletics.

LAWI9890  Toxic Substances
This course addresses policies and law governing toxic substances and wastes. We will analyze federal statutes dealing with pesticides, chemical wastes and other toxic substances, as well as alternatives to the use of toxics, such as biotechnology and th

LAWI9900  Trademark-Tradeselect Unfair Competition Law
A survey of business torts covering such topics as trademark infringement, trade secret misappropriation, product disparagement, right to publicity and false advertising. This course will also study the regulation of advertising by the Federal Trade Comm

LAWI9930  Water Law
The study of surface and ground water allocation systems throughout the United States, including allocation issues that arise among states, and between the United States and other countries. This course will also address federal authority over water resou

LAWI9940  White Collar Crime
A survey of the federal criminal law relating to crimes committed by corporations and non-traditional criminals. Topics include corporate criminal liability, wire and mail fraud, RICO, money laundering, false claims and false statements, tax crimes, envi
**LAWL6110  Law Review I**  
Course is graded on a Satisfactory/Unsatisfactory basis. Course requires the successful completion of a publishable manuscript as determined by the editor-in-chief and faculty adviser of the Law Review. With the approval of the faculty member assigned to the student.  
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWL6120  Law Review II**  
Only students who have successfully completed Law Review I and who are serving as editors of the Law Review will be permitted to register for Law Review II. Enrollment is selective.  
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWL6150  Moot Court I**  
Students participate in interscholastic Moot Court and Trial Advocacy competitions, each of which deals with a particular area of law, such as: international law, family law, corporate law, sports law, tax, intellectual property, criminal law and constitu  
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWL6160  Moot Court II**  
Students participate in interscholastic Moot Court and Trial Advocacy competitions, each of which deals with a particular area of law, such as: international law, family law, corporate law, sports law, tax, intellectual property, criminal law and constitu  
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWL6180  Trial Advocacy I**  
Students participate in interscholastic trial advocacy competitions; conduct trials against counsel from other schools including making opening and closing statements, introducing evidence, and examining and cross-examining witnesses.  
Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWL6190  Trial Advocacy II**  
Students participate in interscholastic trial advocacy competitions; conduct trials against counsel from other schools including making opening and closing statements, introducing evidence, and examining and cross-examining witnesses.  
Prerequisites: LAWL 6180 FOR LEVEL GR WITH MIN. GRADE OF D- AND LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWL9110  Law Review I**  
Course is graded on a Satisfactory/Unsatisfactory basis. Course requires the successful completion of a publishable manuscript as determined by the editor-in-chief and faculty adviser of the Law Review. With the approval of the faculty member assigned to the student.
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<td>Law Review II</td>
<td>2</td>
<td>Only students who have successfully completed Law Review I and who are serving as editors of the Law Review will be permitted to register for Law Review II. Enrollment is selective.</td>
</tr>
<tr>
<td>LAWL9150</td>
<td>Moot Court I</td>
<td>1-2</td>
<td>Students participate in interscholastic Moot Court and Trial Advocacy competitions, each of which deals with a particular area of law, such as: international law, family law, corporate law, sports law, tax, intellectual property, criminal law and constit</td>
</tr>
<tr>
<td>LAWL9160</td>
<td>Moot Court II</td>
<td>1-2</td>
<td>Students participate in interscholastic Moot Court and Trial Advocacy competitions, each of which deals with a particular area of law, such as: international law, family law, corporate law, sports law, tax, intellectual property, criminal law and constit</td>
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<td>LAWL9180</td>
<td>Trial Advocacy I</td>
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<td>Students participate in interscholastic trial advocacy competitions; conduct trials against counsel from other schools including making opening and closing statements, introducing evidence, and examining and cross-examining witnesses.</td>
</tr>
<tr>
<td>LAWL9190</td>
<td>Trial Advocacy II</td>
<td>1-2</td>
<td>Students participate in interscholastic trial advocacy competitions; conduct trials against counsel from other schools including making opening and closing statements, introducing evidence, and examining and cross-examining witnesses. Prerequisites: LAWL 9180 FOR LEVEL LW WITH MIN. GRADE OF D</td>
</tr>
<tr>
<td>LAWM5000</td>
<td>Law And The Legal System</td>
<td>3</td>
<td>U.S. legal system at trial and appellate levels in state and federal courts. Case and statutory sources of law; legal reasoning; introduction to contracts, torts, property, criminal and constitutional law.</td>
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<tr>
<td>LAWN6000</td>
<td>Trial Practice</td>
<td>3</td>
<td>Simulated exercises and trials, including such matters as pretrial motions, jury selection, opening statement, presentation of evidence, cross-examination, witness impeachment, closing argument and jury instructions. Emphasis is given to developing and p Prerequisites: LAWA 6310 FOR LEVEL GR WITH MIN. GRADE OF D- AND LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)</td>
</tr>
</tbody>
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LAWN6020  Advanced Legal Research  Credit Hours:  2-3
An in-depth view of legal bibliography in both print and electronic formats. Detailed attention given to encyclopedias, treatises, and various general and topical indexes, digests, and citators as well as web based compilations of legal materials.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN6030  Law Practice  Credit Hours:  1-3
An introduction to management of a law practice. This course will develop concepts related to four areas: Business Management, Practice Management, Client Management and Life Management. In the area of Business Management, students will be exposed to bus

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN6040  Mediation And Settlement  Credit Hours:  2-3
This course explores the theory and practice of mediation from the standpoint of both the mediator and the attorney-advocate. The course includes several mediation simulations that require preparation of post-mediation evaluations. Other topics include

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN6050  Negotiation And Settlement  Credit Hours:  2-3
This course focuses on developing an analytical framework for preparing, conducting and evaluating negotiations. A variety of negotiation strategies and tactics are explored including cooperative, problem-solving and competitive, positional approaches.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN6070  Pretrial Practice - Discovery  Credit Hours:  1-3
One-half of the course concentrates on learning the rules of discovery and developing practical skill in drafting interrogatories, requests for production, requests for admission and requests for physical examination. The other half focuses on the practi

Prerequisites: LAWD 6020 FOR LEVEL GR WITH MIN. GRADE OF D- AND LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN6080  Pretrial Practice - Motions  Credit Hours:  2-3
This course teaches students to "talk to the judge" in legal writing by using plain, persuasive language. Topics include the rules and practice of many types of motions from the usually mundane motion for extension of time to motions in limine and for su

Prerequisites: LAWD 6020 FOR LEVEL GR WITH MIN. GRADE OF D- AND LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN6090  Alternative Dispute Resolution  Credit Hours:  2-3
This survey course starts with a comparison of various adjudicatory and non-adjudicatory methods of dispute resolution and then proceeds to an in-depth study of negotiation, mediation and arbitration as well as various hybrid dispute resolution processes

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
LAWN6100  Negotiation: Theory And Strategy  Credit Hours: 1-3
This course will provide structures to organize the complex features of negotiation into manageable categories. This course is based on a three-pronged approach: 1) Communicating the theoretical insights, conceptual basics, and strategic approaches of th

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN6150  Advanced Negotiation  Credit Hours: 1-2
This advanced course builds upon Negotiation and Settlement; it develops the theories, strategies, and conceptual models of negotiation and gives students opportunities to apply these theories, strategies, and conceptual models to actual negotiation probl

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN6160  Pretrial Practice  Credit Hours: 1-3
This course concentrates on the practical application of the rules of discovery and motions. Students will develop practical skills in drafting associated with pretrial practice.

Prerequisites: LAWD 6020 FOR LEVEL GR WITH MIN. GRADE OF D- AND LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN6190  Interviewing And Counseling  Credit Hours: 2-3
Most lawyers in both litigation and transactional practice spend substantial amounts of their time interviewing and counseling clients. The goals of this course are to develop understanding of theories and techniques of client interviewing and counseling

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN6310  Prosecutor Clinic  Credit Hours: 3-7
The Prosecutor Clinic trains law students in basic prosecutorial skills and values. Students serve externships in local prosecutor offices trying cases, plea-bargaining and interviewing witnesses. The clinic may be taken for either six or four credit ho

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN6330  Advanced Prosecutor Clinic  Credit Hours: 3-4
The Advanced Prosecutor Clinic trains students in advanced skills of prosecution. Students undertake more challenging tasks than those typically undertaken in the basic clinic. For example, students may conduct jury trials, make appellate arguments, or

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN6410  Dispute Resolution Clinic  Credit Hours: 2-4
In the Dispute Resolution Clinic, second and third year students have the unique opportunity to learn mediation skills and apply those skills mediating in the Lucas County Juvenile Court and Toledo Municipal Court. This fieldwork experience provides hands

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
LAWN6420  Advanced Dispute Resolution Clinic  Credit Hours: 2-4
The Advanced Dispute Resolution Clinic emphasizes development of skills beyond those achieved in the basic clinic. The course provides students with the opportunity to become involved in mediations in a number of courts throughout Lucas County and Northw

Prerequisites: LAW 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN6610  Public Service Externship  Credit Hours: 1-6
The Public Service Externship Clinic is a field placement program in which students are placed in structured legal settings with public service attorneys and programs. There is a required classroom component in which issues relating to learning from exper

Prerequisites: LAW 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN6910  Legal Clinic  Credit Hours: 2-7
The clinic focuses on development of legal skills such as interviewing, counseling, negotiation, drafting, trial and appellate work and the application of those skills to the problems of individuals. Typical practice includes probate, domestic relations,

Prerequisites: LAW 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN6930  Advanced Legal Clinic  Credit Hours: 2-4
The advanced clinic emphasizes development of skills beyond those achieved in the basic clinic in the context of complex litigation or other more involved representation.

Prerequisites: LAW 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN6940  Domestic Violence Clinic  Credit Hours: 3-7
Students enrolled in the domestic violence clinic provide direct legal representation to persons who experience domestic abuse. Readings, classroom lectures, videos, and guest speakers complement live-client legal practice. Eight hours of casework and 4

Prerequisites: LAW 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN6950  Advanced Domestic Violence Clinic  Credit Hours: 2-4
The advanced clinic development of skills beyond those achieved in the basic clinic in the context of complex domestic violence prosecution.

Prerequisites: LAW 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWN9000  Trial Practice  Credit Hours: 3
Simulated exercises and trials, including such matters as pretrial motions, jury selection, opening statement, presentation of evidence, cross-examination, witness impeachment, closing argument and jury instructions. Emphasis is given to developing and p

Prerequisites: LAW 9310 FOR LEVEL LW WITH MIN. GRADE OF D
LAWN9020 Advanced Legal Research
Credit Hours: 2-3
An in-depth view of legal bibliography in both print and electronic formats. Detailed attention given to encyclopedias, treatises, and various general and topical indexes, digests, and citators as well as web based compilations of legal materials.

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Credit Hours: 1-3
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Credit Hours: 2-3
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LAWN9070 Pretrial Practice - Discovery
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Prerequisites: LAWD 9020 FOR LEVEL LW WITH MIN. GRADE OF D

LAWN9080 Pretrial Practice - Motions
Credit Hours: 2-3
This course teaches students to "talk to the judge" in legal writing by using plain, persuasive language. Topics include the rules and practice of many types of motions from the usually mundane motion for extension of time to motions in limine and for su

Prerequisites: LAWD 9020 FOR LEVEL LW WITH MIN. GRADE OF D

LAWN9090 Alternative Dispute Resolution
Credit Hours: 2-3
This survey course starts with a comparison of various adjudicatory and non-adjudicatory methods of dispute resolution and then proceeds to an in-depth study of negotiation, mediation and arbitration as well as various hybrid dispute resolution processes
### Course Descriptions 2009-2010

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<td>LAWN9150</td>
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<td>and gives students opportunities to apply these</td>
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<td>theories, strategies, and conceptual models to</td>
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<td>actual negotiation probl</td>
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<tr>
<td>LAWN9160</td>
<td>Pretrial Practice</td>
<td>1-3</td>
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<td>This course concentrates on the practical</td>
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<td>application of the rules of discovery and</td>
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<td>motions. Students will develop practical skills</td>
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<td>in drafting associated with pretrial practice.</td>
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<td>Prerequisites: LAWD 9020 FOR LEVEL LW WITH MIN.</td>
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<td>GRADE OF D</td>
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<tr>
<td>LAWN9190</td>
<td>Interviewing And Counseling</td>
<td>2-3</td>
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<td></td>
<td>Most lawyers in both litigation and</td>
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<td></td>
<td>transactional practice spend substantial</td>
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<td>amounts of their time interviewing and</td>
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<td>counseling clients. The goals of this course are</td>
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<td>to develop understanding of theories and</td>
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<td>techniques of client interviewing and counseling.</td>
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<tr>
<td>LAWN9310</td>
<td>Prosecutor Clinic</td>
<td>3-7</td>
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<td></td>
<td>The Prosecutor Clinic trains law students in</td>
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<td>basic prosecutorial skills and values. Students</td>
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<td>serve externships in local prosecutor offices</td>
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<td>trying cases, plea-bargaining and interviewing</td>
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<td>witnesses. The clinic may be taken for either six</td>
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<td>or four credit ho</td>
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<tr>
<td>LAWN9330</td>
<td>Advanced Prosecutor Clinic</td>
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<td>The Advanced Prosecutor Clinic trains students in</td>
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<td>advanced skills of prosecution. Students</td>
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<td>undertake more challenging tasks than those</td>
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<td>typically undertaken in the basic clinic. For</td>
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<td></td>
<td>example, students may conduct jury trials, make</td>
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<td>appellate arguments, or</td>
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<tr>
<td>LAWN9410</td>
<td>Dispute Resolution Clinic</td>
<td>2-4</td>
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<td>In the Dispute Resolution Clinic, second and</td>
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<td>third year students have the unique opportunity</td>
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<td>to learn mediation skills and apply those</td>
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<td>skills mediating in the Lucas County Juvenile</td>
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<td>Court and Toledo Municipal Court. This fieldwork</td>
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<td>experience provides hands</td>
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</tbody>
</table>
LAWN9420  Advanced Dispute Resolution Clinic  
Credit Hours:  2-4  
The Advanced Dispute Resolution Clinic emphasizes development of skills beyond those achieved in the basic clinic. The course provides students with the opportunity to become involved in mediations in a number of courts throughout Lucas County and Northw

LAWN9610  Public Service Externship  
Credit Hours:  1-6  
The Public Service Externship Clinic is a field placement program in which students are placed in structured legal settings with public service attorneys and programs. There is a required classroom component in which issues relating to learning from exper

LAWN9910  Legal Clinic  
Credit Hours:  2-7  
The clinic focuses on development of legal skills such as interviewing, counseling, negotiation, drafting, trial and appellate work and the application of those skills to the problems of individuals. Typical practice includes probate, domestic relations,

LAWN9930  Advanced Legal Clinic  
Credit Hours:  2-4  
The advanced clinic emphasizes development of skills beyond those achieved in the basic clinic in the context of complex litigation or other more involved representation.

LAWN9940  Domestic Violence Clinic  
Credit Hours:  3-7  
Students enrolled in the domestic violence clinic provide direct legal representation to persons who experience domestic abuse. Readings, classroom lectures, videos, and guest speakers complement live-client legal practice. Eight hours of casework and 4

LAWN9950  Advanced Domestic Violence Clinic  
Credit Hours:  2-4  
The advanced clinic development of skills beyond those achieved in the basic clinic in the context of complex domestic violence prosecution.

LAWP6000  Advanced Seminar  
Credit Hours:  1-3  
Seminars are offered in a wide variety of subject areas. In addition to class work, seminars require a substantial research project.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
LAWP6010  Honors Research Program I
Credit Hours: 2
A student who has completed 32 semester hours in the College of Law and who has a cumulative grade point average of 3.0 or higher may apply to undertake honors research. The student must submit a topic and detailed research proposal four weeks prior to e

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWP6020  Honors Research Program II
Credit Hours: 2
A student who has completed 32 semester hours in the College of Law and who has a cumulative grade point average of 3.0 or higher may apply to undertake honors research. The student must submit a topic and detailed research proposal four weeks prior to e

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWP6030  Advanced Appellate Advocacy
Credit Hours: 2-3
The course focuses on teaching advanced advocacy skills for practice before the appellate courts. It covers advanced persuasive writing, the rules of appellate court procedure, as well as advanced research and oral argument techniques.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWP6040  Advanced Legal Writing
Credit Hours: 1-3
This is a practicum course that develops the theory and practice of cognitive legal writing, i.e., legal writing that is well-organized, precise, effective and persuasive. This approach to legal writing is applicable to briefs, memoranda, opinion letters

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWP6050  Independent Research Program
Credit Hours: 2
A student who has completed at least 32 semester hours in the College of Law and who has a grade point average of 2.0 or higher may undertake and complete individual research and writing for credit under an Independent Research Program. To enroll in the

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWP6060  Practical Legal Writing
Credit Hours: 1-3
This course focuses on writing skills necessary for the legal practitioner, including client letters, complaints, answers, interrogatories and motions. It is aimed at those students interested in learning the nuts and bolts of practice and how to prepare

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWP6210  Writing For Law Review
Credit Hours: 1
This is a practicum course that develops the theory and practice of cognitive legal writing, i.e. legal writing that is well-organized, precise, effective, persuasive, and reader-centered. This approach to legal writing is applicable to law review notes

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
Course Descriptions 2009-2010

LAWP6400 Drafting Wills And Trusts
Credit Hours: 2-3
The course’s primary goals are to improve student drafting skills in general and to provide practical experience in will and trust drafting. Students design drafting solutions to a series of particular exercises. A final, comprehensive drafting project.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWP6460 Legal Drafting
Credit Hours: 1-3
This is a practicum course that develops the theory and practice of preparing clear, consistent, well-organized and readable legal instruments (e.g., contracts, leases, regulations and statutory provisions).

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWP9000 Advanced Seminar
Credit Hours: 1-3
Seminars are offered in a wide variety of subject areas. In addition to class work, seminars require a substantial research project.

LAWP9010 Honors Research Program I
Credit Hours: 2
A student who has completed 32 semester hours in the College of Law and who has a cumulative grade point average of 3.0 or higher may apply to undertake honors research. The student must submit a topic and detailed research proposal four weeks prior to e

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Credit Hours: 2
A student who has completed 32 semester hours in the College of Law and who has a cumulative grade point average of 3.0 or higher may apply to undertake honors research. The student must submit a topic and detailed research proposal four weeks prior to e

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LAWP9050  Independent Research Program  Credit Hours:  2
A student who has completed at least 32 semester hours in the College of Law and who has a grade point average of 2.0 or higher may undertake and complete individual research and writing for credit under an Independent Research Program. To enroll in the

LAWP9060  Practical Legal Writing  Credit Hours:  1-3
This course focuses on writing skills necessary for the legal practitioner, including client letters, complaints, answers, interrogatories and motions. It is aimed at those students interested in learning the nuts and bolts of practice and how to prepare

LAWP9210  Writing For Law Review  Credit Hours:  1
This is a practicum course that develops the theory and practice of cognitive legal writing, i.e. legal writing that is well-organized, precise, effective, persuasive, and reader-centered. This approach to legal writing is applicable to law review notes

LAWP9400  Drafting Wills And Trusts  Credit Hours:  2-3
The course’s primary goals are to improve student drafting skills in general and to provide practical experience in will and trust drafting. Students design drafting solutions to a series of particular exercises. A final, comprehensive drafting project

LAWP9460  Legal Drafting  Credit Hours:  1-3
This is a practicum course that develops the theory and practice of preparing clear, consistent, well-organized and readable legal instruments (e.g., contracts, leases, regulations and statutory provisions).

LAWT6070  Complex Litigation  Credit Hours:  2-3
A study of selected problems of complexity in litigation, in relation to subject matter, parties, forums, and pre-trial and trial procedures.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

LAWT6120  European Union  Credit Hours:  2-3
This course will begin with an examination of the history of and legal foundations for the European Union. It will then explore the relationship between individual sovereign states and the EU. Finally, the course will look at various particular bodies of

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
**Course Descriptions 2009-2010**

**LAWT6130  Entertainment Law**  
Credit Hours: 2-3  
Course explores how legal doctrine, social and economic policy, and constitutional principles are reflected in the media and entertainment industries. Includes antitrust and telecommunications law, defamation, legal restraints on sex and violence, copyright.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWT6150  Health Care Regulations**  
Credit Hours: 1-3  
Examines the legal structures that regulate the organization, delivery and financing of health care. Topics include Medicare and Medicaid, Antitrust and the structure of health care enterprises. Discussion includes the public policy objectives and effects.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWT6260  Health Care Finance**  
Credit Hours: 1-3  
This course will cover the different problems presented by government regulation versus the private market model focusing on managed care (risk allocation, standard of care, consumer information), insurance (basic models of insurance and underwriting), etc.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWT6270  Legislative Process And Drafting**  
Credit Hours: 2-3  
The Legislative Drafting course focuses on legislative drafting techniques and surveys legal drafting, limitations on legislation, statutory interpretation, legislative procedure and professional responsibility. Students will draft a bill for an actual client.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWT6280  Death, Dying, And Decisionmaking**  
Credit Hours: 2  
This course explains the legal issues that surround death, dying, and decisionmaking. It examines topics such as bioethical decisionmaking, informed consent, capacity to make medical decisions, definitions of death, organ donation, the right to die, etc.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWT6290  Bioethics Practicum**  
Credit Hours: 1-3  
This clinical course requires students to design and conduct a community workshop that explains the Ohio law of advanced directives. The clinical faculty will evaluate each student's professional competence, legal analysis, critical thinking, preparation.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWT6350  Mental Health Law**  
Credit Hours: 2-3  
motional Health Law deals with the rights of persons with mental disabilities. Topics considered are: civil commitment, right to treatment, right to refuse treatment, Americans with Disabilities Act, competence to stand trial, the doctrine of "not guilty"

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
**Course Descriptions 2009-2010**

**LAWT6360 Medicine For Lawyers**
Credit Hours: 1-2
This course, taught by a medical doctor with a JD, addresses practical litigation issues involved in health care law. It focuses on the use and interpretation by the lawyer of the medical record. Regardless of the nature of the action brought, negligence

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWT6370 Health Care Provider Liability**
Credit Hours: 2-3
This advanced torts course covers quality control in health care, medical malpractice, informed consent, medical confidentiality and institutional liability for medical injury. It includes causes of action against individual and institutional health care

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWT6380 Native American Law**
Credit Hours: 2-3
This course will initially examine the legal concepts of "Native American" individual and tribe. The study of unique (and not so unique) aspects of the treatment of Native American individuals and tribes under the U.S. Constitution; treaties; and nationa

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWT6400 Nafta**
Credit Hours: 2-3
This course will begin with an overview of free trade in North America. Then it will turn to an in-depth examination of different areas of commerce affected by the North American Free Trade Agreement (NAFTA): the movement of goods, the cross border provi

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWT6550 Securities Practice**
Credit Hours: 2-3

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWT6600 Special Topics**
Credit Hours: 1-6
Courses covering special topics and current events.

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

**LAWT6630 Tax Procedure And Tax Fraud**
Credit Hours: 2-3
This course first considers civil tax cases, with emphasis upon negotiation between taxpayers; counsel and Internal Revenue Service personnel, and upon Tax Court procedure. The course then takes up criminal tax prosecutions, with emphasis upon the intera

Prerequisites: LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>LAWT6790</td>
<td>Advanced Criminal Procedure</td>
<td>2-3</td>
<td>This course will combine in-depth study of the most important and current issues in criminal procedure with direct experience in oral and written advocacy. In the post 9/11 world, criminal procedure is in a state of change not seen in the last thirty years.</td>
<td>LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)</td>
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<td>LAWT6800</td>
<td>International Environmental Law</td>
<td>2-3</td>
<td>This course introduces students to issues, problems and legal norms applicable to environmental concerns in the international arena. The course begins with an examination of the various sources of international law and the applicability and affect that...</td>
<td>LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)</td>
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<tr>
<td>LAWT6900</td>
<td>Forensic Evidence Law</td>
<td>2-3</td>
<td>A review of the law of scientific evidence and the underlying science employed in detecting and solving crimes and in the reconstruction of accidents. Topics include, accident and injury reconstruction, DNA matching, the identification and toxicology of...</td>
<td>LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)</td>
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<td>LAWT6910</td>
<td>Death Penalty</td>
<td>2</td>
<td>This course addresses legal and policy aspects of state and federal death penalty practice. Both prosecutor and defense strategies will be explored. Students will take a final exam or write a paper in lieu of the exam.</td>
<td>LAWM 5000 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)</td>
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<td>LAWT6990</td>
<td>Distance Learning</td>
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Credit Hours: 2-3

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LAWT9990  Distance Learning  Credit Hours:  2-3

LGL1010  Introduction To Law  Credit Hours:  3
The course is designed to improve oral and written communication skills through the study of contracts, real property, torts and criminal law. The course includes the structure and operation of the state and federal court systems, as well as the status a

LGL1150  Tort Law  Credit Hours:  3
This course covers the traditional areas of tort law, including negligence, trespass, mental distress and conversion as well as the defenses to these claims. The course is taught through the case study method.
LGL1160  Legal Research, Writing And Case Analysis  Credit Hours:  3
Designed to provide the student with an understanding of the function of the law library and to develop research techniques and legal analysis and writing skills through use of traditional law library materials and computerized legal research techniques.
Prerequisites: LGL 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

LGL1720  Law Practice Management  Credit Hours:  3
This course exposes students to various management structures within and the administration of the law office and other legal environments. Critical thinking will be applied to management theories and applications.

LGL2020  Civil Procedure  Credit Hours:  3
An in-depth study of the Rules of Civil Procedure, including application of rules of fact patterns. Students will draft litigation documents including complaint, answer and discovery pleadings.
Prerequisites: (LGL 1010 FOR LEVEL UG WITH MIN. GRADE OF D- AND LGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D-)

LGL2110  Estate & Probate Administration  Credit Hours:  3
Study of the common forms of wills and trusts and a survey of the fundamental principles of law applicable to each; study of the organization and jurisdiction of the probate court, analysis of the administration of estates in probate court and a review o

LGL2120  Real Estate Transactions  Credit Hours:  3
The law of real property and common types of real estate transactions and conveyances, such as deeds, land installment contracts, sales contracts and leases, with emphasis on researching, drafting and recording of documents related thereto.

LGL2130  Family Law  Credit Hours:  3
Study of the law and practice of divorce, dissolution and all matters relating to the termination of a marriage. Students will be trained to conduct client interviews, draft pleadings and associated court forms, and calculate support under state-mandated
Prerequisites: (LGL 1010 FOR LEVEL UG WITH MIN. GRADE OF D- AND LGL 1160 FOR LEVEL UG WITH MIN. GRADE OF D-)

LGL2210  Practices And Procedures In Administrative Law  Credit Hours:  3
This course takes a look at the substantive and procedural aspects of various administrative law agencies with emphasis on providing skills to practice in administrative law.
LGL2700  Advocacy: Mock Trial  Credit Hours: 3
An in-depth survey of the trial process which exposes students to each step of a trial in a hands-on fashion. The course will be taught utilizing traditional lecture, reading and actual mock trial experience.

LGL2940  Legal Assisting Internship  Credit Hours: 3
Field experience in law offices. Students will be placed in various legal assisting positions by the program director. Students will meet for job-related seminar once a week and will work at their assigned law office for 180 hours during the semester.

LGL2990  Independent Study  Credit Hours: 1-3
This course is used for faculty-assisted independent study in the area of legal assisting.

LGL3010  Law Of Business Associations  Credit Hours: 3
Study of business entities: sole proprietorships, partnerships and corporations. Critical analysis of business entities, de factor and de jure entities. Students will complete articles of incorporation, bylaws and minute books.

Prerequisites:(LGL 1010 FOR LEVEL UG WITH MIN. GRADE OF D- AND LGL 1720 FOR LEVEL UG WITH MIN. GRADE OF D-)

LGL3030  Advanced Legal Research & Writing  Credit Hours: 3
Focus on advanced legal writing. Students will be challenged to master computer assisted legal research methods.

Prerequisites:(LGL 1010 FOR LEVEL UG WITH MIN. GRADE OF D- AND LGL 1160 FOR LEVEL UG WITH MIN. GRADE OF D-)

LGL3050  Bankruptcy Practices & Consumer Applications  Credit Hours: 3
An analysis of consumer laws including landlord-tenant relationships, consumer sales practices, uniform commercial code transactions, credit card law, garnishment, fair debt collection practices act and the United States Bankruptcy Code.

Prerequisites:(LGL 1010 FOR LEVEL UG WITH MIN. GRADE OF D- AND LGL 1160 FOR LEVEL UG WITH MIN. GRADE OF D-)

LGL3110  Personal Law  Credit Hours: 3
Through critical reasoning/collaborative learning, students will examine personal law issues and legal rights/responsibilities, enabling them to formulate analytical models readily transferable to legal issues in their present and future lives.
LGL3120 Personal Law II  Credit Hours: 3
An analysis of current legal decisions on topics such as same sex marriage, home forced entry and theology studies subsidies through analogizing/distinguishing related fact patterns and criticizing judicial exposition/logic.
Prerequisites: LGL 3110 FOR LEVEL UG WITH MIN. GRADE OF D-

LGL3330 Litigation  Credit Hours: 3
Focus on evidence and investigation, applying critical thinking skills to actual litigation cases. Analysis of court pleadings for appropriateness and alternative mechanisms. Study of post trial and appellate matters.
Prerequisites: (LGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- AND LGL 2020 FOR LEVEL UG WITH MIN. GRADE OF D-)  

LGL3350 Alternative Dispute Resolution  Credit Hours: 3
Students will overview conflict theory, resolution and its history. Students will focus on skills necessary for alternative dispute resolution: negotiation, mediation, arbitration, summary jury trial and mini trial.
Prerequisites: (LGL 1010 FOR LEVEL UG WITH MIN. GRADE OF D- AND LGL 1150 FOR LEVEL UG WITH MIN. GRADE OF D- AND LGL 2020 FOR LEVEL UG WITH MIN. GRADE OF D-)  

LGL4030 Contract Law  Credit Hours: 3
Focus on the laws concerning creation and termination of contracts. Students will analyze contractual terms including reliance, capacity, unconscionability, conditions, assignments, third-party beneficiaries and the effect of changed circumstances.
Prerequisites: (LGL 1010 FOR LEVEL UG WITH MIN. GRADE OF D- AND LGL 1160 FOR LEVEL UG WITH MIN. GRADE OF D-)  

LGL4130 Clinic Experience  Credit Hours: 3
Students will work in a clinical environment, such as: Court Appointed Special Advocates, the UT Center for Mediation and Legal Rights, the Toledo Bar Association's Pro Se Family Law Program.
Prerequisites: (LGL 1010 FOR LEVEL UG WITH MIN. GRADE OF D- AND LGL 1160 FOR LEVEL UG WITH MIN. GRADE OF D-)  

LGL4230 Health Care And The Law  Credit Hours: 3
An analysis of health care laws and legal issues, including treatment relationships, medical malpractice, the right to die, reproductive rights, bioethics, health care financing, public health, delivery systems and regulations.

LGL4330 Mediation: Topics And Techniques  Credit Hours: 3
This service learning course teaches the facilitative approach to mediating disputes. Students break down disputed issues, role play, and observe actual mediations for the peaceful and cooperative resolution of disputes.
Prerequisites: LGL 3350 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LGL4940</td>
<td>Advanced Paralegal Internship</td>
<td>3</td>
<td>Field experience for seniors, placement within their specialty. Students meet for 1 hour seminar and work at assigned law office for 12 hours per week.</td>
</tr>
<tr>
<td>LGL4990</td>
<td>Independent Study</td>
<td>1-3</td>
<td>This course is used for faculty-assisted independent study in this area of studies.</td>
</tr>
<tr>
<td>LGL6100</td>
<td>Legal Issues for the Elderly</td>
<td>3</td>
<td>A comprehensive review of legal issues affecting elderly people, including estate planning, trusts, guardianships, powers of attorney, advance directives, social security, Medicare, Medicaid, grandparents' rights, and prenuptial agreements.</td>
</tr>
<tr>
<td>LGL6200</td>
<td>Elder Health Law and Ethical</td>
<td>3</td>
<td>A study of elder health law and elder legal and ethical issues affecting our aging population including home, long term and hospice care, guardianship, housing, age discrimination and elder abuse.</td>
</tr>
<tr>
<td>LGL6980</td>
<td>Special Topics</td>
<td>3</td>
<td>Content may vary, covering some aspect of the law or some area of special interest to the student and instructor. Students may repeat the course for credit as topics vary.</td>
</tr>
<tr>
<td>LING3000</td>
<td>Human Language</td>
<td>3</td>
<td>A non-technical overview of the nature of human language, including issues relating to spoken and written language, language change and language development, and other aspects of language use in a variety of contexts.</td>
</tr>
<tr>
<td>LING3150</td>
<td>Linguistic Principles</td>
<td>3</td>
<td>An introduction to modern linguistic theories about the nature and structure of language. Data from English as well as other languages will be used.</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
<td>Description</td>
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</tr>
<tr>
<td>LING3160</td>
<td>Phonology</td>
<td>3</td>
<td>Introduction to the study of patterns and rules which govern the production of human speech, including a review of phonetics and a study of various explanatory theories.</td>
</tr>
<tr>
<td>LING3170</td>
<td>Syntax</td>
<td>3</td>
<td>Introduction to syntax within the transformational-generative framework. Emphasis on data from a variety of languages as a basis for evaluating competing theories.</td>
</tr>
<tr>
<td>LING3180</td>
<td>Morphology</td>
<td>3</td>
<td>Theories of how morphemes combine to form structurally complex words; word formation rules; the relationship between word structure and how words sound. Recommended: LING 3160 and/or 3170.</td>
</tr>
<tr>
<td>LING3190</td>
<td>Sociolinguistics</td>
<td>3</td>
<td>Combines linguistic and societal concerns through empirical research; includes issues of language variation and related larger constructs such as speech community, communicative competence, dialect and language change.</td>
</tr>
<tr>
<td>LING4100</td>
<td>The History Of English</td>
<td>3</td>
<td>Description of the changes that have taken place in the English language from the earliest days to the present.</td>
</tr>
<tr>
<td>LING4110</td>
<td>Old English</td>
<td>3</td>
<td>A study of phonology, morphology and syntax with representative readings in verse and prose.</td>
</tr>
<tr>
<td>LING4120</td>
<td>Middle English</td>
<td>3</td>
<td>Study of the phonology, morphology and syntax of Middle English, with special attention to literary and cultural background. Representative readings in verse and prose.</td>
</tr>
</tbody>
</table>
### LING4150  Applied Linguistics I

**Credit Hours:** 3  
Focus on methods of applied linguistics in the broad sense, including their use in studies of first and second language acquisition, language teaching, the teaching of reading and writing, and other related areas.

Prerequisites: ENGL 3150 FOR LEVEL UG WITH MIN. GRADE OF D- OR LING 3150 FOR LEVEL UG WITH MIN. GRADE OF D-

### LING4170  Applied Linguistics II

**Credit Hours:** 3  
Focuses on theories of second/foreign language acquisition, especially, but not exclusively, as they relate to English as a Second Language.

Prerequisites: LING 4150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 4150 FOR LEVEL UG WITH MIN. GRADE OF D-

### LING4210  Issues In ESL Writing

**Credit Hours:** 3  
Course content includes key concepts in ESL writing instruction and research; characteristics of second language writers and their texts; curricular options; and responding to and assessing ESL writing.

### LING4980  Special Topics

**Credit Hours:** 3  
An undergraduate course on a special topic. Consult Time Schedules for topic to be studied, prerequisite(s) and semester offered.

### LING4990  Independent Study

**Credit Hours:** 1-3  
An opportunity for students to concentrate on areas of interest or weakness.

### LING5100  History Of The English Language

**Credit Hours:** 3  
Study of the origins and development of the English language.

Prerequisites: ENGL 3150 FOR LEVEL UG WITH MIN. GRADE OF D- OR LING 3150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 5150 FOR LEVEL GR WITH MIN. GRADE OF D- OR LING 5150 FOR LEVEL GR WITH MIN. GRADE OF D- OR ENGL 7150 FOR LEVEL GR WITH MIN. GRADE OF D- OR L

### LING5110  Old English

**Credit Hours:** 3  
Study of the phonology, morphology and syntax of Old English, with special attention to literary and cultural backgrounds. Representative readings in verse and prose.
LING5120  Middle English  
Study of the phonology, morphology and syntax of Middle English, with special attention to literary and cultural background. Representative readings in verse and prose.

LING5150  Fundamentals Of Linguistics  
Formal techniques required for the synchronic and diachronic study of language.

LING5160  Phonology  
Fundamentals of phonological description, phonetics, phonemics, distinctive features, generative phonology, with study of formulations basic to phonological theory.

Prerequisites: ENGL 5150 FOR LEVEL GR WITH MIN. GRADE OF D- OR ENGL 7150 FOR LEVEL GR WITH MIN. GRADE OF D- OR LING 5150 FOR LEVEL GR WITH MIN. GRADE OF D- OR LING 7150 FOR LEVEL GR WITH MIN. GRADE OF D-

LING5170  Syntax  
Formal theories of syntactic analysis, the relationship between semantics and syntax and the evaluation of current approaches.

Prerequisites: ENGL 5150 FOR LEVEL GR WITH MIN. GRADE OF D- OR ENGL 7150 FOR LEVEL GR WITH MIN. GRADE OF D- OR LING 5150 FOR LEVEL GR WITH MIN. GRADE OF D- OR LING 7150 FOR LEVEL GR WITH MIN. GRADE OF D-

LING5180  Morphology  
The theory of word structure within the framework of generative grammar.

Prerequisites: ENGL 5150 FOR LEVEL GR WITH MIN. GRADE OF D- OR ENGL 7150 FOR LEVEL GR WITH MIN. GRADE OF D- OR LING 5150 FOR LEVEL GR WITH MIN. GRADE OF D- OR LING 7150 FOR LEVEL GR WITH MIN. GRADE OF D- OR LING 5160 FOR LEVEL GR WITH MIN. GRADE OF D-

LING5190  Sociolinguistics  
Combines linguistic and societal concerns through empirical research.

Prerequisites: ENGL 5150 FOR LEVEL GR WITH MIN. GRADE OF D- OR ENGL 7150 FOR LEVEL GR WITH MIN. GRADE OF D- OR LING 5150 FOR LEVEL GR WITH MIN. GRADE OF D- OR LING 7150 FOR LEVEL GR WITH MIN. GRADE OF D-

LING5210  Issues In Esl Writing  
Course content includes key concepts in ESL writing instruction and research; characteristics of second language writers and their texts; curricular options; and responding to and assessing ESL writing.
**LING5980 Special Topics**

A graduate course on a special topic. Consult Time Schedule for topic to be studied, prerequisite(s), and semester offered.

**LING6150 Applied Linguistics I**

Focus on the methods of applied linguistics in the broad sense, through case studies including research on first and second language acquisition, language teaching, the teaching of reading and writing, and other related areas.

Prerequisites: LING 5150 FOR LEVEL GR WITH MIN. GRADE OF D- OR ENGL 5150 FOR LEVEL GR WITH MIN. GRADE OF D-

**LING6160 Applied Linguistics Lab**

Computer lab work for Applied Linguistics Research and Theory I.

Corequisite: LING 6159

**LING6170 Applied Linguistics Research And Theory II**

Focuses on theories of second/foreign language acquisition, especially, but not exclusively, as they relate to English as a Second Language.

Prerequisites: ENGL 6150 FOR LEVEL GR WITH MIN. GRADE OF D- OR ENGL 8150 FOR LEVEL GR WITH MIN. GRADE OF D- OR LING 6150 FOR LEVEL GR WITH MIN. GRADE OF D- OR LING 8150 FOR LEVEL GR WITH MIN. GRADE OF D-

**LING6990 Independent Study**

An opportunity for students to concentrate on areas of interest or weakness.

**LING7100 History Of The English Language**

Study of the origins and development of the English language.

**LING7120 Middle English**

Study of the phonology, morphology and syntax of Middle English, with special attention to literary and cultural background. Representative readings in verse and prose.
<table>
<thead>
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<tr>
<td>LING7150</td>
<td>Fundamentals Of Linguistics</td>
<td>3</td>
<td>Formal techniques required for the synchronic and diachronic study of language.</td>
</tr>
<tr>
<td>LING7180</td>
<td>Morphology</td>
<td>3</td>
<td>The theory of word structure within the framework of generative grammar.</td>
</tr>
<tr>
<td>LING7190</td>
<td>Sociolinguistics</td>
<td>3</td>
<td>Combines linguistic and societal concerns through empirical research.</td>
</tr>
<tr>
<td>LING7980</td>
<td>Special Topics</td>
<td>3</td>
<td>A graduate course on a special topic. Consult Time Schedule for topic to be studied, prerequisite(s), and semester offered.</td>
</tr>
<tr>
<td>LING8150</td>
<td>Applied Linguistics I</td>
<td>3</td>
<td>Focus on the methods of applied linguistics in the broad sense, through case studies including research on first and second language acquisition, language teaching, the teaching of reading and writing, and other related areas.</td>
</tr>
<tr>
<td>LING8160</td>
<td>Applied Linguistics Lab</td>
<td>1</td>
<td>Computer lab work for Applied Linguistics Research and Theory I.</td>
</tr>
<tr>
<td>LING8990</td>
<td>Independent Study</td>
<td>1-3</td>
<td>An opportunity for students to concentrate on areas of interest or weakness.</td>
</tr>
</tbody>
</table>

Corequisite: LING 8150
LST2010  Law And Social Thought  
Credit Hours: 3
Examine the function and force of law in society in an interdisciplinary context. Course includes texts from philosophy, literature, psychology, sociology, history, anthropology and opinions of the court.

LST2030  Cultural Geography  
Credit Hours: 3
A learning-through-writing course. Systematic applications of the concept of cultural to geographic themes: culture areas, cultural landscapes, culture history, cultural ecology and cultural diversity.

LST2500  Proseminar I  
Credit Hours: 1
For sophomore and junior majors in LST: discussion among faculty and students of the interdisciplinary study of law and LST program development. Topics vary, may be repeated for credit.
Prerequisites: LST 2010 FOR LEVEL UG WITH MIN. GRADE OF D-

LST2640  Race, Class, And Gender  
Credit Hours: 3
Introduction to the study of race, class and gender as factors in American satisfaction.

LST2800  Cultural Anthropology  
Credit Hours: 3
Introduction to culture patterns and processes and their relationship to human society and language.

LST2980  Special Topics  
Credit Hours: 3
Special topics in Law and Social Thought. Topics vary by instructor, may be repeated for credit.
Prerequisites: LST 2010 FOR LEVEL UG WITH MIN. GRADE OF D-

LST3050  Economics Of Gender  
Credit Hours: 3
Analysis of labor market outcomes and income distribution characteristics resulting from gender differences; Gender-related economic outcomes: the "feminization of poverty," persistent male-female wage differential, expanding proportion of female headed h
Prerequisites: ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D-
LST3070 Economics And Law  Credit Hours: 3
Methodologies of Law and Economics; Legal institutions; Economic Theory of Property; Property Rights; Contract Theory; Economic Theory of Torts and Tort Law; Common Law Process; Economics of Crime and Punishment.

LST3080 Economics Of Crime  Credit Hours: 3
Study of crime as an economic activity; costs of crime to the community; economic approach to crime reduction.

LST3180 Mass Communication Law  Credit Hours: 4
Case studies and readings in libel, privacy, access and other legal issues arising from constitutional, judicial and administrative laws that affect mass communication.

LST3500 Proseminar II  Credit Hours: 1
For Junior and Senior majors in LST: discussion among faculty and students of the interdisciplinary study of law and LST program development. Topics vary, may be repeated for credit.

Prerequisites: LST 2010 FOR LEVEL UG WITH MIN. GRADE OF D-

LST3510 Constitutional Law I  Credit Hours: 3
The development of the American legal system and the implications of judicial decisions affecting the institutions and powers of government, the federal system and the relationship of the individual to government.

Prerequisites: PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

LST3520 Constitutional Law II  Credit Hours: 3
The development of the American legal system and the implications of judicial decisions affecting the institutions and powers of government, the federal system and the relationship of the individual to government.

Prerequisites: PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

LST3550 Principles Of Law  Credit Hours: 3
An overview of law, legal procedures and the legal professions.
LST3710  Psychology And The Law  Credit Hours: 3
Emphasizes the utilization of theoretical and empirical notions of psychological science as they apply to both civil and criminal law.

LST3720  Philosophy Of Law  Credit Hours: 3
A study of philosophical issues raised by law such as the relation of law to morality, obligation to obey the law, paternalism, censorship and free speech.

LST3750  Social And Political Philosophy  Credit Hours: 3
A study of classic and contemporary treatments of justice, authority, the relations between individual and community, the meaning of freedom and equality, power and violence, and race and gender.

LST3760  Crime And Punishment  Credit Hours: 3
A philosophical study of topics such as crime, responsibility, justice and punishment. Special attention is paid to current practices in the criminal justice system.

LST3800  Sexual Politics  Credit Hours: 3
This course examines sexual politics through studying canonical literature of Western political theory, feminism and postmodern theory.

LST3810  Political Geography  Credit Hours: 3
An examination of geopolitical and geostrategic issues at the nation-state and international level.

LST3820  Contemporary Political Ideas  Credit Hours: 3
Surveys trends in 20th century political and social thought, including critical theory, post-structuralist theory, feminism and anti-racist politics. Particular issues addressed include bureaucracy, mass society, state and civil violence, and identity po
LST3860  Gender And Geography  
Traces the development and institutionalization of gender roles and how these influence spatial decisions and the formation of perceptual landscapes.

LST3980  Special Topics  
Special topics relating to issues in Law and Social Thought. Topics vary by instructor, may be repeated for credit.

Prerequisites: LST 2010 FOR LEVEL UG WITH MIN. GRADE OF D-

LST4170  Law And Society  
Dynamics of law and legal institutions; the relationship of sociocultural changes in substantive and procedural aspects of law to the concept of justice, and to the social control of deviance.

LST4490  Witchcraft And Magic In Medieval And Early Modern Europe  
Witchcraft, religion and magic in western Europe from the 12th through 17th centuries, focusing on the origins of witchcraft belief, diabolical magic, the witchcraze and its decline.

LST4530  Civil Rights  
A study of judicial policy-making and administrative implementation of decisions affecting racial issues, freedom of expressions, national security and criminal procedures.

LST4550  Issues In Contemporary Law  
Examination of contemporary approaches to the analyses of law and the judicial system with special focus on current issues facing the courts.

LST4570  Legal Issues  
Topics may include abortion, three strikes sentencing, homosexual rights, hate speech and decriminalizing narcotics. Emphasizes liberal/conservative ideology.
LST4580  International Law  Credit Hours:  3
An examination of the legal status of nation states and dependencies and the rules concerning international diplomacy, treatment of persons and peaceful settlement of disputes.

LST4710  Criminology  Credit Hours:  3
Crime and criminal behavior: nature, types and extent of crime, societal reactions; problems in research and theory, prevention, control and treatment.

LST4740  Issues In Crime  Credit Hours:  3
Topics may include legalizing drugs, police violence, please bargaining, death sentence and mandatory sentencing. Emphasizes liberal/conservative ideology.

LST4820  Anthropology Of Religion  Credit Hours:  3
A cross-cultural approach to the description and aliases of magical and religious beliefs and practices in Asia, Africa, Latin America and Indigenous North America.

LST4830  Theory Of Public History  Credit Hours:  3
The definition, philosophy and evolution of public history as well as the current literature and debates within the field. Public history is the application of historical knowledge and methodology beyond academe.

LST4900  Seminar In Law And Social Thought  Credit Hours:  3
Advanced seminar for the interdisciplinary study of law in society. Topics vary by instructor, may be repeated for credit. Required of LST majors.

Prerequisites: LST 2010 FOR LEVEL UG WITH MIN. GRADE OF D-

LST4940  Field Experience  Credit Hours:  1-6
Community work, internship, or field study relating to law and society. May be repeated for credit.

Prerequisites: LST 2010 FOR LEVEL UG WITH MIN. GRADE OF D-
LST4980  Special Topics  Credit Hours:  3
Advanced seminar in Law and Social Thought. Topics vary by instructor, may be repeated for credit. Required of LST majors.
Prerequisites: LST 2010 FOR LEVEL UG WITH MIN. GRADE OF D-

LST4990  CAPSTONE IN LAW AND SOCIAL THOUGHT  Credit Hours:  3
The Capstone course in Law and Social Thought is an interdisciplinary, collaboratively taught seminar thematically organized around a topic in the study of law.
Prerequisites: LST 2010 FOR LEVEL UG WITH MIN. GRADE OF D-

MARS1010  Marketing Principles  Credit Hours:  3
A theoretical and practical understanding of marketing issues from both a micro and macro perspective: environmental forces, ethical and social responsibility, consumer buying behavior, target market analysis, market segmentation, branding and packaging.

MARS1110  Personal Selling  Credit Hours:  3
Emphasis is placed on the effective techniques of personal selling. These include: prospecting, qualifying customers, building product knowledge, understanding presentation techniques, overcoming customer objections, closing sales and customer follow-up.

MARS1720  Sales Force Management  Credit Hours:  3
Analysis and examination of the sales management function in the consumer and industrial markets. Organizing, recruiting, selecting, hiring, staffing, training, compensating and evaluating an outside sales force.

MARS2010  Marketing Communication  Credit Hours:  3
Focuses on developing integrated marketing communications plan. Includes role of advertising strategy, audience analysis, development of media plans, creative execution, coordination of sales promotion techniques and publicity tools.
Prerequisites: MARS 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

MARS2110  Marketing Management  Credit Hours:  3
Primary focus is on development of marketing strategies. Students required to develop a marketing plan based on marketing opportunity of personal choice.
Prerequisites: MARS 1010 FOR LEVEL UG WITH MIN. GRADE OF D-
MARS2120  Industrial Marketing Management  Credit Hours:  3
Primary focus on development of strategies for business-to-business markets. Case approach used to study distinctions between industrial and consumer demand and general characteristics that influence industrial buying behavior.

Prerequisites: MARS 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

MARS2210  Services Marketing  Credit Hours:  3
Focuses on framework for understanding key issues/differences of services marketing. Nature of services marketing presented through traditional 4 Ps supplemented by issues unique to service encounters. Brings together principles of service marketing, hum

Prerequisites: MARS 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

MARS2940  Marketing And Sales Field Experience  Credit Hours:  3
Independent field experience is designed to provide a student the opportunity to observe marketing and/or sales and retail management activities first-hand in an appropriate employment setting. Students meet with the instructor at prearranged times to di

Prerequisites: MARS 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

MARS2990  Independent Study  Credit Hours:  1-3
Students will study a marketing/retail-related subject mutually agreed upon between the student and instructor. The format may include lecture, computer lab and/or practical experience.

MATH0910  Elementary Algebra I  Credit Hours:  4
This course covers a review of operations with whole numbers, fractions, decimals, ratios and percents. Also covered are integer operations, variables, algebraic expressions, graphs and solving linear equations. Problem solving techniques are emphasized

MATH0950  Elementary Algebra II  Credit Hours:  4
This course introduces the student to functions, solving systems of linear equations, graphing, polynomials, rational and quadratic functions, rational numbers and mathematics modeling. Problem solving techniques are emphasized. No credit toward graduaatio

Prerequisites: MATH 0910 FOR LEVEL UG WITH MIN. GRADE OF D- OR MTEA FOR MIN. SCORE OF 05

MATH0980  Intermediate Algebra  Credit Hours:  4
Review of algebra, linear and quadratic equations, graphs, exponents and radicals, exponential and log functions, simultaneous equations. No credit toward graduation. Course is not applicable toward the undergraduate major in mathematics.

Prerequisites: MATH 0950 FOR LEVEL UG WITH MIN. GRADE OF D- OR MTEA FOR MIN. SCORE OF 10
MATH0990  Independent Study  
Course for students needing to complete only a portion of a developmental math class (MATH 0900 - 0980).

MATH1010  Applied Business Mathematics  
Mathematics used in solving business problems related to simple and compound interest, annuities, payroll, taxes, promissory notes, consumer credit, insurance, markup and markdown, mortgage loans, discounting, financial statement ratios and break-even analysis.

MATH1180  Mathematics For Liberal Arts  
A general liberal arts course for non-science students designed to acquaint students with the nature of mathematics and applications such as probability, statistics, functions and graphs. Course is not applicable toward the undergraduate Mathematics major requirements.

Prerequisites: MATH 0980 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR MTCA FOR MIN. SCORE OF 05 OR MTEA FOR MIN. SCORE OF 08 OR A02 FOR MIN. SCORE OF 16 OR S02 FOR MIN. SCORE OF 400

MATH1200  MATHEMATICAL MODELING AND PROBLEM SOLVING  
Mathematical modeling of data using linear, quadratic, rational, and radical functions in their numerical, symbolic, graphic, and verbal forms. Problem solving methods and strategies will be emphasized. Course is not applicable toward the undergraduate Mathematics major requirements.

Prerequisites: MATH 0980 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR MTCA FOR MIN. SCORE OF 10 OR MTEA FOR MIN. SCORE OF 12 OR A02 FOR MIN. SCORE OF 20 OR S02 FOR MIN

MATH1210  Mathematics For Education Majors I  
Principles of elementary number theory, base systems, development of the rational numbers and problem solving techniques. Course is not applicable toward the undergraduate Mathematics major requirements.

Prerequisites: MATH 0980 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 0990 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR MTCA FOR MIN. SCORE OF 10 OR MTEA FOR MIN. SCORE OF 12 OR A02 FOR MIN. SCORE OF 20 OR S02 FOR MIN

MATH1220  Mathematics For Education Majors II  
Development of the real numbers, probability, statistics, informal geometry, geometric figures and measurements. Course is not applicable toward the undergraduate Mathematics major requirements.

Prerequisites: MATH 1210 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH1260  Calculus For Business With Applications I  
Equations and their graphs, linear systems, vectors and matrices, introduction to linear optimization, exponentials and logs, elementary probability, limits, functions, introductions to differential calculus. Course is not applicable toward the undergraduate Mathematics major requirements.

Prerequisites: MATH 0980 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 0990 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR MTCA FOR MIN. SCORE OF 10 OR MTEA FOR MIN. SCORE OF 12 OR A02 FOR MIN. SCORE OF 20 OR S02 FOR MIN
MATH1270  Calculus For Business With Applications II  Credit Hours: 3
Continuation of differential calculus and integral calculus with business applications. Course is not applicable toward the undergraduate Mathematics major requirements.
Prerequisites:MATH 1260 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH1320  College Algebra  Credit Hours: 3
Number system; elementary theory of equations and inequalities; functions and relations; exponentials and logarithms; systems of equations and topics in analytic geometry. Course is not applicable toward the undergraduate Mathematics major requirements.
Prerequisites:MATH 0980 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 0990 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR MTCA FOR MIN. SCORE OF 10 OR MTEA FOR MIN. SCORE OF 12 OR A02 FOR MIN. SCORE OF 20 OR S02 FOR MIN

MATH1330  Trigonometry  Credit Hours: 3
Definitions and graphs of trigonometric functions and their inverses, solving trigonometric equations, applications and topics in analytic geometry. Course is not applicable toward the undergraduate Mathematics major requirements. No credit given for stu
Prerequisites:MATH 0980 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 0990 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR MTCA FOR MIN. SCORE OF 10 OR MTEA FOR MIN. SCORE OF 12 OR A02 FOR MIN. SCORE OF 20 OR S02 FOR MIN

MATH1340  College Algebra And Trigonometry  Credit Hours: 4
Functions and graphs, exponential and logarithmic functions, trigonometric functions and applications, systems of equations and topics in analytic geometry. No credit for students who have credit for MATH 1320 or 1330.

MATH1750  Calculus For The Life Sciences With Applications I  Credit Hours: 4
Definitions of trigonometric functions, solving trigonometric equations, functions, limits and derivatives, exponential and logarithmic functions, and applications. Course is not applicable toward the undergraduate Mathematics major requirements.
Prerequisites:MATH 1320 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1340 FOR LEVEL UG WITH MIN. GRADE OF D- OR MTCA FOR MIN. SCORE OF 12 OR A02 FOR MIN. SCORE OF 22 OR S02 FOR MIN. SCORE OF 520

MATH1760  Calculus For The Life Sciences With Applications II  Credit Hours: 3
Indefinite and definite integrals, probability, functions of several variables, least squares, differential equations. Course is not applicable toward the undergraduate Mathematics major requirements.
Prerequisites:MATH 1750 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1850 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1920 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1830 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH1780  Introduction To Maple  Credit Hours: 1
Brief review of the computer algebra system Maple; graphing; simplifying algebraic expressions; finding solutions of equations symbolically, graphically and numerically; various typical problems from precalculus and beginning calculus.
MATH1830  Calculus I For Mathematicians, Scientists And Educators  Credit Hours:  4
Limits of sequences and functions, derivatives, Mean Value Theorem, curve sketching, definite and indefinite integral, Fundamental Theorem of
Calculus. Of interest to students requiring a conceptual understanding of calculus. Not for major credit.
Prerequisites: MATH 1340 FOR LEVEL UG WITH MIN. GRADE OF D- OR (MATH 1320 FOR LEVEL UG WITH MIN. GRADE OF D- AND
MATH 1330 FOR LEVEL UG WITH MIN. GRADE OF D-)

MATH1840  Calculus II For Mathematicians, Scientists And Educators  Credit Hours:  4
Techniques of integration, polar coordinates and calculus or plane curves, infinite series and Taylor series. Of interest to students requiring a conceptual
understanding of calculus.
Prerequisites: MATH 1830 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1850 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH
1920 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH1850  Single Variable Calculus I  Credit Hours:  4
Limits, differentiation, Fundamental Theorem of Calculus, Mean Value Theorem, curve sketching, maxima/minima, definite and indefinite integrals,
applications. Course is not applicable toward the undergraduate Mathematics major requirements.

MATH1860  Single Variable Calculus II  Credit Hours:  4
Inverse functions, techniques and applications of integration, polar coordinates, sequences and series.
Prerequisites: MATH 1830 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1850 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH
1920 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH1890  Elementary Linear Algebra  Credit Hours:  3
Matrix algebra, systems of linear equations, determinants, vector spaces, linear transformations, eigenvalues and eigenvectors, and applications.
Prerequisites: MATH 1840 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1860 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH
1930 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH1920  Honors Calculus I  Credit Hours:  4
Theory and applications of derivatives and integrals of a function of one variable.

MATH1930  Honors Calculus II  Credit Hours:  4
Theory and applications of derivatives and integrals of a function of one variable.
Prerequisites: MATH 1920 FOR LEVEL UG WITH MIN. GRADE OF D-
MATH1980  Topics In Mathematics  Credit Hours:  1-4
Selected topics in mathematics.

MATH2450  Calculus For Engineering Technology I  Credit Hours:  4
Differential calculus of algebraic and trigonometric functions, including limits, curve sketching, motion, maxima/minima, related rates, integral calculus of algebraic functions.

MATH2460  Calculus For Engineering Technology II  Credit Hours:  4
Transcendental functions, methods of integration, applications of the integral, polar coordinates, vectors and vector operation, lines and planes, parametric equations.
Prerequisites: MATH 2450 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1850 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1920 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH2600  Introduction To Statistics  Credit Hours:  3
An introduction to descriptive and inferential statistical methods including point and interval estimation, hypothesis testing and regression. No credit allowed if taken after MATH 3610 or 4680; credit not allowed for both MATH 2600 and 2630. Course is no
Prerequisites: MATH 0980 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 0990 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1180 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR MTCA FOR MIN. SCORE OF 10 OR MTEA FOR MIN. SCORE

MATH2620  Discrete Probability  Credit Hours:  3
Sample spaces, events, counting techniques, probability distributions and their applications. No credit if taken after 4680. Course is not applicable toward the undergraduate Mathematics major requirements.
Prerequisites: MATH 0980 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 0990 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR MTCA FOR MIN. SCORE OF 10 OR MTEA FOR MIN. SCORE OF 12 OR A02 FOR MIN. SCOR

MATH2630  Statistics For Business And Economics  Credit Hours:  3
An introduction to descriptive and inferential statistical methods, including numerical and graphical data description, basic probability concepts and distributions, point and interval estimation and hypothesis testing. Credit not allowed for both MATH 26
Prerequisites: MATH 1270 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH2850  Elementary Multivariable Calculus  Credit Hours:  4
Geometry of functions of several variables, partial differentiation, multiple integrals, vector algebra and calculus (including Theorems of Green, Gauss and Stokes), and applications.
Prerequisites: MATH 1840 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1860 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1930 FOR LEVEL UG WITH MIN. GRADE OF D-
MATH2890  Numerical Methods And Linear Algebra  Credit Hours:  3
Topics include: matrices, characteristic roots, solution of linear and nonlinear equations, curve fitting, integration, differentiation and numerical solution of ordinary differential equations. MATLAB is introduced and used to analyze problems.
Prerequisites: MATH 1830 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1850 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1920 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH2950  Honors Calculus III  Credit Hours:  4
Theory and applications of the calculus of functions of two or more variables. The fundamental theorems of vector calculus.
Prerequisites: MATH 1930 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH3000  Symbolic Logic  Credit Hours:  3
A study of propositional and predicate logic, the symbolic techniques used to evaluate deductive arguments. Topics may include computability, set theory, Bayesianism and other formal systems with mathematical or philosophical relevance.
Prerequisites: MATH 1180 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH3190  Introduction To Mathematical Analysis  Credit Hours:  3
This course is intended to introduce students to higher mathematics. The techniques of proving theorems, including proofs by induction, will be emphasized. The course will include elementary set theory and equivalence relations and a discussion of the real numbers.
Prerequisites: MATH 1840 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1860 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1930 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH3200  Number Theory  Credit Hours:  3
Divisibility, congruences, diophantine equations, numerical functions, quadratic reciprocity.
Prerequisites: MATH 3190 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH3320  Introduction To Abstract Algebra  Credit Hours:  3
Sets and mappings, integers, groups, rings and applications.
Prerequisites: MATH 3190 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH3440  Fundamentals Of Modern Geometry I  Credit Hours:  3
Primarily for students in secondary education. Euclidean geometry from a modern viewpoint, constructions and transformations.
Prerequisites: MATH 1840 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1860 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1930 FOR LEVEL UG WITH MIN. GRADE OF D-
MATH3450  Fundamentals Of Modern Geometry II  Credit Hours:  3
Primarily for students in secondary education. Euclidean geometry from a modern viewpoint, constructions and transformations.

Prerequisites: MATH 3440 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH3510  History Of Mathematics  Credit Hours:  3
Contributions to the development of mathematics by various groups and individuals from the earliest history to the present, with special emphasis on the elementary branches: arithmetic, algebra, geometry and calculus.

Prerequisites: MATH 1840 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1860 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1930 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH3610  Statistical Methods I  Credit Hours:  3
Basic probability, sampling, descriptive statistics, statistical inference, regression, correlation, analysis of variance, goodness of fit, model formulation and testing.

Prerequisites: MATH 1840 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1860 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 1930 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 3190 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH3620  Statistical Methods II  Credit Hours:  3
Multiple regression, analysis of covariance, standard experimental designs, contingency tables, nonparametric methods and methods for sample surveys.

Prerequisites: MATH 3610 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH3820  Honors Elementary Differential Equations  Credit Hours:  3
Theory, applications and systems of ordinary differential equations.

Prerequisites: MATH 2950 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH3860  Elementary Differential Equations  Credit Hours:  3
An introduction to the analysis and solution of ordinary differential equations with emphasis on the fundamental techniques for solving linear differential equations.

Prerequisites: MATH 2850 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 2950 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH3920  Junior Readings  Credit Hours:  1-3
Selected subjects in mathematics of special interest to students and the professor.
MATH4300  Linear Algebra I
Theory of vector spaces and linear transformations, including such topics as matrices, determinants, inner products, eigenvalues and eigenvectors, and rational and Jordan canonical forms.

Prerequisites:MATH 3190 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH4310  Linear Algebra II
Hermitian and normal operators, multilinear forms, spectral theorem and other topics.

Prerequisites:MATH 4300 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH4330  Abstract Algebra I
Arithmetic of the integers, unique factorization and modular arithmetic; group theory including normal subgroups, factor groups, cyclic groups, permutations, homomorphisms, the isomorphism theorems, abelian groups and p-groups.

Prerequisites:MATH 3190 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH4340  Abstract Algebra II
Ring theory including integral domains, field of quotients, homomorphisms, ideals, Euclidean domains, polynomial rings, vector spaces, roots of polynomials and field extensions.

Prerequisites:MATH 4330 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH4350  Applied Linear Algebra
Matrices, systems of equations, vector spaces, linear transformations, determinants, eigenvalues and eigenvectors, generalized inverses, rank, numerical methods and applications to various areas of science.

Prerequisites:MATH 1890 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 2890 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH4380  Discrete Structures And Analysis Of Algorithms
Discrete mathematical structures for applications in computer science such as graph theory, combinatorics, and groups theory, asymptotics, recurrence relations and analysis of algorithms.

Prerequisites:MATH 3320 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 4330 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH4450  Introduction To Topology I
Metric spaces, topological spaces, continuous maps, bases and subbases, closure and interior operators, products, subspaces, sums, quotients, separation axioms, compactness and local compactness.

Prerequisites:MATH 3190 FOR LEVEL UG WITH MIN. GRADE OF D-
MATH4460 Introduction To Topology II  Credit Hours: 3
Connectedness and local connectedness, convergence, metrization, function spaces. The fundamental groups and its properties, covering spaces, classical applications, e.g. Jordan Curve Theorem, Fundamental Theorem of Algebra, Brouwer's Fixed Point Theorem
Prerequisites: MATH 4450 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 3320 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 4330 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH4540 Classical Differential Geometry I  Credit Hours: 3
Smooth curves in Euclidean space including the Frenet formulae. Immersed surfaces with the Gauss map, principal curvatures and the fundamental forms. Special surfaces including ruled surfaces and minimal surfaces. Intrinsic Geometry including the Gauss
Prerequisites: MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 3820 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH4550 Classical Differential Geometry II  Credit Hours: 3
Tensors, vector fields, and the Cartan approach to surface theory, Bonnet's Theorem and the construction of surfaces via solutions of the Gauss Equation. Geodesics parallel transport, and Jacobi Fields. Theorems of a global nature such as Hilbert's Theorem
Prerequisites: MATH 4540 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH4600 Applications Of Statistics I  Credit Hours: 3
Real data applications of statistical methods. Emphasis is placed on exploratory data analysis and the use of computing facilities to analyze data and produce statistical reports. Statistical packages used include: MINITAB, SAS, and/or S-PLUS; programming

MATH4610 Applications Of Statistics II  Credit Hours: 3
Continuation of Applications of Statistics I.
Prerequisites: MATH 4600 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH4640 Statistical Computing  Credit Hours: 3

MATH4680 Introduction To Theory Of Probability  Credit Hours: 3
Probability spaces, random variables, probability distributions, moments and moment generating functions, limit theorems, transformations and sampling distributions.
Prerequisites: (MATH 3190 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 4350 FOR LEVEL UG WITH MIN. GRADE OF D-)
MATH4690  Introduction To Mathematical Statistics  
Sampling distributions, point and interval estimation, hypothesis testing, regression and analysis of variance.

Prerequisites:MATH 4680 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH4710  Methods Of Numerical Analysis I  
Floating point arithmetic; polynomial interpolation; numerical solution of nonlinear equations; Newton's method. Likely topics include: numerical differentiation and integration; solving systems of linear equations; Gaussian elimination; LU decomposition

Prerequisites:MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 3820 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH4720  Methods Of Numerical Analysis II  
Likely topics include: Computation of eigenvalues and eigenvectors; solving systems of nonlinear equations; least squares approximations; rational approximations; cubic splines; fast Fourier transforms; numerical solutions to initial value problems; ordin

Prerequisites:MATH 4710 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH4740  Advanced Applied Mathematics I  

Prerequisites:MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 3820 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH4750  Advanced Applied Mathematics II  
Continuation of vector analysis, introduction to complex analysis, partial differential equations, Fourier series and integrals.

Prerequisites:MATH 4740 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH4780  Advanced Calculus  
Extrema for functions of one or more variables, Lagrange multipliers, indeterminate forms, inverse and implicit function theorems, uniform convergences, power series, transformations, Jacobians, multiple integrals.

Prerequisites:MATH 2850 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 2950 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH4800  Ordinary Differential Equations  
Modern theory of differential equations; transforms and matrix methods; existence theorems and series solutions; and other selected topics.

Prerequisites:MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 3820 FOR LEVEL UG WITH MIN. GRADE OF D-
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>MATH4810</td>
<td>Partial Differential Equations</td>
<td>3</td>
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<td>First and second order equations; numerical methods; separation of variables; solutions of heat and wave equations using eigenfunction techniques; and other selected topics.</td>
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<td>Prerequisites: MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 3820 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>MATH4820</td>
<td>Introduction To Real Analysis I</td>
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<td>A rigorous treatment of the Calculus in one and several variables. Topics to include: the real number system; sequences and series; elementary metric space theory including compactness, connectedness and completeness; the Riemann Integral.</td>
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<td>Prerequisites: MATH 3190 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>MATH4830</td>
<td>Introduction To Real Analysis II</td>
<td>3</td>
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<td>Differentiable functions on R^n; the Implicit and Inverse Function Theorems; sequences and series of continuous functions; Stone-Weierstrass Theorem; Arzela-Ascoli Theorem; introduction to measure theory; Lebesgue integration; the Lebesgue Dominated Conver</td>
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<td>Prerequisites: MATH 4820 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>MATH4860</td>
<td>Calculus Of Variations And Optimal Control I</td>
<td>3</td>
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<td>Conditions for an extrema (Euler's equations, Erdman corner conditions, conditions of Legendre, Jacobi, and Weierstrass, fields of extremals, Hilbert's invariant integral); Raleigh-Ritz method; isoperimetric problems; Lagrange, Mayer-Bolza problems.  Reco</td>
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<td>Prerequisites: MATH 1890 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>MATH4870</td>
<td>Calculus Of Variations And Optimal Control II</td>
<td>3</td>
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<td>Pontryagin's maximum principle; necessary and sufficient conditions for optimal control, controllability, time optimal control, existence of optimal controls, relationship to the calculus of variations.</td>
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<td>Prerequisites: MATH 4860 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>MATH4880</td>
<td>Complex Variables</td>
<td>3</td>
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<td>Analytic functions; Cauchy's theorem; Taylor and Laurent series; residues; contour integrals; conformal mappings, analytic continuation and applications.</td>
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<td>Prerequisites: MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 3820 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>MATH4900</td>
<td>Senior Seminar</td>
<td>1-3</td>
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<td>Seminar on a topic not usually covered in a course. Library research and paper to be expected.</td>
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<td>Course Code</td>
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<tr>
<td>MATH4920</td>
<td>Senior Readings</td>
<td>1-3</td>
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<tr>
<td>MATH5010</td>
<td>Functions And Modeling For Middle Grade Mathematics</td>
<td>3</td>
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<tr>
<td>MATH5040</td>
<td>Concepts Of Calculus For Middle Grade Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH5060</td>
<td>Number Theory Concepts For Middle Grade Mathematics</td>
<td>3</td>
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<tr>
<td>MATH5070</td>
<td>Geometry Concepts For Middle School Mathematics</td>
<td>3</td>
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<tr>
<td>MATH5080</td>
<td>History Of Mathematics For Middle Grade Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH5110</td>
<td>Probability Concepts For Middle Grade Mathematics</td>
<td>3</td>
</tr>
</tbody>
</table>
MATH5120  Statistics Concepts For Middle Grade Mathematics  Credit Hours: 3
Introduction to the fundamental ideas of statistics, including sampling techniques, descriptive, variance, confidence intervals, correlation and regression. Graduate math credit for education students only.

MATH5300  Linear Algebra I  Credit Hours: 3
Theory of vector spaces and linear transformations, including such topics as matrices, determinants, inner products, eigenvalues and eigenvectors, and rational and Jordan canonical forms.

MATH5310  Linear Algebra II  Credit Hours: 3
Hermitian and normal operators, multilinear forms, spectral theorem and other topics.

Prerequisites:MATH 5300 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH5330  Abstract Algebra I  Credit Hours: 3
Arithmetic of the integers, unique factorization and modular arithmetic; group theory including normal subgroups, factor groups, cyclic groups, permutations, homomorphisms, the isomorphism theorems, abelian groups and p-groups.

Prerequisites:MATH 3190 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH5340  Abstract Algebra II  Credit Hours: 3
Ring theory including integral domains, field of quotients, homomorphisms, ideals, Euclidean domains, polynomial rings, vector spaces, roots of polynomials and field extensions.

Prerequisites:MATH 5330 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH5350  Applied Linear Algebra  Credit Hours: 3
Matrices, systems of equations, vector spaces, linear transformations, determinants, eigenvalues and eigenvectors, generalized inverses, rank, numerical methods and applications to various areas of science.

Prerequisites:MATH 1890 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH5380  Discrete Structures And Analysis Algorithms  Credit Hours: 3
Discrete mathematical structures for applications in computer science such as graph theory, combinatorics, groups theory, asymptotics, recurrence relations and analysis of algorithms.

Prerequisites:MATH 3320 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 5330 FOR LEVEL GR WITH MIN. GRADE OF D-
MATH5450  Introduction To Topology I  Credit Hours: 3
Metric spaces, topological spaces, continuous maps, bases and sub-bases, closure and interior operators, products, subspaces, sums, quotients, separation axioms, compactness and local compactness.
Prerequisites:MATH 3190 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH5460  Introduction To Topology II  Credit Hours: 3
Connectedness and local connectedness, convergence, metrization, function spaces. The fundamental groups and its properties, covering spaces, classical applications, e.g. Jordan Curve Theorem, Fundamental Theorem of Algebra, Brouwer's Fixed Point Theorem
Prerequisites:MATH 5450 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH5540  Classical Differential Geometry I  Credit Hours: 3
Smooth curves in Euclidean space including the Frenet formulae. Immersed surfaces with the Gauss map, principal curvatures and the fundamental forms. Special surfaces including ruled surfaces and minimal surfaces. Intrinsic Geometry including the Gauss
Prerequisites:MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH5550  Classical Differential Geometry II  Credit Hours: 3
Tensors, vector fields and the Cartan approach to surface theory, Bonnet's Theorem and the construction of surfaces via solutions of the Gauss Equation. Geodesics, parallel transport and Jacobi Fields. Theorems of a global nature such as Hilbert's Theor
Prerequisites:MATH 5540 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH5600  Applications Of Statistics I  Credit Hours: 2
Real data applications of statistical methods. Emphasis is placed on exploratory data analysis and the use of computing facilities to analyze data and produce statistical reports. Statistical packages used include MINITAB, SAS and S-Plus.

MATH5610  Applications Of Statistics II  Credit Hours: 2
Continuation of Applications of Statistics II.
Prerequisites:MATH 5600 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH5620  Linear Statistical Models  Credit Hours: 3
Multiple regression, analysis of variance and covariance, general linear models and model building for linear models. Experimental designs include one-way, randomized block, Latin square, factorial and nested designs.
Prerequisites:MATH 6650 FOR LEVEL GR WITH MIN. GRADE OF D-
MATH5630  Theory And Methods Of Sample Surveys  Credit Hours: 3
The mathematical basis to estimation in various sampling contexts, including probability proportional to size sampling, stratified sampling, two-stage cluster sampling and double sampling, is developed.

Prerequisites:MATH 5680 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH5640  Statistical Computing  Credit Hours: 3

MATH5680  Introduction To Theory Of Probability  Credit Hours: 3
Probability spaces, random variables, probability distributions, moments and moment generating functions, limit theorems, transformations and sampling distributions.

Prerequisites:(MATH 3190 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 5350 FOR LEVEL GR WITH MIN. GRADE OF D-)

MATH5690  Introduction To Mathematical Statistics  Credit Hours: 3
Sampling distributions, point estimation, interval estimation, hypothesis testing, regression and analysis of variance.

Prerequisites:MATH 5680 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH5710  Methods Of Numerical Analysis I  Credit Hours: 3
Floating point arithmetic; polynomial interpolation; numerical solution of nonlinear equations; Newton's method. Likely topics include: numerical differentiation and integration; solving systems of linear equations; Gaussian elimination; LU decomposition

MATH5720  Methods Of Numerical Analysis II  Credit Hours: 3
Likely topics include: Computation of eigenvalues and eigenvectors; solving systems of nonlinear equations; least squares approximations; rational approximations; cubic splines; fast Fourier transforms; numerical solutions to initial value problems; ordi

Prerequisites:MATH 5710 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH5740  Advanced Applied Mathematics I  Credit Hours: 3

Prerequisites:MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-
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<tr>
<th>Course Code</th>
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<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>MATH5750</td>
<td>Advanced Applied Mathematics II</td>
<td>3</td>
<td>Continuation of vector analysis, introduction to complex analysis, partial differential equations, Fourier series and integrals.</td>
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<td>Prerequisites: MATH 5740 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>MATH5780</td>
<td>Advanced Calculus</td>
<td>3</td>
<td>Extrema for functions of one or more variables, Lagrange multipliers, indeterminate forms, inverse and implicit function theorems, uniform convergences, power series, transformations, Jacobians, multiple integrals.</td>
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<td>Prerequisites: MATH 2850 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>MATH5800</td>
<td>Ordinary Differential Equations</td>
<td>3</td>
<td>Modern theory of differential equations; transforms and matrix methods; existence theorems and series solutions; and other selected topics.</td>
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<td>Prerequisites: MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>MATH5810</td>
<td>Partial Differential Equations</td>
<td>3</td>
<td>First and second order equations; numerical methods; separation of variables; solutions of heat and wave equations using eigenfunction techniques; and other selected topics.</td>
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<td>Prerequisites: MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>MATH5820</td>
<td>Introduction To Real Analysis I</td>
<td>3</td>
<td>A rigorous treatment of the Calculus in one and several variables. Topics to include: the real number system; sequences and series; elementary metric space theory including compactness, connectedness and completeness; the Riemann Integral.</td>
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<td>Prerequisites: MATH 3190 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>MATH5830</td>
<td>Introduction To Real Analysis II</td>
<td>3</td>
<td>Differentiable functions on Rn; the Implicit and Inverse Function Theorems; sequences and series of continuous functions; Stone-Weierstrass Theorem; Arsela-Ascoli Theorem; introduction to measure theory; Lebesgue integration; the Lebesgue Dominated Conver</td>
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<td>Prerequisites: MATH 5820 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>MATH5860</td>
<td>Calculus Of Variations And Optimal Control Theory I</td>
<td>3</td>
<td>Conditions for an extreme (Euler's equations, Erdman corner conditions, conditions of Legendre, Jacobi and Weierstrass, fields of extremals, Hilbert's invariant integral); Raleigh-Ritz method; isoperimetric problems; Lagrange, Mayer-Bolza problems.</td>
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<td>Prerequisites: MATH 1890 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
</tbody>
</table>
MATH5870 Calculus Of Variations And Optimal Control Theory II Credit Hours: 3
Pontryagin's maximum principle; necessary and sufficient conditions for optimal control, controllability, time optimal control, existence of optimal controls, relationship to the calculus of variations.

Prerequisites: MATH 5860 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH5880 Complex Variables Credit Hours: 3
Analytic functions; Cauchy's theorem; Taylor and Laurent series; residues; contour integrals; conformal mappings, analytic continuation and applications.

Prerequisites: MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH5970 Industrial Math Practicum Credit Hours: 1
Students must submit for approval by their adviser a report on the solution of a practical problem involving mathematics. The problem must be drawn from a company, university department of government unit.

MATH5980 Topics In Mathematics Credit Hours: 3
Special topics in mathematics.

MATH6180 Linear And Nonlinear Programming Credit Hours: 3
Simplex algorithm, ellipsoidal algorithm, Karmarkar's method, interior point methods, elementary convex analysis, optimality conditions and duality for smooth problems, convex programming, algorithms and their convergence.

Prerequisites: MATH 5820 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH6190 Infinite Dimensional Optimization Credit Hours: 3
Introduction to nonlinear analysis, abstract optimization problems on abstract spaces, applications to calculus of variations, optimal control theory and game theory.

MATH6300 Algebra I Credit Hours: 3
Group actions, Sylow's theorems, permutation groups, nilpotent and solvable groups, abelian groups, rings, unique factorization domains, fields.

Prerequisites: MATH 5340 FOR LEVEL GR WITH MIN. GRADE OF D-
MATH6310   Algebra II  Credit Hours:  3
Field extensions, Galois theory, modules, Noetherian and Artinian rings, tensor products, primitive rings, semisimple rings and modules, the Wedderburn-Artin theorem.

Prerequisites:MATH 6300 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH6400   Topology I  Credit Hours:  3
Topological spaces, continuous functions, compactness, product spaces, Tychonov's theorem, quotient spaces, local compactness, homotopy theory, the fundamental group, covering spaces.

Prerequisites:MATH 4450 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 5450 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 7450 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH6410   Topology II  Credit Hours:  3
Homology theory, excision, homological algebra, the Brouwer fixed point theorem, cohomology, differential manifolds, orientation, tangent bundles, Sard's theorem, degree theory.

Prerequisites:MATH 6400 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH6440   Differential Geometry I  Credit Hours:  3
Introduction to differential geometry. Topics include differentiable manifolds, vector fields, tensor bundles, the Frobenius theorem, Stokes' theorem, Lie groups.

Prerequisites:MATH 6410 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH6450   Differential Geometry II  Credit Hours:  3
Topics include connections on manifolds, Riemannian geometry, the Gauss-Bonnet theorem. Further topics may include: homogeneous and symmetric spaces, minimal surfaces, Morse theory, comparison theory, vector and principal bundles.

Prerequisites:MATH 6440 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH6500   Ordinary Differential Equations  Credit Hours:  3
Existence, uniqueness and dependence on initial conditions and parameter, nonlinear planar systems, linear systems, Floquet theory, second order equations, Sturm-Liouville theory.

MATH6510   Partial Differential Equations  Credit Hours:  3
First order quasi-linear systems of partial differential equations, boundary value problems for the heat and wave equation, Dirichlet problem for Laplace equation, fundamental solutions for Laplace, heat and wave equations.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH6600</td>
<td>Statistical Consulting I And II</td>
<td>2</td>
<td>Real data applications of various statistical methods, project design and analysis including statistical consulting experience.</td>
</tr>
<tr>
<td>MATH6610</td>
<td>Statistical Consulting I And II</td>
<td>2</td>
<td>Real data applications of various statistical methods, project design and analysis including statistical consulting experience.</td>
</tr>
<tr>
<td>MATH6620</td>
<td>Categorical Data Analysis</td>
<td>3</td>
<td>Important methods and modeling techniques using generalized linear models and emphasizing loglinear and logit modeling.</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: MATH 5680 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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</tr>
<tr>
<td>MATH6630</td>
<td>Distribution Free And Robust Statistical Methods</td>
<td>3</td>
<td>Statistical methods based on counts and ranks; methods designed to be effective in the presence of contaminated data or error distribution misspecification.</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: MATH 5680 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<td></td>
</tr>
<tr>
<td>MATH6640</td>
<td>Topics In Statistics</td>
<td>3</td>
<td>Topics selected from an array of modern statistical methods such as survival analysis, nonlinear regression, Monte Carlo methods, etc.</td>
</tr>
<tr>
<td>MATH6650</td>
<td>Statistical Inference</td>
<td>3</td>
<td>Estimation, hypothesis testing, prediction, sufficient statistics, theory of estimation and hypothesis testing, simultaneous inference, decision theoretic models.</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: MATH 5680 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH6670</td>
<td>Measure Theoretic Probability</td>
<td>3</td>
<td>Real analysis, probability spaces and measures, random variables and distribution functions, independence, expectation, law of large numbers, central limit theorem, zero-one laws, characteristic functions, conditional expectations given a s-algebra, marti</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: MATH 5680 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<td></td>
</tr>
</tbody>
</table>
MATH6680  Theory Of Statistics  Credit Hours:  3
Exponential families, sufficiency, completeness, optimality, equivariance, efficiency. Bayesian and minimax estimation. Unbiased and invariant tests, uniformly most powerful tests. Asymptotic properties for estimation and testing. Most accurate confidence intervals.
Prerequisites:MATH 5960 FOR LEVEL GR WITH MIN. GRADE OF D- OR (MATH 6650 FOR LEVEL GR WITH MIN. GRADE OF D- AND MATH 6670 FOR LEVEL GR WITH MIN. GRADE OF D-)

MATH6690  Multivariate Statistics  Credit Hours:  3
Multivariate normal sampling distributions, T tests and MANOVA, tests on covariance matrices, simultaneous inference, discriminant analysis, principal components, cluster analysis and factor analysis.
Prerequisites:MATH 5690 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 6650 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH6720  Methods Of Mathematical Physics I  Credit Hours:  3
Analytic functions, residues, method of steepest descent, complex differential equations, regular singularities, integral representation, real and complex vector spaces, matrix groups, Hilbert spaces, coordinate transformations.

MATH6730  Methods Of Mathematical Physics II  Credit Hours:  3
Self-adjoint operators, special functions, orthogonal polynomials, partial differential equations and separation of variables, boundary value problems, Green's functions, integral equations, tensor analysis, metrics and curvature, calculus of variations.
Prerequisites:MATH 6720 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH6800  Real Analysis I  Credit Hours:  3
Completeness, connectedness and compactness in metric spaces, continuity and convergence, the Stone-Weierstrass Theorem, Lebesgue measure and integration on the real line, convergence theorems, Egorov's and Lusin's theorems, derivatives, functions of bounded variation.
Prerequisites:MATH 4830 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 5830 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH6810  Real Analysis II  Credit Hours:  3
The Vitali covering theorem, absolutely continuous functions, Lebesgue-Stieltjes integration, the Riesz representation theorem, Banach spaces, $L^p$-spaces, abstract measures, the Radon-Nikodym theorem, measures on locally compact Hausdorff spaces.
Prerequisites:MATH 6800 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH6820  Functional Analysis I  Credit Hours:  3
Topics include Topological vector spaces, Banach spaces, convexity, the Hahn-Banach theorem, weak and strong topologies, $L^p$ spaces and duality.
Prerequisites:MATH 6810 FOR LEVEL GR WITH MIN. GRADE OF D-
MATH6830  Functional Analysis II  Credit Hours: 3
Topics include the Mackey-Ahrens Theorem, Banach algebras, spectra in Banach algebras, commutative Banach algebras, unbounded operators, the spectral theorem, topics in functional analysis.
Prerequisites:MATH 6820 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH6840  Complex Analysis I  Credit Hours: 3
Elementary analytic functions, complex integration, the residue theorem, infinite sequences of analytic functions, Laurent expansions, entire functions.
Prerequisites:MATH 6800 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH6850  Complex Analysis II  Credit Hours: 3
Meromorphic functions, conformal mapping, harmonic functions and the Dirichlet problem, the Riemann mapping theorem, monodromy, algebraic functions, Riemann surfaces, elliptic functions and the modular function.
Prerequisites:MATH 6840 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH6930  Colloquium  Credit Hours: 1
Lectures by visiting mathematicians and staff members on areas of current interest in mathematics.

MATH6940  Proseminar  Credit Hours: 1-5
Problems and techniques of teaching elementary college mathematics, supervised teaching, seminar in preparation methods.

MATH6960  Master Thesis  Credit Hours: 3-6

MATH6980  Topics In Mathematical Sciences  Credit Hours: 3
Special topics in Mathematics or Statistics.
<table>
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<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>MATH6990</td>
<td>Readings In Mathematics</td>
<td>1-5</td>
<td>Readings in areas of Mathematics of mutual interest to the student and the professor.</td>
</tr>
<tr>
<td>MATH7300</td>
<td>Linear Algebra I</td>
<td>3</td>
<td>Theory of vector spaces and linear transformations, including such topics as matrices, determinants, inner products, eigenvalues and eigenvectors, and rational and Jordan canonical forms.</td>
</tr>
<tr>
<td>MATH7310</td>
<td>Linear Algebra II</td>
<td>3</td>
<td>Hermitian and normal operators, multilinear forms, spectral theorem and other topics.</td>
</tr>
<tr>
<td>MATH7340</td>
<td>Abstract Algebra II</td>
<td>3</td>
<td>Ring theory including integral domains, field of quotients, homomorphisms, ideals, Euclidean domains, polynomial rings, vector spaces, roots of polynomials and field extensions.</td>
</tr>
<tr>
<td>MATH7350</td>
<td>Applied Linear Algebra</td>
<td>3</td>
<td>Matrices, systems of equations, vector spaces, linear transformations, determinants, eigenvalues and eigenvectors, generalized inverses, rank, numerical methods and applications to various areas of science.</td>
</tr>
<tr>
<td>MATH7380</td>
<td>Discrete Structures And Analysis Algorithms</td>
<td>3</td>
<td>Discrete mathematical structures for applications in computer science such as graph theory, combinatorics, groups theory, asymptotics, recurrence relations and analysis of algorithms.</td>
</tr>
<tr>
<td>MATH7450</td>
<td>Introduction To Topology I</td>
<td>3</td>
<td>Metric spaces, topological spaces, continuous maps, bases and sub-bases, closure and interior operators, products, subspaces, sums, quotients, separation axioms, compactness and local compactness.</td>
</tr>
</tbody>
</table>
MATH7460  Introduction To Topology II  Credit Hours: 3
Connectedness and local connectedness, convergence, metrization, function spaces. The fundamental groups and its properties, covering spaces, classical applications, e.g. Jordan Curve Theorem, Fundamental Theorem of Algebra, Brouwer's Fixed Point Theorem
Prerequisites:MATH 5450 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH7540  Classical Differential Geometry I  Credit Hours: 3
Smooth curves in Euclidean space including the Frenet formulae. Immersed surfaces with the Gauss map, principal curvatures and the fundamental forms. Special surfaces including ruled surfaces and minimal surfaces. Intrinsic Geometry including the Gauss
Prerequisites:MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH7550  Classical Differential Geometry II  Credit Hours: 3
Tensors, vector fields and the Cartan approach to surface theory, Bonnet's Theorem and the construction of surfaces via solutions of the Gauss Equation. Geodesics, parallel transport and Jacobi Fields. Theorems of a global nature such as Hilbert's Theor
Prerequisites:MATH 5540 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH7600  Applications Of Statistics I  Credit Hours: 2
Real data applications of statistical methods. Emphasis is placed on exploratory data analysis and the use of computing facilities to analyze data and produce statistical reports. Statistical packages used include MINITAB, SAS and S-Plus.

MATH7610  Applications Of Statistics II  Credit Hours: 2
Continuation of Applications of Statistics II.
Prerequisites:MATH 5600 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH7620  Linear Statistical Models  Credit Hours: 3
Multiple regression, analysis of variance and covariance, general linear models and model building for linear models. Experimental designs include one-way, randomized block, Latin square, factorial and nested designs.
Prerequisites:MATH 6650 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH7630  Theory And Methods Of Sample Surveys  Credit Hours: 3
The mathematical basis to estimation in various sampling contexts, including probability proportional to size sampling, stratified sampling, two-stage cluster sampling and double sampling, is developed.
Prerequisites:MATH 5680 FOR LEVEL GR WITH MIN. GRADE OF D-
MATH7640  Statistical Computing  Credit Hours:  3

MATH7680  Introduction To Theory Of Probability  Credit Hours:  3
Probability spaces, random variables, probability distributions, moments and moment generating functions, limit theorems, transformations and sampling distributions.

Prerequisites: MATH 3190 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH7690  Introduction To Mathematical Statistics  Credit Hours:  3
Sampling distributions, point estimation, interval estimation, hypothesis testing, regression and analysis of variance.

Prerequisites: MATH 5680 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH7710  Methods Of Numerical Analysis I  Credit Hours:  3
Floating point arithmetic; polynomial interpolation; numerical solution of nonlinear equations; Newton's method. Likely topics include: numerical differentiation and integration; solving systems of linear equations; Gaussian elimination; LU decomposition

MATH7720  Methods Of Numerical Analysis II  Credit Hours:  3
Likely topics include: Computation of eigenvalues and eigenvectors; solving systems of nonlinear equations; least squares approximations; rational approximations; cubic splines; fast Fourier transforms; numerical solutions to initial value problems; ordi

Prerequisites: MATH 5710 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH7740  Advanced Applied Mathematics I  Credit Hours:  3

Prerequisites: MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH7750  Advanced Applied Mathematics II  Credit Hours:  3
Continuation of vector analysis, introduction to complex analysis, partial differential equations, Fourier series and integrals.

Prerequisites: MATH 5740 FOR LEVEL GR WITH MIN. GRADE OF D-
MATH7800  Ordinary Differential Equations  Credit Hours: 3
Modern theory of differential equations; transforms and matrix methods; existence theorems and series solutions; and other selected topics.

Prerequisites:MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH7810  Partial Differential Equations  Credit Hours: 3
First and second order equations; numerical methods; separation of variables; solutions of heat and wave equations using eigenfunction techniques; and other selected topics.

Prerequisites:MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH7820  Introduction To Real Analysis I  Credit Hours: 3
A rigorous treatment of the Calculus in one and several variables. Topics to include: the real number system; sequences and series; elementary metric space theory including compactness, connectedness and completeness; the Riemann Integral.

Prerequisites:MATH 3190 FOR LEVEL UG WITH MIN. GRADE OF D-

MATH7830  Introduction To Real Analysis II  Credit Hours: 3
Differentiable functions on R^n; the Implicit and Inverse Function Theorems; sequences and series of continuous functions; Stone-Weierstrass Theorem; Arzela-Ascoli Theorem; introduction to measure theory; Lebesgue integration; the Lebesgue Dominated Conver

Prerequisites:MATH 5820 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH7860  Calculus Of Variations And Optimal Control Theory I  Credit Hours: 3
Conditions for an extreme (Euler's equations, Erman corner conditions, conditions of Legendre, Jacobi and Weierstrass, fields of extremals, Hilbert's invariant integral); Raleigh-Ritz method; isoperimetric problems; Lagrange, Mayer-Bolza problems.

Prerequisites:MATH 5820 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH7870  Calculus Of Variations And Optimal Control Theory II  Credit Hours: 3
Pontryagin's maximum principle; necessary and sufficient conditions for optimal control, controllability, time optimal control, existence of optimal controls, relationship to the calculus of variations.

Prerequisites:MATH 5860 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH7880  Complex Variables  Credit Hours: 3
Analytic functions; Cauchy's theorem; Taylor and Laurent series; residues; contour integrals; conformal mappings, analytic continuation and applications.

Prerequisites:MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-
MATH7980  Topics In Mathematics  Credit Hours:  3
Special topics in mathematics.

MATH8180  Linear And Nonlinear Programming  Credit Hours:  3
Simplex algorithm, ellipsoidal algorithm, Karmarkar's method, interior point methods, elementary convex analysis, optimality conditions and duality for smooth problems, convex programming, algorithms and their convergence.

Prerequisites:MATH 5820 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 7820 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH8190  Infinite Dimensional Optimization  Credit Hours:  3
Introduction to nonlinear analysis, abstract optimization problems on abstract spaces, applications to calculus of variations, optimal control theory and game theory.

Prerequisites:MATH 6150 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 6810 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8150 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8810 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH8300  Algebra I  Credit Hours:  3
Group actions, Sylow's theorems, permutation groups, nilpotent and solvable groups, abelian groups, rings, unique factorization domains, fields.

Prerequisites:MATH 5340 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 7340 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH8310  Algebra II  Credit Hours:  3
Field extensions, Galois theory, modules, Noetherian and Artinian rings, tensor products, primitive rings, semisimple rings, and modules, the Wedderburn-Artin theorem.

Prerequisites:MATH 6300 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8300 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH8320  Ring Theory I  Credit Hours:  3
Radical theory, rings of quotients, Goldie's Theorem, chain conditions, dimensions of rings, module theory, topics in commutative rings.

Prerequisites:MATH 6310 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8310 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH8330  Ring Theory II  Credit Hours:  3
Advanced topics in ring theory. Possible topics include group rings, enveloping algebras, almost split sequences, PI-rings, division rings, self-injective rings, and ordered rings.

Prerequisites:MATH 6310 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8310 FOR LEVEL GR WITH MIN. GRADE OF D-
MATH8340  Group Theory I  Credit Hours:  3
Fundamental topics in group theory. Possible topics include free groups, presentations, free products and amalgams, permutation groups, abelian groups, nilpotent and solvable groups, subnormality, extensions, the Schur-Zassenhaus theorem, the transfer ho

Prerequisites: MATH 6310 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8310 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH8350  Group Theory II  Credit Hours:  3
Advanced topics in group theory. Possible topics include cohomology of groups, locally finite groups, character theory, modular representation theory, representation theory of symmetric and classical groups, finite simple groups, geometric group theory.

Prerequisites: MATH 6310 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8310 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH8400  Topology I  Credit Hours:  3
Topological spaces, continuous functions, compactness, product spaces, Tychonov's theorem, quotient spaces, local compactness, homotopy theory, the fundamental group, covering spaces.

Prerequisites: MATH 7450 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 4450 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 5450 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH8410  Topology II  Credit Hours:  3
Homology theory, excision, homological algebra, the Brouwer fixed point theorem, cohomology, differential manifolds, orientation, tangent bundles, Sard's theorem, degree theory.

Prerequisites: MATH 6400 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8400 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH8440  Differential Geometry I  Credit Hours:  3
Introduction to differential geometry. Topics include differentiable manifolds, vector fields, tensor bundles, the Frobenius theorem, Stokes' theorem, Lie groups.

Prerequisites: MATH 6410 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8410 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH8450  Differential Geometry II  Credit Hours:  3
Topics include connections on manifolds, Riemannian geometry, the Gauss-Bonnet theorem. Further topics may include: homogeneous and symmetric spaces, minimal surfaces. Morse theory, comparison theory, vector and principal bundles.

Prerequisites: MATH 6440 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8440 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH8500  Ordinary Differential Equations  Credit Hours:  3
Existence, uniqueness and dependence on initial conditions and parameter, nonlinear planar systems, linear systems, Floquet theory, second order equations, Sturm-Liouville theory.
### MATH8510 Partial Differential Equations
**Credit Hours:** 3
First order quasi-linear systems of partial differential equations, boundary value problems for the heat and wave equation, Dirichlet problem for Laplace equation, fundamental solutions for Laplace, heat and wave equations.

### MATH8540 Partial Differential Equations I
**Credit Hours:** 3
Possible topics may include: the Cauchy-Kovalevskaya Theorem, nonlinear partial differential equations of the first order, theory of Sobolev spaces, linear second order PDE's of elliptic, hyperbolic and parabolic type.

Prerequisites: MATH 6510 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8510 FOR LEVEL GR WITH MIN. GRADE OF D-

### MATH8550 Partial Differential Equations II
**Credit Hours:** 3
Selected topics in Partial Differential Equations of current interest emphasizing nonlinear theory. Possible topics may include: Minimal surfaces, applications of the Hopf maximum principle, free boundary value problems, harmonic maps, geometric evoluti

Prerequisites: MATH 6540 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8540 FOR LEVEL GR WITH MIN. GRADE OF D-

### MATH8600 Statistical Consulting I And II
**Credit Hours:** 2
Real data applications of various statistical methods, project design and analysis including statistical consulting experience.

### MATH8610 Statistical Consulting I And II
**Credit Hours:** 2
Real data applications of various statistical methods, project design and analysis including statistical consulting experience.

### MATH8620 Categorical Data Analysis
**Credit Hours:** 3
Important methods and modeling techniques using generalized linear models and emphasizing loglinear and logit modeling.

Prerequisites: MATH 5680 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 7680 FOR LEVEL GR WITH MIN. GRADE OF D-

### MATH8630 Distribution Free And Robust Statistical Methods
**Credit Hours:** 3
Statistical methods based on counts and ranks; methods designed to be effective in the presence of contaminated data or error distribution misspecification.

Prerequisites: MATH 5680 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 7680 FOR LEVEL GR WITH MIN. GRADE OF D-
**Course Descriptions 2009-2010**

**MATH8640** Topics In Statistics  
Credit Hours: 3  
Topics selected from an array of modern statistical methods such as survival analysis, nonlinear regression, Monte Carlo methods, etc.

**MATH8650** Statistical Inference  
Credit Hours: 3  
Estimation, hypothesis testing, prediction, sufficient statistics, theory of estimation and hypothesis testing, simultaneous inference, decision theoretic models.

Prerequisites: MATH 5680 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 7680 FOR LEVEL GR WITH MIN. GRADE OF D-

**MATH8670** Measure Theoretic Probability  
Credit Hours: 3  
Real analysis, probability spaces and measures, random variables and distribution functions, independence, expectation, law of large numbers, central limit theorem, zero-one laws, characteristic functions, conditional expectations given a s-algebra, marti

Prerequisites: MATH 5680 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 7680 FOR LEVEL GR WITH MIN. GRADE OF D-

**MATH8680** Theory Of Statistics  
Credit Hours: 3  
Exponential families, sufficiency, completeness, optimality, equivariance, efficiency. Bayesian and minimax estimation. Unbiased and invariant tests, uniformly most powerful tests. Asymptotic properties for estimation and testing. Most accurate confid

**MATH8690** Multivariate Statistics  
Credit Hours: 3  
Multivariate normal sampling distributions, T tests and MANOVA, tests on covariance matrices, simultaneous inference, discriminant analysis, principal components, cluster analysis and factor analysis.

Prerequisites: MATH 5690 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 6650 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8650 FOR LEVEL GR WITH MIN. GRADE OF D-

**MATH8720** Methods Of Mathematical Physics I  
Credit Hours: 3  
Analytic functions, residues, method of steepest descent, complex differential equations, regular singularities, integral representation, real and complex vector spaces, matrix groups, Hilbert spaces, coordinate transformations.

**MATH8730** Methods Of Mathematical Physics II  
Credit Hours: 3  
Self-adjoint operators, special functions, orthogonal polynomials, partial differential equations and separation of variables, boundary value problems, Green's functions, integral equations, tensor analysis, metrics and curvature, calculus of variations,

Prerequisites: MATH 6720 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8720 FOR LEVEL GR WITH MIN. GRADE OF D-
MATH8800  Real Analysis I  Credit Hours:  3
Completeness, connectedness and compactness in metric spaces, continuity and convergence, Stone-Weierstrass Theorem, Lebesgue measure and integration on the real line, convergence theorems, Egorov's and Lusin's theorems, derivatives, functions of bounded variation.
Prerequisites: MATH 7830 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 4830 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 5830 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH8810  Real Analysis II  Credit Hours:  3
The Vitali covering theorem, absolutely continuous functions, Lebesgue-Stieltjes integration, the Reisz representation theorem, Banach spaces, L^p-spaces, abstract measures, the Radon-Nikodym theorem, measures on locally compact Hausdorff spaces.
Prerequisites: MATH 6800 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8800 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH8820  Functional Analysis I  Credit Hours:  3
Topics include Topological vector spaces, Banach spaces, convexity, the Hahn-Banach theorem, weak and strong topologies, L^p spaces and duality.
Prerequisites: MATH 6810 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8810 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH8830  Functional Analysis II  Credit Hours:  3
Topics include the Mackey-Arens Theorem, Banach algebras, spectra in Banach algebras, commutative Banach algebras, unbounded operators, the spectral theorem, topics in functional analysis.
Prerequisites: MATH 6820 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8820 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH8840  Complex Analysis I  Credit Hours:  3
Elementary analytic functions, complex integration, the residue theorem, infinite sequences of analytic functions, Laurent expansions, entire functions.
Prerequisites: MATH 6800 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8800 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH8850  Complex Analysis II  Credit Hours:  3
Mermomorphic functions, conformal mapping, harmonic functions and the Dirichlet problem, the Riemann mapping theorem, monodromy, algebraic functions, Riemann surfaces, elliptic functions and the modular function.
Prerequisites: MATH 6840 FOR LEVEL GR WITH MIN. GRADE OF D- OR MATH 8840 FOR LEVEL GR WITH MIN. GRADE OF D-

MATH8930  Colloquium  Credit Hours:  1
Lectures by visiting mathematicians and staff members on areas of current interest in mathematics.
MATH8940  Proseminar  Credit Hours:  1-5
Problems and techniques of teaching elementary college mathematics, supervised teaching, seminar in preparation methods.

MATH8960  Dissertation  Credit Hours:  3-6

MATH8980  Topics In Mathematical Sciences  Credit Hours:  3
Special topics in Mathematics or Statistics.

MATH8990  Readings In Mathematics  Credit Hours:  1-5
Readings in areas of Mathematics of mutual interest to the student and the professor.

MBC3100  Practices in Pharmaceutical Research  Credit Hours:  1
Consideration of the scientific, ethical, and legal obligations expected in the conduct of academic and industrial pharmaceutical research.

MBC3310  Medicinal Chemistry I: Drug Action And Design  Credit Hours:  2
An introductory course presenting the basic chemical principles governing the behavior of drugs and the design of new therapeutics.

Prerequisites: CHEM 2420 FOR LEVEL UG WITH MIN. GRADE OF D-

MBC3320  MEDICINAL CHEMISTRY II: ENDOCRINE, REPRODUCTIVE, AND CARDIOLOGY DRUGS  Credit Hours:  2
A course presenting basic chemical principles governing the design and behavior of therapeutics targeted to receptors in physiologic systems which are key to the integrated control of human metabolism.

Prerequisites: (MBC 3310 FOR LEVEL UG WITH MIN. GRADE OF D- AND MBC 3550 FOR LEVEL UG WITH MIN. GRADE OF D-)
MBC3330  Applied Drug Design  Credit Hours:  2
Theory and practice of drug design with consideration of molecular aspects that effect drug absorption, distribution, metabolism, and excretion.

MBC3550  Physiological Chemistry I: Structure And Function Of Biological Macromolecules  Credit Hours:  3
An examination of the levels of structure of proteins, nucleic acids, other biomolecules and biomolecular assemblies.

Prerequisites: CHEM 2420 FOR LEVEL UG WITH MIN. GRADE OF D-

MBC3560  Physiological Chemistry II: Chemical Regulation Of Cells And Organisms  Credit Hours:  3
An examination of the chemistry and regulation of metabolic processes in cells, interacting cells and tissues.

Prerequisites: MBC 3550 FOR LEVEL UG WITH MIN. GRADE OF D-

MBC3800  Microbiology And Immunology  Credit Hours:  3
A lecture course with emphasis on how the immune system protects the body against bacterial, viral and parasitic invaders. Medically important human infectious diseases are described as well as chemotherapeutic intervention.

Prerequisites: MBC 3550 FOR LEVEL UG WITH MIN. GRADE OF D-

MBC3850  Microbiology And Immunology Laboratory  Credit Hours:  1
A laboratory course that follows the course material presented in MBC 3800. Both immunology and microbiology experiments that are medically useful and clinically important will be performed.

Corequisite: MBC 3800

MBC3880  Medicinal And Biological Chemistry Laboratory  Credit Hours:  1-4
Research and lecture teaching fundamental laboratory skills in medicinal and biological chemistry.

MBC4300  Medicinal Chemistry III: Chemotherapy And Immunotherapy  Credit Hours:  3
The chemical bases for actions of drugs that counter infectious disease and cancer, including use and modulation of the immune system and its products to target infectious disease and cancer.

Prerequisites: MBC 3800 FOR LEVEL UG WITH MIN. GRADE OF D- OR (BIOL 4030 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 4050 FOR LEVEL UG WITH MIN. GRADE OF D-)
MBC4340  Contemporary Natural Remedies  Credit Hours: 2
An introduction to natural remedies, their history, source, chemical constituents, documented therapeutic utility and toxicity.

Prerequisites: MBC 3320 FOR LEVEL UG WITH MIN. GRADE OF D-

MBC4380  Medicinal Plants  Credit Hours: 3
A lecture/field course emphasizing medicinal and poisonous plants of this locale.

MBC4390  Genes And Proteins In Therapy  Credit Hours: 2
Consideration of the symptoms, molecular nature, current treatment and amelioration by gene therapy of diseases caused by gene and protein defects.

Prerequisites: MBC 3550 FOR LEVEL UG WITH MIN. GRADE OF D-

MBC4410  Nutrition In Health And Disease  Credit Hours: 2
A comprehensive examination of the role of carbohydrates, lipids, proteins, vitamins and minerals in maintaining good health, as well as our current understanding of the interplay between nutrition and disease.

Prerequisites: MBC 3560 FOR LEVEL UG WITH MIN. GRADE OF D-

MBC4420  Neuroscience  Credit Hours: 2
An examination of the basic anatomy, chemistry and physiology of neural systems. The organization of the brain and its role in behavior and in disease states are presented in an interdisciplinary way.

Prerequisites: MBC 3560 FOR LEVEL UG WITH MIN. GRADE OF D-

MBC4430  Biochemistry Of Disease  Credit Hours: 2
Mechanisms of pathogenesis and pathophysiological consequences in diseases already well-understood at a biochemical level. Emphasis is placed on the logic behind existing and future drug therapies in disease.

Prerequisites: MBC 3560 FOR LEVEL UG WITH MIN. GRADE OF D-

MBC4450  New Drug Development  Credit Hours: 2
An examination of all phases of drug discovery and development from conception to marketing: case histories from pharmaceutical research and development.

Prerequisites: MBC 3560 FOR LEVEL UG WITH MIN. GRADE OF D-
Course Descriptions 2009-2010

MBC4470  Advanced Immuno-Therapeutics  Credit Hours: 2
This course emphasizes the development of methods for immunotherapeutic intervention in cancer and autoimmune and infectious disease. The course has a seminar/discussion/student presentation format.

Prerequisites:MBC 4300 FOR LEVEL UG WITH MIN. GRADE OF D-

MBC4480  Chemical Defense Mechanisms In Plants  Credit Hours: 2
A study of the effects on plant predators of secondary metabolites in plants as a basis for the novel development of therapeutics.

Prerequisites:MBC 3560 FOR LEVEL UG WITH MIN. GRADE OF D-

MBC4710  Targeted Drug Design  Credit Hours: 3
A survey of novel macromolecular targeting approaches to drug design in important human disorders. The course has a seminar/discussion/student presentation format.

Prerequisites:MBC 3320 FOR LEVEL UG WITH MIN. GRADE OF D-

MBC4720  Advances In Drug Design  Credit Hours: 3
A survey of novel approaches to drug design and development. The course has a seminar/discussion/student presentation format.

Prerequisites:MBC 3320 FOR LEVEL UG WITH MIN. GRADE OF D-

MBC4760  Biochemical Toxicology  Credit Hours: 2
The biochemical principles underlying toxicological phenomena, including biotransformation, host and environmental modulation, and target organs.

Prerequisites:MBC 3550 FOR LEVEL UG WITH MIN. GRADE OF D-

MBC4770  Molecular Modeling In Drug Design  Credit Hours: 3
Theoretical and graphical approaches to the geometry of drug interactions with their receptors. Methods of determining and predicting conformation at drug receptor sites are examined.

Prerequisites:MBC 3320 FOR LEVEL UG WITH MIN. GRADE OF D-

MBC4780  Practicum In Medicinal & Biological Chemistry  Credit Hours: 6-12
An experiential course in which students acquire practical knowledge through hands-on experience in an area of medicinal and biological chemistry by working in an academic, private or government laboratory or professional site.

Prerequisites:MBC 3320 FOR LEVEL UG WITH MIN. GRADE OF D- AND MBC 3560 FOR LEVEL UG WITH MIN. GRADE OF D-
### MBC4800  Quantitative Structure Activity Relationships
- **Credit Hours:** 2
- Linear free energy relationships and substituent effects in pharmacologically related agents are considered in the quantitative description of structure vs. drug activity.
- **Prerequisites:** MBC 3320 FOR LEVEL UG WITH MIN. GRADE OF D-

### MBC4850  Advanced Immunology And Tissue Culture Laboratory
- **Credit Hours:** 1-10
- Research experience in medicinally related immunology including literature investigations, tissue culture, cell sorting and sterile biotechniques and culminating with a seminar and written report.

### MBC4870  Biomedical Chemistry Laboratory
- **Credit Hours:** 1-10
- Research experience in biomedicinal chemistry including literature investigations and chemical synthesis of medicinally important compounds and culminating with a seminar and written report.

### MBC4880  Medicinal Biotechnology Laboratory
- **Credit Hours:** 1-10
- Research experience in medicinally related biotechnology including literature investigations, informatics, DNA and protein methodologies, and biological activity assays; and culminating with a seminar and written report.

### MBC4900  Honors Seminar In Medicinal And Biological Chemistry
- **Credit Hours:** 1-3
- An examination of a specific question in the context of the primary literature in medicinal or biological chemistry.

### MBC4910  Problems In Biomedical Chemistry
- **Credit Hours:** 1-3
- Selected study of topics in biomedicinal chemistry. New chemical and biochemical strategies in drug design are examined in detail.

### MBC4950  Research In Medicinal Chemistry
- **Credit Hours:** 6-8
- Selected research and study in medicinal chemistry.
MBC4960 Honors Thesis In Medicinal And Biological Chemistry  
Credit Hours: 2-5
An examination of a specific research question in medicinal or biological chemistry that can be answered through experimental work.

MBC4980 Special Topics In Drug Design  
Credit Hours: 1-4
A detailed examination of new chemical and biochemical strategies in drug design.

Prerequisites: (MBC 3320 FOR LEVEL UG WITH MIN. GRADE OF D- AND MBC 3560 FOR LEVEL UG WITH MIN. GRADE OF D-)

MBC5100 Research Practices In Medicinal Chemistry  
Credit Hours: 1
Consideration of the scientific, ethical and legal obligations of the graduate student researcher.

MBC5380 Medicinal And Poisonous Plants  
Credit Hours: 3
Lecture/field course examining medicinal and harmful properties of herbals and plants using pharmacognosy, clinical trials and local plant examples.

MBC5620 Biochemical Techniques  
Credit Hours: 2
A detailed study of biochemical laboratory techniques necessary for the development of novel therapeutics, including bioassays and data analysis.

MBC5900 Medicinal Chemistry Seminar  
Credit Hours: 1
Presentation and discussion of advanced research topics in medicinal chemistry, with an emphasis on evaluating and criticizing emerging data as a way of testing hypotheses.

MBC6100 Advanced Immunology  
Credit Hours: 2
Readings in and critical analysis of the recent literature in immunology and basic immunologic responses, especially as considered in immunotherapy.
MBC6190  Advanced Medicinal Chemistry  Credit Hours: 4
Discussion of the qualitative and quantitative aspects of the design of new therapeutic agents. Approaches to the design of drugs and new therapeutic modalities directed at enzymes, receptors, membrane transport proteins and nucleic acids are examined.

MBC6200  Biomedical Chemistry  Credit Hours: 4
Examination of the primary literature on approaches to the design of new therapeutic agents. Recent novel directions in the design of drugs will be examined and compared.
Prerequisites: MBC 6190 FOR LEVEL GR WITH MIN. GRADE OF D-

MBC6300  Biomedical Chemistry Laboratory I  Credit Hours: 4
Experimental research problems in biomedical chemistry.
Prerequisites: (MBC 6190 FOR LEVEL GR WITH MIN. GRADE OF D- AND MBC 6550 FOR LEVEL GR WITH MIN. GRADE OF D-)

MBC6310  Biomedical Chemistry Laboratory II  Credit Hours: 4
Additional experimental research problems in biomedical chemistry (see MBC 6300/8300).
Prerequisites: (MBC 6190 FOR LEVEL GR WITH MIN. GRADE OF D- AND MBC 6550 FOR LEVEL GR WITH MIN. GRADE OF D-)

MBC6420  Protein Chemistry  Credit Hours: 4
A detailed analysis of the structure and function of proteins: current methodology for the analysis of structure, the basis for molecular associations, and relationships between structure and biological function.
Prerequisites: MBC 6550 FOR LEVEL GR WITH MIN. GRADE OF D-

MBC6430  Nucleic Acid Chemistry  Credit Hours: 4
The chemical basis for storage and transmission of genetic information.
Prerequisites: MBC 6550 FOR LEVEL GR WITH MIN. GRADE OF D-

MBC6440  Enzymology  Credit Hours: 4
The principles of chemical catalysis applied to molecular enzymology.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBC6550</td>
<td>Biochemistry</td>
<td>4</td>
<td>A consideration of the structure and function of biological macromolecules as well as the basic and regulated metabolism of cells.</td>
</tr>
<tr>
<td>MBC6750</td>
<td>Bioorganic Chemistry: Chemical Approaches To Enzymes</td>
<td>2</td>
<td>An advanced course in the application of organic chemistry, stereochemistry, synthesis and kinetics to the study of enzymes, enzyme inhibition and enzyme mechanisms.</td>
</tr>
<tr>
<td>Prerequisites: MBC 6550 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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</tr>
<tr>
<td>MBC6800</td>
<td>Methods In Biotechnology</td>
<td>3</td>
<td>Experimental investigations of current techniques in biochemistry and molecular biology that involve DNA or protein amplification, modification and interactions relevant to drug research.</td>
</tr>
<tr>
<td>Prerequisites: MBC 6550 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>MBC6960</td>
<td>M.s. Thesis Research In Medicinal Chemistry</td>
<td>1-15</td>
<td>Development and pursuit of research leading to an M.S. thesis in medicinal chemistry.</td>
</tr>
<tr>
<td>MBC6980</td>
<td>Special Topics In Biomedical Chemistry</td>
<td>1-5</td>
<td>Selected study of topics in medicinal chemistry. New chemical and biochemical strategies in drug design are examined in detail.</td>
</tr>
<tr>
<td>MBC7100</td>
<td>Research Practices In Medicinal Chemistry</td>
<td>1</td>
<td>Consideration of the scientific, ethical and legal obligations of the graduate student researcher.</td>
</tr>
<tr>
<td>MBC7620</td>
<td>Biochemical Techniques</td>
<td>2</td>
<td>A detailed study of biochemical laboratory techniques necessary for the development of novel therapeutics, including bioassays and data analysis.</td>
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<tr>
<td>Course Code</td>
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<td>Credit Hours</td>
<td>Course Description</td>
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<tr>
<td>MBC7900</td>
<td>Medicinal Chemistry Seminar</td>
<td>1</td>
<td>Presentation and discussion of advanced research topics in medicinal chemistry, with an emphasis on evaluating and criticizing emerging data as a way of testing hypotheses.</td>
</tr>
<tr>
<td>MBC8100</td>
<td>Advanced Immunology</td>
<td>2</td>
<td>Readings in and critical analysis of the recent literature in immunology and basic immunologic responses, especially as considered in immunotherapy.</td>
</tr>
<tr>
<td>MBC8190</td>
<td>Advanced Medicinal Chemistry</td>
<td>4</td>
<td>Discussion of the qualitative and quantitative aspects of the design of new therapeutic agents. Approaches to the design of drugs and new therapeutic modalities directed at enzymes, receptors, membrane transport proteins and nucleic acids are examined.</td>
</tr>
<tr>
<td>MBC8200</td>
<td>Biomedicalal Chemistry</td>
<td>4</td>
<td>Examination of the primary literature on approaches to the design of new therapeutic agents. Recent novel directions in the design of drugs will be examined and compared.</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: MBC 8190 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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</tr>
<tr>
<td>MBC8300</td>
<td>Biomedicalal Chemistry Laboratory I</td>
<td>4</td>
<td>Experimental research problems in biomedicinal chemistry.</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: (MBC 6190 FOR LEVEL GR WITH MIN. GRADE OF D- AND MBC 8550 FOR LEVEL GR WITH MIN. GRADE OF D-)</td>
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<tr>
<td>MBC8310</td>
<td>Biomedicalal Chemistry Laboratory II</td>
<td>4</td>
<td>Additional experimental research problems in biomedicinal chemistry (see MBC 6300/8300).</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: (MBC 6190 FOR LEVEL GR WITH MIN. GRADE OF D- AND MBC 8550 FOR LEVEL GR WITH MIN. GRADE OF D-)</td>
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</tr>
<tr>
<td>MBC8420</td>
<td>Protein Chemistry</td>
<td>4</td>
<td>A detailed analysis of the structure and function of proteins: current methodology for the analysis of structure, the basis for molecular associations, and relationships between structure and biological function.</td>
</tr>
<tr>
<td></td>
<td>Prerequisites:</td>
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</tbody>
</table>
MBC8430  Nucleic Acid Chemistry  
The chemical basis for storage and transmission of genetic information.  

MBC8440  Enzymology  
The principles of chemical catalysis applied to molecular enzymology.  

MBC8550  Biochemistry  
A consideration of the structure and function of biological macromolecules as well as the basic and regulated metabolism of cells.  

MBC8750  Bioorganic Chemistry: Chemical Approaches To Enzymes  
An advanced course in the application of organic chemistry, stereochemistry, synthesis and kinetics to the study of enzymes, enzyme inhibition and enzyme mechanisms.  
Prerequisites: MBC 8550 FOR LEVEL GR WITH MIN. GRADE OF D-  

MBC8800  Methods In Biotechnology  
Experimental investigations of current techniques in biochemistry and molecular biology that involve DNA or protein amplification, modification and interactions relevant to drug research.  
Prerequisites: MBC 8550 FOR LEVEL GR WITH MIN. GRADE OF D- OR MBC 6550 FOR LEVEL GR WITH MIN. GRADE OF D-  

MBC8960  Ph.d. Dissertation Research In Medicinal Chemistry  
Development and pursuit of research leading to a Ph.D. dissertation in medicinal chemistry.  

MBC8980  Special Topics In Biomedical Chemistry  
Selected study of topics in medicinal chemistry. New chemical and biochemical strategies in drug design are examined in detail.
MBDP603 Molecular Basis of Disease
An introduction to the molecular mechanisms of diseases through comparison of fundamental concepts in microbiology, immunology, oncology, physiology, pharmacology and biochemistry that are common to many diseases.

MBDP630 Seminar Molecular Basis Disease
Local and outside scientists will present their scientific work in seminars that will take place twice a week. May be repeated for credit.

MBDP650 Molecular Basis Disease Lab
Introduction to the laboratory methods used in molecular basis of disease research. Students will conduct short research projects in the laboratories of MBD faculty. May be repeated for credit.

MBDP656 Reading Molecular Basis Disease
An in-depth literature review of selected research topics related to disease mechanisms and protection from disease. Faculty-led student discussion of selected articles. May be repeated for credit.

MBDP660 Jrnl Rev Molecular Basis Disease
A weekly report on recent advances in molecular basis of disease taken from original papers to give students an opportunity to find, assess, and report on important developments in the field. May be repeated for credit.

MBDP698 Frontiers Molecular Microbiology
This is a weekly course combining a journal paper discussion with a research data presentation, both focusing on current work in molecular microbiology. May be repeated for credit.

MBDP803 Molecular Basis of Disease
An introduction to the molecular mechanisms of diseases through comparison of fundamental concepts in microbiology, immunology, oncology, physiology, pharmacology and biochemistry that are common to many diseases.
MBDP830  Semnr Molecular Basis Disease  
Credit Hours:  1
Local and outside scientists will present their scientific work in seminars that will take place twice a week. May be repeated for credit.

MBDP850  Molecular Basis Disease Lab  
Credit Hours:  0-8
Introduction to the laboratory methods used in molecular basis of disease research. Students will conduct short research projects in the laboratories of MBD faculty. May be repeated for credit.

MBDP856  Reading Molecular Basis Disease  
Credit Hours:  0-4
An in-depth literature review of selected research topics related to disease mechanisms and protection from disease. Faculty-led student discussion of selected articles. May be repeated for credit.

MBDP860  Jnrl Rev Molecular Basis Disease  
Credit Hours:  1
A weekly report on recent advances in molecular basis of disease taken from original papers to give students an opportunity to find, assess, and report on important developments in the field. May be repeated for credit.

MBDP898  Frontiers Molecu Microbiology  
Credit Hours:  0-2
This is a weekly course combining a journal paper discussion with a research data presentation, both focusing on current work in molecular microbiology. May be repeated for credit.

MCBP601  Meth Molec and Cell Biology  
Credit Hours:  3

MCBP630  Semnr Molecular Cellulr Biology  
Credit Hours:  1
Local and outside scientists, and senior graduate students, will present their scientific work in seminars that usually take place weekly. Enables students to hear state-of-the-art science in the areas of molecular and cellular biology. May be repeated.
MCBP656  Read Molec and Cell Biology  Credit Hours: 1
Presentation and discussion in depth of original papers to give students an opportunity to assess and report on important developments in the field. May be repeated for credit.

MCBP670  Energy Transduction ATPases  Credit Hours: 2
The course will cover the fundamentals and the present day research on all major superfamilies of ion-motive ATPases. Special emphasis will be given to the key enzymes of the cell energy cycle, ATP synthases and Na,K-ATPase. The course also will focus on

MCBP673  Rsrch Molec and Cell Biology  Credit Hours: 0-15
Students will participate in selected on-going research programs with faculty members of the MCB program. May be repeated for credit.

MCBP675  Research Presentation  Credit Hours: 1
Presentations, oral (fall) and poster (spring), at research forums will provide training in communication of experimental findings. This is a MCB programs requirement for all second-year master and second-fifth year doctoral students. May be repeated fo

MCBP689  Ind Study Molecular Cell Biol  Credit Hours: 0-15
Intensive study in field of interest, including theoretical and experimental work. May be repeated for credit.

MCBP801  Meth Molec and Cell Biology  Credit Hours: 3

MCBP830  Semnr Moleculr Cellulr Biology  Credit Hours: 1
Local and outside scientists, and senior graduate students, will present their scientific work in seminars that usually take place weekly. Enables students to hear state-of-the-art science in the areas of molecular and cellular biology. May be repeated
MCBP856 Read Molec and Cell Biology  
Presentation and discussion in depth of original papers to give students an opportunity to assess and report on important developments in the field. May be repeated for credit.

MCBP870 Energy Transduction ATPases  
The course will cover the fundamentals and the present day research on all major superfamilies of ion-motive ATPases. Special emphasis will be given to the key enzymes of the cell energy cycle, ATP synthases and Na,K-ATPase. The course also will focus on

MCBP873 Research Molec and Cell Biology  
Students will participate in selected on-going research programs with faculty members of the MCB program. May be repeated for credit.

MCBP875 Research Presentation  
Presentations, oral (fall) and poster (spring), at research forums will provide training in communication of experimental findings. This is a MCB programs requirement for all second-year master and second-fifth year doctoral students. May be repeated fo

MCBP889 Indp Study Molecular Cell Biol  
Intensive study in field of interest, including theoretical and experimental work. May be repeated for credit.

MCOE4000 Gross Anatomy  
The study of the structure and functional implications of the musculoskeletal, cardiovascular and respiratory systems of the human, and an introduction to the peripheral nervous system. An emphasis is placed on the biomechanisms of spine and extremity mo

MCOE4070 Neurosciences And Clinical Correlations  
An integrated study of structure and function of the central and peripheral nervous systems. Principles of neurophysiological and neuropathological motor and sensory function and related basic assessment skills will be emphasized.

Prerequisites:MCOE 4000 FOR LEVEL UG WITH MIN. GRADE OF D-
**MCOE4110  Clinical Pathophysiology**  
Credit Hours: 3  
The integrated study of the physiology of various systems of the human body throughout the lifespan. The focus will be on the pathophysiology of the various systems with emphasis on clinical manifestations and their influence on client examination and st

**MCOE4200  Health Promotion**  
Credit Hours: 3  
Health and wellness as they relate to able-bodied clients and clients with disability. The mind-body interaction will be explored as it relates to the role of the physical therapist as health educator. Principles of nutritional and pharmacological manag

**MCOE4250  Introduction To Examination**  
Credit Hours: 3  
An introduction to the physical examination process. Includes the integration of anatomy, analysis of movement, health and observation skills. Emphasis on basic examination skills.  
Prerequisites: (MCOE 4000 FOR LEVEL UG WITH MIN. GRADE OF D- AND MCOE 4090 FOR LEVEL UG WITH MIN. GRADE OF D-)

**MCOE4600  Integrated Control Of Movement**  
Credit Hours: 3  
Integration of the organizing principles of biomechanics, neurosciences and exercise physiology as they relate to an understanding of how voluntary, coordinated human movement is controlled. The implications on the management of movement dysfunction will

**MCOE4800  Elective Seminar**  
Credit Hours: 1-2  
In-depth exploration of selected clinical topics (Physical Therapy).

**MED1000  Music Education Lab**  
Credit Hours: 0  
Experiential learning for music education majors. All music education majors must register for this course when enrolled in the following classes: MUS 1500, 1510, 1530, 1550, 1560, 3500, 3510, 3520, or any MED course. A total of 5 semesters is required.

**MED3000  Foundations Of Music Education**  
Credit Hours: 2  
General overview of music education. Addresses history and philosophy of music education, music in a diverse society, classroom observation skills, analysis of music teaching, classroom communication and educational theories.
MED3030  Music For The Early Childhood Teacher  
Credit Hours:  2  
Topics: Children's voices, music literacy, appreciation, creativity, classroom instruments. Analysis of music books, comparative methodology, curriculum integration. May include field experience.  
Prerequisites: MUS 2200 FOR LEVEL UG WITH MIN. GRADE OF C

MED3300  Elementary And Secondary School Instrument Methods For Music Majors  
Credit Hours:  3-4  
Choral/Gen cluster 3 cr.; Inst cluster 4 cr. A study of the techniques and teaching procedures used in the presentation of the instrumental music program in elementary and secondary schools. Field experience required. Includes participation in MUS 1000

MED3310  Music For Children  
Credit Hours:  3  
Topics: Children's voices, music reading readiness and music reading, appreciation, creativity, use of classroom instruments. Projects: Analysis of music books for children, a comparative review of Orff, Kodaly, Dalcroze, & Gordon. Field experience req

MED3320  Secondary School Vocal Methods For Music Majors  
Credit Hours:  3-4  

MED3330  Early Childhood Music Methods For Music Majors  
Credit Hours:  3  
Topics include children's voices, music readiness skills, appreciation, creativity, use of classroom instruments. Projects include keyboard technology, analysis of basic series, a comparative review of Orff, Kodaly, Dalcroze and Gordon. Includes computer

MED4230  Integrating Aesthetic Experience  
Credit Hours:  3  
This course will provide students majoring in education an overview of the role of music and art in educational curriculum development. Students will learn about the history of art and music through lecture, discussion and participation in art and music

MED4900  Student Teaching Seminar  
Credit Hours:  2  
This course is required for all music education majors. This course focuses reflectivity on common experiences in student teaching. Attention is also given to resume preparation, portfolio use and job interviews.
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<tr>
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<tbody>
<tr>
<td>MED4930</td>
<td>Student Teaching</td>
<td>6-12</td>
</tr>
<tr>
<td></td>
<td>This course is required for all music education majors. Planned field experiences in public school classrooms under the direction of University supervisors. Observation of teaching of experienced teachers; gradual acceptance of full teaching responsibil</td>
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<tr>
<td></td>
<td>Prerequisites: UPDV FOR MIN. SCORE OF 1</td>
<td></td>
</tr>
<tr>
<td>MED4990</td>
<td>Individual Study In Music Education For Undergraduate Students</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Individual study is designed to provide a student with the opportunity to work individually on professional interests and concerns under the direction of the faculty of the Department of Music.</td>
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<tr>
<td>MED5340</td>
<td>Curriculum Development In Music Education</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>The impact of historical, sociological and philosophical influences on various music curricula, past and present. Integration of skill development and content learning for designing comprehensive and sequential objectives for school music programs.</td>
<td></td>
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<tr>
<td>MED5360</td>
<td>Pedagogy Of Aural Perception</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Theory and techniques for teaching of musical skills. Sequences for development of tonal and rhythm skills, techniques and materials for instruction plus measurement and evaluation of music learning.</td>
<td></td>
</tr>
<tr>
<td>MED5370</td>
<td>Psychology Of Music</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Study of theories of musical behavior and pattern perception.</td>
<td></td>
</tr>
<tr>
<td>MED5990</td>
<td>Independent Study In Music Education</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Individual study is designed to provide a student the opportunity to work independently on professional problems under the direction of the faculty of the Department of Music.</td>
<td></td>
</tr>
<tr>
<td>MED6920</td>
<td>Master's Research Project In Music Education</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Open to the graduate student who elects a research project to fulfill the research requirement of the master's degree program.</td>
<td></td>
</tr>
</tbody>
</table>
MED6960 Master's Research Thesis In Music Education  Credit Hours: 1-3
Open to the graduate student who elects a master's thesis to fulfill the research requirement of the master's degree program.

MED6980 Music Education: Special Topics  Credit Hours: 1-3
The area of study will be announced at the time the course is offered.

MEDI605 Advanced Biostatistics  Credit Hours: 1-3
Application of advanced statistical techniques with particular emphasis on problems in the biomedical sciences. Multiple regression, methods of analysis of variance, categorical data analysis including logistic regression, nonparametric and survival analy

MEDI620 Managed Health Care  Credit Hours: 2
This course will enable the health care professional to understand those forces driving change in the managed care era and will help prepare them for the future.

MEDI672 Current Topics in Medicine  Credit Hours: 0-4
A lecture and/or seminar course on topics of current interest in medicine with special emphasis on the fundamentals of human life under normal, experimental, or pathological conditions. May be repeated for credit.

MEDI673 Research in Medicine  Credit Hours: 0-4
Student will participate in selected ongoing research programs of members of the staff. May be repeated for credit.

MEDI689 Independent Study in Medicine  Credit Hours: 0-12
Intensive study in field of interest, including theoretical and experimental work. May be repeated for credit.
MEDI703 Medicine
Internal Medicine Clerkship (12 weeks)

MEDI704 Acting Internship in Medicine
Credit Hours: 0-6
Students will be designated as an Acting Intern with increased responsibility for patient management under supervision.

MEDI705 Cardiology
Credit Hours: 0-6
Students will be designated as an Acting Intern with increased responsibility for patient management under supervision.

MEDI706 Dermatology
Credit Hours: 0-6
Students will see outpatients: 10 half days in Ambulatory Private Patient Care at UTMC. Additional responsibilities include taking histories & physicals, assisting in minor surgeries, as well as consultation rounds. Reading of selected dermatologic text

MEDI707 Endocrinology
Credit Hours: 0-6
The students will have the opportunity to expand their knowledge of endocrinology by actively participating in the initial evaluation, diagnosis, and management of patients with endocrine and metabolic problems under the supervision of a faculty member.

MEDI708 CVM Clerkship
Credit Hours: 6

MEDI709 Gastroenterology
Credit Hours: 6
This course provides a focused opportunity for the senior student to study gastroenterologic and hepatologic diseases in both inpatient and outpatient settings.
**MEDI710  General Internal Medicine**  
Credit Hours: 0-6  
This is an elective that serves to strengthen basic science experiences and clerkship experiences. It also serves to provide further knowledge and clinical base necessary for transition to residency program.

**MEDI711  Geriatric Medicine**  
Credit Hours: 0-6  
This is an elective designed to give the student a broad exposure to types of health problems faced by older adults as well as settings in which Geriatric Medicine is practiced. Weekly or biweekly discussion sessions complement clinical experiences in our

**MEDI712  Heart Station**  
Credit Hours: 0-6  
The primary goal is to expand the student's fund of knowledge in electrocardiography. This elective will also give the student an opportunity to investigate a particular topic in some depth and present his/her findings to the cardiology staff at a house

**MEDI713  Hematology/Oncology**  
Credit Hours: 0-6  
The student will perform histories and physical exams on inpatients and outpatients, participate in daily hospital rounds, lab and microscope use and interpretation. The student will observe bone marrow aspiration and biopsy.

**MEDI714  Infectious Disease**  
Credit Hours: 0-6  
The student is expected to know how to evaluate patients who present with possible infectious diseases including, but not restricted to, fevers of unknown origin, acute febrile episodes, urinary tract infections, pneumonia, endocarditis, parasitic infesta

**MEDI715  Nephrology**  
Credit Hours: 0-6  
This elective consists of a mixture of acting internship inpatient consultation, and outpatient experiences. The student will have primary and/or consultative responsibility for patients who have a variety of acid-base and electrolyte disorders and probl

**MEDI716  Pulmonary Medicine**  
Credit Hours: 0-6  
Student(s) will assist in consultations and management of a wide variety of patients with pulmonary diseases. This will include In-patient and outpatient consultations, hospital ward, and SICU patients. Participation in procedures including bronchosco
MEDI717  Rheumatology
The intent of the clerkship is to make students skillful in the differential diagnosis of the common rheumatic disorders, the collagen vascular diseases and chronic pain syndromes. All students will be provided with a core packet of materials that form t

MEDI718  Palliative Care
Credit Hours: 0-6

MEDI719  Complementary/Alternative Med
Credit Hours: 0-6

MEDI721  Sleep Disorders
Credit Hours: 0-6

MEDI723  Medical Intensive Care Unit
Students will be designated as an Acting Intern with increased responsibility for patient management under supervision.
Credit Hours: 0-6

MEDI724  Clinical Laboratory Hematology
This elective is designed to provide the students with an opportunity to gain the knowledge, skills and attitude required to diagnose and manage hematologic disorders. In addition, the student will have opportunities to gain the fundamental skills in the
Credit Hours: 6

MEDI725  Cardiology Consults
Credit Hours: 6
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDI726</td>
<td>Research in Internal Medicine</td>
<td>6</td>
</tr>
<tr>
<td>MEDI727</td>
<td>Medical Humanities and History</td>
<td>6</td>
</tr>
<tr>
<td>MEDI728</td>
<td>Sleep Medicine Elective - UTMC</td>
<td>6</td>
</tr>
<tr>
<td>MEDI729</td>
<td>Nephrology AI - Riverside</td>
<td>6</td>
</tr>
<tr>
<td>MEDI730</td>
<td>Dermatology</td>
<td>0-3</td>
</tr>
<tr>
<td>MEDI731</td>
<td>Gastroenterology</td>
<td>3</td>
</tr>
<tr>
<td>MEDI732</td>
<td>Rheumatology</td>
<td>3</td>
</tr>
</tbody>
</table>

Students will see outpatients: 10 half days in Ambulatory Private Patient Care at UTMC. Additional responsibilities include taking histories & physicals, assisting in minor surgeries, as well as consultation rounds. Reading of selected dermatologic text.

This course provides a focused opportunity for the senior student to study gastroenterologic and hepatologic diseases in both inpatient and outpatient settings.

The intent of the clerkship is to make students skillful in the differential diagnosis of the common rheumatic disorders, the collagen vascular diseases and chronic pain syndromes. All students will be provided with a core packet of materials that form t
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<tr>
<th>Course Code</th>
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<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDI733</td>
<td>Palliative Care</td>
<td>3</td>
</tr>
<tr>
<td>MEDI734</td>
<td>Nephrology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>A four week rotation for fourth year medical students interested in pursuing Nephrology as a specialty. There is a great opportunity for dialysis observation and management, and most of the rotation relates to etiology and management of chronic renal fail</td>
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</tr>
<tr>
<td>MEDI735</td>
<td>Cardiology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Exposure to EKGs, Echocardiography and stress testing, cardiac catherization and critical care of cardiac patients. Inpatient and outpatient histories and physical exams. Observation if appropriate in cardiac surgery.</td>
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</tr>
<tr>
<td>MEDI736</td>
<td>Inpatient Hematology/Oncology</td>
<td>3</td>
</tr>
<tr>
<td>MEDI737</td>
<td>Outpatient Hematology/Oncology</td>
<td>3</td>
</tr>
<tr>
<td>MEDI740</td>
<td>Medicine: Required Remediation</td>
<td>6</td>
</tr>
<tr>
<td>MEDI745</td>
<td>MD/PhD Medicine Elective</td>
<td>1-2</td>
</tr>
<tr>
<td></td>
<td>In the summer after the second year of medical school, MD/PhD students will identify a clinical mentor. This faculty member will be responsible for the clinical training program of the student, and will provide formative and summative feedback concerning</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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<tr>
<td>MEDI750</td>
<td>Medicine Away Elective</td>
<td>0-6</td>
</tr>
<tr>
<td>MEDI751</td>
<td>Medicine Away Elective</td>
<td>3</td>
</tr>
<tr>
<td>MEDI755</td>
<td>International Health Care</td>
<td>0-6</td>
</tr>
<tr>
<td>MEDI789</td>
<td>Independent Study in Medicine</td>
<td>0-6</td>
</tr>
<tr>
<td>MEDI872</td>
<td>Current Topics in Medicine</td>
<td>0-4</td>
</tr>
<tr>
<td>MEDI873</td>
<td>Research in Medicine</td>
<td>0-4</td>
</tr>
<tr>
<td>MEDI889</td>
<td>Independent Study in Medicine</td>
<td>0-12</td>
</tr>
</tbody>
</table>

A lecture and/or seminar course on topics of current interest in medicine with special emphasis on the fundamentals of human life under normal, experimental, or pathological conditions. May be repeated for credit.

Student will participate in selected ongoing research programs of members of the staff. May be repeated for credit.

Intensive study in field of interest, including theoretical and experimental work. May be repeated for credit.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET1020</td>
<td>Technical Drawing</td>
<td>3</td>
<td>Essentials of dimensioning, size, position and form tolerancing and their application in shop processes. Pictorial drawings are created freehand and with the use of drawing instruments.</td>
</tr>
<tr>
<td>MET1110</td>
<td>Metal Machining And Processes</td>
<td>3</td>
<td>Material and machining processes dealing with production methods, machining capabilities, tolerances. Metal working with lathe, mill, etc., along with processes such as molding, stamping, forging, etc.</td>
</tr>
<tr>
<td>MET1120</td>
<td>Metal Machining &amp; Processes Lab</td>
<td>1</td>
<td>Provides students with an opportunity to gain hands-on experience with machine tools and gauging measurement instruments.</td>
</tr>
<tr>
<td></td>
<td>Corequisite: MET 1110</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MET1250</td>
<td>Cadd</td>
<td>4</td>
<td>Introduction to two-dimensional and three-dimensional Computer Aided Drafting. Laboratory based experiences with creating and dimensioning working drawings, part libraries, entity insertion, graphics manipulation and customization.</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: (ENGT 1050 FOR LEVEL UG WITH MIN. GRADE OF D- AND MET 1020 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MET2050</td>
<td>Fluid And Hydraulic Mechanics</td>
<td>4</td>
<td>Application of physical principles for the design of systems to transport liquids in closed hydraulic or process piping systems; friction, pumping, flow meters and gauges.</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: PHYS 2010 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
<td></td>
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</tr>
<tr>
<td>MET2100</td>
<td>Statics For Technology</td>
<td>3</td>
<td>Review and extension of static force analysis: free-body diagrams, forces, moments, dry friction and static equilibrium applied to machines, mechanisms, trusses and frames.</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: PHYS 2010 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
<td></td>
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</tr>
<tr>
<td>MET2110</td>
<td>Machine Design</td>
<td>3</td>
<td>A course in machinery component design with emphasis on the selection of commercial components on the basis of forces and stresses involved.</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: CET 1200 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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</tr>
</tbody>
</table>
**Course Descriptions 2009-2010**

**MET2120  Strength Of Materials For Technology**  
Credit Hours: 4  
Introduction to the study of stress distribution and deformation of elastic materials due to applied loads. Consideration of stress, strain, compression, tension, shear, torsion, moments and combined loading in basic machine elements.  
Prerequisites: MET 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

**MET2150  Numerical Control Applications**  
Credit Hours: 4  
Survey of tooling and production activities adaptable to numerical control equipment and processes. Includes terminology, definitions and functions. Students will learn how to create part programs for CNC machinery.  
Prerequisites: (MATH 1330 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGT 1050 FOR LEVEL UG WITH MIN. GRADE OF D- AND MET 1250 FOR LEVEL UG WITH MIN. GRADE OF D- AND MET 1110 FOR LEVEL UG WITH MIN. GRADE OF D- AND MET 1120 FOR LEVEL UG WITH MIN. GRADE OF D-)

**MET2210  Technical Thermodynamics**  
Credit Hours: 4  
Analysis of thermodynamic concepts as they apply to heating and power production; conservation of energy, work and heat, engines and refrigeration. Includes laboratory experiences.  
Prerequisites: (PHYS 2010 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGT 1050 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 2450 FOR LEVEL UG WITH MIN. GRADE OF D-)

**MET2350  Advanced Cadd**  
Credit Hours: 4  
Continuation of MET 1250. Topics covered include attributes, with attention to geometric tolerancing and true dimensioning. Application of three-dimensional modeling techniques and the preparation of detail drawings from the model.  
Prerequisites: MET 1250 FOR LEVEL UG WITH MIN. GRADE OF D-

**MET2980  Special Topics**  
Credit Hours: 1-4  
Student performs work on a specialized project of an advanced nature under the supervision of a Mechanical Engineering Technology faculty member.

**MET3100  Applied Thermodynamics**  
Credit Hours: 4  
Basic principles and laws of classical thermodynamics, equations of state, reversibility and entropy applied to processes and cycles for ideal and non-ideal substances.  
Prerequisites: (MET 2210 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 2460 FOR LEVEL UG WITH MIN. GRADE OF D-)

**MET3200  Mechanical Design I**  
Credit Hours: 3  
Introduction to the engineering design process. Analysis of stress, strain, deflection and fatigue in mechanical design. Design of beams, columns, springs and machine elements.  
Prerequisites: (MET 3400 FOR LEVEL UG WITH MIN. GRADE OF D- AND MET 2120 FOR LEVEL UG WITH MIN. GRADE OF D-)
MET3300  Applied Circuit Analysis And Electronics For Met  Credit Hours:  4
Investigation of DC and AC circuits using basic circuit analysis techniques. Study of the characteristics and applications of electronic devices, including transistors and integrated circuits.

MET3400  Applied Dynamics  Credit Hours:  3
Prerequisites: MATH 2460 FOR LEVEL UG WITH MIN. GRADE OF D-

MET4100  Applied Fluid Mechanics  Credit Hours:  4
Fundamentals of fluid statics and dynamics including differential analysis, dimensional analysis and similitude, laminar and turbulent flow, viscosity and boundary layer concepts, and compressible flow.
Prerequisites: (MET 2050 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 2460 FOR LEVEL UG WITH MIN. GRADE OF D-)

MET4150  Thermo-Fluid Laboratory  Credit Hours:  2
Pipe flow, determination of drag coefficients, flow visualization and force-momentum experiments, performance characteristics of pumps, compressors and fans, steam power plant performance analysis, refrigeration cycles, air conditioning processes.

MET4200  Mechanical Design II  Credit Hours:  3
Design and application of mechanical components and machine elements including shafts, gears, gear drives, belt drives, chain drives, fasteners, power screws, clutches, brakes and machine frames.
Prerequisites: (MET 3200 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGT 3040 FOR LEVEL UG WITH MIN. GRADE OF D-)

MET4300  Applied Control Systems For Met  Credit Hours:  3
Introduction to control system language, with emphasis on sensors, signal conditioning and instrument characteristics. Includes entry level design, selection and specification of continuous process control systems.
Prerequisites: ENGT 3050 FOR LEVEL UG WITH MIN. GRADE OF D-

MET4400  Applied Heat Transfer  Credit Hours:  3
Fundamentals of applied heat transfer by conduction, laminar and turbulent convection, condensation and boiling, radiation exchange between surfaces, and heat exchangers.
Prerequisites: MET 3100 FOR LEVEL UG WITH MIN. GRADE OF D-
MET4500  Computer-Aided Design (cad)  Credit Hours:  3
A project is used to demonstrate the engineering design process in a real-world setting. Teams use Engineering College Computing facilities to conduct product analysis and prepare working drawings and presentation documentation.

MET4600  Engineering Safety  Credit Hours:  3
Application of human factors and engineering practices toward accident prevention and elimination of hazards. Topics include liability, standards, OSHA, hazard control, accident investigation and safety management.

MET4700  Quality Control  Credit Hours:  3
Introduction to statistical quality control, including sampling, statistical inference, control charts, specifications and tolerances, and acceptance sampling by attributes and variables.

Prerequisites: ENGT 3010 FOR LEVEL UG WITH MIN. GRADE OF D-

MFGM8480  Management of Technology  Credit Hours:  3
This seminar covers conceptual framework and relevant empirical studies on technology management. The literature from Technology Management as it relates to the management of product, manufacturing and supply chain technologies will be discussed.

MFGM8490  Supply Chain and E-Business Issues in Manufacturing  Credit Hours:  3
This seminar focuses broadly on key issues related to supply chain management issues in relation to effective information flows, product flows, distribution and logistics, key business process integration across supply chains.

MFGM8630  Management Science  Credit Hours:  3
This course is an applied study of mathematical programming and stochastic processes. After discussing the notions of Markov and Renewal processes, we introduce a variety of applications with emphasis on manufacturing.

MFGM8690  Innovation and Technology Commercialization  Credit Hours:  3
This course will cover the theory and application of different conceptual models that explain the firm's ability to leverage technological innovation and achieve commercialization of its technology.
MFGM8810  Seminar/Colloquia  Credit Hours:  1
One (1) credit hour requirement of these courses will be met by requiring the students to attend a reasonable number (10) of research seminars and colloquia in and outside the college, doctoral dissertation proposal and defenses at the college, etc., during

MFGM8830  Organizational Issues in Implementation of Technologies  Credit Hours:  3
This seminar emphasizes the behavioral issues (cognition, empowerment, self-efficacy, etc.) that determine how effectively advanced manufacturing technologies are utilized in manufacturing or product development.

Prerequisites: MGMT 5110 FOR LEVEL GR WITH MIN. GRADE OF D- OR ORGD 7110 FOR LEVEL GR WITH MIN. GRADE OF D-

MFGM8840  Manufacturing Strategy  Credit Hours:  4
The seminar examines the theory and research related to the formulation and implementation of manufacturing strategy including the strategic planning process and techniques for industry and competitive analysis.

Prerequisites: MGMT 5110 FOR LEVEL GR WITH MIN. GRADE OF D- OR ORGD 7110 FOR LEVEL GR WITH MIN. GRADE OF D-

MFGM8850  Readings And Research In Manufacturing Management  Credit Hours:  1-12
This individually designed course will provide advanced readings in areas needed by a doctoral student.

MFGM8860  Advanced Statistics  Credit Hours:  3
This course discusses multivariate data analysis. Topics include: principal components analysis, factor analysis, multidimensional scaling, cluster analysis, multiple regression analysis and multivariate analysis of variance. Statistical software packa

Prerequisites: OPMT 5510 FOR LEVEL GR WITH MIN. GRADE OF D-

MFGM8870  Seminar in Statistics/ Research Method  Credit Hours:  3
This is an advanced second course in Statistical methods or management science or research methods. This course is designed for individual needs of the student to provide more depth in the research method as required.

MFGM8880  Research Methods And Theory Building  Credit Hours:  3
The course seeks to frame and discuss key issues that arise as social scientists conduct theoretically-relevant empirical research. In the course, the theory building in manufacturing management as well as research process and the literature, tools and t
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<tr>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>MFGM8890</td>
<td>Advanced Manufacturing Systems</td>
<td>3</td>
</tr>
<tr>
<td>MFGM8900</td>
<td>Field Research</td>
<td>1-8</td>
</tr>
<tr>
<td>MFGM8960</td>
<td>Dissertation</td>
<td>1-8</td>
</tr>
<tr>
<td>MFGM8980</td>
<td>Special Topics Seminar</td>
<td>3</td>
</tr>
<tr>
<td>MGMT3770</td>
<td>Ethics In Leadership And Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT3910</td>
<td>Research In Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT3940</td>
<td>Junior Achievement Internship</td>
<td>1-3</td>
</tr>
</tbody>
</table>
MGMT4210  Leading And Managing Organizational Improvement  Credit Hours: 3
Covers theory, practice, and techniques in identifying major organizational problems and issues and leading the organization through change efforts.

Prerequisites: BUAD 3030 FOR LEVEL UG WITH MIN. GRADE OF D-

MGMT4250  Performance Management For Individuals And Teams  Credit Hours: 3
Course examines the process and implementation of performance management systems at both individual and group levels. Performance appraisal, coaching, development planning, and performance problems will be discussed.

Prerequisites: HURM 3220 FOR LEVEL UG WITH MIN. GRADE OF D-

MGMT4330  Organizational Leadership And Management Practicum  Credit Hours: 3
Advanced study of the methods and evaluation of planned change. Includes needs analysis, applied measurement and evaluation, and development of process consultation skills required in change.

Prerequisites: MGMT 4210 FOR LEVEL UG WITH MIN. GRADE OF D-

MGMT4780  Leadership & Managerial Competencies  Credit Hours: 3
This course focuses on concepts and experiences for developing leadership skills that facilitate organizational development and change. Writing, cases, videos and exercises are used extensively.

Prerequisites: BUAD 3030 FOR LEVEL UG WITH MIN. GRADE OF D-

MGMT4900  Seminar On Contemporary Issues In Management  Credit Hours: 3
This seminar is designed to facilitate applications of managerial skills, tools and techniques in meeting contemporary challenges in organizations.

Prerequisites: BUAD 3030 FOR LEVEL UG WITH MIN. GRADE OF D-

MGMT4910  Research In Human Resource Management  Credit Hours: 1-3
Students have the opportunity to conduct an intensive investigation in a Human Resource Management area, supervised by a departmental faculty member. A formal paper is expected at the study's end.

Prerequisites: (HURM 3220 FOR LEVEL UG WITH MIN. GRADE OF D- AND BLAW 3550 FOR LEVEL UG WITH MIN. GRADE OF D-)

MGMT4940  Management Internship  Credit Hours: 1-3
A supervised work experience for outstanding students. The internship involves practical experience. A written report is required of the student.
Course Descriptions 2009-2010

MGMT5110  Introduction To Management  Credit Hours: 3
Course is designed to provide a comprehensive, accurate and up-to-date picture of the field of management. This course focuses on organizational behavior (individual and small group) and organizational theory (large group and total organization). Also in

MGMT6100  Leading Through Ethical Decision-Making  Credit Hours: 3
This course seeks to challenge students to discover their core values and how they shape beliefs and actions. Students will learn how to apply four theoretical perspectives to issues facing them as business persons.

MGMT6110  Long Range Strategic Planning  Credit Hours: 3
Detailed understanding to the basic processes and techniques for analysis of dynamic changes in the internal and external environment of complex organizations. The course generally involves the writing of research papers and case analyses.

MGMT6150  Leading and Developing Yourself  Credit Hours: 3
The course explores how one's own leadership competencies can be developed and applied most effectively in a variety of situations.

MGMT6160  Leading With Power and Influence  Credit Hours: 3
Students will develop an understanding of the strategic use of power and influence to exercise leadership in organizations. Skill development in the diagnosis and practical use of power and influence to mobilize action, to negotiate, and to resolve confl

MGMT6190  Leading change and Organizational Improvement  Credit Hours: 3
Students will learn and apply the key theories and practices of change management and organizational development processes.

MGMT6930  Independent Research  Credit Hours: 1-3
Independent research opportunities are provided to advanced students for pursuing topics in depth under the faculty supervision.
MICB502 Medical Microbiology II  Credit Hours:  5

MICB602 Intro Medical Parasitology  Credit Hours:  1
The medically-important protozoa, arthropods and helminths, together with their infections will be described during lectures and in the laboratory. Students will prepare several short reports and present a class seminar.

MICB604 Biology of Pathogenic Bacteria  Credit Hours:  3
Integration of genetic, biomechanical, and physiologic approaches in the study of bacteria that cause disease. Presentations by instructor and students of selected papers and texts.

MICB612 Fungal Toxins  Credit Hours:  1
An introduction to the human toxicity and mode of action of fungal toxins including mycotoxins, hallucinogens, and poisonous mushrooms. This course will include field gathering and identification of edible and poisonous fungi.

MICB620 Microbiology Human Infections  Credit Hours:  3
A series of lectures describing the classification, replication strategies and structural composition of the major families of animal viruses that infect humans.

MICB621 Advanced Virology  Credit Hours:  3
An in-depth analysis of current research in virology including the reading and analysis of recently published papers on the replication and molecular biology of animal viruses, particularly viruses belonging to the Togaviridae and Coronaviridae and the b

MICB622 Laboratory Molecular Virology  Credit Hours:  4
A laboratory course in which the students will learn to grow tissue culture cells and grow, quantify, purify, and analyze animal viruses. The student will complete a research project on a problem concerning the molecular biology of animal virus replication.
MICB623  Advanced Mycology  Credit Hours:  4
The course consists of seminars and laboratory. There will be a review of aspects of fungal structure, taxonomy, genetics, physiology, and ecology. The student will be instructed in detail on contemporary work with fungal pathogens and on the application

MICB624  Advanced Mycology Laboratory  Credit Hours:  4
Research in aspects of immunology, genetics, taxonomy and/or physiology is the subject of a project which is conducted under supervision of the instructor. The results will be presented as a written report. The course may be combined with Advanced Mycolog

MICB625  Adv Cell/Molecular Immunology  Credit Hours:  0-4
Review and discussion including the molecular basis for antigen recognition, the initiation and regulation of immune responses, and modern approaches to immunotherapy.

MICB640  Survey of Immunobiology  Credit Hours:  4
Review of important principles on which our current understanding of immunology is based. Consists of didactic lectures and student-led discussions of relevant research articles.

MICB651  Microbiology Seminar  Credit Hours:  1
Weekly seminars by students, faculty and guests. Attendance and one formal presentation is required for credit per semester.

MICB652  Microbial Interactions Seminar  Credit Hours:  3
Examining the interrelationships among microorganisms in different environments, particularly animal and human. Faculty-led student discussion of selected articles.

MICB653  Advanced Mycology Co-Seminar  Credit Hours:  2
The student will make an in-depth literature review of a selected topic concerning the fungi. Topics may include immunology, taxonomy, physiology, genetics, virology, or other areas by approval. Critical analysis of research methodology will be made in di
MICB655  Jnl Rev Microbiology/Immunolo  Credit Hours:  1
A weekly report on recent advances in immunobiology and microbial pathogenesis taken from original papers to give students an opportunity to find, assess, and report on important developments in the field. May be repeated for credit.

MICB660  Current Topics in Immunology  Credit Hours:  2
This seminar course covers different topics of particular interest in immunology and emphasizes the methods and logic of research and how to read and critically evaluate the research. May be repeated for credit.

MICB661  Medical Mycology Review  Credit Hours:  1
Research papers in the areas of medical mycology and related fields will be reviewed and critiqued by students. Reviews will be presented by students in seminar format.

MICB672  Current Topics in Microbiology  Credit Hours:  0-4
A lecture and/or seminar course on topics of current interest in microbiology with special emphasis on the fundamentals of mammalian, especially human, life under normal, experimental, or pathological conditions. Students and department faculty will prese

MICB673  Research in Microbiology  Credit Hours:  0-4
Students will participate in selected on-going research programs of members of the department faculty. May be repeated for credit.

MICB689  Independent Study Microbiology  Credit Hours:  0-15
Intensive study in field of interest, including theoretical and experimental work. May be repeated for credit.

MICB701  Medical Microbiology I  Credit Hours:  5
MICB702    Medical Microbiology II    Credit Hours:  5

MICB802    Intro Medical Parasitology    Credit Hours:  1
The medically-important protozoa, arthropods and helminths, together with their infections will be described during lectures and in the laboratory. Students will prepare several short reports and present a class seminar.

MICB804    Biology of Pathogenic Bacteria    Credit Hours:  3
Integration of genetic, biomechanical, and physiologic approaches in the study of bacteria that cause disease. Presentations by instructor and students of selected papers and texts.

MICB812    Fungal Toxins    Credit Hours:  1
An introduction to the human toxicity and mode of action of fungal toxins including mycotoxins, hallucinogens, and poisonous mushrooms. This course will include field gathering and identification of edible and poisonous fungi.

MICB816    Laboratory Research Immunopath    Credit Hours:  5
Modern techniques and related theory in molecular and cellular immunology.

MICB820    Microbiology Human Infections    Credit Hours:  3
A series of lectures describing the classification, replication strategies and structural composition of the major families of animal viruses that infect humans.

MICB821    Advanced Virology    Credit Hours:  3
An in-depth analysis of current research in virology including the reading and analysis of recently published papers on the replication and molecular biology of animal viruses, particularly viruses belonging to the Togaviridae and coronaviridae and the b
MICB822  Laboratory Molecular Virology  Credit Hours:  4
A laboratory course in which the students will learn to grow tissue culture cells and grow, quantify, purify, and analyze animal viruses. The student will complete a research project on a problem concerning the molecular biology of animal virus replication.

MICB823  Advanced Mycology  Credit Hours:  4
The course consists of seminars and laboratory. There will be a review of aspects of fungal structure, taxonomy, genetics, physiology, and ecology. The student will be instructed in detail on contemporary work with fungal pathogens and on the application.

MICB824  Advanced Mycology Laboratory  Credit Hours:  4
Research in aspects of immunology, genetics, taxonomy and/or physiology is the subject of a project which is conducted under supervision of the instructor. The results will be presented as a written report. The course may be combined with Advanced Mycolog.

MICB825  Adv Cell/Molecular Immunology  Credit Hours:  0-4
Review and discussion including the molecular basis for antigen recognition, the initiation and regulation of immune responses, and modern approaches to immunotherapy.

MICB840  Survey of Immunology  Credit Hours:  4
Review of important principles on which our current understanding of immunology is based. Consists of didactic lectures and student-led discussions of relevant research articles.

MICB851  Microbiology Seminar  Credit Hours:  1
Weekly seminars by students, faculty and guests. Attendance and one formal presentation is required for credit per semester.

MICB852  Microbial Interactions Seminar  Credit Hours:  3
Examining the interrelationships among microorganisms in different environments, particularly animal and human. Faculty-led student discussion of selected articles.
MICB853  Advanced Mycology Co-Seminar  Credit Hours:  2
The student will make an in-depth literature review of a selected topic concerning the fungi. Topics may include immunology, taxonomy, physiology, genetics, virology, or other areas by approval. Critical analysis of research methodology will be made in di

MICB855  Jnl Paper Microbiol and Immun  Credit Hours:  1
A weekly report on recent advances in immunobiology and microbial pathogenesis taken from original papers to give students an opportunity to find, assess, and report on important developments in the field. May be repeated for credit.

MICB860  Current Topics in Immunology  Credit Hours:  2
This seminar course covers different topics of particular interest in immunology and emphasizes the methods and logic of research and how to read and critically evaluate the research. May be repeated for credit.

MICB861  Medical Mycology Review  Credit Hours:  1

MICB872  Current Topics Microbiology  Credit Hours:  0-4
A lecture and/or seminar course on topics of current interest in microbiology with special emphasis on the fundamentals of mammalian, especially human, life under normal, experimental, or pathological conditions. Students and department faculty will prese

MICB873  Research in Microbiology  Credit Hours:  0-4
Students will participate in selected on-going research programs of members of the department faculty. May be repeated for credit.

MICB889  Independent Study Microbiology  Credit Hours:  0-15
Intensive study in field of interest, including theoretical and experimental work. May be repeated for credit.
MIME1000  Orientation To Me & Ie  Credit Hours:  3
The mechanical and industrial engineering professions are discussed with emphasis on career opportunities. Orientation to the university campus, study skills and time management. Word processing, spreadsheets, e-mail and MATLAB programming are studied.

MIME1010  Professional Development  Credit Hours:  1
Social protocol and ethics in industry are reviewed. Resume writing and interview skills are developed. Course assists in preparing the student for the co-op experience in industry.

Prerequisites: MIME 1000 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME1100  Introduction To Cad  Credit Hours:  2
Techniques for visualization and representation of machine components using solid modeling and projection. Section views, orthographic projection, dimensioning and tolerancing. CAD techniques for solving vector problems.

MIME1200  Introduction of Design  Credit Hours:  2
Concepts in engineering design. Working in teams to use these concepts on multiweek design projects. The emphasis is hands-on creative components, teamwork, and effective communication. Reverse engineering: students will dismantle common products to de

Prerequisites: MIME 1100 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME1650  Materials Science & Engineering  Credit Hours:  3
Engineering properties of materials, the effect of atomic bonding and crystalline structure on the mechanical properties of metals, ceramics and polymers. Common measurement, testing and comparison techniques to aid in selection of materials. Laboratory

Prerequisites: CHEM 1230 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME2000  Measurements Laboratory  Credit Hours:  2
How to write engineering laboratory reports. Statistical analysis of experimental data, uncertainty analysis, general characteristics of measurement systems, static and dynamic measurements, computer data acquisition, applications to thermal, mechanical a

Prerequisites: ENGL 1930 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 2340 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME2300  Engineering Dynamics  Credit Hours:  3
Kinematics of particles and rigid bodies. Thorough study of kinetics of particles and rigid bodies using Newton's laws of motion, work-energy methods, and impulse and momentum methods.

Prerequisites: CIVE 1150 FOR LEVEL UG WITH MIN. GRADE OF D-
MIME2600 Engineering Economics  Credit Hours:  3
The study of micro-economic and macro-economic theories. Methods of economic analysis, including the time value of money, are described. Economic decision criteria are used to select best alternatives with emphasis in engineering. Impact of economic deci

MIME2650 Manufacturing Processes  Credit Hours:  3
Manufacturing processes discussed include metal casting and forming such as forging, rolling, extrusion, stamping and drawing. Metal cutting processes such as turning, boring, drilling, milling, sawing and broaching are discussed. Polymer processes incl

Prerequisites:MIME 1650 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME2920 Special Projects  Credit Hours:  1-3
A special project by the student to investigate or solve an acceptable problem in industrial or mechanical engineering. This course is primarily intended for students interested in mechanical, industrial or manufacturing engineering early in their underg

MIME2980 Special Topics  Credit Hours:  1-3
A special topic at the undergraduate level in Mechanical, Industrial or Manufacturing Engineering to be offered as a course during a term by a faculty member. Credits will correspond to regular class meetings of one lecture hour per week per credit hour.

MIME2990 Independent Study  Credit Hours:  1-3
An independent study by the student to investigate or solve an acceptable problem in industrial or mechanical engineering. This course is primarily intended for engineering students early or midway through their program of study. Instructor will specify

MIME3300 Design And Analysis Of Mechanical Systems  Credit Hours:  3

Prerequisites:MIME 2300 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

MIME3310 Mechanical Design I  Credit Hours:  3
Applications of mechanics of materials to analysis and design of mechanical components; introduction to fracture mechanics; applications of failure theories to design of machine elements subjected to static and cyclic loadings.

Prerequisites:(CIVE 1160 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 1650 FOR LEVEL UG WITH MIN. GRADE OF D-)

Corequisite:MIME 3330
MIME3320  Mechanical Design II  
Application of failure theories in static and fatigue loading to the design and analysis of mechanical elements including fasteners, power screws, welded joints, springs, bearings, gears, clutches, brakes and shafts.

Prerequisites: MIME 3310 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME3330  Mechanics Laboratory  
This laboratory course consists of experiments in strength of materials and stress analysis. Experiments include stress analysis of straight and curved beams, analysis of torsion and combined stresses in shafts, stress concentrations, and determination of

Corequisite: MIME 3310

MIME3360  Vibration Laboratory  
This laboratory course will be taken concurrently with Mechanical Vibration and consists of experiments to determine the natural frequency of one degree of freedom systems, free and forced vibrations of lumped parameter systems, mode shapes and natural fr

Corequisite: MIME 3370

MIME3370  Mechanical Vibration  
Modeling mechanical systems, mechanical elements, equations of motion for single-DOF and multi-DOF systems, linearization of equations of motion, free and forced response, electrical systems, frequency response, feedback control systems.

Prerequisites: MIME 2300 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-

Corequisite: MIME 3360

MIME3380  Modeling and Control of Engineering Systems  
Physical modeling and feedback principles are applied for control of mechanical systems. Transient response, root locus and frequency response principles are experimentally applied to the control of basic mechanical and electrical systems.

Prerequisites: MIME 3370 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 2000 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 2340 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME3390  Mechanics And Vibrations Laboratory  
This laboratory course consists of experiments in solid mechanics including mechanical testing, stress and deflection analysis, fatigue, stability and mechanical vibrations.

Prerequisites: (MIME 3310 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 3370 FOR LEVEL UG WITH MIN. GRADE OF D-)

MIME3400  Thermodynamics I  
Introduction to thermal sciences with an emphasis on the first and second law of thermodynamics. Topics include conservation of energy for closed and open systems, thermodynamic properties and cycles and entropy production.

Prerequisites: (MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (MATH 3820 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D-)

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MIME3410 Thermodynamics II
Credit Hours: 3
Review of open and closed systems in thermodynamics, the Carnot principle and cycle efficiency concepts. Application to gas and vapor power cycles and refrigeration cycles. Thermodynamic property relations, gaseous mixtures and combustion.

Prerequisites: MIME 3400 FOR LEVEL UG WITH MIN. GRADE OF D-

Corequisite: MIME 3420

MIME3420 Fluids Laboratory
Credit Hours: 1
This laboratory course is to be taken with Fluid Mechanics and Thermodynamics II to illustrate the concepts in those courses. Experiments include fluid statics, forces on a submerged surface, center of pressure, manometers, surface tension, flow visualization.

Corequisite: MIME 3430 MIME 3410

MIME3430 Fluid Mechanics
Credit Hours: 3
Fluid mechanics for mechanical engineers. Topics include fluid statics and dynamics, equations of motion, dimensional analysis, boundary layer theory, flow in pipes, turbulence, fluid machinery, potential flow, CFD and aerodynamics.

Prerequisites: MIME 3400 FOR LEVEL UG WITH MIN. GRADE OF D-

Corequisite: MIME 3420

MIME3440 Heat Transfer
Credit Hours: 3

Prerequisites: MIME 3430 FOR LEVEL UG WITH MIN. GRADE OF D-

Corequisite: MIME 3450

MIME3450 Energy Laboratory
Credit Hours: 1
This laboratory course is to be taken with Heat Transfer to illustrate the concepts in this course. Experiments include Fourier's Law, cooling of fins/rods, determination of free and forced convection heat transfer coefficients, heat exchangers, Stefan B

Corequisite: MIME 3430

MIME3470 Thermal Science Laboratory
Credit Hours: 2
Determination of transition Reynolds number, measurement of basic fluid properties, buoyancy, calibration of flow measuring devices, pipe flow, determination of drag coefficients, study of fluid flow by use of aerodynamic smoke tunnel, performance character.

Prerequisites: MIME 3400 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME3710 Work Design And Measurement
Credit Hours: 3
A study of the methods used to analyze, design and specify the human performance in operation/production systems for the purpose of improving productivity. Computerized predetermined time systems, robots and material handling equipment are utilized in the

Prerequisites: MIME 4000 FOR LEVEL UG WITH MIN. GRADE OF D-
MIME3780  Engineering Management  Credit Hours:  3
The development of the fundamentals required in an engineering and manufacturing environment where technical competency is considered standard and an appreciation of the human behavioral responses to managerial policies and rules is essential. This course

MIME3940  Co-Op Experience  Credit Hours:  1
Students in the Industrial and Mechanical Engineering programs are to enroll in this course during each of their approved Co-Op experiences.

Prerequisites: MIME 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME3950  Co-Op Experience  Credit Hours:  1
Approved co-op work experience beyond third required co-op experience. Course may be repeated.

Prerequisites: MIME 3940 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4000  Engineering Statistics I  Credit Hours:  3
This course introduces the student to the areas of probability theory and statistical inferences. Topics include sample spaces, the concepts of random variables, probability distributions; functions of random variables, transformation of variables, moment

Prerequisites: MATH 2850 FOR LEVEL UG WITH MIN. GRADE OF D- OR MATH 2950 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4010  Engineering Statistics II  Credit Hours:  3
This course continues the student's development of statistical tools and techniques. Topics include test of hypothesis, nonparametric statistics, simple linear regression and correlation, multiple linear regression, analysis of variance and factorial exper

Prerequisites: MIME 4000 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4020  Statistical Quality Control And Management  Credit Hours:  3
Students learn fundamental statistical process control, including control charting and sampling using variables and attributes. Also covered are the fundamentals of implementing and managing a continuous quality improvement program.

Prerequisites: MIME 4010 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4050  Human Factors Engineering  Credit Hours:  3
Characteristics of the human as an operator in human-machine systems. Human abilities to process information and perform physical tasks within the constraints of environmental conditions - temperature, illumination, noise, etc.

Prerequisites: (PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 4000 FOR LEVEL UG WITH MIN. GRADE OF D-)
MIME4060 Manufacturing Engineering
Credit Hours: 3
Students apply machine tools and fabrication processes to optimize the manufacture of a product. Emphasis is on engineering design integrated with economic principles and fabricating methods.
Prerequisites: (MIME 2650 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-)

MIME4070 Computer-Aided Manufacturing
Credit Hours: 3
The study of machining processes using numerical control machine tools and controllers. Development of programs to machine parts on mills and lathes. Conversion of CAD models to programs through software interfaces.
Prerequisites: MIME 2650 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4080 Operations Research I
Credit Hours: 3
This course focuses on the mathematical methods of Operations Research and their applications in engineering. Topics include the optimal solution of deterministic and stochastic mathematical models, modeling process, linear programming, the simplex method.
Prerequisites: (MIME 4000 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 2890 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (MIME 4000 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 2890 FOR LEVEL UG WITH MIN. GRADE OF D)

MIME4090 Operations Research II
Credit Hours: 3
This course extends the mathematical methods of Operations Research I and their application. Topics include transportation and assignment problems, network analysis, PERT-CPM, Markov chains and queuing theory.
Prerequisites: MIME 4080 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4100 Manufacturing Systems Simulation
Credit Hours: 3
Discrete and continuous simulation models are used to study queuing, networks, manufacturing and related engineering systems. Simulation languages and animation are covered. Statistical inference is used to draw conclusions and to identify the best system.
Prerequisites: (MIME 2650 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (MIME 2650 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3820 FOR LEVEL UG WITH MIN. GRADE OF D-)

MIME4110 Production Planning And Inventory Control
Credit Hours: 3
The planning, scheduling and control of inventory and production. Critical path methods, PERT, applications of mathematical and computer methods.
Prerequisites: MIME 3710 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4160 Facilities Planning And Design
Credit Hours: 3
Planning, design, development, management and control of production and distribution systems to effectively distribute goods and services from the producer to the user. Aspects of facilities for manufacturing, material handling, packaging and distribution.
Prerequisites: MIME 3710 FOR LEVEL UG WITH MIN. GRADE OF D-
MIME4200  Senior Design Projects  Credit Hours:  3
Students work in teams using knowledge gained in earlier courses to solve real design, manufacturing and operational problems relevant to industry. Oral and written communications with participating companies as well as teamwork are stressed. Other topics

Prerequisites:(MIME 3320 FOR LEVEL UG WITH MIN. GRADE OF D- OR MIME 3710 FOR LEVEL UG WITH MIN. GRADE OF D-) AND (MIME 4020 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR MIME 3440 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

MIME4210  Vehicle Dynamics  Credit Hours:  3
Analytic mechanics are applied to automotive structures. This includes the forces, time dependent motions including bounce and pitch modes, suspension kinematics, limitations imposed by the human body, and how the automotive structure must be designed to

Prerequisites:MIME 3370 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

MIME4230  Dynamics Of Human Movement  Credit Hours:  3
The study of human movement including muscle mechanics, kinematics, kinetics and energetics of human gait, anthropometry and application to bioengineering and orthopedics.

Prerequisites:MIME 2300 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4270  Cad-Geometric Modeling  Credit Hours:  3
Principles of CAD systems and their relationship to the design process. Topics include CAD hardware as well as geometric modeling of curves, surfaces and solids.

Prerequisites:MIME 3320 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4280  Cad-Finite Element Methods  Credit Hours:  3
An introduction to the basic concepts of the finite element method. Topics include engineering analysis of continuous systems, numerical solutions of boundary value problems, method of weighted residuals and the principle of minimum potential energy, app

Prerequisites:MIME 3320 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4300  Advanced Mechanics Of Materials  Credit Hours:  3
Theory of elasticity, plane stress and plane problems, yield criteria and failure theories, bending of beams, energy methods, curved flexural members, unsymmetric bending, torsion, shear center and axisymmetrically loaded members.

Prerequisites:(CIVE 1160 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-)

MIME4310  Mechanics Of Composite Materials  Credit Hours:  3
Review of elasticity of anisotropic solids, determination of mechanical properties of fiber-reinforced lamina, analysis and performance of laminated composites.

Prerequisites:(CIVE 1160 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 1650 FOR LEVEL UG WITH MIN. GRADE OF D-)
MIME4320  Fatigue Of Materials & Structures  Credit Hours:  3
Fatigue design methods; fatigue fracture mechanisms; cyclic deformation behavior and material cyclic properties; stress-based, and fracture mechanics-based methodologies to fatigue life prediction of smooth and notched members subjected to constant or var

Prerequisites:CIVE 1160 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4330  Occupational Ergonomics  Credit Hours:  3
An introduction to the science and practice related to the musculoskeletal problems of work. This course includes some of the methodologies that define occupational biomechanics including anthropometry, work-capacity evaluation, bioinstrumentation, biome

Prerequisites:CIVE 1160 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4340  Experimental Mechanics  Credit Hours:  3
Application of experimental techniques to stress analysis, comparison of experimental and analytical methods, theory of electrical resistance gages, methods of photoelasticity including photostress, data acquisition systems and their use.

Prerequisites:(CIVE 1160 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-)

MIME4410  Alternative Energy  Credit Hours:  3
[3 hours] This course focuses on the technical aspects of sustainable energy technologies, such as wind, solar, biomass, ocean waves/tides, geothermal, and hydropower; it also covers issues and applications related to storage, transportation, distribution

MIME4510  Turbomachinery  Credit Hours:  3
Theory of energy transfer between fluid and rotor in turbomachines. Design of turbomachine components. Applications to pumps, compressors and turbines.

Prerequisites:(MIME 3410 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 3430 FOR LEVEL UG WITH MIN. GRADE OF D-)

MIME4520  Heating, Ventilating And Air Conditioning  Credit Hours:  3
Control of the thermal environment within enclosed spaces including psychometric properties of air heating and cooling, loads and factors affecting human comfort. Analysis of basic heating and refrigeration systems, heat pumps, heaters, utilization of sol

Prerequisites:MIME 3410 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4530  Internal Combustion Engines  Credit Hours:  3
Study of Carnot, Otto, Diesel and Brayton Cycles, performance characteristics, combustion engines and construction details of internal combustion engines. Analysis of problems associated with carburetion, fuel injection, combustion, cooling, supercharging

Prerequisites:MIME 3410 FOR LEVEL UG WITH MIN. GRADE OF D-
MIME4540  Jet Propulsion  Credit Hours:  3

Prerequisites:MIME 3410 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4550  Aerodynamics  Credit Hours:  3
Fundamentals of aerodynamics, potential flow theory, aerodynamic forces and moments, introduction to numerical analysis, application to internal flows, theory of lift for infinite and finite wings, induced drag.

Prerequisites:MIME 3430 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4560  Gas Dynamics  Credit Hours:  3
Analysis of compressible flow phenomena including shock and detonation waves. Internal flow with friction and heat addition. Analysis and application to supersonic airfoil theory, inlet nacelles, nozzles to generate supersonic thrust and jet engine comb

Prerequisites:MIME 3430 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4580  Design Of Thermal Systems  Credit Hours:  3
Design of thermal systems, analysis and design of systems involving energy transfer due to fluid flow and heat transfer. The analogy between fluid mechanics, heat transfer and electrical circuits will be developed and used. Methods for determining on-des

Prerequisites:MIME 3400 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4590  Lubrication Technology And Bearing Design  Credit Hours:  3

Prerequisites:MIME 3430 FOR LEVEL UG WITH MIN. GRADE OF D-

MIME4640  Random Processes  Credit Hours:  3
An introduction to the basic theory of stochastic processes, Markov chains, Markov processes, renewal theory, ergodicity, stationarity, applications in queuing, inventory and reliability.

Prerequisites:(MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 4010 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (MATH 3820 FOR LEVEL UG WITH MIN. GRADE OF D- AND MIME 4010 FOR LEVEL UG WITH MIN. GRADE OF D-)

MIME4690  Reliability  Credit Hours:  3
Reliability of components and multicomponent systems. Static and dynamic reliability models for both independent and dependent failures. Effects of hot and cold redundancy. Reliability testing consideration and renewal theory.

Prerequisites:MIME 4010 FOR LEVEL UG WITH MIN. GRADE OF D-
MIME4730  Forecasting  Credit Hours:  3
Mathematical methods used in forecasting and time series analysis. Brown's exponential smoothing, Winter's seasonal forecasting and Box-Jenkins methods are introduced and used in forecasting. Applications include forecasting demand to aid production planning.
Prerequisites: MIME 4010 FOR LEVEL UG WITH MIN. GRADE OF D-.

MIME4780  Advanced Engineering Economy And Decision Theory  Credit Hours:  3
Decision analysis of economic and multi-objective projects under conditions of risk and uncertainty. Use of wealth building approaches, decision trees, statistical decision analysis and decision techniques for capital investment and multiple attribute problems.
Prerequisites: MIME 2600 FORLEVEL UG WITH MIN. GRADE OF D-.

MIME4800  Design For Manufacturability  Credit Hours:  3
Design considerations for economic manufacturing including overview of design process, design for assembly, design for material handling, design for recyclability and design of experiments including Taguchi Analysis.
Prerequisites: MIME 2650 FOR LEVEL UG WITH MIN. GRADE OF D-.

MIME4810  Material Removal Processes  Credit Hours:  3
This course analyzes the major manufacturing material removal processes including machining, flame cutting, electro-discharge machining, etc. Analysis of tool wear, mechanics, cutting fluids, chip control and thermal effects are discussed.
Prerequisites: MIME 2650 FOR LEVEL UG WITH MIN. GRADE OF D-.

MIME4920  Special Projects  Credit Hours:  1-3
A special project by the student to investigate or solve an acceptable problem in industrial or mechanical engineering. This course is primarily intended for students interested in mechanical, industrial or manufacturing engineering nearing completion of.

MIME4980  Special Topics  Credit Hours:  1-3
A special topic at the undergraduate level in Mechanical, Industrial or Manufacturing Engineering to be offered as a course during a term by a faculty member. This is intended for students nearing graduation. Credits will correspond to regular class meetings.

MIME4990  Independent Study  Credit Hours:  1-3
An independent study by the student to investigate or solve an acceptable problem in industrial or mechanical engineering. This course is primarily intended for engineering students nearing graduation. Instructor will specify scope of study to correspond.
MIME5010    Engineering Statistics II  Credit Hours:  3
This course continues the students' development of statistical tools and techniques. Topics include test of hypothesis, nonparametric statistics, simple linear regression and correlation, multiple linear regression, analysis of variance and factorial expe
Prerequisites:MIME 5000 FOR LEVEL GR WITH MIN. GRADE OF D-

MIME5020    Statistical Quality Control And Management  Credit Hours:  3
Students learn fundamental statistical process control including control charting and sampling using variables and attributes. Also covered are the fundamentals of implementing and managing a continuous quality improvement program.

MIME5050    Human Factors Engineering  Credit Hours:  3
Characteristics of the human as an operator in human-machine systems. Human abilities to process information and perform physical tasks within the constraints of environmental conditions - temperature, illumination, noise, etc. Lecture and lab experience

MIME5060    Manufacturing Engineering  Credit Hours:  3
Students integrate machine tools and fabrication processes to optimize the manufacture of a product. Emphasis is on engineering design integrated with economic principles and fabricating methods.

MIME5070    Computer-Aided Manufacturing  Credit Hours:  3
The study of machining processes using numerical control machine tools and controllers. Development of programs to machine parts on mills and lathes. Conversion of CAD models to programs through software interfaces.

MIME5080    Operations Research I  Credit Hours:  3
This course focuses on the mathematical methods of Operations Research and their applications in engineering. Topics include the optimal solution of deterministic and stochastic mathematical models, modeling process, linear programming, the simplex metho

MIME5090    Operations Research II  Credit Hours:  3
This course extends the mathematical methods of Operations Research I and their application. Topics include transportation and assignment problems, network analysis, PERT-CPM, Markov chains and queuing theory.
Prerequisites:MIME 5080 FOR LEVEL GR WITH MIN. GRADE OF D-
MIME5100  Manufacturing Systems Simulation
Credit Hours: 3
Discrete and continuous simulation models are used to study queuing networks, manufacturing and related engineering systems. Simulation languages and animation are covered. Statistical inference is used to draw conclusions and to identify the best system.

MIME5110  Production Planning And Inventory Control
Credit Hours: 3
The planning, scheduling and control of inventory and production. Critical path methods, PERT, applications of mathematical and computer methods.

MIME5160  Facilities Planning And Design
Credit Hours: 3
Planning, design, development, management and control of production and distribution systems to effectively distribute goods and services from the producer to the user. Aspects of facilities for manufacturing, material handling, packaging and distribution.

MIME5210  Vehicle Dynamics
Credit Hours: 3
Analytic mechanics are applied to automotive structures. This includes the forces, time dependent motions including bounce and pitch modes, suspension kinematics, limitations imposed by the human body, and how the automotive structure must be designed to

MIME5230  Dynamics Of Human Movement
Credit Hours: 3
The study of human movement including muscle mechanics, kinematics, kinetics and energetics of human gait, anthropometry and application to bioengineering and orthopedics.

MIME5280  Cad - Finite Element Methods
Credit Hours: 3
Numerical solutions of boundary value problems, variational calculus and the principle of minimum potential energy, finite element formulation of two dimensional field and elasticity problems, axisymmetric elements, finite element programming.

MIME5300  Advanced Mechanics Of Materials
Credit Hours: 3
Theory of elasticity, plane stress and plane strain problems, yield criteria and failure theories, bending of beams, energy methods, curved flexural members, unsymmetric bending, torsion, shear center and axisymmetrically loaded members.
### MIME5310 Mechanics Of Composite Materials  
**Credit Hours:** 3  
Review of elasticity of anisotropic solids, determination of mechanical properties of fiber-reinforced lamina, analysis and performance of laminated composites.

### MIME5320 Fatigue Of Materials & Structures  
**Credit Hours:** 3  
Fatigue design methods; fatigue mechanisms; cyclic deformation behavior and material cyclic properties; stress-based and fracture mechanics-based methodologies to fatigue life prediction of smooth and notched members subjected to constant or variable ampl

### MIME5330 Occupational Ergonomics  
**Credit Hours:** 3  
Methodologies that define musculoskeletal problems of work including anthropometry, work capacity evaluation, bioinstrumentation, biomechanical models, and work classification and time prediction. Some applications in occupational biomechanics are presen

### MIME5340 Experimental Mechanics  
**Credit Hours:** 3  
Application of experimental techniques to stress analysis, comparison of experimental and analytical methods, theory of electrical resistance gages, methods of photoelasticity including photostress, data acquisition systems and their use.

### MIME5510 Turbomachinery  
**Credit Hours:** 3  
Theory of energy transfer between fluid and rotor in turbomachines. Design of turbomachine components. Applications to pumps, compressors and turbines.

### MIME5520 Heating, Ventilating & Air Conditioning  
**Credit Hours:** 3  
Control of the thermal environment within enclosed spaces including psychometric properties of air heating and cooling, loads and factors affecting human comfort. Analysis of basic heating and refrigeration systems, heat pumps, heaters, utilization of sol

### MIME5530 Internal Combustion Engines  
**Credit Hours:** 3  
Study of Carnot, Otto, Diesel and Brayton Cycles, performance characteristics, combustion engines and construction details of internal combustion engines. Analysis of problems associated with carburetion, fuel injection, combustion, cooling, supercharging.
MIME5540 Jet Propulsion

MIME5550 Aerodynamics
Fundamentals of aerodynamics, potential flow theory, aerodynamic forces and moments, introduction to numerical analysis, application to internal flows, theory of lift for infinite and finite wings, induced drag.

MIME5560 Gas Dynamics
Analysis of compressible flow phenomena including shock and detonation waves. Internal flow with friction and heat addition. Analysis and application to supersonic airfoil theory, inlet nacelles, nozzles to generate supersonic thrust and jet engine combu

MIME5580 Design Of Thermal Systems
Design of thermal systems, analysis and design of systems involving energy transfer due to fluid flow and heat transfer. The analogy between fluid mechanics, heat transfer and electrical circuits will be developed and used. Methods for determining on-desi

MIME5590 Lubrication Technology And Bearing Design

MIME5640 Random Processes
An introduction to the basic theory of stochastic processes, Markov chains, Markov processes, renewal theory, ergodicity, stationarity, applications in queuing, inventory and reliability.

MIME5680 Operations Research I
MIME5690  Reliability  Credit Hours:  3
Reliability of components and multicomponent systems. Static and dynamic reliability models for both independent and dependent failures. Effects of hot and cold redundancy. Reliability testing consideration and renewal theory.

MIME5730  Forecasting  Credit Hours:  3
Mathematical methods used in forecasting and time series analysis. Brown's exponential smoothing, Winter's seasonal forecasting and Box-Jenkins methods are introduced and used in forecasting. Applications include forecasting demand to aid production pla

MIME5750  Work Measurement & Manufacturing Systems  Credit Hours:  3
A study of the methods used to analyze, design and specify the human performance in operation/production systems for the purpose of improving productivity. Computerized predetermined time systems, robots and material handling equipment are utilized in th

MIME5780  Advanced Engineering Economy And Decision Theory  Credit Hours:  3
Decision analysis of economic and multi-objective projects under conditions of risk and uncertainty. Use of wealth building approaches, decision trees, statistical decision analysis, and decision techniques for capital investment and multiple attribute pr

MIME5800  Design For Manufacturability  Credit Hours:  3
Design considerations for economic manufacturing including overview of design process, design for assembly, design for material handling, design for recyclability and design of experiments including Taguchi Analysis.

MIME5810  Material Removal Processes  Credit Hours:  3
This course analyzes the major manufacturing material removal processes including machining, flame cutting, electro-discharge machining, etc. Analysis of tool wear, mechanics, cutting fluids, chip control and thermal effects are discussed.

MIME5920  Special Projects  Credit Hours:  1-6
A special project by the student to investigate or solve an acceptable problem in industrial or mechanical engineering. This course is primarily intended for graduate students interested in mechanical, industrial or manufacturing engineering.
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>MIME5980</td>
<td>Special Topics</td>
<td>1-6</td>
<td>A special topic at the graduate level in Mechanical, Industrial or Manufacturing Engineering to be offered as a course during a term by a faculty member.</td>
</tr>
<tr>
<td>MIME6000</td>
<td>Advanced Engineering Mathematics I</td>
<td>3</td>
<td>An advanced course in mathematical analysis for engineers. Topics include matrix methods, eigenvalues and eigenvectors, systems of equations, series representations including FFT, ordinary differential equations and Bessel functions. This course will ma</td>
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<tr>
<td>MIME6100</td>
<td>Advanced Engineering Mathematics II</td>
<td>3</td>
<td>Partial differential equations for engineering applications including elliptic, parabolic, hyperbolic differential and non-linear systems of equations. Solution procedures include separation of variables, Laplace transform methods, solutions using complex</td>
</tr>
<tr>
<td>MIME6120</td>
<td>Advanced Measurement Systems</td>
<td>3</td>
<td>Sensor selection, data acquisition system selection, evaluation of system response, digital sampling theory, statistical data analysis, space-time correlations, spectral analysis, analog and digital signal conditioning, and static and dynamic measurements</td>
</tr>
<tr>
<td>MIME6150</td>
<td>Applied Numerical Methods</td>
<td>3</td>
<td>An advanced course in mathematical analysis for engineers. Topics include real and complex solutions to polynomial and transcendental equations, approximate interpolation and integration procedures, matrix methods, solutions of systems of nonlinear equati</td>
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<tr>
<td>MIME6180</td>
<td>Micro Electro Mechanical Systems</td>
<td>3</td>
<td>Current design and methods in micromachining mechanical and electrical components on silicon wafers with an emphasis on mechanical as well as the LIGA Microcasting techniques. Both prototyping and mass production practices will be covered.</td>
</tr>
<tr>
<td>MIME6190</td>
<td>Mechatronics</td>
<td>3</td>
<td>Design, analysis, and synthesis of integrated electromechanical systems. Transducer models, signal conditioning and power amplification, and analog-to-digital interfaces. Topics will focus on mechanical engineering applications of process control and data</td>
</tr>
</tbody>
</table>
MIME6200 Advanced Dynamics
Study of dynamics of a system of particles and rigid bodies using Newtonian and Lagrangian Mechanics including multi-body systems. Principles of nonlinear system dynamics and stability.

Credit Hours: 3

MIME6210 Advanced Mechanical Vibrations
Advanced concepts in normal mode theory for discrete systems and vibration of continuous systems such as bars, beams and plates.

Credit Hours: 3

MIME6230 Cad-Surface Modeling
Theory and implementation of contemporary parametric sculptured surface modeling technology. Non-uniform rational B-spline [NURBS] curves and surfaces. Fundamental computational algorithms, construction techniques and advanced modeling topics.

Credit Hours: 3

MIME6300 Continuum Mechanics
A unified approach to the study of the mechanics of continuous media; analysis of tensors; kinematics of material media; analysis of deformation and stress; the mathematical statement of the laws of conservation of mass, momentum and energy; formulation o

Credit Hours: 3

MIME6320 Advanced Finite Element Methods
Formulation of isoperimetric elements, coordinate transformation, solids of revolution, bending of flat plates, general shell elements, dynamics, vibrations and time dependent problems, geometric and material nonlinearity.

Prerequisites:MIME 5280 FOR LEVEL GR WITH MIN. GRADE OF D- OR CIVE 6310 FOR LEVEL GR WITH MIN. GRADE OF D-

Credit Hours: 3

MIME6350 Elasticity
Review of tensor analysis, analysis of stress and strain, three dimensional equations of elasticity, plane problems in rectangular Cartesian and polar coordinates.

Credit Hours: 3

MIME6360 Plasticity
Review of elastic stress-strain relations, analysis of strain rate and concept of stress rate, criteria of yielding and rules of plastic flow, elastoplastic bending and torsion, theory of slipline fields, mechanics of metal forming processes.

Credit Hours: 3
MIME6370 Stress Waves in Solids  
Credit Hours: 3

Principles of fracture mechanics and its applications to the prevention of fractures in components and structures, linear elastic and elastic-plastic fracture mechanics, fracture mechanisms, fracture toughness, applications to fatigue crack propagation.

MIME6380 Fracture Mechanics  
Credit Hours: 3

An advanced course in viscous fluid flow. Topics include relationships between boundary layer and viscous flow, laws of conservation of mass and momentum, exact solutions, similarity solutions, creeping flow, boundary layer concept, stability of laminar flow.

MIME6410 Viscous Flow  
Credit Hours: 3

Theoretical analysis of problems in steady-state and transient heat conduction with constant and variable material properties, heat-source systems, Laplace transform techniques, numerical and computer solutions, analogies.

MIME6420 Conduction  
Credit Hours: 3

Second law of thermodynamics based on statistical mechanics. Prediction of properties from microscopic data based on statistical mechanics. General thermodynamic relations to include Maxwell relations and the Clapeyron equation, prediction of unmeasurable properties.

MIME6430 Advanced Thermodynamics  
Credit Hours: 3


MIME6440 Computational Fluid Dynamics I  
Credit Hours: 3

Digital data acquisition and analysis; limitations and interpretation of physical measurements; sources of errors and difficulties in experimental technique; advanced experimental methods for static and dynamic measurements in thermal systems and fluid flows.
### Course Descriptions 2009-2010

#### MIME6510 Boundary Layer Theory
- **Credit Hours:** 3
- This course covers laminar and turbulent boundary layer theory. Topics include boundary layer equations, separation, similarity, 2-D and 3D, control, integral methods, turbulence, stability, transition and heat transfer.

#### MIME6520 Convection
- **Credit Hours:** 3
- Study of convection processes involving the transfer of heat, mass and momentum. Boundary layer theory. Analogy between heat and momentum transfer. Condensation and boiling, two-phase flow, diffusion, mass transfer between phases.
  
  **Prerequisites:** MIME 6000 FOR LEVEL GR WITH MIN. GRADE OF D-

#### MIME6540 Computational Fluid Dynamics II
- **Credit Hours:** 3
- Finite difference procedures applied to the solution of reduced forms of the Navier-Stokes equations. Numerical solution of compressible and incompressible forms of the Navier-Stokes equations for laminar and turbulent flows. Fundamental turbulence models.

  **Prerequisites:** MIME 6440 FOR LEVEL GR WITH MIN. GRADE OF D-

#### MIME6550 Turbulent Flow
- **Credit Hours:** 3
- Study of the nature, origin and dynamics of turbulence. Governing equations of turbulent flows. Internal and external flows. Aspects of free shear flow, turbulent boundary layers and statistical descriptions are presented. Numerical and experimental metho

  **Prerequisites:** MIME 6150 FOR LEVEL GR WITH MIN. GRADE OF D-

#### MIME6560 Combustion
- **Credit Hours:** 3
- Physics and chemistry of combustion processes; chemical thermodynamics; chemical kinetics; heat and mass transfer in the combustion of gas, liquid and solid fuels; flame speed determination; applications to combustion efficiency, pollutant formation and c

#### MIME6630 Applied Statistical Methods
- **Credit Hours:** 3
- Techniques of statistical analysis which are applicable in a modern day manufacturing environment. Course is meant to provide the student having little or no background in the statistical areas with a sufficiently disciplined course to use statistical met

#### MIME6640 Inventory Theory
- **Credit Hours:** 3
- Mathematical models of inventory and production systems. Consideration of static and dynamic problems under the influence of deterministic probabilistic demand. Demand forecasting using Box-Jenkins models of adaptive forecasting. Consideration of echelon
MIME6670  Queuing Theory  
Credit Hours: 3
Single channel and multichannel queuing problems with Poisson arrivals and negative exponential service times. Single and multichannel systems with general service disciplines. Priority queues, busy period and waiting time distributions.

MIME6720  Design Of Experiments  
Credit Hours: 3
Design and analysis of experiments including analysis of variance and regression analysis. Factorial, blocked and nested models are considered together with appropriate estimation and post ANOVA tests.

MIME6740  Optimization Theory And Applications  
Credit Hours: 3
A consideration of general systems optimization techniques: classical calculus methods, Lagrange multipliers, linear and nonlinear programming, penalty functions, search methods and dynamic programming. Applications to design and manufacturing problems.

MIME6780  Advanced Engineering Management  
Credit Hours: 3
Classical analysis of the theories of organization and management applied to engineering and high technology management.

MIME6790  Human-Machine Systems  
Credit Hours: 3
Measures of effectiveness for a human-machine system. Design of the system to effect the optimum operation. Emphasis on quantitative models for studying information processing, control and decision making aspects of human performance in human-machine sy
Prerequisites:MIME 5050 FOR LEVEL GR WITH MIN. GRADE OF D-

MIME6800  Advanced Manufacturing Systems Engineering  
Credit Hours: 3
Advanced studies of traditional manufacturing processes and advanced manufacturing systems with emphasis on manufacturing engineering processes and equipment, machine tools, process planning, design an operation of manufacturing systems.

MIME6810  Assembly And Joining Processes  
Credit Hours: 3
This course is comprised of two parts: joining processes and assembly systems. Commonly used joining methods, such as welding, mechanical fastening and adhesion are discussed. General principles of assembly are presented with extensive use of automobile a
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<td>MIME6900</td>
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<td>MIME6990</td>
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<td>MIME7230</td>
<td>Dynamics of Human Movement</td>
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<td>MIME7270</td>
<td>Advanced Computer Aided Design</td>
<td>3</td>
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<tr>
<td>MIME7280</td>
<td>CAD - Finite Element Methods</td>
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<tr>
<td>MIME7300</td>
<td>Adv Mechanics of Materials</td>
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<td>MIME7310</td>
<td>Mechanics-Composite Materials</td>
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<td>MIME7320</td>
<td>Fatigue of Matls and Structres</td>
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<td>MIME7330</td>
<td>Occupational Ergonomics</td>
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<td>MIME7340</td>
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<td>MIME7510</td>
<td>Turbomachinery</td>
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<td>Jet Propulsion</td>
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<td>MIME7580</td>
<td>Design of Thermal Systems</td>
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<td>MIME7590</td>
<td>Lubrication Technology and Bearing Design</td>
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<td>Engineering Statistics II</td>
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<td>Statistical Quality Control and Management</td>
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<td>Management Information Systems</td>
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<td>MIME7670</td>
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<td>MIME7690</td>
<td>Reliability</td>
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<td>MIME7700</td>
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<tr>
<td>MIME7920</td>
<td>Special Projects</td>
<td>1-6</td>
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</tbody>
</table>
MIME7980  Special Topics  Credit Hours:  1-6

MIME8000  Advanced Engineering Mathematics I  Credit Hours:  3
An advanced course in mathematical analysis for engineers. Topics include matrix methods, eigenvalues and eigenvectors, systems of equations, series representations including FFT, ordinary differential equations and Bessel functions. This course will ma

MIME8100  Advanced Engineering Mathematics II  Credit Hours:  3
Partial differential equations for engineering applications including elliptic, parabolic, hyperbolic differential and non-linear systems of equations. Solution procedures include separation of variables, Laplace transform methods, solutions using complex
Prerequisites:MIME 8000 FOR LEVEL GR WITH MIN. GRADE OF D-

MIME8120  Advanced Measurement Systems  Credit Hours:  3
Sensor selection, data acquisition system selection, evaluation of system response, digital sampling theory, statistical data analysis, space-time correlations, spectral analysis, analog and digital signal conditioning, and static and dynamic measurements

MIME8150  Applied Numerical Methods  Credit Hours:  3
An advanced course in mathematical analysis for engineers. Topics include real and complex solutions to polynomial and transcendental equations, approximate interpolation and integration procedures, matrix methods, solutions of systems of nonlinear equati

MIME8180  Micro Electro Mechanical Systems  Credit Hours:  3
Current design and methods in micromachining mechanical and electrical components on silicon wafers with an emphasis on mechanical as well as the LIGA Microcasting techniques. Both prototyping and mass production practices will be covered.

MIME8190  Mechatronics  Credit Hours:  3
Design, analysis and synthesis of integrated electromechanical systems. Transducer models, signal conditioning and power amplification, and analog-to-digital interfaces. Topics will focus on mechanical engineering applications of process control and data
MIME8200  Advanced Dynamics  
Study of dynamics of a system of particles and rigid bodies using Newtonian and Lagrangian Mechanics including multi-body systems. Principles of nonlinear system dynamics and stability.

MIME8210  Advanced Mechanical Vibrations  
Advanced concepts in normal mode theory for discrete systems and vibration of continuous systems such as bars, beams and plates.

MIME8230  Cad-Surface Modeling  
Theory and implementation of contemporary parametric sculptured surface modeling technology. Non-uniform rational B-spline [NURBS] curves and surfaces. Fundamental computational algorithms, construction techniques and advanced modeling topics.

MIME8300  Continuum Mechanics  
A unified approach to the study of the mechanics of continuous media; analysis of tensors; kinematics of material media; analysis of deformation and stress; the mathematical statement of the laws of conservation of mass, momentum and energy; formulation o

MIME8320  Advanced Finite Element Methods  
Formulation of isoperimetric elements, coordinate transformation, solids of revolution, bending of flat plates, general shell elements, dynamics, vibrations, and time dependent problems, geometric and material nonlinearity.

Prerequisites:MIME 7280 FOR LEVEL GR WITH MIN. GRADE OF D- OR CIVE 8310 FOR LEVEL GR WITH MIN. GRADE OF D-

MIME8350  Elasticity  
Review of tensor analysis, analysis of stress and strain, three dimensional equations of elasticity, plane problems in rectangular Cartesian and polar coordinates.

MIME8360  Plasticity  
Review of elastic stress-strain relations, analysis of strain rate and concept of stress rate, criteria of yielding and rules of plastic flow, elastoplastic bending and torsion, theory of slipline fields, mechanics of metal forming processes.
MIME8370  Stress Waves in Solids  Credit Hours: 3
Principles of fracture mechanics and its applications to the prevention of fractures in components and structures, linear elastic and elastic-plastic fracture mechanics, fracture mechanisms, fracture toughness, applications to fatigue crack propagation.

MIME8380  Fracture Mechanics  Credit Hours: 3
An advanced course in viscous fluid flow. Topics include relationships between boundary layer and viscous flow, laws of conservation of mass and momentum, exact solutions, similarity solutions, creeping flow, boundary layer concept, stability of laminar

MIME8410  Viscous Flow  Credit Hours: 3
Theoretical analysis of problems in steady-state and transient heat conduction with constant and variable material properties, heat-source systems, Laplace transform techniques, numerical and computer solutions, analogies.

MIME8420  Conduction  Credit Hours: 3
Second law of thermodynamics based on statistical mechanics. Prediction of properties from microscopic data based on statistical mechanics. General thermodynamic relations to include Maxwell relations and the Clapeyron equation, prediction of unmeasureab

MIME8440  Computational Fluid Dynamics I  Credit Hours: 3

MIME8450  Experimental Fluid Mechanics  Credit Hours: 3
Digital data acquisition and analysis; limitations and interpretation of physical measurements; sources of errors and difficulties in experimental technique; advanced experimental methods for static and dynamic measurements in thermal systems and fluid fl
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<tr>
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<tbody>
<tr>
<td>MIME8510</td>
<td>Boundary Layer Theory</td>
<td>3</td>
<td>This course covers laminar and turbulent boundary layer theory. Topics include boundary layer equations, separation, similarity, 2-D and 3D, control, integral methods, turbulence, stability, transition, and heat transfer.</td>
</tr>
<tr>
<td>MIME8520</td>
<td>Convection</td>
<td>3</td>
<td>Study of convection processes involving the transfer of heat, mass and momentum. Boundary layer theory. Analogy between heat and momentum transfer. Condensation and boiling, two-phase flow, diffusion, mass transfer between phases. Prerequisites: MIME 8000 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>MIME8540</td>
<td>Computational Fluid Dynamics II</td>
<td>3</td>
<td>Finite difference procedures applied to the solution of reduced forms of the Navier-Stokes equations. Numerical solution of compressible and incompressible forms of the Navier-Stokes equations for laminar and turbulent flows. Fundamental turbulence models Prerequisites: MIME 8440 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>MIME8550</td>
<td>Turbulent Flow</td>
<td>3</td>
<td>Study of the nature, origin and dynamics of turbulence. Governing equations of turbulent flows. Internal and external flows. Aspects of free shear flow, turbulent boundary layers and statistical descriptions are presented. Numerical and experimental metho Prerequisites: MIME 8150 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>MIME8560</td>
<td>Combustion</td>
<td>3</td>
<td>Physics and chemistry of combustion processes; chemical thermodynamics; chemical kinetics; heat and mass transfer in the combustion of gas, liquid and solid fuels; flame speed determination; applications to combustion efficiency, pollutant formation and c</td>
</tr>
<tr>
<td>MIME8630</td>
<td>Applied Statistical Methods</td>
<td>3</td>
<td>Techniques of statistical analysis which are applicable in a modern day manufacturing environment. Course is meant to provide the student having little or no background in the statistical areas with a sufficiently disciplined course to use statistical met</td>
</tr>
<tr>
<td>MIME8640</td>
<td>Inventory Theory</td>
<td>3</td>
<td>Mathematical models of inventory and production systems. Consideration of static and dynamic problems under the influence of deterministic probabilistic demand. Demand forecasting using Box-Jenkins models of adaptive forecasting. Consideration of echelon</td>
</tr>
</tbody>
</table>
MIME8670 Queuing Theory
Credit Hours: 3
Single channel and multichannel queuing problems with Poisson arrivals and negative exponential service times. Single and multichannel systems with general service disciplines. Priority queues, busy period and waiting time distributions.

MIME8720 Design Of Experiments
Credit Hours: 3
Design and analysis of experiments including analysis of variance and regression analysis. Factorial, blocked and nested models are considered together with appropriate estimation and post ANOVA tests.

MIME8740 Optimization Theory And Applications
Credit Hours: 3
A consideration of general systems optimization techniques: classical calculus methods, Lagrange multipliers, linear and nonlinear programming, penalty functions, search methods and dynamic programming. Applications to design and manufacturing problems.

MIME8780 Advanced Engineering Management
Credit Hours: 3
Classical analysis of the theories of organization and management applied to engineering and high technology management.

MIME8790 Human-Machine Systems
Credit Hours: 3
Measures of effectiveness for a human-machine system. Design of the system to effect the optimum operation. Emphasis on quantitative models for studying information processing, control and decision making aspects of human performance in human-machine sy

MIME8800 Advanced Manufacturing Systems Engineering
Credit Hours: 3
Advanced studies of traditional manufacturing processes and advanced manufacturing systems with emphasis on manufacturing engineering processes and equipment, machine tools, process planning, design an operation of manufacturing systems.

MIME8810 Assembly And Joining Processes
Credit Hours: 3
This course is comprised of two parts: joining processes and assembly systems. Commonly used joining methods, such as welding, mechanical fastening and adhesion are discussed. General principles of assembly are presented with extensive use of automobile a
MIME8900 Independent Research
Credit Hours: 1-16
Research credit hours toward the doctoral degree for students in the Mechanical, Industrial and Manufacturing Engineering Department. Students are to use the section number of their dissertation adviser.

MIME8920 Special Projects
Credit Hours: 1-6
A special project by the student to investigate or solve an acceptable problem in industrial or mechanical engineering. This course is primarily intended for graduate students interested in mechanical, industrial or manufacturing engineering.

MIME8930 Graduate Seminar
Credit Hours: 0
This is a seminar for graduate students in Mechanical, Industrial and Manufacturing Engineering. Topics include orientation to the graduate program and special topics by speakers from industry and other universities. Credit does not apply toward a graduate degree.

MIME8960 Dissertation
Credit Hours: 1-16
Doctoral dissertation research credit hours for students in the Mechanical, Industrial and Manufacturing Engineering Department. Students are to use the section number of their dissertation adviser.

MIME8980 Special Topics
Credit Hours: 1-6
A special topic at the graduate level in Mechanical, Industrial or Manufacturing Engineering to be offered as a course during a term by a faculty member.

MIME8990 Independent Study
Credit Hours: 1-6
An independent study by the student to investigate or solve an acceptable problem in industrial or mechanical engineering. This course is primarily intended for graduate students in mechanical, industrial or manufacturing engineering.

MKTG3130 Supply Chain Management
Credit Hours: 3
Examination of the role of logistics and supply chain management in creating value and as sources of competitive advantage. Analysis of transportation, warehousing, inventory management and materials management.

Prerequisites: BUAD 2080 FOR LEVEL UG WITH MIN. GRADE OF D-
### Course Descriptions 2009-2010

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<th>Course Code</th>
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<tbody>
<tr>
<td>MKTG3140</td>
<td>International Marketing</td>
<td>3</td>
<td>Course focuses on developing an international marketing plan. Global market screening, selection and development of a plan of action are explored in hands-on learning experience.</td>
<td>BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>MKTG3170</td>
<td>Marketing For Non-Profit Organizations</td>
<td>3</td>
<td>An introduction to marketing for non-business students. Focus is on planning and executing marketing programs in not-for-profit organizations. No credit for CBA students.</td>
<td></td>
</tr>
<tr>
<td>MKTG3200</td>
<td>Marketing, Organization, Society, And Ethics</td>
<td>3</td>
<td>A macro approach to marketing utilizing readings and cases on topics related to the interface between managerial marketing and external socio-economic systems.</td>
<td>BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>MKTG3260</td>
<td>Global Framework For E-Commerce</td>
<td>3</td>
<td>A study on how firms can capitalize on the Internet to conduct business internationally, assess e-commerce readiness in key regions, localize Web presence and contents and build business service infrastructures.</td>
<td>BUAD 2080 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>MKTG3280</td>
<td>Internet Marketing</td>
<td>3</td>
<td>A study of Internet-based marketing management, including market opportunity and environmental assessment, Web presence and value propositions, and special issues concerning marketing mix design and implementation.</td>
<td>BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>MKTG3690</td>
<td>Principles Of Marketing Communications</td>
<td>3</td>
<td>Focuses on communication tools in marketing: advertising, sales promotion, specialty advertising, packaging, publicity, direct marketing and personal selling. Attention to managerial decision making, legal and ethical aspects of promotion.</td>
<td>BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>MKTG3850</td>
<td>Buyer Behavior And Relationship Marketing</td>
<td>3</td>
<td>Utilization of the behavioral sciences for the analysis of both consumer and business markets. Designing marketing programs to build strong seller-buyer relationships.</td>
<td>BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
</tbody>
</table>
MKTG3870 Advertising Strategy  Credit Hours: 3
Project-oriented course providing hands-on experience in advertising campaign design. Emphasis on strategy and application involved in advertising.
Prerequisites: MKTG 3690 FOR LEVEL UG WITH MIN. GRADE OF D-

MKTG3880 Marketing Research And Data-Based Management  Credit Hours: 3
This course addresses the fundamentals of marketing information system, marketing research and data-based marketing. Emphasis is on searching, developing and providing customer information for marketing decision making.
Prerequisites: BUAD 2070 FOR LEVEL UG WITH MIN. GRADE OF D- AND BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D-

MKTG3910 Direct Marketing  Credit Hours: 3
Techniques used and problems encountered in direct marketing. Analysis of the various marketing strategies, with an emphasis on promotions and media employed. Analysis of the social issues of direct marketing is included.
Prerequisites: BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D-

MKTG4120 Marketing Channel Management  Credit Hours: 3
Channel structure and institutions, logistics, transportation, channel design, channel operations, behavioral dimensions such as leadership, conflict, cooperation and control.
Prerequisites: BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D-

MKTG4130 Marketing Analysis And Decision Making  Credit Hours: 3
This capstone course, which focuses on small and global firms, is designed to sharpen students' integrative decision-making abilities through case analysis and a simulation or project-based analysis experience.
Prerequisites: (MKTG 3880 FOR LEVEL UG WITH MIN. GRADE OF D- AND MKTG 3850 FOR LEVEL UG WITH MIN. GRADE OF D-)

MKTG4220 International Sourcing, Logistics And Transportation  Credit Hours: 3
Physical supply, logistics and transportation functions are discussed within the context of a global marketplace, global business operations and international trade.
Prerequisites: BUAD 2080 FOR LEVEL UG WITH MIN. GRADE OF D-

MKTG4520 Advanced Market Analysis  Credit Hours: 3
A course designed for students interested in market analysis and marketing research who wish further training in market analysis tools, research methodology, data analysis and analytical decision making models.
Prerequisites: BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D-
**MKTG4540  Business Marketing**  
Analysis of business markets and development of programs to market industrial business-to-business products/services.  
Prerequisites: BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D-

**MKTG4570  Product And Pricing Management**  
Developing, analyzing, organizing, planning, implementing and controlling the organization's product and pricing policies. Both existing and new products will be considered.  
Prerequisites: BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D-

**MKTG4940  Marketing Internship**  
Receive practical business experience working in an organization.

**MKTG4980  Special Topics**  
Analysis of current issues in Marketing, International Business, or Business Economics.  
Prerequisites: BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D-

**MKTG4990  Independent Study**  
Independent study in marketing, international business, or business economics. Student must submit a proposal to be approved by a department faculty member prior to enrolling in the course.

**MKTG5170  Marketing For Non-Profit Organizations**  
An introduction to marketing for non-business students. Focus is on planning and executing marketing programs in not-for-profit organizations. No credit for CBA students.

**MKTG5410  Marketing Systems**  
Examines the areas of marketing management, marketing functions and institutions, and the role of marketing in the organization. The course explores the relationship between marketing and the environment.
Course Descriptions 2009-2010

MKTG6080 International Supply Management
Credit Hours: 3
Physical supply, logistics, transportation, sourcing and negotiating within a global context are evaluated. Impact of global business operations and world trade are discussed.

MKTG6120 Marketing Management
Credit Hours: 3
This course focuses on the application of marketing concepts and techniques to marketing problems. Emphasis is on decision-making using cases, simulation and computer analyses.
Prerequisites: MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-

MKTG6140 Customer Relationship Marketing
Credit Hours: 3
Course will examine the theoretical and managerial development of relationship marketing as an organizational strategy to build and maintain profitable customer relationships.
Prerequisites: MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-

MKTG6150 CRM Analytics and Intelligence Driven Customer Strategy
Credit Hours: 3
Course will study how marketing managers can analyze data collected from customers to assist organizations in making appropriate decisions and target marketing resources to serve the needs of customers and increase return for the organization.
Prerequisites: MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-

MKTG6200 Market Structure
Credit Hours: 3
Interdisciplinary (economics, psychology, geography, marketing, marketing channel) approach to analyzing and understanding markets (market structure). Product, pricing, promotion and channel management decisions taught as a function of market structure.
Prerequisites: MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-

MKTG6210 Buyer Behavior
Credit Hours: 3
Explores behavioral dimensions of buyers focusing on psychological processes, individual differences, interpersonal influences, environmental influences, and incorporating these individual, group, and contextual influences into strategic marketing decision making.
Prerequisites: MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-

MKTG6220 Integrated Marketing Communications
Credit Hours: 3
Course focuses on the integration of marketing communication tools in achieving desired changes in consumer attitudes and behaviors. Organizations realize the benefit of integrating their marketing communication efforts to achieve synergistic and superior results.
Prerequisites: MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-
MKTG6230  Digital Marketing Processes and Virtual Value Networks  Credit Hours: 3
Course will examine how marketing processes can leverage e-commerce opportunities to create greater customer value in relational and transactional exchanges, and to build virtual value networks spanning functional, organizational and geographical boundaries.
Prerequisites: MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-

MKTG6240  Sales Force Leadership and Strategy  Credit Hours: 3
The roles and functions of the business-to-business sales manager will be examined, including using market and competitive analysis in sales planning and strategy development, as well as sales management operations.
Prerequisites: MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-

MKTG6250  Strategic Account Management  Credit Hours: 3
The roles and functions of the business-to-business salesperson will be examined in managing accounts considered strategic to meeting organizational goals. Students will partner with area businesses to play the role of the strategic account manager by id
Prerequisites: MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-

MKTG6290  Business Marketing  Credit Hours: 3
Nature, structure, and managerial problems and processes in the field of business-to-business marketing.
Prerequisites: MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D- OR BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D-

MKTG6310  Managing Innovation and Product Commercialization  Credit Hours: 3
Course will provide an understanding of how new products and services are designed and commercialized, and will take a strategic and managerial perspective in defining how to best plan, lead, and develop the processes of managing innovation and new product

MKTG6320  Strategic Brand Management  Credit Hours: 3
Course will address the strategic importance of branding and will focus on the design and implementation of marketing programs and activities to build, measure, and manage brand equity.
Prerequisites: MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-

MKTG6330  Applied Marketing Research  Credit Hours: 3
Course focuses on the managerial applications of marketing research techniques including the design, analysis, and interpretation of marketing research studies, and is designed to help managers recognize the role of information gathering and analysis in m
Prerequisites: MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-
### Course Descriptions 2009-2010

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<tbody>
<tr>
<td>MKTG6400</td>
<td>International Marketing</td>
<td>3</td>
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<td></td>
<td>This course focuses on identifying and servicing foreign market opportunities. Skills in research, strategic and tactical analysis, and adaptation are developed.</td>
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<tbody>
<tr>
<td>MKTG6960</td>
<td>MBA Thesis</td>
<td>1-3</td>
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<td>Master's thesis. Requires student to submit for approval a written proposal. Faculty member must approve proposal and organize thesis committee to supervise project.</td>
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<tbody>
<tr>
<td>MKTG6980</td>
<td>Special Topics</td>
<td>3</td>
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<tr>
<td></td>
<td>Current issues/developments in marketing, international business, or business economics are discussed.</td>
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<tbody>
<tr>
<td>MKTG6990</td>
<td>Independent Study</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Independent study in marketing, international business, or business economics. A proposal for the independent study must be approved by faculty member and department chair.</td>
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<tbody>
<tr>
<td>MKTG7410</td>
<td>Marketing Systems</td>
<td>3</td>
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<tr>
<td></td>
<td>Examines the areas of marketing management, marketing functions and institutions, and the role of marketing in the organization. The course explores the relationship between marketing and the environment.</td>
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<td>MKTG8140</td>
<td>Customer Relationship Marketing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Course will examine the theoretical and managerial development of relationship marketing as an organizational strategy to build and maintain profitable customer relationships.</td>
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<tr>
<td></td>
<td>Prerequisites: MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>MKTG8150</td>
<td>CRM Analytics and Intelligence Driven Customer Strategy</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Course will study how marketing managers can analyze data collected from customers to assist organizations in making appropriate decisions and target marketing resources to serve the needs of customers and increase return for the organization.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prerequisites: MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
<td></td>
</tr>
</tbody>
</table>
MKTG8220  Integrated Marketing Communication  Credit Hours:  3
Course focuses on the integration of marketing communication tools in achieving desired changes in consumer attitudes and behaviors. Organizations realize the benefit of integrating their marketing communication efforts to achieve synergistic and superior

Prerequisites:MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-

MKTG8230  Digital Marketing Processes and Virtual Value Networks  Credit Hours:  3
Course will examine how marketing processes can leverage e-commerce opportunities to create greater customer value in relational and transactional exchanges, and to build virtual value networks spanning functional, organizational and geographical boundaries.

Prerequisites:MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-

MKTG8240  Sale Force Leadership and Strategy  Credit Hours:  3
The roles and functions of the business-to-business sales manager will be examined, including using market and competitive analysis in sales planning and strategy development, as well as sales management operations.

MKTG8250  Strategic Account Management  Credit Hours:  3
The roles and functions of the business-to-business salesperson will be examined in managing accounts considered strategic to meeting organizational goals. Students will partner with area businesses to play the role of the strategic account manager by id

Prerequisites:MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-

MKTG8290  Business Marketing  Credit Hours:  3
Nature, structure, and managerial problems and processes in the field of business-to-business marketing.

Prerequisites:MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D- OR MKTG 7410 FOR LEVEL GR WITH MIN. GRADE OF D-

MKTG8310  Managing Innovation and Product Commercialization  Credit Hours:  3
Course will provide an understanding of how new products and services are designed and commercialized, and will take a strategic and managerial perspective in defining how to best plan, lead, and develop the processes of managing innovation and new product

Prerequisites:MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-

MKTG8320  Strategic Brand Management  Credit Hours:  3
Course will address the strategic importance of branding and will focus on the design and implementation of marketing programs and activities to build, measure, and manage brand equity.

Prerequisites:MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-
**MKTG8330 Applied Marketing Research**

Course focuses on the managerial applications of marketing research techniques including the design, analysis, and interpretation of marketing research studies, and is designed to help managers recognize the role of information gathering and analysis in m

Prerequisites: MKTG 5410 FOR LEVEL GR WITH MIN. GRADE OF D-

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**MKTG8400 International Marketing**

This course focuses on identifying and servicing foreign market opportunities. Skills in research, strategic and tactical analysis, and adaptation are developed. Ph.D. students are assigned additional readings from the academic literature.

Prerequisites: BUAD 6500 FOR LEVEL GR WITH MIN. GRADE OF D-

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**MKTG8790 Integrated Marketing/CRM Seminar**

A seminar in selected topics in Marketing. Ph.D. students are assigned readings from the Marketing academic literature. They will complete several research papers focusing on specific topics that advance the field and that are suitable for submission to

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**MLS6010 MLS Seminar in Humanities**

Introduction to the concerns and methods of graduate study in the Humanities. This course will demonstrate, through readings from different eras, the interrelated nature of literature, philosophy and history.

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**MLS6020 MLS Seminar in Social Sciences**

Drawing from major principles and concepts in the social sciences, this course examines issues of the individual and society from a range of disciplinary approaches. Special topics vary.

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**MLS6030 MLS Seminar in Natural Sciences**

This course discusses the major ideas of the natural sciences in terms of their impact upon the human species. Specific topics vary.

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**MLS6040 MLS Seminar In The Visual And Performing Arts**

An examination of the concept of creativity in the fields of visual art, theater, dance and music. Topics covered vary with instructor.
MLS6400  Studies In Humanities  
Individually supervised study in the humanities. Permission of the Director required. May be repeated for additional credit.

Credit Hours: 1-6

MLS6500  Studies In Social Sciences  
Individually supervised study in the social sciences. Permission of the Director required. May be repeated for additional credit.

Credit Hours: 1-6

MLS6600  Studies In Natural Sciences  
Individually supervised study in the natural sciences. Permission of the Director required. May be repeated for additional credit.

Credit Hours: 1-6

MLS6700  Studies In The Visual And Performing Arts  
Individualized or small-group study in the visual and performing arts.

Credit Hours: 1-6

MLS6990  Mis Thesis  
Permission of the Director required. May be repeated for additional credit.

Credit Hours: 1-6

MPHY601  Radiation Physics I  
This course considers the physical principles and instrumentation of radiation physics and diagnostic imaging including basic atomic and nuclear properties, production of x-rays, interaction or radiation with matter, radiographic and fluoroscopic imaging.

Credit Hours: 3

MPHY602  Radiation Physics II  
This course is a continuation of Radiation Physics I and includes the radioactive decay principles, basics of nuclear medicine imaging including SPECT and PET, basic concepts of NMR and MR imaging, and the principles of ultrasound including Doppler ultrasound.

Credit Hours: 3
Course Descriptions 2009-2010

**MPHY604**  Diagnostic Radiological Physic  
Credit Hours: 0-5  
This course considers the physical principles and instrumentation of diagnostic image formation including radiography, fluoroscopy, computed tomography, ultrasound, nuclear medicine and magnetic resonance imaging.

**MPHY606**  Nuclear Medicine  
Credit Hours: 3  
Course covers the physical aspects of diagnostic and therapeutic applications of radionuclides. This includes radiation detectors and imaging systems, emission tomography, counting statistics, equipment testing, radiopharmaceuticals and internal radiation.

**MPHY610**  Clinical Imaging Review  
Credit Hours: 0-4  
Review of the clinical aspect of diagnostic imaging of clinical modalities and anatomy as approved by instructor. Review typically will include reading, discussion, and clinical image review covering radiological anatomy, physiology, disease states, and c

**MPHY611**  Survey Clinical Radi Therapy  
Credit Hours: 2  
A series of lectures on various topics in radiation therapy give an overview of radiation therapy in the clinical care of patients and familiarize students with a variety of options for treatment of cancer patients.

**MPHY612**  Radiation Dosimetry I  
Credit Hours: 4  
Series of lectures covering dosimetry fundamentals, dosimetry of photon and electron beams using ionization chambers through applications of cavity theory. Dosimetry of pulse mode detectors and applications of Monte Carlo calculations.

**MPHY613**  Radiation Dosimetry II  
Credit Hours: 4  
Series of lectures in Radiation dosimetry Physics. This includes use of ionization chamber in determination of absorbed dose and measurement of radiation with other techniques.

**MPHY616**  Radiation Biology  
Credit Hours: 4  
A series of introductory lectures on radiation biology with emphasis on the effects of radiation on cellular components. The course also covers the radiation effect on mammals.
MPHY618  Physics of Radiation Therapy  
Basic radiation physics and physical aspects of treatment planning, using photon and electron beams as well as brachytherapy sources will be taught.

MPHY619  Brachytherapy  
Fundamental information about the physical characteristics of the sources used in brachytherapy, the methods used for implant planning and evaluation of plans.

MPHY620  Radiatn Protect and Regulation  
Course considers the hazards associated with radioactivity and electromagnetic radiation, including types and sources of radiation, radiation measurement and units, dosimetry, radiation protection practices required by governmental regulation and medical

MPHY624  Physics of Medicine and Biol  
Overview of physics as applied to physiological and biological systems, including body mechanics, osmosis, respiratory and cardiovascular mechanisms, electric signals, speech, hearing, and sight.

MPHY626  Computers Radiation Therapy  
Computer fundamentals and problem solving through programming. Typical problems include PDD, TAR, TMR, MU calculations, scatter summation, TMR for arc and dose distributions.

MPHY628  Electronics for Med Physicists  
Basics of electronics circuit design to perform specific tasks as it relates to medical physics applications.

MPHY630  Radiation Detection/Measuremen  
Introduces the student to the various equipment and methods used in radiation detection and measurement. Introduces advanced concepts in error analysis, energy spectra unfolding, fit results with function, etc. The lab portion of this course, PHYS6180, is
Course Descriptions 2009-2010

MPHY631 Anatomy/Physiology  
Anatomy/Physiology Course has been developed to provide basic knowledge regarding anatomy and physiology to the students enrolled in the Medical Physics degree. The student will learn about structures and functions of the human body, from cell to gross an

MPHY632 Practical Measurements in Rad  
Basic practical considerations in measurements of photon and electron beam parameters of the linear accelerator.

MPHY640 Intro to LINAC in Radiation Th  
The electron linear accelerator will be described in theory and operation as it relates to medical physics and cancer patients. The physics aspect of particle acceleration and x-ray and electron generation using these units as well as dose delivery to the

MPHY650 Medical Physics Seminar  
Recent developments, special topics, critical analysis of recent publications, and literature reviews in specific areas of medical physics. May be repeated for credit.

MPHY652 Radiation Safety and Measremnt  
Review of fundamentals of radiation safety and protection, instrumentation, radioactivity, radiation interaction with matter, and biological effects of radiation. Also, measurement methods, safety practices and regulations for use of radiation in research.

MPHY655 Journal Paper Revw Med Physics  
Presentation and critical review of original papers on developments in medical sciences. May be repeated for credit.

MPHY661 Clin Trng Radi Oncol Physics I  
Clinical training in radiation therapy physics to graduate students who have obtained on MS or Ph.D. degree in the field of medical physics or related area. May be repeated for credit.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPHY662</td>
<td>Clin Trng Radi Oncol Physcs II</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Clinical training in radiation therapy physics to graduate students who have obtained an MS or Ph.D. degree in the field of medical physics or related area. May be repeated for credit.</td>
<td></td>
</tr>
<tr>
<td>MPHY663</td>
<td>Clin Trng Radi Oncol Physc III</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Clinical training in radiation therapy physics to graduate students who have obtained an MS or Ph.D. degree in the field of medical physics or related area. May be repeated for credit</td>
<td></td>
</tr>
<tr>
<td>MPHY672</td>
<td>Current Topics Medical Physics</td>
<td>0-4</td>
</tr>
<tr>
<td></td>
<td>Lecture and seminar course on topics of current interest in medical physics. May be repeated for credit.</td>
<td></td>
</tr>
<tr>
<td>MPHY673</td>
<td>Medical Physics Research</td>
<td>0-4</td>
</tr>
<tr>
<td></td>
<td>Students will participate in selected ongoing research programs of members of the department faculty. May be repeated for credit.</td>
<td></td>
</tr>
<tr>
<td>MPHY675</td>
<td>Ind Stdy:Rad Imaging</td>
<td>0-12</td>
</tr>
<tr>
<td>MPHY676</td>
<td>Ind Study:Mammo</td>
<td>0-12</td>
</tr>
<tr>
<td>MPHY677</td>
<td>Ind Study:CT</td>
<td>0-12</td>
</tr>
</tbody>
</table>
MPHY679  Ind Sty:Nuc Med  Credit Hours:  0-12

MPHY680  Ind Sty:Ultrasn  Credit Hours:  0-12

MPHY681  Ind Sty:Diag QC  Credit Hours:  0-12

MPHY682  Ind Sty:Dig Img  Credit Hours:  0-12

MPHY683  Ind Sty:Im Proc  Credit Hours:  0-12

MPHY684  Independent Study: Med Physics  Credit Hours:  0-12
Combination of reading, lecture and discussion within a defined area of medical physics. Defined topics are: dosimetry, internal dosimetry, radiobiology, monte carlo analysis, image processing, topical study. May be repeated for credit.

MPHY686  Independent Study in Radiology  Credit Hours:  0-12
Combination of reading, lecture and discussion within a defined area of radiology. Defined topics are: radiographic imaging, computed tomography, magnetic resonance imaging, nuclear medicine, diagnostic ultrasound, diagnostic quality control, digital ima
MPHY688  Independent Study: Rad Therapy  Credit Hours:  0-12
Combination of reading, lecture, and discussion within a defined area of radiation therapy. Defined topics are: 3-D conformal treatment planning, 3-D dose compensators, stereotactic radiosurgery, electron arc therapy, photon and electron algorithms, trea

MPHY690  Scholarly Project  Credit Hours:  0-12

MPHY691  Ind Sty:Rad Ptc  Credit Hours:  0-12

MPHY692  Ind Sty:Rad Bio  Credit Hours:  0-12

MPHY693  Ind Sty:Dosmtry  Credit Hours:  0-12

MPHY694  Ind Sty:M Carlo  Credit Hours:  0-12

MPHY697  Scholarly Project  Credit Hours:  3
Develop an in-depth scholarly project in radiation therapy to fulfill the requirements for the MSBS degree. May be repeated for credit.
MPHY801 Radiation Physics I  
This course considers the physical principles and instrumentation of radiation physics and diagnostic imaging including basic atomic and nuclear properties, production of x-rays, interaction or radiation with matter, radiographic and fluoroscopic imaging.

MPHY802 Radiation Physics II  
This course is a continuation of Radiation Physics I and includes the radioactive decay principles, basics of nuclear medicine imaging including SPECT and PET, basic concepts of NMR and MR imaging, and the principles of ultrasound including Doppler ultrasound.

MPHY804 Diagnostic Radiological Physics  
This course considers the physical principles and instrumentation of diagnostic image formation including radiography, fluoroscopy, computed tomography, ultrasound, nuclear medicine and magnetic resonance imaging.

MPHY806 Nuclear Medicine  
Course covers the physical aspects of diagnostic and therapeutic applications of radionuclides. This includes radiation detectors and imaging systems, emission tomography, counting statistics, equipment testing, radiopharmaceuticals and internal radiation.

MPHY810 Clinical Imaging Review  
Review of the clinical aspect of diagnostic imaging of clinical modalities and anatomy as approved by instructor. Review typically will include reading, discussion, and clinical image review covering radiological anatomy, physiology, disease states, and c

MPHY811 Survey Clinical Radiology  
A series of lectures on various topics in radiation therapy give an overview of radiation therapy in the clinical care of patients and familiarize students with a variety of options for treatment of cancer patients.

MPHY812 Radiation Dosimetry I  
Series of lectures covering dosimetry fundamentals, dosimetry of photon and electron beams using ionization chambers through applications of cavity theory. Dosimetry of pulse mode detectors and applications of Monte Carlo calculations.
Course Descriptions 2009-2010

MPHY813 Radiation Dosimetry II
Credit Hours: 4
Series of lectures in Radiation dosimetry Physics. This includes use of ionization chamber in determination of absorbed dose and measurement of radiation with other techniques.

MPHY816 Radiation Biology
Credit Hours: 4
A series of introductory lectures on radiation biology with emphasis on the effects of radiation on cellular components. The course also covers the radiation effect on mammals.

MPHY818 Physics of Radiation Therapy
Credit Hours: 3
Basic radiation physics and physical aspects of treatment planning, using photon and electron beams as well as brachytherapy sources will be taught.

MPHY819 Brachytherapy
Credit Hours: 3
Fundamental information about the physical characteristics of the sources used in brachytherapy, the methods used for implant planning and evaluation of plans.

MPHY820 Radiatn Protect and Regulation
Credit Hours: 3
Course considers the hazards associated with radioactivity and electromagnetic radiation, including types and sources of radiation, radiation measurement and units, dosimetry, radiation protection practices required by governmental regulation and medical

MPHY824 Physics of Medicine and Biol
Credit Hours: 3
Overview of physics as applied to physiological and biological systems, including body mechanics, osmosis, respiratory and cardiovascular mechanisms, electric signals, speech, hearing, and sight.

MPHY826 Computer in Radiation Therapy
Credit Hours: 2
Computer fundamentals and problem solving through programming. Typical problems include PDD, TAR, TMR, MU calculations, scatter summation, TMR for arc and dose distributions.
MPHY828  Electronics for Med Physicists  
Credit Hours: 2  
Basics of electronics circuit design to perform specific tasks as it relates to medical physics applications.

MPHY830  Radiation Detection/Measurement  
Credit Hours: 3  
Introduces the student to the various equipment and methods used in radiation detection and measurement. Introduces advanced concepts in error analysis, energy spectra unfolding, fit results with function, etc. The lab portion of this course, PHYS6180, is

MPHY832  Practical Measurements in Rad  
Credit Hours: 2  
Basic practical considerations in measurements of photon and electron beam parameters of the linear accelerator.

MPHY840  Intro to LINAC in Radiation Th  
Credit Hours: 3  
The electron linear accelerator will be described in theory and operation as it relates to medical physics and cancer patients. The physics aspect of particle acceleration and x-ray and electron generation using these units as well as dose delivery to the

MPHY850  Medical Physics Seminar  
Credit Hours: 1  
Recent developments, special topics, critical analysis of recent publications, and literature reviews in specific areas of medical physics. May be repeated for credit.

MPHY852  Radiation Safety and Measurement  
Credit Hours: 3  
Review of fundamentals of radiation safety and protection, instrumentation, radioactivity, radiation interaction with matter, and biological effects of radiation. Also, measurement methods, safety practices and regulations for use of radiation in research

MPHY855  Jnl Review in Medical Physics  
Credit Hours: 1  
Presentation and critical review of original papers on developments in medical sciences. May be repeated for credit.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPHY861</td>
<td>Clin Trng Radi Oncol Physics I</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Clinical training in radiation therapy physics to graduate students who have obtained an MS or Ph.D. degree in the field of medical physics or related area. May be repeated for credit.</td>
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</tr>
<tr>
<td>MPHY863</td>
<td>Clin Trng Radi Oncol Phycl III</td>
<td>5</td>
</tr>
<tr>
<td>MPHY872</td>
<td>Current Topics Medical Physics</td>
<td>0-4</td>
</tr>
<tr>
<td></td>
<td>Lecture and seminar course on topics of current interest in medical physics. May be repeated for credit.</td>
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</tr>
<tr>
<td>MPHY873</td>
<td>Medical Physics Research</td>
<td>0-4</td>
</tr>
<tr>
<td></td>
<td>Students will participate in selected ongoing research programs of members of the department faculty. May be repeated for credit.</td>
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</tr>
<tr>
<td>MPHY875</td>
<td>Ind Sty:Rad Img</td>
<td>0-12</td>
</tr>
<tr>
<td>MPHY876</td>
<td>Ind Study:Mammo</td>
<td>0-12</td>
</tr>
<tr>
<td>MPHY877</td>
<td>Ind Study:CT</td>
<td>0-12</td>
</tr>
<tr>
<td>Course Code</td>
<td>Title</td>
<td>Credits</td>
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<tr>
<td>MPH878</td>
<td>Ind Study: MRI</td>
<td>0-12</td>
</tr>
<tr>
<td>MPH879</td>
<td>Ind Study: Nuc Med</td>
<td>0-12</td>
</tr>
<tr>
<td>MPH880</td>
<td>Ind Study: Ultrasound</td>
<td>0-12</td>
</tr>
<tr>
<td>MPH881</td>
<td>Ind Study: Diag QC</td>
<td>0-12</td>
</tr>
<tr>
<td>MPH882</td>
<td>Ind Study: Dig Img</td>
<td>0-12</td>
</tr>
<tr>
<td>MPH883</td>
<td>Ind Study: Im Proc</td>
<td>0-12</td>
</tr>
<tr>
<td>MPH884</td>
<td>Independent Study: Med Physics</td>
<td>0-12</td>
</tr>
</tbody>
</table>

Combination of reading, lecture and discussion within a defined area of medical physics. Defined topics are: dosimetry, internal dosimetry, radiobiology, monte carlo analysis, image processing, topical study. May be repeated for credit.
**MPHY886 Independent Study in Radiology**  
Credit Hours: 0-12  
Combination of reading, lecture and discussion within a defined area of radiology. Defined topics are: radiographic imaging, computed tomography, magnetic resonance imaging, nuclear medicine, diagnostic ultrasound, diagnostic quality control, digital imaging.

**MPHY888 Independent Study: Rad Therapy**  
Credit Hours: 0-12  
Combination of reading, lecture, and discussion within a defined area of radiation therapy. Defined topics are: 3-D conformal treatment planning, 3-D dose compensators, stereotactic radiosurgery, electron arc therapy, photon and electron algorithms, treatment planning.

**MPHY891 Ind Sty:Rad Ptc**  
Credit Hours: 0-12

**MPHY892 Ind Sty:Rad Bio**  
Credit Hours: 0-12

**MPHY893 Ind Sty:Dosmtry**  
Credit Hours: 0-12

**MPHY894 Ind Sty:MCarlo**  
Credit Hours: 0-12

**MPHY896 Dissertation Research**  
Credit Hours: 0-15  
Disciplinary or interdisciplinary investigation of significant problems at the doctoral level leading to the preparation of a scientific project for presentation as a dissertation.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSL1000</td>
<td>Orientation and the Military</td>
<td>1</td>
</tr>
<tr>
<td>MSL1010</td>
<td>Foundations Of Officership</td>
<td>2</td>
</tr>
<tr>
<td>MSL1020</td>
<td>Basic Leadership</td>
<td>2</td>
</tr>
<tr>
<td>MSL1030</td>
<td>Introduction To Physical Fitness</td>
<td>1</td>
</tr>
<tr>
<td>MSL1040</td>
<td>Physical Fitness</td>
<td>1</td>
</tr>
<tr>
<td>MSL2010</td>
<td>Individual Leadership Studies</td>
<td>3</td>
</tr>
<tr>
<td>MSL2020</td>
<td>Leadership And Teamwork</td>
<td>3</td>
</tr>
</tbody>
</table>

**MSL1000 Orientation and the Military**

Introduces students to issues and competencies that are central to a commissioned officer's responsibilities. Establishes a framework for understanding leadership, officership, Army values, physical fitness and time management. Leadership Lab required.

**MSL1010 Foundations Of Officership**

Introduces students to issues and competencies that are central to a commissioned officer's responsibilities. Establishes a framework for understanding leadership, officership, Army values, physical fitness and time management. Leadership Lab required.

**MSL1020 Basic Leadership**

Builds upon the basic leadership fundamentals introduced in MSL 1010 and includes lessons in goal setting, problem solving, critical thinking, values clarification, leadership and followership, and introduces techniques for improving listening and speaking.

**MSL1030 Introduction To Physical Fitness**

Students participate in the U.S. Army's physical fitness program three days each week. The sessions include running, strength exercises, agility exercises and organized sports.

**MSL1040 Physical Fitness**

Students participate in the U.S. Army's physical fitness program three days each week. The sessions build upon the fitness level previously achieved.

**MSL2010 Individual Leadership Studies**

Identifies successful leadership characteristics through observation of others and self, using experiential learning exercises designed to teach students how to communicate, how to build teams and how to plan and organize effectively. Leadership Lab required.

**MSL2020 Leadership And Teamwork**

Students examine how to build successful teams, including methods for influencing action and achieving goals, effective communication techniques, values and ethics, problem solving and physical fitness. Leadership Lab required.
### MSL2030 Physical Training I

**Credit Hours:** 1

Students participate in physical training three times each week. Students learn how to conduct and lead a military physical training session.

### MSL2040 Physical Training II

**Credit Hours:** 1

Students participate in physical training three times each week. The sessions build upon the training level previously achieved.

### MSL2200 Leader's Training Course

**Credit Hours:** 3

This training is a six week course in leadership management and interpersonal skills taught at Ft. Knox, Kentucky. The training compresses the Military Science 1000 and 2000-level courses. Camp graduates are eligible to enter the Army ROTC Advanced course.

### MSL2990 Independent Study In Military Science

**Credit Hours:** 1-3

Students will study an appropriate subject mutually agreed upon between the student and instructor.

### MSL3010 Leadership And Problem Solving

**Credit Hours:** 3

Students assess leadership abilities, plan and conduct individual and small unit training, and apply basic tactical principles and reasoning skills. Leadership Lab required.

### MSL3020 Leadership And Ethics

**Credit Hours:** 3

Examines the role that communications, values and ethics play in effective leadership. Topics include ethical decision making, consideration of others and Army Leadership Doctrine. Leadership Lab required.

### MSL3030 Physical Fitness Planning I

**Credit Hours:** 1

Students design and implement weekly physical training sessions. In addition, they learn how to supervise a group training session.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSL3040</td>
<td>Physical Fitness Planning II</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Students design and implement weekly physical</td>
<td></td>
</tr>
<tr>
<td></td>
<td>training sessions. The sessions build upon the</td>
<td></td>
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<tr>
<td></td>
<td>skill level previously achieved.</td>
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<tr>
<td>MSL3600</td>
<td>Airborne Operations</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Three weeks of intensive field training conducted</td>
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<tr>
<td></td>
<td>at Ft. Benning, Georgia. Combines the study of</td>
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<tr>
<td></td>
<td>military airborne operations, strenuous physical</td>
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<tr>
<td></td>
<td>conditioning, military parachute techniques and</td>
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<td></td>
<td>culminates with five parachute jumps from military</td>
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<tr>
<td></td>
<td>aircraft.</td>
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<tr>
<td>MSL3700</td>
<td>Cadet Troop Leadership Training (ctlt)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Three weeks of practical experience serving as a</td>
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<tr>
<td></td>
<td>platoon leader with U.S. Army soldiers. This</td>
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<tr>
<td></td>
<td>training puts the student in leadership</td>
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<td></td>
<td>situations and allows them to practice and hone</td>
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<td></td>
<td>their leadership skills in a real world environment.</td>
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<tr>
<td>MSL3800</td>
<td>Air Assault Operations</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Two weeks of intensive field training conducted</td>
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<tr>
<td></td>
<td>at an Army installation. Combines the study of</td>
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<tr>
<td></td>
<td>Military Heliborne Operations, strenuous physical</td>
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<tr>
<td></td>
<td>conditioning and advanced rappelling. Culminates</td>
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<tr>
<td></td>
<td>with 4 rappels from a military helicopter.</td>
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<tr>
<td>MSL3850</td>
<td>Leaders Development And Assessment Course</td>
<td>3</td>
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<tr>
<td></td>
<td>This is an intense five-week course conducted</td>
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<td></td>
<td>between the junior and senior year. This</td>
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<td></td>
<td>concentrated practical training provides an</td>
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<td></td>
<td>opportunity to evaluate the student's application</td>
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<tr>
<td></td>
<td>of academic knowledge over a myriad of</td>
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<tr>
<td></td>
<td>leadership situations and tasks.</td>
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<tr>
<td>MSL3990</td>
<td>Independent Study In Military Science</td>
<td>1-3</td>
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<tr>
<td></td>
<td>Students will study an appropriate subject</td>
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<td></td>
<td>mutually agreed upon between the student and</td>
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<td></td>
<td>instructor.</td>
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<tr>
<td>MSL4010</td>
<td>Leadership And Staff Management</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Develops student proficiency in planning and</td>
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<td></td>
<td>executing complex operations, functioning as a</td>
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<tr>
<td></td>
<td>member of a staff and mentoring subordinates.</td>
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<td></td>
<td>Students explore the Army's training management</td>
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<td></td>
<td>system, methods of effective staff collaboration</td>
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<td>and developmental co</td>
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</tbody>
</table>
MSL4020  Officership  Credit Hours:  3
Course includes a case study analysis of military law and practical exercises on establishing an ethical command climate. Students complete a semester-long Senior Leadership Project that requires them to plan, organize, analyze and demonstrate their lead

MSL4030  Advanced Pt Planning I  Credit Hours:  1
Students design and implement a physical training program for the entire semester. They supervise and critique implementation of the MS 3030 students' weekly training plans.

MSL4040  Advanced Pt Planning II  Credit Hours:  1
Students design and implement a physical training program for the entire semester. The sessions build upon the skill level previously achieved.

MSL4800  Gettysburg: A Military History  Credit Hours:  3
An in-depth study of the battle and its place in American history, examining combat leadership and the decision making process at both the operational and tactical level.

MSL4990  Independent Study In Military Science  Credit Hours:  1-3
Students will study an appropriate subject mutually agreed upon between the student and instructor.

MUS1000  Performance Laboratory  Credit Hours:  0
Required of music majors and minors. Weekly departmental student recitals. Offered as P/NC only.

MUS1010  Concert Attendance  Credit Hours:  0
Required of music majors and minors. Attend 8 department concerts and 2 non-department concerts. Offered as P/NC only.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS1100</td>
<td>Introduction To Music Technology</td>
<td>1</td>
<td>Introduction of basic computer applications for music sequencing, notation, and digital recording used in music classes.</td>
</tr>
<tr>
<td></td>
<td>Corequisite: MUS 1610</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUS1200</td>
<td>Group Guitar For The Non-Major</td>
<td>2</td>
<td>Basic guitar skills: note reading, chords, accompaniment, variety of musical styles. Includes rhythmic and aural training, theory and ensemble playing. Students must provide acoustic guitars. May be repeated for credit.</td>
</tr>
<tr>
<td></td>
<td>Corequisite: MUS 1610</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUS1250</td>
<td>Group Piano For The Non-Major I</td>
<td>2</td>
<td>Classical and popular literature in a variety of styles and period will be explored. May be repeated for credit. Students may take P/NC.</td>
</tr>
<tr>
<td></td>
<td>Corequisite: MUS 1610</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUS1280</td>
<td>Group Voice For The Non-Major</td>
<td>2</td>
<td>Develops basic vocal techniques with attention to the principles of voice production, vowel formation, breathing, articulation and flexibility. May be repeated for credit. Open to all students regardless of major. Students may take P/NC.</td>
</tr>
<tr>
<td>MUS1500</td>
<td>String Class</td>
<td>2</td>
<td>Principles, concepts, difficulties typical of stringed instruments and pedagogy addressed through performance.</td>
</tr>
<tr>
<td></td>
<td>Corequisite: MED 1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUS1510</td>
<td>Percussion Class</td>
<td>2</td>
<td>Principles, concepts, difficulties typical of percussion instruments and pedagogy addressed through performance.</td>
</tr>
<tr>
<td></td>
<td>Corequisite: MED 1000</td>
<td></td>
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</tr>
<tr>
<td>MUS1530</td>
<td>Brass Class</td>
<td>2</td>
<td>Principles, concepts, difficulties typical of brass instruments and pedagogy addressed through performance.</td>
</tr>
<tr>
<td></td>
<td>Corequisite: MED 1000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MUS1550  Woodwinds Class
Principles, concepts, difficulties typical of woodwind instruments and pedagogy addressed through performance.

Corequisite: MED 1000

MUS1560  Instrumental Class
An overview of principles, concepts and difficulties typical of string, brass, woodwind and percussion instruments.

Corequisite: MED 1000

MUS1570  Piano Class For Music Majors I
Progressive sequence of keyboard skills courses stressing technique, repertoire, sight reading, harmonization, improvisation and transposition. Includes keyboard technology.

MUS1580  Piano Class For Music Majors II
Provides instruction in keyboard skills required for the various degree programs. Progressive sequence of courses stressing technique, repertoire, sight reading, harmonization, transposition. Includes keyboard technology.

Prerequisites: MUS 1570 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS1590  Jazz Piano Class
Provides instruction in jazz keyboard skills, including jazz techniques, voicings, repertoire, sight reading and harmonization.

Prerequisites: MUS 1570 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS1610  Music Theory And Ear Training I
Dictation, ear training and sight singing skills in rhythm, melody and harmony. Basic theoretical skills include key signatures, clefs, notation of scales, chords and rhythm patterns. Includes computer technology.

MUS1620  Music Theory And Ear Training II
Continuation of 1610. Emphasis on melody dictation and sight singing. Additional skill development in harmonizations, figured bass and study of basic forms. Includes computer technology.

Prerequisites: MUS 1610 FOR LEVEL UG WITH MIN. GRADE OF D-
MUS1700  Jazz Fundamentals  Credit Hours: 2
Introduction to jazz performance practices, nomenclature, chord and music notation, analysis and improvisation.

Prerequisites: MUS 1610 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS1800  Applied Music  Credit Hours: 1-4
Private music lessons for first-year music majors and minors. Must be taken twice, and a grade of B or better is required in each semester.

MUS1810  Applied Music For The Non-Major  Credit Hours: 1-2
MUS 1810 APPLIED MUSIC FOR THE NON-MAJOR Private music lessons for provisional and non-music majors. May be repeated for credit. Limited by instructor availability.

MUS2200  Music Theory For The Non-Major  Credit Hours: 3
Introduction to the fundamentals of music, including notation, key and time signatures, scales, intervals, chords, melodic and formal analysis and elementary compositional procedures. Students may take P/NC. Not for major credit.

MUS2210  Introduction To Music  Credit Hours: 3
The study of vocal and instrumental music from the standard repertoire primarily through listening. Previous music training is not required, but regular listening is part of the course. Not for major credit. Students may take P/NC.

MUS2220  History Of Jazz  Credit Hours: 3
A study of the development of jazz styles including listening skills and historical perspectives. Because the major innovations and stylistic interpretations of jazz are a result of African Americans, the course includes a study of how their culture influ

MUS2250  Musical Diversity In The United States  Credit Hours: 3
The cultures of various ethnic groups (Native Americans, African-American, Mennonite, Moravian, Creole and others) are examined, especially as they relate to the development of folk, popular and art music styles in the United States. This course includes
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS2270</td>
<td>Recording Techniques</td>
<td>2</td>
<td>Examination of contemporary recording technology for live recording and studio applications. Emphasis on microphone placement, signal processing devices and multitrack mixdown techniques.</td>
</tr>
<tr>
<td>MUS2410</td>
<td>Music History And Literature I: World Music And Jazz</td>
<td>3</td>
<td>A study of music from various world cultures and jazz. A special emphasis is placed on developing listening skills.</td>
</tr>
<tr>
<td>MUS2420</td>
<td>Cultures And Music Of Non-Western Styles</td>
<td>3</td>
<td>This course examines the following world cultures and their music-Indonesian, Chinese, Middle eastern, North African, South African, West African and Balkan Countries. Student may take P/NC.</td>
</tr>
<tr>
<td>MUS2530</td>
<td>Diction For Singers I</td>
<td>1</td>
<td>International Phonetic Alphabet mastery; pronunciation of English, German, Latin, Italian and French in relation to art song and aria form, emphasis on the sound of the language. Meets two hours per week.</td>
</tr>
<tr>
<td>MUS2540</td>
<td>Diction For Singers II</td>
<td>1</td>
<td>Continuation of MUS 2530. IPA; pronunciation of German and English in relation to art song and aria form; emphasis on the sound of the language. Meets two hours per week.</td>
</tr>
<tr>
<td>MUS2550</td>
<td>Voice Class For Music Majors</td>
<td>1</td>
<td>For instrumental and keyboard majors. Develops basic vocal techniques with attention to the principles of voice production, vowel formation, breathing, articulation and flexibility. May be repeated for credit.</td>
</tr>
<tr>
<td></td>
<td><strong>Prerequisites:</strong> MUS 1620 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MUS2570  Piano Class For Music Majors III  Credit Hours: 1
Provides instruction in keyboard skills required for the various degree programs. Progressive sequence of courses stressing technique, repertoire, sight reading, harmonization, improvisation and transposition. Includes keyboard technology.

Prerequisites:MUS 1580 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS2580  Piano Class For Music Majors IV  Credit Hours: 1
Provides instruction in keyboard skills required for the various degree programs. Progressive sequence stressing technique, repertoire, sight reading, harmonization, improvisation and transposition. Includes keyboard technology.

Prerequisites:MUS 2570 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS2590  Class Piano For Piano Majors  Credit Hours: 2
MUS-2590 KEYBOARD FUNDAMENTALS for PIANO MAJORS, to be taken in conjunction with music theory. Fundamental keyboard skills including harmony, technique, transposition, improvisation, sight reading, score reading, and ensemble playing.

Corequisite:MUS 2610

MUS2610  Music Theory And Ear Training III  Credit Hours: 4
Continuation of 1620. Students develop proficiency in all musical elements through analytical, written and aural studies. Primary materials are the common practice period literature and small formal units. Includes computer technology.

Prerequisites:MUS 1620 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS2620  Music Theory And Ear Training IV  Credit Hours: 4
Continuation of 2610. Students are introduced to contemporary topics, styles and music through analysis and creative assignments. Dictation and sightsinging studies will also develop topics from MUS 2610. Includes computer technology.

Prerequisites:MUS 2610 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS2700  Jazz Improvisation I  Credit Hours: 2
Practical application of beginning jazz improvisation techniques as applied to modal, blues, and the chord-scale relationships, ear training, and style analysis as applied to jazz.

Prerequisites:MUS 1700 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS2710  Jazz Improvisation II  Credit Hours: 2
Practical application of intermediate jazz improvisation techniques as applied to jazz standards and bebop playing.

Prerequisites:MUS 2700 FOR LEVEL UG WITH MIN. GRADE OF D-
MUS2800  Applied Music
Private music lessons for sophomore music majors.

Prerequisites: MUS 1800 FOR LEVEL UG WITH MIN. GRADE OF B

MUS2990  Special Projects
Designed to meet the needs of individual students who wish to pursue projects in the area of music.

MUS3010  University Band
Open to any qualified student.

MUS3020  Jazz Ensemble
Open to any qualified student.

MUS3030  Brass Choir
Open to a limited number of qualified students.

MUS3050  Chamber Music Ensembles
Open to a limited number of qualified students upon sufficient demand and with the permission of the instructor. The study and performance of chamber music literature.

MUS3090  University Orchestra
Open to any qualified student. Fulfills the large ensemble participation requirement for instrumentalists.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS3140</td>
<td>Concert Chorale</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>A select group of singers.</td>
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</tr>
<tr>
<td>MUS3150</td>
<td>Jazz Vocalstra</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Open to qualified students.</td>
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</tr>
<tr>
<td>MUS3160</td>
<td>Women’s Chorus</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Open to any qualified student. No audition necessary.</td>
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</tr>
<tr>
<td>MUS3170</td>
<td>Madrigal Singers</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Open to a limited number of qualified students.</td>
<td></td>
</tr>
<tr>
<td>MUS3180</td>
<td>Men’s Chorus</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Open to any qualified student. No audition necessary.</td>
<td></td>
</tr>
<tr>
<td>MUS3190</td>
<td>Opera Workshop</td>
<td>1</td>
</tr>
<tr>
<td>MUS3260</td>
<td>Advanced Electronic Music</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>A continuation of the aesthetic and technical aspects of electronically or computer generated music and sound. Emphasis on individual lab work and project presentation.</td>
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<tr>
<td></td>
<td>Prerequisites: MUS 2260 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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</tr>
<tr>
<td>MUS3270</td>
<td>Advanced Recording Techniques</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>This class examines state-of-the-art recording techniques with an emphasis on digital audio technology. Topics include principles of sound design and hard disk recording systems, with assigned production in the lab. Prerequisites: MUS 2270 FOR LEVEL UG WITH MIN. GRADE OF D-.</td>
<td></td>
</tr>
<tr>
<td>MUS3410</td>
<td>Music History And Literature II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>A study of the literature, composers, theorists, trends and musical style of Western Music from Plainchant through Early Classic.</td>
<td></td>
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<tr>
<td>MUS3420</td>
<td>Music History And Literature III</td>
<td>3</td>
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<tr>
<td></td>
<td>An intensive study of the music of the Late Classic period to the present day through the examination of major trends and styles.</td>
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<tr>
<td>MUS3450</td>
<td>Jazz History And Literature</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>An in-depth study of jazz styles, trends, performers and composers geared for music majors.</td>
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<tr>
<td>MUS3470</td>
<td>Theatre Sound</td>
<td>3</td>
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<tr>
<td></td>
<td>Students study the methods and techniques of sound production and design used in the theatre. Tools and techniques of audio production are used in laboratory recording and mixdown. (Alternate years.) Prerequisites: MUS 2270 FOR LEVEL UG WITH MIN. GRADE OF D- OR THR 1040 FOR LEVEL UG WITH MIN. GRADE OF D-.</td>
<td></td>
</tr>
<tr>
<td>MUS3500</td>
<td>Conducting</td>
<td>2</td>
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<tr>
<td></td>
<td>Basic baton techniques and rehearsal routine applicable to both vocal and instrumental conducting. Preparation of scores and opportunity for conducting experience with student groups. Includes MUS 1000:002 and video recording technology. Prerequisites: MUS 1620 FOR LEVEL UG WITH MIN. GRADE OF D-.</td>
<td></td>
</tr>
<tr>
<td>MUS3510</td>
<td>Choral Conducting</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Conducting techniques and rehearsal routine especially concerned with choral groups. Opportunities to direct choral groups. Includes MUS 1000:002 and video recording technology.</td>
<td></td>
</tr>
</tbody>
</table>
### MUS3520 Instrumental Conducting
Conducting techniques and rehearsal routine especially concerned with instrumental ensembles. Opportunities to direct student instrumental groups. Includes MUS 1000:002 and video recording technology.

**Prerequisites:** MUS 3500 FOR LEVEL UG WITH MIN. GRADE OF D-

### MUS3530 Marching Band Techniques
The organization and training of marching bands in secondary schools. Problems of planning and charting football shows for band of different sizes. Opportunity for practical laboratory experience. Includes computer technology and both music writing and m

### MUS3540 Jazz Synthesis
Instruction in the art of improvisation in the jazz style. A study of jazz harmony, melodic construction, keyboard voicings and practice materials. Lab instruction in combo performance techniques and repertoire. May be repeated for credit.

**Prerequisites:** MUS 2620 FOR LEVEL UG WITH MIN. GRADE OF D-

### MUS3550 Vocal Pedagogy
Intended for classroom music teachers, school choral directors, and private voice teachers. A study of anatomy and acoustics of the vocal instrument and techniques for developing the singing voice, with a survey of materials for class and individual inst

### MUS3560 Jazz Pedagogy And Conducting
A study of teaching materials and conducting techniques of the jazz idiom.

**Prerequisites:** MUS 2620 FOR LEVEL UG WITH MIN. GRADE OF D-

### MUS3580 Functional Piano Techniques
Designed for keyboard majors to develop functional skills and harmonization, improvisation, transposition, sight reading, score reading, etc. Successful completion of this course fulfills the piano requirement for student teaching and Licensure.

**Prerequisites:** MUS 2590 FOR LEVEL UG WITH MIN. GRADE OF D-

### MUS3590 Piano Pedagogy
Exploration of techniques and materials for comprehensive, private and group instruction.
MUS3610  Form And Analysis  Credit Hours:  3
The study of musical structures: the theme, the motive, the phrase and analysis of homophonic and polyphonic forms and procedures.
Prerequisites: MUS 2620 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS3630  Instrumentation  Credit Hours:  3
A study of wind, percussion and string instrumentation; scoring for small ensembles, band and orchestra. Opportunities for performances of student scores by university organizations. Includes computer technology.
Prerequisites: MUS 2620 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS3650  Jazz Arranging And Composition I  Credit Hours:  3
Scoring for contemporary jazz ensembles. A study of jazz notations, voicing, orchestration and composition for small jazz groups and the rhythm section.
Prerequisites: MUS 2620 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS3660  Jazz Arranging And Composition II  Credit Hours:  3
Advanced scoring for contemporary jazz ensembles. A study of notations, voicing, orchestration and composition for large jazz groups.
Prerequisites: MUS 3650 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS3700  Jazz Improvisation III  Credit Hours:  2
Practical application of advanced jazz improvisation techniques as applied to avant-garde, fusion and chromatic playing.
Prerequisites: MUS 2710 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS3710  Jazz Improvisation IV  Credit Hours:  2
Practical application of jazz improvisation techniques as applied to contemporary jazz composition and performance.
Prerequisites: MUS 3700 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS3800  Applied Music  Credit Hours:  1-4
Private music lessons for junior music majors.
Prerequisites: MUS 2800 FOR LEVEL UG WITH MIN. GRADE OF B
MUS3810 Recital 1
Credit Hours: 1
A juried public performance of no more than 25-minutes of musical compositions selected from repertoire studied in MUS 4800 and in consultation with the student's major applied professor.

Prerequisites: MUS 2800 FOR LEVEL UG WITH MIN. GRADE OF D-

Corequisite: MUS 4800

MUS4410 Instrumental Music Literature 3
Credit Hours: 3
Course will examine the development of the orchestral and chamber repertoire, from their origins to the present day.

Prerequisites: (MUS 2410 FOR LEVEL UG WITH MIN. GRADE OF D- AND MUS 2420 FOR LEVEL UG WITH MIN. GRADE OF D-)

MUS4420 Vocal Music Literature 3
Credit Hours: 3
A study of the vocal literature of western music, including art song, choral and operatic work.

Prerequisites: (MUS 2410 FOR LEVEL UG WITH MIN. GRADE OF D- AND MUS 2420 FOR LEVEL UG WITH MIN. GRADE OF D-)

MUS4450 Keyboard Literature 3
Credit Hours: 3
A survey of piano or organ/harpsichord literature from earliest publications to the present. Emphasis on a particular period or genre at the discretion of the instructor.

MUS4620 Counterpoint: Introduction 3
Credit Hours: 3
Study of counterpoint in all species, primarily in 18th century style. Development of motive with invertible counterpoint, canon, and analysis and composition of inventions and fugues.

Prerequisites: MUS 2620 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS4690 Seminar In Music Composition 2
Credit Hours: 2
May be repeated, but maximum accumulated credit is six hours toward graduation. Beginning composition including writing in the smaller musical forms. Opportunity for performance of original student compositions.

Prerequisites: MUS 2620 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS4800 Applied Music 1-4
Credit Hours: 1-4
Private music lessons for seniors.

Prerequisites: MUS 3800 FOR LEVEL UG WITH MIN. GRADE OF B
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>MUS4810</td>
<td>Recital</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>A juried public performance of no more than 50-minutes of musical compositions selected from repertoire studied in MUS 4800 and in consultation with a student's major applied professor.</td>
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<tr>
<td></td>
<td>Prerequisites: MUS 2800 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
<td></td>
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<tr>
<td></td>
<td>Corequisite: MUS 4800</td>
<td></td>
</tr>
<tr>
<td>MUS4980</td>
<td>Seminar: Special Topics</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Critical inquiry into specific topics through lectures, class seminar reports and discussion. Seminar topics announced in semester schedule of classes.</td>
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</tr>
<tr>
<td>MUS4990</td>
<td>Special Projects</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Designed to meet the needs of individual students who wish to pursue projects in the area of music.</td>
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<tr>
<td>MUS5010</td>
<td>University Band</td>
<td>1</td>
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<tr>
<td></td>
<td>Students will perform a wide variety of band literature.</td>
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</tr>
<tr>
<td>MUS5020</td>
<td>Jazz Ensemble</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Open to any qualified student.</td>
<td></td>
</tr>
<tr>
<td>MUS5030</td>
<td>Brass Choir</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Open to a limited number of qualified students.</td>
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</tr>
<tr>
<td>MUS5050</td>
<td>Chamber Music Ensembles</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Open to a limited number of qualified students upon sufficient demand and with the permission of the instructor. The study and performance of chamber music literature.</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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</tr>
<tr>
<td>MUS5090</td>
<td>University Orchestra</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Open to any qualified student.</td>
<td></td>
</tr>
<tr>
<td>MUS5140</td>
<td>Concert Chorale</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>A select group of singers.</td>
<td></td>
</tr>
<tr>
<td>MUS5150</td>
<td>Jazz Vocalstra</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Open to qualified students.</td>
<td></td>
</tr>
<tr>
<td>MUS5160</td>
<td>Women’s Chorus</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Open to any qualified student.</td>
<td></td>
</tr>
<tr>
<td>MUS5180</td>
<td>Men’s Chorus</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Open to any qualified student.</td>
<td></td>
</tr>
<tr>
<td>MUS5190</td>
<td>Opera Workshop</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Open to any qualified student.</td>
<td></td>
</tr>
<tr>
<td>MUS5410</td>
<td>Music History And Literature: World Music</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Explores the function and styles of music in various cultures.</td>
<td></td>
</tr>
</tbody>
</table>
MUS5440  Music History And Literature: Special Topics  Credit Hours: 3
The area of study will be announced at the time the course is offered.

MUS5490  Music History And Literature: The Twentieth Century  Credit Hours: 3
An intensive study of the literature, composers, theorists, trends and musical styles during the 20th century.

MUS5510  Choral Conducting  Credit Hours: 2
Conducting techniques and rehearsal routine, especially concerned with choral groups. Opportunities to direct student choral groups.

Prerequisites: MUS 3500 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS5520  Instrumental Conducting  Credit Hours: 2
Conducting techniques and rehearsal routine especially concerned with instrumental ensembles. Opportunities to direct student instrumental groups.

Prerequisites: MUS 3500 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS5590  Piano Pedagogy  Credit Hours: 3
Exploration of techniques and materials for comprehensive, private and group instruction.

MUS5610  Analytical Techniques  Credit Hours: 3
Application of various analytical theories of music to selected works from different style periods to further the understanding of musical forms and works.

Prerequisites: MUS 2620 FOR LEVEL UG WITH MIN. GRADE OF D-

MUS5630  Counterpoint: Comparison Of Styles  Credit Hours: 3
A study of 16th, 18th and 20th century polyphony. Analysis of selected works and composition exercises will be the basis for comparing and contrasting these three styles.

Prerequisites: MUS 4620 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS5800</td>
<td>Applied Music</td>
<td>1-2</td>
<td>1, 2, or 4 hours. Methods and literature of the highest levels (6,7,8). Preparation for professional-level performance. May be repeated for credit with permission of the instructor. Intended for music education majors.</td>
</tr>
<tr>
<td>MUS5900</td>
<td>Graduate Studies In Music</td>
<td>3</td>
<td>The study of sources and bibliographical materials in music.</td>
</tr>
<tr>
<td>MUS6000</td>
<td>Master’s Recital</td>
<td>0</td>
<td>Required for the Master of Music Performance degree. A passing grade documents successful completion of the recital requirement. Must be taken during the semester in which the recital is presented.</td>
</tr>
<tr>
<td></td>
<td>Corequisite: MUS 6800</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUS6560</td>
<td>Jazz Pedagogy and Conducting</td>
<td>2</td>
<td>An in-depth study of pedagogical materials, rehearsal and conducting.</td>
</tr>
<tr>
<td>MUS6600</td>
<td>Jazz Composition and Arranging Seminar</td>
<td>2</td>
<td>Examination and analysis of jazz scores with creative assignments in jazz orchestration and composition in traditional and contemporary styles. May be repeated one time.</td>
</tr>
<tr>
<td>MUS6650</td>
<td>Seminar In Music Arranging</td>
<td>3</td>
<td>Examination and analysis of scores of varied composers and styles; creative assignments in orchestration exploring traditional and contemporary textures and timbres.</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: MUS 2620 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUS6690</td>
<td>Seminar In Music Composition</td>
<td>2</td>
<td>May be repeated, but maximum accumulated credit is six hours. Beginning composition, including writing in the smaller musical forms, to advanced compositions for large.</td>
</tr>
</tbody>
</table>
MUS6700  Jazz Improvisation Seminar  
Credit Hours: 2  
Practical application and analysis of jazz improvisation methods and techniques as applied to contemporary jazz composition and performance. May be repeated one time.

MUS6800  Applied Music  
Credit Hours: 2-5  
Study of methods and literature of the highest levels (7,8). Preparation for professional-level performance. May be repeated for credit with permission of the instructor.

MUS6980  Seminar: Special Topics  
Credit Hours: 1-3  
Selected subjects in music in areas of special interest to the advanced master's degree student. The seminar topic will be announced in the semester schedule of classes.

MUS6990  Independent Study  
Credit Hours: 1-3  
Designed to meet the needs of individual students who wish to pursue projects in the area of music.

NASC1100  Our Physical World  
Credit Hours: 3  
Elementary study of motion and gravity, thermodynamics, wave phenomena, light, electricity, magnetism, models of the atom, the solar system, stars and galaxies.

NASC1110  Physical World Laboratory  
Credit Hours: 1  
Quantitative measurements and predictions concerning the physical universe in a laboratory environment. Motion, electric and magnetic fields, properties of matter, temperature and heat, radioactive decay. Two hours of laboratory per week.

Corequisite: NASC 1100

NERS581  Neuroscience  
Credit Hours: 6  
The content of the medical neuroscience course includes not only the basic science concepts introduced in more traditional neuroanatomy courses, it also incorporates neurohistology, neuroembryology, neurophysiology, neuropathology, and neuroradiology. The
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>NERS585</td>
<td>Sensory Neuroscience</td>
<td>2</td>
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<tr>
<td>NERS605</td>
<td>Intro Neuroscience Research</td>
<td>1</td>
</tr>
<tr>
<td>NERS611</td>
<td>Vestibular Neuroscience</td>
<td>2</td>
</tr>
<tr>
<td>NERS811</td>
<td>Vestibular Neuroscience</td>
<td>2</td>
</tr>
<tr>
<td>NERS862</td>
<td>Neuroscience Lab Rotations III</td>
<td>2</td>
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<tr>
<td>NERS863</td>
<td>Neuroscience Lab Rotations IV</td>
<td>2</td>
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<tr>
<td>NERS864</td>
<td>Neuroscience Lab Rotations V</td>
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<tr>
<td>NERS865</td>
<td>Neuroscience Lab Rotations VI</td>
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<tr>
<td>NEUR701</td>
<td>Neurology: Adult</td>
<td>0-6</td>
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<tr>
<td>NEUR704</td>
<td>Advanced Neurology</td>
<td>0-6</td>
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<td>NEUR707</td>
<td>Acting Internship Neurology</td>
<td>1-6</td>
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<tr>
<td>NEUR710</td>
<td>Advanced Neurology</td>
<td>3-6</td>
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<tr>
<td>NEUR740</td>
<td>Neurology: Req Remediation</td>
<td>6</td>
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<tr>
<td>NEUR745</td>
<td>MD/PhD Neurology Elective</td>
<td>1-2</td>
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</tbody>
</table>

- **NEUR701 Neurology: Adult**
  - Neurology (4 weeks)

- **NEUR704 Advanced Neurology**
  - This elective is designed primarily for fourth year students who want additional experience in evaluation, diagnosis and management of neurological disorders. This elective is offered to students who have successfully completed three years of medical schoo.

- **NEUR707 Acting Internship Neurology**
  - Students will be designated as an Acting Intern with increased responsibility for patient management under supervision.

- **NEUR710 Advanced Neurology**
  - The elective is organized as a 4 week block. Students will identify a mentor for the rotation and plan on spending majority of time working with them on a clinical or basic science research project. The purpose of this elective is to provide students addi.

- **NEUR740 Neurology: Req Remediation**

- **NEUR745 MD/PhD Neurology Elective**
  - In the summer after the second year of medical school, MD/PhD students will identify a clinical mentor. This faculty member will be responsible for the clinical training program of the student, and will provide formative and summative feedback concerning
NEUR750 Neurology Away Elective
Credit Hours: 0-6

NEUR751 Neurology Away Elective
Credit Hours: 3
This elective is designed primarily for fourth year students who want additional experience in evaluation, diagnosis and management of neurological disorders. This elective is offered to students who have successfully completed three years of medical school.

NEUR789 Independent Study in Neurology
Credit Hours: 0-6

NEUS702 Neurosurgery
Credit Hours: 6
Students will be designated as an Acting Intern with increased responsibility for patient management, under supervision.

NEUS703 Advanced Neurosurgery
Credit Hours: 6

NEUS750 Away Elective Neurosurgery
Credit Hours: 6

NEUS751 Neurosurgery Away Elective
Credit Hours: 3
NEUS789 Independent Study Neurosurgery  Credit Hours: 0-6

NDP581 Neuroscience  Credit Hours: 5
A survey of medical neuroscience, taught as part of the medical school curriculum. It includes lectures, laboratories, and patient-presentation sessions.

NDP601 Neurosciences Neurolog Disease  Credit Hours: 2
The objectives of the course are to study nervous system development, organization and structure and of nervous system-related diseases.

NDP650 Seminar in Neuroscience  Credit Hours: 1
Training and practice in presenting seminars on neuroscience research. May be repeated for credit.

NDP654 Jrnl Paper Review Neuroscience  Credit Hours: 2
A weekly report on recent advances in neurobiology taken from original papers to give the students an opportunity to find, critically assess, and report on these studies. Students will develop skills for communicating scientific ideas in a seminar format.

NDP656 Readings in Neuroscience  Credit Hours: 1-4
Tutorial course between major advisor and student to acquaint student with important writings relevant to neuroscience concepts. May be repeated for credit.

NDP672 Current Topics in Neuroscience  Credit Hours: 1-4
Tutorial course between major advisor and student to acquaint student with the range of topics of current major interest in neuroscience research. May be repeated for credit.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>NNDP673</td>
<td>Research in NNDP</td>
<td>1-15</td>
</tr>
<tr>
<td>NNDP689</td>
<td>Independ Study in Neuroscience</td>
<td>1-12</td>
</tr>
<tr>
<td>NNDP699</td>
<td>Thesis Research Neuroscience</td>
<td>1-15</td>
</tr>
<tr>
<td>NNDP781</td>
<td>Neuroscience</td>
<td>5</td>
</tr>
<tr>
<td>NNDP801</td>
<td>Neurosci Neuro Diseases</td>
<td>2</td>
</tr>
<tr>
<td>NNDP850</td>
<td>Seminar in Neuroscience</td>
<td>1</td>
</tr>
<tr>
<td>NNDP854</td>
<td>Jrnl Paper Review Neuroscience</td>
<td>2</td>
</tr>
</tbody>
</table>

- **NNDP673 Research in NNDP**: Independent library and laboratory work under the supervision of the major advisor. May be repeated for credit.
- **NNDP689 Independ Study in Neuroscience**: Independent library and laboratory work under the supervision of the major advisor. May be repeated for credit.
- **NNDP699 Thesis Research Neuroscience**: Independent library and laboratory work under the supervision of the major advisor. May be repeated for credit.
- **NNDP781 Neuroscience**: A survey of medical neuroscience, taught as part of the medical school curriculum. It includes lectures, laboratories, and patient-presentation sessions.
- **NNDP801 Neurosci Neuro Diseases**: The objectives of the course are to study nervous system development, organization and structure and of nervous system-related diseases.
- **NNDP850 Seminar in Neuroscience**: Training and practice in presenting seminars on neuroscience research. May be repeated for credit.
- **NNDP854 Jrnl Paper Review Neuroscience**: A weekly report on recent advances in neurobiology taken from original papers to give the students an opportunity to find, critically assess, and report on these studies. Students will develop skills for communicating scientific ideas in a seminar format.
**Course Descriptions 2009-2010**

**NNDP856  Readings in Neuroscience**  
Credit Hours: 1-4  
Tutorial course between major advisor and student to acquaint student with important writings relevant to neuroscience concepts. May be repeated for credit.

**NNDP872  Current Topics in Neuroscience**  
Credit Hours: 1-4  
Tutorial course between major advisor and student to acquaint student with the range of topics of current major interest in neuroscience research. May be repeated for credit.

**NNDP889  Independ Study in Neuroscience**  
Credit Hours: 1-12  
Independent library and laboratory work under the supervision of the major advisor. May be repeated for credit.

**NNDP899  Research in Neuroscience**  
Credit Hours: 1-15  
Training in neuroscience research techniques through laboratory experience. May be repeated for credit.

**NNDP999  Dissertation Research in Neurosci and Neurologcl Disord**  
Credit Hours: 1-15

**NURA1180  Nursing For Adults I**  
Credit Hours: 5  
This course focuses on caring for adults in long term and community health settings with an emphasis on at risk populations. Pathophysiology of selective organ systems and nursing process are introduced.

Corequisite:NURA 1190

**NURA1190  Foundations Of Nursing**  
Credit Hours: 5  
Using Orem's theory and nursing process, this course introduces the student to basic concepts in nursing and foundational skills. Theory is reinforced by caring for individuals in acute-care settings.

Prerequisites:(MATH 1320 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1120 FOR LEVEL UG WITH MIN. GRADE OF D- AND KINE 2560 FOR LEVEL UG WITH MIN. GRADE OF D-)
NURA1290  Nursing For Adults II  Credit Hours:  6
Nursing management of adults with acute and chronic health deviations. Clinical experiences in acute and community settings under the guidance of faculty.
Prerequisites: (KINE 2570 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURA 1180 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURA 1190

NURA2110  Nursing For Mental Health  Credit Hours:  4
Focuses on nursing care of individuals across the life-span experiencing self-care deficits in mental health in acute/community settings. Clinical emphasis is on coping/adaptation and therapeutic communication.
Prerequisites: (KINE 2570 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURA 1180 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURA 1190

NURA2180  Nursing For Maternal, Newborn And Women’s Health  Credit Hours:  4
Focus is on health care needs of childbearing families, newborns and the gynecological care of women with self-care deficits. Clinical experiences are in ambulatory, acute care and community settings.
Prerequisites: (NURA 1290 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURA 2110 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND KINE 2590 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY))

NURA2190  Nursing For Adults III  Credit Hours:  6
Nursing management of adults with increasingly complex self-care deficits. Clinical experiences in acute and chronic care settings, under the guidance of faculty.
Prerequisites: (NURA 1290 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURA 2110 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND KINE 2590 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY))

NURA2280  Nursing For Infants And Children  Credit Hours:  4
Focus is on health promotion/health deviations of infants and children in a family centered approach. Clinical will emphasize the elements present in theory in diverse locations with multiple patients.
Prerequisites: (NURA 2180 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURA 2190 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURA 2300 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY))

NURA2290  Nursing For Adults IV  Credit Hours:  6
Focuses on nursing management of adults with self-care deficits requiring critical, urgent, acute and rehabilitative care. Clinical experiences include leadership/management roles with guidance from faculty and preceptor.
Prerequisites: (NURA 2180 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURA 2190 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURA 2300 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY))

NURA2300  Nursing For Self Care  Credit Hours:  1
The course is designed to be the capstone experience to assist the senior nursing students as they prepare for their professional practice. Health promotion, maintenance and restoration are emphasized to promote self-care behaviors.
Prerequisites: (NURA 2180 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURA 2190 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURA 2290 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)) AND NURA 2290
NURA2990  Independent Study  
Credit Hours: 1-4
A course designed to provide educational opportunities in a specialized academic area under the direct supervision of a faculty member.

NURS1000  Professional Nursing Orientation  
Credit Hours: 1
Course provides opportunity for development of academic, personal, and interpersonal skills required to become a successful, independent learner. Introduces student to professional nursing as a career.

NURS3010  Nursing Agency I: Concepts  
Credit Hours: 3
Provides foundational knowledge of nursing theory, professional concepts, therapeutic communication and applied interventions. Incorporates laboratory experience with simulated clients.

NURS3060  Holistic Approach To Nursing Interventions  
Credit Hours: 3
Focuses on the holistic model integrating technology, scientific knowledge, and alternative/complementary clinical caring modalities into basic and advanced practices of nursing. Elective.

NURS3100  Holistic Approach To Nursing Interventions  
Credit Hours: 3
Focuses on the holistic model integrating technology, scientific knowledge, and alternative/complementary clinical caring modalities into basic and advanced practices of nursing. Elective.

NURS3110  Nursing Agency II: Assessment  
Credit Hours: 3
Provides for acquisition of knowledge and development of skill in comprehensive nursing assessment.

Prerequisites: NURS 3010 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3100 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3130 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3170 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3180

NURS3120  Adult Health Nursing I  
Credit Hours: 7
Care of adults with common nursing problems using Orem's Self-Care Deficit Theory of Nursing.

Prerequisites: NURS 3010 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3100 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3130 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3170 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3180
NURS3130  Gerontological Nursing  Credit Hours: 3
Focus on theories and concepts of aging and health, based on Universal Self-Care Requisites from Orem's Self-Care Deficit Theory of Nursing.

Prerequisites: NURS 3010 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3110 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3170 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3180

NURS3170  Concepts Of Pathophysiology  Credit Hours: 3
Basic science of pathophysiology of disease across the life span. Prepares for critical thinking in application of concepts to nursing practice.

Prerequisites: NURS 3010 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3110 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3130 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3170

NURS3180  Concepts Of Nursing Pharmacology  Credit Hours: 3
Fundamental pharmacologic principles of physiological response to drugs, therapeutic outcomes and potential drug interactions. Prepares for critical thinking in application of pharmacotherapy principles to nursing.

Prerequisites: NURS 3010 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3110 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3130 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3170

NURS3210  Nursing Agency III: Interventions  Credit Hours: 3
Application of principles of nursing interventions in the learning lab on simulated clients.

Prerequisites: (NURS 3010 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3110 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3130 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3170

NURS3620  Women's Health Nursing  Credit Hours: 5
Provides didactic and clinical opportunities relevant to care of women across lifespan. Various clinical settings used in application of nursing system with a self-care framework.

Prerequisites: (NURS 3120 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3210 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3630 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY))

NURS3630  Mental Health Nursing  Credit Hours: 5
Psychosocial influences on self-care agency are presented within the context of culturally competent nursing care. Concepts are interpreted within self-care deficit theory and applied in clinical experiences.

Prerequisites: (NURS 3010 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3110 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3130 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY))

NURS3640  Parent-Child Nursing  Credit Hours: 5
Nursing care of infants, children, and adolescents within families and groups using Orem's Self Care Deficit Theory of Nursing. Clinical experiences in wellness, acute, and chronic care settings.

Prerequisites: (NURS 3120 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3170 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3180 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3210)
Course Descriptions 2009-2010

NURS4010  Community Health Nursing  Credit Hours:  5
Focuses on design and implementation of nursing care for aggregates and communities. Individual and family care is provided within the context of population health.
Prerequisites:(NURS 3120 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3170 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3180 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3210

NURS4020  Leadership And Management In Nursing  Credit Hours:  3
Focus on principles and theories of management/leadership as a basis for provision of nursing care.
Prerequisites:(NURS 3620 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3640 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 4010 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

NURS4030  Adult Health Nursing II  Credit Hours:  7
Design and implementation of nursing systems for the adult population with complex health states. Includes application of nursing leadership principles in clinical settings.
Prerequisites:(NURS 3620 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3640 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 4010 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

NURS4040  Interdisciplinary Ethics  Credit Hours:  1
Interdisciplinary dialogue among health professionals. Explores potential conflicts among nurses, physicians and other health care providers. Includes conflict resolution, truth telling, withdrawing nutrition and hydration, whistle blowing and assisted

NURS4050  Oncology Nursing  Credit Hours:  3
Focuses on concepts, knowledge and skills necessary to assist individuals who have cancer and their families. Emphasizes helping people to care for themselves throughout their illness. Elective.

NURS4080  Perioperative Nursing Care  Credit Hours:  4
Clinical elective with focus on the practice of perioperative nursing.
Prerequisites:(NURS 3120 FOR LEVEL UG WITH MIN. GRADE OF D- AND NURS 3170 FOR LEVEL UG WITH MIN. GRADE OF D- AND NURS 3180 FOR LEVEL UG WITH MIN. GRADE OF D- AND NURS 3210 FOR LEVEL UG WITH MIN. GRADE OF D-

NURS4120  Nursing Leadership And Management  Credit Hours:  5
Focus on principles of management and leadership for the baccalaureate prepared nurse. Provision of professional care in a variety of settings.
Prerequisites:(NURS 4230 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 4180 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 4190 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY))
NURS4140   Research Inquiry I And II   Credit Hours: 4
Students will critically evaluate publishing research for clinical relevance, identify a research problem, select a conceptual framework, review selected literature, and prepare a quantitative or qualitative research proposal.

NURS4150   Pathophysiology For Advanced Practice Nursing   Credit Hours: 3
Overview of pathologic processes that influence the development of diseases in humans. Includes discussion of normal function and the impact of disease on health.

NURS4160   Advanced Health Assessment   Credit Hours: 3
Focuses on specialty specific comprehensive and problem focused advanced patient assessment. Specialty laboratory practice and supervision are required.

NURS4170   Health Care Aspects Of Human Sexuality   Credit Hours: 3
Examination of impact on health care of selected components of human sexuality. Aspects include sexual assessment, sexual changes during the life span and disturbances in sexuality due to health conditions. Elective.

NURS4180   Theoretical And Professional Foundations In Nursing   Credit Hours: 4
Focus on RN student's transition to professional higher education and theory-based practice. Current professional issues are explored. Political, socioeconomic, ethical and legal issues are critically examined and discussed.

NURS4190   Interpersonal Strategies In Nursing Of Older Individuals   Credit Hours: 6
Focus on application of Self-Care Deficit Theory of Nursing and health maintenance for older individuals within the family and environment; emphasis on development of interpersonal skills for RNs.

Prerequisites: (NURS 3770 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 4180 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY))

NURS4200   Population Focused Care   Credit Hours: 5
Focuses on the design and implementation of nursing care for aggregates and communities. Individual and family care is provided within the context of population focused care.

Prerequisites: (NURS 3770 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 4190 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 4230 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY))
NURS4210  Applied Nursing Research  Credit Hours: 3
Emphasizes all phases of the research process. Analysis and application of research strategies for the professional nurse.

NURS4220  Applied Pathophysiology And Pharmacology  Credit Hours: 4
Concepts of pathophysiology and pharmacology. Prepares for critical thinking in application of concepts to nursing practice.

NURS4230  Applied Health Assessment  Credit Hours: 3
Nursing application of health history, physical and psychosocial assessment skills across the lifespan.

NURS4250  Professional Nursing Competency  Credit Hours: 2
This course provides an overview of NCLEX and practice in the application of knowledge required for the professional nursing examination.

Prerequisites: NURS 3620 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3640 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 4010 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

NURS4280  Theories Of Addictive Behaviors  Credit Hours: 3
Research and treatment related to addictive behaviors are critiqued. Nursing interventions specific for addicted persons are evaluated. Implications of legal/social/health policies on services for the population are explored. Elective.

NURS4600  Critical Care Nursing  Credit Hours: 4
Clinical elective with focus on design and implementation of partially and wholly compensatory nursing systems for clients with critical health states.

Prerequisites: NURS 3620 FOR LEVEL UG WITH MIN. GRADE OF D- AND NURS 3640 FOR LEVEL UG WITH MIN. GRADE OF D- AND NURS 3630 FOR LEVEL UG WITH MIN. GRADE OF D- AND NURS 3640 FOR LEVEL UG WITH MIN. GRADE OF D- AND NURS 4010 FOR LEVEL UG WITH MIN. GRADE OF D-

NURS4720  Special Topics In Women's Health  Credit Hours: 4
Clinical elective with focus on advanced issues in women's and neonatal healthcare.

Prerequisites: NURS 3620 FOR LEVEL UG WITH MIN. GRADE OF D- AND NURS 3640 FOR LEVEL UG WITH MIN. GRADE OF D- AND NURS 4010 FOR LEVEL UG WITH MIN. GRADE OF D-
NURS4950 Nursing Research
Credit Hours: 3
Introduction to concepts, issues and processes in nursing research. Emphasis on critical analysis and evaluation of published research for nursing practice and research role of baccalaureate nurse.
Prerequisites: NURS 3620 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 3640 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NURS 4010 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

NURS4990 Independent Study
Credit Hours: 1-3
Independent study in nursing.

NURS501 Adult Health Nursing II
Credit Hours: 4

NURS502 Adult Health Nursing III
Credit Hours: 4

NURS504 Hlth Assess and Nrs Prmng Hlth
Credit Hours: 6
Using Orem's SCDT, students assess individuals and families and apply the nursing process in order to promote the health of individuals and families across the life span. Includes 90 clinical hours.

NURS505 Integrative Hlth Science I
Credit Hours: 3
Examines foundational chemical, physical, cellular biological, and microbiological principles of human physiology. Focuses on advanced physiologic and pathophysiologic mechanisms underlying human responses to genetic, defense, and nervous system disease.

NURS506 Professional Socialization I
Credit Hours: 3
Focuses on the development of the professional nursing role. Students explore the effects of historical, legal, and ethical influences on professional nursing. Cultural diversity also is examined.
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**NURS507 Therapeutic Comm Skills Nurses**
Credit Hours: 3
Focuses on therapeutic communication skills at the intrapersonal and interpersonal levels. Explore nursing agency from a holistic perspective. Includes 30 clinical hours.

**NURS509 Psych Mental Health Nursing I**
Credit Hours: 5
Investigate human behavior using nursing and other theories from related disciplines. Apply psychotherapeutic intervention theories. Evaluate for clinical application with individuals and groups. Includes 120 clinical hours.

**NURS510 Psych Mental Health Nursing II**
Credit Hours: 6
Analyze human responses to biopsychosocial and spiritual stressors. Examine stressors in relation to group and family psychotherapy theories. Includes 180 clinical hours.

**NURS511 Psych Mental Health Nurs Pract**
Credit Hours: 4-6
Students maintain a caseload of clients/families/groups experiencing mental health problems in a practicum setting. Motivation for change will be analyzed in relation to human behavior. Includes 240 clinical hours.

**NURS514 Design Nurs Sys Promote Slf Cr**
Credit Hours: 0-7
Apply Orem's SCDT in the design and implementation of nursing systems that assist individuals and families in achieving and maintaining optimal health. Includes 90 clinical hours.

**NURS516 Professional Socialization II**
Credit Hours: 3
Integrate nursing theory and models into professional nursing practice. Focuses on ethical, political, and economic issues that impact nursing practice. Differentiation of advanced practice and entry level roles are explored.

**NURS519 Adv Interpersonal Intervention**
Credit Hours: 2-3
Integrates interpersonal strategies and complementary modalities through peer counseling and supervision. Analyzes personal abilities and limitations in developing therapeutic relationships with individuals and groups. Includes 60 hours clinical.
**NURS522**  
**Field Experience Seminar**  
Credit Hours: 1-3  
Program capstone experience that integrates nursing theory, research, and practice to fulfill the requirements of the MSN degree.

**NURS524**  
**Design Nurs Sys Com Hlth Sts**  
Credit Hours: 6  
Using Orem's SCCT, students design and implement nursing systems that assist individuals and families with complex problems to achieve and maintain optimal health. End of life care is addressed. Includes 120 clinical hours.

**NURS525**  
**Health Science II**  
Credit Hours: 3  
Focuses on advanced physiologic and pathophysiologic mechanisms underlying disease across the life span. Examines cardiovascular, respiratory, endocrine, muscular skeletal, nervous, genitourinary, hepatobiliary, renal, integumentary and gastrointestinal

Prerequisites: (NURS 504 FOR LEVEL GR WITH MIN. GRADE OF AND NURS 505 FOR LEVEL GR WITH MIN. GRADE OF AND NURS 506 FOR LEVEL GR WITH MIN. GRADE OF AND NURS 507 FOR LEVEL GR WITH MIN. GRADE OF )

**NURS527**  
**Health Care Aspect Human Sex**  
Credit Hours: 3  
Examination of the impact of selected components of human sexuality on health care. Aspects include sexual assessment, changes during the life span and disturbances in sexuality due to health conditions.

**NURS528**  
**Theories of Addictive Behavior**  
Credit Hours: 2  
Required for Psychiatric-Mental Health Students

**NURS533**  
**Health Assessments**  
Credit Hours: 3  
Focuses on acquisition of graduate level skills in collection and documentation of assessment data across the life-span. Differentiates normal from abnormal findings. Supervised laboratory practice is required.

**NURS535**  
**Parent/Child Health Nursing II**  
Credit Hours: 4
NURS536  Parent/Child Hlth Nrs PractiCredit Hours: 4

NURS540  Theoretical and Ethical FoundCredit Hours: 3
Explores roots of nursing as a science and art. Examines personal and professional values in the context of ethical decision-making. Emphasis is on analysis and evaluation of selected nursing and ethical theories. Course Enrollment is Limited.

NURS544  Population Focused CareCredit Hours: 6
Students apply epidemiological principles and Orem's SCDT to improve the health status of aggregates, vulnerable populations and communities. Includes 90 clinical hours.

NURS546  Desn Hlth Care Org and SystemsCredit Hours: 3

NURS550  Family and Cultural DiversityCredit Hours: 3

NURS551  Adv Clinical Seminar:NursingCredit Hours: 3-4
Application of nursing theory and research with clients in wellness promotion or complex care states. Emphasis is on the assessment and analysis of human responses and outcomes of care.

NURS553  Public Policy and Health CareCredit Hours: 2-3
Explores the public policy process from agenda setting through program evaluation. Focus is on how health problems are brought to the attention of government and solutions are obtained. Some field work is expected.
### NURS554  Adv Practicum Nurs Sys Design  
Credit Hours: 12  
Students demonstrate integration of nursing knowledge and skill in designing and implementing nursing systems in a capstone clinical experience. Includes 300 clinical hours.

### NURS555  Anatomy and Pathophysiology  
Credit Hours: 3

### NURS567  Pharmacology  
Credit Hours: 3  
Focuses on fundamental pharmacological principles. Prepares for critical thinking in application of pharmacotherapy principles to nursing. Emphasizes physiological responses to drugs, expected outcomes, and potential drug interactions.  
Prerequisites: (NURS 504 FOR LEVEL GR WITH MIN. GRADE OF  AND NURS 505 FOR LEVEL GR WITH MIN. GRADE OF  AND NURS 506 FOR LEVEL GR WITH MIN. GRADE OF  AND NURS 507 FOR LEVEL GR WITH MIN. GRADE OF )

### NURS568  Adv Phys/Pathphysiology I  
Credit Hours: 3  
Focuses on advanced physiologic and pathophysiologic mechanisms underlying human responses to disease illness across the life-span. Students will build on existing knowledge of human anatomy and physiology. Course Enrollment is Limited.

### NURS569  Adv Pharmacotheapeutics  
Credit Hours: 3  
Focuses on advanced pharmacologic principles in decision-making for pharmacotherapy. Emphasizes responses to drugs, expected outcomes, and potential drug interactions. Discusses professional responsibilities of prescriptive privileges.

### NURS570  Clinical Diagnostic Reasoning  
Credit Hours: 2  
Focuses on analysis of a clinical problem using clinical reasoning and diagnostic hypothesis formation. Students will practice developing a working diagnosis. Includes 60 hours of laboratory.

### NURS574  Advanced Health Assessments  
Credit Hours: 4  
Focuses on acquisition of advanced skills in collection and documentation of assessment data across the life span. Differentiates normal from abnormal findings. Supervised laboratory practice is required. Course Enrollment is Limited. Includes 60 hours lab.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>NURS581</td>
<td>PNP I: Care of Children - Well</td>
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<tr>
<td></td>
<td>Focuses on the health care needs of children and adolescents and principles of health promotion and wellness. Students will have an opportunity to begin development of skills in primary and specialty care settings. Includes 180 hours clinical.</td>
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<tr>
<td>NURS582</td>
<td>PNP Clin II: Acute/Chronic</td>
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<td></td>
<td>Focuses on the care of children and adolescents with an emphasis on the management of common acute and stable chronic illnesses. Includes 180 hours clinical.</td>
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<tr>
<td>NURS583</td>
<td>PEDIATRIC NURSE PRACTITIONER CLINICAL III: COMPLEX, CHRONIC, ILLNESSES, OR DISABILITIES</td>
<td>6</td>
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<tr>
<td></td>
<td>Focuses on management of common and complex acute and chronic conditions of children and adolescents. Issues of disability and developmental conditions are addressed. Emphasis is on integration of the advanced practice role.</td>
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<td>Prerequisites: NURS 582 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>NURS585</td>
<td>Prim Care of Women and Childn</td>
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<tr>
<td>NURS586</td>
<td>Primary Care of Adolescents</td>
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<tr>
<td>NURS587</td>
<td>Prim Care of Adults and Older</td>
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<tr>
<td>NURS591</td>
<td>Advanced Nursing Research</td>
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<tr>
<td></td>
<td>Critically evaluate published research for clinical relevance, identify a research problem, select a conceptual framework, review selected literature, and prepare a quantitative or qualitative research proposal.</td>
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<td>Course Code</td>
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<tr>
<td>NURS593</td>
<td>ANP: Care of Adults and Older</td>
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<tr>
<td>NURS594</td>
<td>ANP: Care of Adolescents and Adl</td>
<td>6</td>
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<tr>
<td>NURS595</td>
<td>ANP-CNS I: Care-Women and Conc</td>
<td>4</td>
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<tr>
<td>NURS596</td>
<td>ANP/CNS II: Care of Adolescents</td>
<td>6</td>
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<tr>
<td>NURS597</td>
<td>ANP/Clin Nurse Spec III</td>
<td>5</td>
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<tr>
<td>NURS598</td>
<td>Comprehensive Exam in Nursing</td>
<td>3</td>
</tr>
<tr>
<td>NURS601</td>
<td>Research Inquiry I</td>
<td>2</td>
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</tbody>
</table>

Program capstone emphasizes independent comprehensive review preparation for exams with synthesis of knowledge from the total graduate nursing curriculum and review of relevant literature in selected field of study.
NURS602  Research Inquiry II  Credit Hours:  2

NURS603  ANP-Certificate Clin I  Credit Hours:  7
Focuses on the care of adolescents and adults with an emphasis on the management of common acute and stable chronic illnesses. Includes 180 clinical hours.

NURS604  ANP-Certificate Clinical II  Credit Hours:  6
Focuses on the care of women and principles of health promotion and wellness. Students will have the opportunity to continue development of skills in primary care. Includes 180 clinical hours.

NURS605  ANP-Certificate Clinical III  Credit Hours:  6
Focuses on management of common and complex acute and chronic conditions of adults and older adults. Urgent care issues are addressed. Emphasis is on integration of the advanced practice role. Includes 180 clinical hours.

NURS607  Adv Comm Skills Grp Dynamics  Credit Hours:  3
Focuses on advanced therapeutic communication skills in the nurse-client relationship and analysis of Self-care agency. Complementary modalities are explored. Includes 45 clinical hours.

NURS608  ANP/CNS Care Adol Adults  Credit Hours:  6-7
Focuses on the care of adolescents and adults with an emphasis on the management of common acute and stable chronic illnesses. Includes 180 clinical hours.

NURS609  Women and Wellness  Credit Hours:  6-7
Focuses on the care of women and principles of health promotion and wellness. Students will have an opportunity to begin development of skills in primary and specialty care settings. Includes 180 clinical hours.
Course Descriptions 2009-2010

NURS610  ANP/CNS III Older Adults  
Credit Hours:  6-8  
Focuses on management of common and complex acute and chronic conditions of adults and older adults. Urgent care issues are addressed. Emphasis is on integration of the advanced practice role. Includes 240 clinical hours.

NURS614  Adv Pract Nurs: Role and Issue  
Credit Hours:  2  
Focuses on the issues and role of the advanced practice nurse, including historical and current perspectives of the advanced role. Examines health care system issues pertaining to advanced practice.

NURS621  FNP Clin I: Adolescent and Adult  
Credit Hours:  6-7  
Focuses on primary care of common and chronic illness of adolescents and adults. Clinical experiences will continue to incorporate women and children, adults, and target populations. Includes 180 clinical hours.

NURS622  FNP Clin II: Women and Children  
Credit Hours:  6-7  
Focuses on the primary care of children and women's health and includes normal prenatal care. Emphasis is on health promotion and common acute illness. Includes 180 clinical hours.

NURS623  FNP Clin III: Adults/Older Adult  
Credit Hours:  6-8  
Focuses on primary care management of acute and chronic conditions of adults and older adults. Urgent care issues are addressed. Emphasizes integration of primary care concepts across the life span. Includes 240 clinical hours.

NURS650  Genetics in Clinical Practice  
Credit Hours:  3  
This course focuses on the fundamental concepts and principles of human genetics and the applications of this knowledge to clinical practice situations in a variety of settings.

NURS660  Topics in Nursing  
Credit Hours:  2  
Explores selected nursing topics with in-depth analysis and Synthesis. Classroom and independent study required. Students choose one sub-topic. Sub-topics are Nursing Theory, Family Theories, Ethics, Cultural Diversity.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>NURS664</td>
<td>Nursing Case Management</td>
<td>3</td>
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<tr>
<td>NURS668</td>
<td>Transcultural Nursing Lifecycle</td>
<td>3</td>
</tr>
<tr>
<td>NURS670</td>
<td>Issues of Aging</td>
<td>3</td>
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<tr>
<td>NURS671</td>
<td>Develop Instruc Progrm Nursing</td>
<td>3</td>
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<tr>
<td>NURS672</td>
<td>Tchg, Lrng and Evaluation Nurs</td>
<td>4</td>
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<tr>
<td>NURS673</td>
<td>Practicum/Seminar in Teaching</td>
<td>3-4</td>
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<tr>
<td>NURS689</td>
<td>Independent Study in Nursing</td>
<td>0-4</td>
</tr>
</tbody>
</table>

**NURS670: Issues of Aging**
Examination of issues of aging focusing on current research and reading in gerontological and rehabilitation nursing practice. May be repeated for credit.

**NURS671: Develop Instruc Progrm Nursing**
Focuses on skills to develop curricular components for nursing instructional programs. Examines the relationships among mission, philosophy, goals, and outcomes for various learning environments.

**NURS672: Tchg, Lrng and Evaluation Nurs**
Focuses on teaching-learning theories, processes, strategies, and styles. Examines evaluation principles and strategies in the classroom and clinical setting.

**NURS673: Practicum/Seminar in Teaching**
Applies knowledge of learning and evaluation theories in the development and implementation of a program of instruction. Within a seminar format, emphasizes significant issues in healthcare education.

**NURS689: Independent Study in Nursing**
The student and faculty member agree on a course of study that will enable the student to achieve his/her objectives. An Independent Study Contract and Evaluation Form are submitted to the Associate Dean of the Graduate Nursing Program. May be repeated.
<table>
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<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>NURS695</td>
<td>Research Practicum</td>
<td>2</td>
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<tr>
<td>NURS696</td>
<td>Res Inquiry III: Scholarly Proj</td>
<td>0-2</td>
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<tr>
<td>NURS697</td>
<td>Scholarly Project</td>
<td>1-2</td>
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<tr>
<td>NURS698</td>
<td>Inquiry III: Thesis</td>
<td>0-2</td>
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<tr>
<td>NURS699</td>
<td>Thesis Research</td>
<td>1-3</td>
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<tr>
<td>NURS701</td>
<td>Scientific Basis Nsg Practice</td>
<td>1-3</td>
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<tr>
<td>NURS702</td>
<td>Org Systems Leadership in Hlth</td>
<td>3</td>
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</table>

Research in nursing to fulfill the requirement of Master of Nursing Program. May be repeated for credit and divided across semesters.

Research in nursing to fulfill the requirement of Master of Nursing Program. May be repeated for credit and divided across semesters. Only 2 credit hours are applicable for the degree. May be repeated for credit.

Implementation of thesis. May be repeated for credit.

Research in nursing to fulfill the research requirement of the Nursing Master's Program. The (required) 2 credit hours may be divided and repeated across semesters. Only 2 credit hours are applicable for the degree. May be repeated for credit.

This course examines the application of organizational and leadership theories and strategies to assess process and outcomes in a variety of health care settings. Focus is on the role of the advanced practice nurse in analyzing clinical patterns and issue.
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>NURS703</td>
<td>Qual Mgmt/Perf Improve Hlth Or</td>
<td>3</td>
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<tr>
<td>NURS704</td>
<td>Applied Nursing Research</td>
<td>3</td>
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<tr>
<td>NURS705</td>
<td>Inf Tech Nsg &amp; Hlth Care Syst</td>
<td>3</td>
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<tr>
<td>NURS706</td>
<td>Population Health</td>
<td>3</td>
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<tr>
<td>NURS707</td>
<td>Mktg/Entrep Act Cmplx Hlth Cr</td>
<td>3</td>
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<tr>
<td>NURS708</td>
<td>Evdnc Base Diag Mthds Adv Prac</td>
<td>3</td>
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<tr>
<td>NURS709</td>
<td>Project Seminar</td>
<td>1-3</td>
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</tbody>
</table>

**NURS703 Qual Mgmt/Perf Improve Hlth Or**

Examines principles/practice of quality management/clinical performance in care delivery and outcomes. Focuses on role and accountability of the advanced practice nurse/collaborative team for maintaining safety and improving quality of care.

**NURS704 Applied Nursing Research**

This course is an extension of basic research and utilization methods. The focus is on preparing the student for leadership in clinical research, research utilization, and grant-writing activity.

**NURS705 Inf Tech Nsg & Hlth Care Syst**

Systematic assessment of clinical and administrative information needs of health care systems. Examines the technology and strategies needed to support patients, nurses, and health care delivery in dynamic environmental systems.

**NURS706 Population Health**

This course uses epidemiologic models to analyze and construct interventions for health care delivery systems. The focus is on safe, quality, culturally-appropriate advanced nursing practice activities to meet emerging world needs.

**NURS707 Mktg/Entrep Act Cmplx Hlth Cr**

This course examines marketing and entrepreneurial strategies for advanced nursing practice in complex health care systems. The focus is on creating and evaluating marketing plans and entrepreneurial activities.

**NURS708 Evdnc Base Diag Mthds Adv Prac**

This course examines diagnostic laboratory and imaging methods as foundational evidence for assessment and intervention in the care of patient populations. The focus is on examining the basis for diagnosis using laboratory and imaging procedures, assessing.

**NURS709 Project Seminar**

This course provides a forum to articulate and explore advanced nursing practice roles and responsibilities. The focus will be on leading nursing practice in patient advocacy, teaching, collaboration, and the design and provision of care.
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
<td>NURS710</td>
<td>Evidence-based Practice Proj</td>
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<td></td>
<td>This course is guided, independent</td>
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<td>project utilizing research to</td>
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<td>improve patient outcomes, health</td>
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<td></td>
<td>care delivery, or nursing practice.</td>
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<tr>
<td>NURS718</td>
<td>Evdnc Base Admin Comp Hlth Sys</td>
<td>3</td>
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<td></td>
<td>This course examines evidence</td>
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<td>practices in administrative health</td>
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<td>care settings. The focus is on</td>
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<td>examining current status and</td>
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<td>creating and evaluating innovative</td>
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<td>administrative practices based on</td>
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<td>best practices. Competencies</td>
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<tr>
<td>NURS797</td>
<td>Capstone Pract: Direct Care</td>
<td>1-6</td>
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<tr>
<td></td>
<td>Individually precepted practicum</td>
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<td>that requires advanced nursing</td>
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<td>practice with individuals and</td>
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<td>groups. Includes seminar that</td>
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<td>facilitates synthesis and</td>
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<td>application of all prior learning</td>
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<td>for evidence-based practice.</td>
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<tr>
<td>NURS798</td>
<td>Capstone Pract: Indirect Care</td>
<td>1-6</td>
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<td>Individually precepted practicum</td>
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<td>that requires leadership and practice at the aggregate/systems/organizational level of health care. Includes required seminar that facilitates application, synthesis, and evaluation of prior learning in applied practice.</td>
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<tr>
<td>NURSWAC</td>
<td>Nursing - Writing Intensive</td>
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<tr>
<td>OBGY701</td>
<td>Obstetrics/Gynecology</td>
<td>0-9</td>
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<tr>
<td></td>
<td>Obstetrics and Gynecology (6 weeks)</td>
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<td>Corequisite: PSCH 701 FMMD 701 PEDS 701</td>
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<td>OBGY712</td>
<td>Acting Internship in OB/GYN</td>
<td>0-6</td>
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<tr>
<td>Course Code</td>
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<tr>
<td>OBGY713</td>
<td>Maternal Fetal Medicine</td>
<td>6</td>
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<td></td>
<td>Student will be integrated in to the MFM service as a member of the team, participating in all aspects of the practice of Maternal Fetal Medicine both inpatient and outpatient. The student will be exposed to the care of high risk pregnant women and their</td>
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<tr>
<td>OBGY714</td>
<td>Obstetrics:Ultrasonography</td>
<td>6</td>
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<tr>
<td>OBGY715</td>
<td>OB/GYN Research</td>
<td>6</td>
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<tr>
<td>OBGY716</td>
<td>Gynecologic Oncology</td>
<td>0-6</td>
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<tr>
<td></td>
<td>The student will have the opportunity to observe the practice of gynecologic oncology and care for women with gynecologic cancer. The student will be integrated in to the gyn oncology service as a member of the team and be involved with outpatient clinic</td>
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<tr>
<td>OBGY740</td>
<td>OB/GYN:Required Remediation</td>
<td>6</td>
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<tr>
<td>OBGY750</td>
<td>OB/GYN Away Elective</td>
<td>0-6</td>
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<tr>
<td>OBGY751</td>
<td>OB/GYN Away Elective</td>
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<tr>
<td>OBGY755</td>
<td>International Health OB/GYN</td>
<td>0-6</td>
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<tr>
<td>OBGY789</td>
<td>Independent Study OB/GYN</td>
<td>0-6</td>
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<tr>
<td>OCCH501</td>
<td>Principles Occupational Health</td>
<td>0-3</td>
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<tr>
<td>OCCH505</td>
<td>Principles Occupational Safety</td>
<td>2</td>
</tr>
<tr>
<td>OCCH510</td>
<td>Human System Occupation Diseases</td>
<td>2</td>
</tr>
<tr>
<td>OCCH515</td>
<td>Principles Environmental Hlth</td>
<td>2</td>
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<tr>
<td>OCCH520</td>
<td>Air Monitoring Analytical Meth</td>
<td>3</td>
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<tr>
<td>Course Code</td>
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<tr>
<td>OCCH525</td>
<td>Management Hazardous Materials</td>
<td>2</td>
</tr>
<tr>
<td>OCCH535</td>
<td>Ergonomics</td>
<td>2</td>
</tr>
<tr>
<td>OCCH540</td>
<td>Hazard Control Methods</td>
<td>3</td>
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<tr>
<td>OCCH541</td>
<td>Air Contaminant Model Vent Res</td>
<td>3</td>
</tr>
<tr>
<td>OCCH555</td>
<td>General and Mechanical Hazards</td>
<td>3</td>
</tr>
<tr>
<td>OCCH561</td>
<td>Physical Agents</td>
<td>3</td>
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<td>OCCH562</td>
<td>Phys Agents-Eff Eval and Ctrl</td>
<td>3</td>
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</table>

Qualitative and quantitative aspects of air contaminant modeling, local and general ventilation, and respiratory protection for controlling human exposures to hazardous chemical, biological and radiological agents.

Scientific principles and practices applicable to the potential effects, evaluation, and control of physical agents associated with human diseases resulting from various environmental exposures. Agents include ionizing and nonionizing radiation, noise and...
OCCH565  Fire Safety and Emergency Plan  Credit Hours:  2

OCCH575  Accident Causation and Investigation  Credit Hours:  3
Lectures focus on concepts of hazard, risk and accident; accident causation theories (single factor, Domino, multiple factors, energy release, behavioral); accident investigation; estimating accident costs; recordkeeping; and incidents rates.

OCCH602  Research Methods  Credit Hours:  1

OCCH605  System Safety  Credit Hours:  3

OCCH610  Environ/Occupat Epidemiology  Credit Hours:  3
The course focuses on the application of epidemiological techniques to the study of effects of occupational and environmental exposures.

OCCH625  Safety Programs and Risk Mgmt  Credit Hours:  3

OCCH640  Occupational and Envrn Hlth Law  Credit Hours:  2
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
<td>OCCH699</td>
<td>Thesis Research</td>
<td>0-8</td>
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<tr>
<td>OCCT2550</td>
<td>PURPOSEFUL LIVING ROLE OF OCCUPATIONAL THERAPY</td>
<td>3</td>
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<tr>
<td>OCCT500</td>
<td>Concept Framework Therap Occup</td>
<td>3</td>
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<tr>
<td>OCCT501</td>
<td>OT Models of Practice I</td>
<td>5</td>
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<td>OCCT502</td>
<td>OT Models of Practice II</td>
<td>5</td>
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<td>OCCT503</td>
<td>OT Models of Practice III</td>
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<tr>
<td>OCCT504</td>
<td>OT Models of Practice IV</td>
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<td>OCCT510</td>
<td>Research in OT I</td>
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<td>OCCT511</td>
<td>Research in OT II</td>
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<td>OCCT520</td>
<td>OT Advocacy I</td>
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<tr>
<td>OCCT521</td>
<td>OT Advocacy II</td>
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<td>OCCT540</td>
<td>Conditions in OT</td>
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<td>OCCT550</td>
<td>Fieldwork Seminar I</td>
<td>1</td>
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<tr>
<td>OCCT551</td>
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<td>OCCT605</td>
<td>OT Models of Practice V</td>
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<td>OCCT606</td>
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<td>OCCT607</td>
<td>OT Models of Practice VII</td>
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<td>OT Thesis Research I</td>
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<td>OCCT611</td>
<td>OT Thesis Research II</td>
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<td>OCCT612</td>
<td>Research in OT III</td>
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<td>OCCT613</td>
<td>Research in OT IV</td>
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<td>OCCT653</td>
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<td>OCCT670</td>
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<td>OCCT672</td>
<td>Fieldwork Level II</td>
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<td>OCCT680</td>
<td>Independent Study OT</td>
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<tr>
<td>OCCT689</td>
<td>Community Needs</td>
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<td>OCCT690</td>
<td>Program Development</td>
<td>3</td>
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<tr>
<td>OCCT700</td>
<td>Conceptual Framework Therapy</td>
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<tr>
<td></td>
<td>Provides logical system for occupational therapy models of practice. Applies terminology through student experiences with occupational analysis and synthesis. Includes Level I fieldwork experience (12 hours). Fall Prerequisite: Admission to OTD Program.</td>
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<tr>
<td>OCCT701</td>
<td>OT Models of Practice I</td>
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<td>Examines the biomechanical model of practice including its musculoskeletal and kinesiological foundations. Includes assessments and interventions for prevention, adaptation, and compensation. Includes Level I fieldwork experience (12 hours). Fall Prerequisite:</td>
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<td>OCCT702</td>
<td>OT Models of Practice II</td>
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<td>Part I: Continues OCCT701. Part II: An introduction to the nervous system, with emphasis on the neurological basis of human occupation and the effects of neurological conditions (disease, injury, and mental illness) on occupational performance. Examines a</td>
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<td>OCCT703</td>
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<td></td>
<td>Explores historical and alternative conceptual frameworks of occupation and therapeutic occupation. Examines cognitively based and general models of practice. Presents related assessments and interventions for prevention, adaptation, and compensation. Inc</td>
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<td>OCCT704</td>
<td>OT Models of Practice IV</td>
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<td></td>
<td>Examines models of practice specific to pediatric population with neurological impairments. Intervention strategies focus on neurodevelopment, neurorehabilitation, sensory integration, motor learning, and motor control impairments. Includes two Level I f</td>
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</table>
**OCCT711 Research in OT I**
Credit Hours: 4
Examines quantitative and qualitative research methodologies. Includes critical analysis of occupational therapy research. Explores areas of possible research interest with guidance from potential major advisors. Fall
Prerequisite: Admission to the OTD Program.

**OCCT721 OT Advocacy I**
Credit Hours: 2
Explores the role of occupational therapist as educator. Examines educational theory, instructional methods and technology, and evaluation of teaching effectiveness with patients, families, peers, supervisees, and community groups. Fall
Prerequisite: Admission to the OTD Program.

**OCCT722 OT Advocacy II**
Credit Hours: 2
Applies teaching principles as students assume the role of educators to the community. Explores the role of the therapist in design, development, implementation, and evaluation of occupational therapy curricula. Integrates presentation of self and professional role.

**OCCT731 FW and Professional Dev I**
Credit Hours: 1
Introduces Level I and Level II Fieldwork, and the Capstone Experience, including policy, procedures, and documentation and the portfolio assignment. Defines professional behavior and health care communication. Encourages discussion of Level I fieldwork experiences.

**OCCT732 FW and Professional Dev II**
Credit Hours: 1
Emphasizes interviewing clients for an occupational profile. Encourages discussion of Level I fieldwork experiences. Introduces the course sequence of the Capstone Experience. Spring
Prerequisite: Fieldwork and Professional Development Seminar I.

**OCCT733 FW and Professional Dev III**
Credit Hours: 1
Introduces Capstone Seminar opportunities in teaching, research, program development, or clinical practice. Introduces Capstone Manual and structure for planning the individualized Capstone Experience. Provides a forum for discussion of fieldwork experiences.

**OCCT740 Conditions in OT**
Credit Hours: 2
Reviews the physical and mental health conditions that challenge successful and satisfying occupational performance, with an emphasis on the aspects of medical management and rehabilitation relevant to the role of the occupational therapist. Spring
Prerequisite: Admission to the OTD Program.
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<td>OCCT806</td>
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<td>OCCT807</td>
<td>OT Models of Practice VII</td>
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<tr>
<td>OCCT808</td>
<td>OT Models of Practice VIII</td>
<td>3</td>
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<tr>
<td>OCCT812</td>
<td>Research in OT II</td>
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<tr>
<td>OCCT813</td>
<td>Research in Occ Therapy III</td>
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</table>

**OCCT805 OT Models of Practice V**
Examines occupational therapy models of practice that support occupational performance throughout the lifespan, including prevention of occupational impairment. Examines the psychosocial aspects of disease and disability. Includes Level I fieldwork experience.

**OCCT806 OT Models of Practice VI**
Examines compensation-oriented models of practice including assistive technology, positioning, patient handling, and mobility. Presents occupational and non-occupational assessments and interventions for prevention, adaptation, and compensation. Includes...

**OCCT807 OT Models of Practice VII**
Examines contemporary and possible models of practice emphasizing wellness, health promotion, community care, population-based intervention and other emerging trends. Provides students with leadership experiences in program development. Includes two Level...

**OCCT808 OT Models of Practice VIII**
Models of practice emphasizing group occupational forms, group process, and therapeutic use of self in groups. Involves practice in assessment and intervention with persons experiencing both physical and mental health conditions. Includes Level I fieldwork.

**OCCT812 Research in OT II**
Provides structure for student, guided by faculty mentor, to define a research question, investigate the literature, explore the site(s) for data collection, and prepare preliminary research proposal. Involves individual faculty contact. Spring Prerequisite:

**OCCT813 Research in Occ Therapy III**
Provides structure for student to begin data collection after obtaining official approval of project by major advisor and institutional review board. Involves individual faculty contact. Fall, Spring, Summer Prerequisite: Research in Occupational Therapy.
OCCT814  Research in OT IV  Credit Hours: 3
Includes completion of data collection, analysis of results, submission of approved final project in journal article format, and formal presentation of the research project. Involves individual faculty contact. Fall, Spring, Summer Prerequisite: Research

OCCT823  OT Advocacy III  Credit Hours: 2
Identifies advocacy issues relevant to occupational therapy and introduces community resources that can enhance successful and satisfying reintegration back into home, school, work, and/or community. Explores legislation and ethical issues that influence

OCCT824  OT Advocacy IV  Credit Hours: 4
Examines leadership, management, and supervision of occupational therapy services in a dynamic health care system. Addresses legislative, regulatory, and payment issues affecting program development. Encourages leadership development. Spring Prerequisite

OCCT834  FW and Professional Dev IV  Credit Hours: 1
Addresses communication with children, family members, and health care professionals; ethics and safety; and cultural diversity. Students identify Capstone Practicum sites, site mentor(s), and the faculty mentor. Encourages discussion of Level I fieldwork

OCCT835  FW and Professional Dev V  Credit Hours: 3
Addresses issues of clinical supervision; Level II fieldwork policy, procedures, and documentation; and professional development. Provides a forum for discussion of fieldwork occupational analysis. Students develop a comprehensive Capstone Proposal. Inclu

OCCT836  Fieldwork Level II  Credit Hours: 3
Provides a 12-week, full-time, supervised fieldwork experience where students refine entry-level abilities to integrate occupational therapy theory, research, and practice under supervision and with collaboration of the academic institution. Summer, Fall

OCCT837  Fieldwork Level II  Credit Hours: 6
Provides a 12-week, full-time, supervised fieldwork experience where students refine entry-level abilities to integrate occupational therapy theory, research, and practice under supervision and with collaboration of the academic institution. Fall Prerequisite
OCCT838  Capstone Fieldwork Practicum  Credit Hours:  6
Students develop skills in teaching, research, program development, advocacy or clinical practice with mentorship by faculty and on-site practitioners. This course, in combination with OCCT890 and 891 requires documentation of 640 hours. Spring Prerequisite:

OCCT840  Phys Agent Mod and Non Occ Met  Credit Hours:  2
Addresses non-occupational methods including physical agent modalities and technology used with medically complex patients. Covers scientific underpinnings and regulatory guidelines for appropriate use of physical agent modalities in occupational therapy.

OCCT880  Independent Study OT  Credit Hours:  0-12
Intensive study in a field of interest, including theoretical and experimental work. May be repeated for credit. Prerequisite: Admission to OTD program or consent of instructor Fall, Spring, Summer

OCCT890  Mentored Capstone Disseminatio  Credit Hours:  3
Focuses on individualized issues arising in the Capstone Practicum. Involves mentorship by site and faculty practitioners and culminates in a paper and a presentation dealing with a specific area within occupational therapy. Spring Prerequisite: Level 1

OCCT891  Mentored Studies:Capstone Area  Credit Hours:  3
Focuses on mastery of literature and in-depth knowledge of an area within occupational therapy through exploration of library, electronic, and clinical resources. Lends theoretical and research support to the Capstone Practicum. Spring Prerequisite: Level

OPEP4940  Office of Professional Experience Programs Internship/Co-Op  Credit Hours:  0
Students receive intensive work experience related to their academic course work and career field.

OPMT3310  Computer And Model Based Business Decision Making  Credit Hours:  3
An introduction to quantitative methods of decision making including linear programming, transportation, simulation, waiting line analysis, advanced decision theory and Markov chains. Computer packages and creative thinking will be emphasized.

Prerequisites: BUAD 2070 FOR LEVEL UG WITH MIN. GRADE OF D-
OPMT3340  Quality Management  Credit Hours: 3
Covers major aspects of managing total quality functions in manufacturing/service operations. Includes: quality assurance, reliability, SPC, inspection/testing, acceptance sampling, product liability and organization of the quality function.
Prerequisites: BUAD 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

OPMT3600  Facility Planning  Credit Hours: 3
The study of the design and planning of new facilities. Topics include product and process design, the application of CIM, FMS, capacity planning, facility location and layout, and job design.
Prerequisites: BUAD 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

OPMT3610  Production Planning And Scheduling  Credit Hours: 3
Production planning, its relation to organizational/operational goals, MRP, MRP II, capacity management, JIT, scheduling of manufacturing/service systems and emerging/new concepts in the discipline will be discussed.
Prerequisites: BUAD 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

OPMT3660  Materials Management And Purchasing  Credit Hours: 3
Relationship between materials management and firm's strategic goals, forecasting, competing through materials management, inventory management of independent demand, aggregate inventory management, joint replenishing, purchasing, state-of-the-art supplies.
Prerequisites: BUAD 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

OPMT3750  Applied Regression Analysis  Credit Hours: 3
This course emphasizes model formulation, tests of goodness-of-fit and significance of parameters for the traditional linear regression model. Business applications/cases and computer packages will be emphasized.
Prerequisites: BUAD 2070 FOR LEVEL UG WITH MIN. GRADE OF D-

OPMT3760  Management Science: Cases And Applications  Credit Hours: 3
A study of business applications emphasizing model formulation, identification and validation. The course includes linear programming, critical path methods, queuing and various modeling techniques using computer packages.
Prerequisites: OPMT 3310 FOR LEVEL UG WITH MIN. GRADE OF D-

OPMT4020  Statistics For Administrative Services  Credit Hours: 3
An introduction to statistical methods, including measures of central tendency and dispersion, probability and probability distributions, sampling theory, decision theory, regression and correlation. Specifically designed for the Administrative Services.
Prerequisites: MATH 1270 FOR LEVEL UG WITH MIN. GRADE OF D-
OPMT4150  Operations Management Cases  Credit Hours:  3
Course includes projects, presentations and case analysis using operation management models and computer software. Role of emerging topics (e.g. bench-marking, reengineering, systems/technology) in operations management will also be covered.

Prerequisites:(OPMT 3340 FOR LEVEL UG WITH MIN. GRADE OF D- AND OPMT 3610 FOR LEVEL UG WITH MIN. GRADE OF D- AND OPMT 3660 FOR LEVEL UG WITH MIN. GRADE OF D-)

OPMT4210  Project Management  Credit Hours:  3
This course covers planning, organizing and controlling projects. Topics such as project selection, scheduling, budgeting, resource management, project control, time-based competition and concurrent engineering will be discussed.

Prerequisites:BUAD 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

OPMT4420  Service Operations Management  Credit Hours:  3
The service sector is the dominant sector of the economy. Students will study various aspects of Operations Management as applied to service industries. Services for manufacturing will be emphasized.

Prerequisites:BUAD 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

OPMT4450  Forecasting  Credit Hours:  3
A study of forecasting techniques including: time series analysis, moving average, exponential smoothing, auto-regressive models and Box-Jenkins. A statistical software package is used.

Prerequisites:BUAD 2070 FOR LEVEL UG WITH MIN. GRADE OF D-

OPMT4750  Analysis Of Variance  Credit Hours:  3
Analysis of variance and related topics such as factorial design and Latin squares. Experimental designs including repeated measures, factorial and nested designs.

OPMT4760  Simulation Modelin And Analysis Of Manufacturing/Service Systems  Credit Hours:  3
This course provides an introduction to modeling stochasticity in manufacturing/service systems using various techniques such as simulation, Queuing networks and other techniques using simulation software and business cases.

Prerequisites:BUAD 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

OPMT4940  Internship for OPMT Or SCM  Credit Hours:  3
A prearranged work study program where students specializing in OPMT or SCM obtain on the job experience while learning and applying the basic concepts and techniques of their respective discipline.
OPMT4980  Contemporary Topics In Operations Management  
Selected current topics in Operations Management practice, trends and technology. 

Prerequisites: BUAD 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

OPMT5510  Business Statistics With Computer Applications  
The application of statistics to business problem solving. Topics include descriptive statistics, probability theory, hypothesis testing, decision making, regression and correlation analysis, and time series analysis.

OPMT5520  Analysis Of Manufacturing & Service Systems  
Concepts, methods and strategies for designing and managing manufacturing and service systems are discussed. Topics include creating flexible and efficient systems for producing services and goods, total quality management, time-based competition, global

Prerequisites: OPMT 5510 FOR LEVEL GR WITH MIN. GRADE OF D-

OPMT5730  Modeling And Analysis For Manufacturing  
An introduction to model building and analysis with special reference to manufacturing and operations management issues. The students will be introduced to linear models, dynamic programming models and stochastic models.

OPMT6100  Time Series Analysis And Forecasting  
An introduction to time series analysis and forecasting. Moving average, exponential smoothing, trend projection with and without seasonality and regression-based techniques are covered. Statistical software packages are used.

Prerequisites: OPMT 5520 FOR LEVEL GR WITH MIN. GRADE OF D- OR BUAD 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

OPMT6180  Regression Analysis For Business  
Analysis of business data using simple and multiple regression. Model building, estimation and hypothesis testing in the context of regression, and stepwise regression are covered. Statistical software packages are used.

OPMT6240  Management Science Applications  
The definition of business problems and the formulation of appropriate models for their study. Cases and readings are discussed to illustrate the use of management science modeling techniques.

Prerequisites: OPMT 5730 FOR LEVEL GR WITH MIN. GRADE OF D-
OPMT6270  Simulation  Credit Hours:  3
Simulation will be introduced through appropriate software (e.g. SIMAN, ARENA). Fitting distributions, validation, verification, confidence intervals, experimental design, comparison with analytic models will be the topics covered.

Prerequisites:OPMT 5520 FOR LEVEL GR WITH MIN. GRADE OF D- OR BUAD 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

OPMT6510  Project Management  Credit Hours:  3
This course deals with managing of projects in research and development, manufacturing, construction and service organizations. Students will discuss cases and use extensively a project management software.

Prerequisites:OPMT 5520 FOR LEVEL GR WITH MIN. GRADE OF D-

OPMT6680  Total Quality Management And Spc  Credit Hours:  3
The course introduces students to the TQM philosophy, concepts and tools. Provides student with an overall approach for the design of a system to manage quality along the entire value adding chain.

Prerequisites:OPMT 5520 FOR LEVEL GR WITH MIN. GRADE OF D- OR BUAD 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

OPMT6690  Manufacturing Resources Management  Credit Hours:  3
Study methods such as MRP, JIT and bottleneck approaches used in managing manufacturing activities through business cases where appropriate. Tools such as scheduling, and inventory systems will be studied.

Prerequisites:OPMT 5520 FOR LEVEL GR WITH MIN. GRADE OF D- OR BUAD 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

OPMT6710  Managing Operations  Credit Hours:  3
This course provides an integrative and interdisciplinary approach to managing operations. Strategic and tactical issues will be addressed primarily through business cases with focus on policy setting and problem solving.

Prerequisites:OPMT 5520 FOR LEVEL GR WITH MIN. GRADE OF D-

OPMT6720  Manufacturing Systems Design  Credit Hours:  3
Discusses the design and implementation of cellular and flexible manufacturing systems including the role of group technology. Describes the role of flexible manufacturing systems in the integrated and automated facility.

Prerequisites:OPMT 5520 FOR LEVEL GR WITH MIN. GRADE OF D-

OPMT6960  Master's Thesis  Credit Hours:  1-6
Master's Thesis
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<tr>
<th>Course Code</th>
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<th>Credit Hours</th>
<th>Description</th>
<th>Prerequisites</th>
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<td>OPMT7520</td>
<td>Analysis Of Manufacturing &amp; Service Systems</td>
<td>3</td>
<td>Concepts, methods and strategies for designing and managing manufacturing and service systems are discussed. Topics include creating flexible and efficient systems for producing services and goods, total quality management, time-based competition, global</td>
<td>OPMT 5510 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>OPMT8270</td>
<td>Simulation</td>
<td>3</td>
<td>Simulation will be introduced through appropriate software (e.g. SIMAN, ARENA). Fitting distributions, validation, verification, confidence intervals, experimental design, comparison with analytic models will be the topics covered.</td>
<td>OPMT 5520 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>OPMT8680</td>
<td>Total Quality Management And Spc</td>
<td>3</td>
<td>The course introduces students to the TQM philosophy, concepts and tools. Provides student with an overall approach for the design of a system to manage quality along the entire value adding chain.</td>
<td>OPMT 5520 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>OPMT8690</td>
<td>Manufacturing Resources Management</td>
<td>3</td>
<td>Study methods such as MRP, JIT and bottleneck approaches used in managing manufacturing activities through business cases where appropriate. Tools such as scheduling, and inventory systems will be studied.</td>
<td>OPMT 5520 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>OPMT8720</td>
<td>Manufacturing Systems Design</td>
<td>3</td>
<td>Discusses the design and implementation of cellular and flexible manufacturing systems including the role of group technology. Describes the role of flexible manufacturing systems in the integrated and automated facility.</td>
<td>OPMT 5520 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<td>OPTH708</td>
<td>Ophthalmology</td>
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<td>OPTH730</td>
<td>Ophthalmology</td>
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OPTH750  Opthalmology Away Elective  Credit Hours:  6

OPTH751  Opthalmology Away Elective  Credit Hours:  3

ORGD4240  Communication Strategies For Leading Change  Credit Hours:  3
An applied course that focuses on development of communication competencies for people leading and facilitating change in organizations. Focuses on preparation for and delivery of intraorganizational and interorganizational communication programs.

Prerequisites: (BUAD 3030 FOR LEVEL UG WITH MIN. GRADE OF D- AND COMM 3880 FOR LEVEL UG WITH MIN. GRADE OF D-)

ORGD6170  The Individual And The Organization  Credit Hours:  3
Studies the behavior of individuals and small groups in organizations. Includes the behavioral science theories and research applicable to the work environment.

Prerequisites: MGMT 5110 FOR LEVEL GR WITH MIN. GRADE OF D-

ORGD6380  Comparative Organization  Credit Hours:  3
An analysis of the organizational design and administrative systems in different types of organizations such as business and other profit-making organization; non-profit organization - hospitals, unions, governmental and universities.

ORGD6590  Organization Theory And Design  Credit Hours:  3
Course focuses on designing and managing innovative, continuously learning organizations in response to today's rapidly changing technological and market environment. The emphasis will be on top-down, macro perspective.

Prerequisites: MGMT 5110 FOR LEVEL GR WITH MIN. GRADE OF D-

ORGD7110  Management Of Organizational Business  Credit Hours:  3
Organizational behavior (individual and small group) and organizational theory (large group and total organization). Also included is a review of the key functions of management; (1) planning, (2) organizing, (3) directing and (4) controlling.
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Prerequisites: HON FOR MIN. SCORE OF 1
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<td>ORTH560</td>
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<td>ORTH570</td>
<td>Orthopaedic X-Ray Conference</td>
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<tr>
<td>ORTH580</td>
<td>Ortho Bone Physiology</td>
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</table>

**ORTH560 Phys Exam Musculoskeletal Sys**

Students will be taught to do a complete physical exam of the musculoskeletal system and how to identify common clinical pathologies. A quick review of anatomy is helpful before taking this course. May be repeated for credit.

**ORTH570 Orthopaedic X-Ray Conference**

Weekly discussion of interesting and challenging clinical orthopaedic cases through X-ray conference discussion. Management and treatment options of each case presented also are discussed. May be repeated for credit.

**ORTH580 Ortho Bone Physiology**

Lecture topics will include the physiology of bone fracture healing process, bone adaptation, molecular genetics of the musculoskeletal system, bone tumor process, etc. This course serves to provide the student with a good general knowledge of bone physio
ORTH585  Ortho Sports Medicine  Credit Hours: 0-3
This course meets several times a week, discussing elements of sports orthopaedics, sports rehabilitation and principles of orthopaedic biomechanics as seen in different clinical and field settings.

ORTH590  Orthopaedic Biomechanics I  Credit Hours: 3
Introduction to the basic biomechanics concept in orthopaedics. Lectures will include statistics and dynamics analysis of forces as applied to the musculoskeletal system. Topics to be covered will also include biomechanics of fixation devices, modeling ef

ORTH591  Orthopaedic Biomechanics II  Credit Hours: 3
This course concentrates on the studies of body joint mechanics and the dynamics of joint motion. Lectures also will include artificial joint prosthesis designs, including new orthopaedic devices and implants.

ORTH592  Orthopaedic Biomechanics III  Credit Hours: 3
This course will cover principally motion analysis, gait, and rehabilitation biomechanics as they apply to the orthopaedic patient. Lectures will include 3-D motion analysis as well as a force plate quantification of gait and movement.

ORTH650  Orthopaedic Basic Science Sem  Credit Hours: 3
Weekly lectures on various orthopaedic topics ranging from bone histology to biomechanics. The lectures focus on the basic science of orthopaedics, including the physiology, biochemistry, genetics, anatomy, etc. of the musculoskeletal system. May be rep

ORTH655  Jnl Rev Orthopaedic Science  Credit Hours: 1
Orthopaedic Grand Rounds is a conference format where nationally known authorities on orthopaedic topics present a talk, followed by discussion of challenging clinical cases presented to the speaker. Usually the topics involve the latest state-of-the-art

ORTH673  Research in Orthopaedic Sci  Credit Hours: 0-4
Students will participate in ongoing research programs of the members of the department faculty. Research could be clinical, theoretical, or experimental in nature. May be repeated for credit.
ORTH691 Orthopaedic Trauma  Credit Hours:  1
Topics could include the trauma of musculoskeletal system, the pathogenesis, treatment options and clinical outcomes; may involve theoretical and/or experimental work. May be repeated for credit.

ORTH692 Orthopaedic Spine  Credit Hours:  1
Focus will be on spine mechanics, anatomy, spine fixation devices, clinical outcome of spine surgeries, etc. May involve theoretical and/or experimental work. May be repeated for credit.

ORTH693 Orthopaedic Biomechanics  Credit Hours:  0-3
Topics could range from fracture mechanics to study of different fixation devices or new prosthetic implant designs; may involve theoretical and/or experimental work. May be repeated for credit.

ORTH694 Orthopaedic Anatomy  Credit Hours:  1
Concentration on anatomy of the musculoskeletal system with orthopaedic considerations; surgical approaches, safe zones for hardware placement, neurovascular structural compromise in different trauma situations, etc. Course may involve theoretical and/or

ORTH695 Orthopaedic Radiology  Credit Hours:  0-4
Topics will include radiological studies of the musculoskeletal system with orthopaedic considerations; may involve theoretical and/or experimental work. May be repeated for credit.

ORTH696 Upper Extremity and Hand  Credit Hours:  3
Topics will include (but are not limited to) study of the biomechanics of the upper extremity and hand, brachial plexus injuries, treatment options, surgical exposures, detail anatomy, etc. May involve theoretical and/or experimental work. May be repeat

ORTH701 Orthopaedic Surgery  Credit Hours:  0-6
Students will be designated as an Acting Intern with increased responsibility for patient management under supervision.
ORTH702  Orthopaedic Surgery Research  
Credit Hours: 0-6
A four-week research elective can be structured to involve investigation into most areas of orthopaedics, according to the interest of the particular student.

ORTH710  Orthopaedic Surgery  
Credit Hours: 3
Clinical experiences for the student can be structured to involve exposure to adult general orthopaedics, trauma, pediatric orthopaedics, sports medicine and hand surgery. Experience will be in a hospital-based clinic and the orthopaedic floor of the hos

ORTH750  Orthopaedic Away Elective  
Credit Hours: 0-6

ORTH751  Orthopaedic Away Elective  
Credit Hours: 3

ORTH789  Independent Study in Ortho  
Credit Hours: 0-6

ORTNALL  Rocket Launch - All Colleges  
Credit Hours: 0

ORTNARS  Arts and Sciences Orientation  
Credit Hours: 0
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Course Descriptions 2009-2010

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ORTNEDUH  Education Honors Orientation  Credit Hours: 0

ORTNEDUT  Education Transfer Orientation  Credit Hours: 0

ORTNHS  HSHS Orientation  Credit Hours: 0

ORTNHSHSH  HSHS Honors Orientation  Credit Hours: 0

ORTNHSHT  HSHS Transfer Orientation  Credit Hours: 0

ORTNNUR  Nursing Orientation  Credit Hours: 0
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<td>PATH672</td>
<td>Current Topics in Pathology</td>
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<td>PATH673</td>
<td>Research in Pathology</td>
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<tr>
<td>PATH689</td>
<td>Independent Study in Pathology</td>
<td>0-12</td>
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- **PATH620 Principles of Toxicology**: 3 Credit Hours
  - Indications for and utilization of EM in diagnosis of human diseases (renal), neoplasia, infections, and neuromuscular disease.

- **PATH624 Clinical Toxicology**: 3 Credit Hours

- **PATH635 Ultrastructural Pathology**: 1 Credit Hour
  - Indications for and utilization of EM in diagnosis of human diseases (renal), neoplasia, infections, and neuromuscular disease.

- **PATH655 Jnl Paper Review in Pathology**: 1 Credit Hour
  - A weekly report on recent advances in pathology taken from original papers to give students an opportunity to find, assess, and report on important developments in the field. May be repeated for credit.

- **PATH672 Current Topics in Pathology**: 1-4 Credit Hours
  - A lecture and/or seminar course in topics of current interest in pathology with special emphasis on the fundamentals of mammalian, especially human, life under normal, experimental, or pathological conditions. Students and department faculty will present.

- **PATH673 Research in Pathology**: 1-4 Credit Hours
  - Students will participate in selected ongoing research programs of the department faculty. May be repeated for credit.

- **PATH689 Independent Study in Pathology**: 0-12 Credit Hours
  - Intensive study in field of interest, including theoretical and experimental work. May be repeated for credit.
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<td>PATH705</td>
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<td>PATH712</td>
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<td></td>
<td>Students are expected to spend a minimum of 4-5 hours per day in the Lucas County Coroner's Office. During that time they attend autopsies and assist in their performance, accompany investigators on field investigations, accompany pathologist to court an</td>
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<td>Pathology Case Studies</td>
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<td>Students meet daily; three clinical cases are presented by students; all students participate in discussion of cases as well as related learning issues.</td>
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PATH805  Clinical Neuropathology  Credit Hours: 1

PATH806  Intro Surgical Path and Cytolo  Credit Hours: 1-4
Introduces students to surgical pathology and cytology including gross evaluation of tissues, tissue processing and microscopic evaluation of diseased human tissues to render a diagnosis, recommend treatment and evaluate prognosis. In addition, students

PATH807  Intro Clinical Lab Medicine  Credit Hours: 1-4
An introductory course designed to acquaint students with the laboratory tests that are available in the clinical laboratory, prioritization of test ordering, how the tests are performed and their usefulness in clinical diagnosis and clinical investigati

PATH808  Intro Postmortem Pathology  Credit Hours: 1-4
An introductory course designed to acquaint students with the autopsy. It consists of a series of lectures, demonstrations and readings pertaining to the human autopsy. Students will be involved in the actual performance of autopsies, the selection of app

PATH818  Cell/Molecular Toxicology  Credit Hours: 2

PATH821  Methods in Toxicology  Credit Hours: 3

PATH823  Forensic Toxicology  Credit Hours: 3
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<td>PATH826</td>
<td>Environmental Toxicology + Medicine</td>
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<td>PATH889</td>
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Indications for and utilization of EM in diagnosis of human diseases (renal), neoplasia, infections, and neuromuscular disease.

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A lecture and/or seminar course in topics of current interest in pathology with special emphasis on the fundamentals of mammalian, especially human, life under normal, experimental, or pathological conditions. Students and department faculty will present.

Students will participate in selected ongoing research programs of the department faculty. May be repeated for credit.

Intensive study in field of interest, including theoretical and experimental work. May be repeated for credit.
PED2000  Coaching Of Physical Activity  Credit Hours:  1
Includes basic fundamentals, offensive and defensive team play, conditioning techniques, and scouting.

PED2100  Sport Skill And Strategy I  Credit Hours:  3
Sport skill and strategy development for students who are in the physical education major sequence. Must earn minimum grade of C to pass the course.

PED2200  Sport Skill And Strategy II  Credit Hours:  3
Sport skill and strategy development for students who are in the physical education major sequence. Stunts and tumbling, tennis, volleyball. Must earn minimum grade of C to pass the course.

PED2400  Physical Education In The Elementary School  Credit Hours:  2
Emphasis on perceptual-motor programs, motor performance, physical fitness, movement activities, testing and evaluation in the K-6 curriculum. Designed for elementary education majors.

PED2450  Physical Education For Early Childhood Education  Credit Hours:  2
In this course, physical education major students will discuss the integration learned in physical education classes and teaching. Course may be repeated twice for a maximum total credit of 2 hours.

PED2900  Physical Education Linking Seminar  Credit Hours:  1
Developmentally appropriate activity for children in Pre-K-Grade 3. Includes fundamental motor skill development, assessment skills and evaluation techniques. Stress is on psychomotor, cognitive and affective development through movement.

Corequisite: PED 2950

PED2950  Introduction To Teaching In Physical Education  Credit Hours:  3
Designed to provide students with knowledge of effective instruction, skills in systematic data collection for teacher evaluation, task and skill analysis and instructional design. Field experience included.

Corequisite: PED 2900
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>PED2960</td>
<td>Intensive Field Experience</td>
<td>2</td>
</tr>
</tbody>
</table>

**Prerequisites:** (PED 2950 FOR LEVEL UG WITH MIN. GRADE OF D- AND PED 2900 FOR LEVEL UG WITH MIN. GRADE OF D-)

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>PED3000</td>
<td>Developmentally Appropriate Games And Activities</td>
<td>3</td>
</tr>
</tbody>
</table>

**Content for elementary school physical education programs including physical fitness, fundamental motor skill, manipulative skills, games, sport-related skills, educational gymnastics, movement activities, etc.**

**Prerequisites:** UPDV FOR MIN. SCORE OF 1

**Corequisite:** PED 3100

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>PED3100</td>
<td>Physical Education Methods Pre-K - 5</td>
<td>3</td>
</tr>
</tbody>
</table>

**Methods of teaching pre-K - 5 physical education. Students will combine readings, discussions and field experience to learn about different strategies for working in the physical activity environment at these levels.**

**Prerequisites:** UPDV FOR MIN. SCORE OF 1

**Corequisite:** PED 3000

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>PED3110</td>
<td>Perceptual Motor Development</td>
<td>2</td>
</tr>
</tbody>
</table>

**PED3120 | Rhythmic Activity And Dance**

**Content for pre-school through high school education programs. Emphasis on fundamental motor skill, rhythmic activities, folk dance, square dance.**

**Prerequisites:** UPDV FOR MIN. SCORE OF 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>PED3130</td>
<td>Understanding Games: Sport Concepts</td>
<td>3</td>
</tr>
</tbody>
</table>

**Techniques and concepts of team and individual sport activities in the middle and secondary school. Course will focus on teaching for understanding, game tactics, progressions, technique analysis, appropriate practice and safety procedures.**

**Prerequisites:** UPDV FOR MIN. SCORE OF 1

**Corequisite:** PED 3140

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PED3140</td>
<td>Physical Education Methods For Middle/Adolescent Levels</td>
<td>3</td>
</tr>
</tbody>
</table>

**Methods of teaching grades 6 - 12 physical education. Students will combine readings, discussions and field experience to learn about different strategies for working in the physical activity environment at these levels.**

**Prerequisites:** UPDV FOR MIN. SCORE OF 1

**Corequisite:** PED 3130
PED3400  Adapted Physical Education  
Methods for teaching the atypical child. Evaluation and formulation of IEP. Exercise and activity prescription. Emphasis on disorders most prevalent within public school systems. Forty (40) hour field experience included.

Prerequisites: UPDV FOR MIN. SCORE OF 1

PED3740  Measurement, Analysis And Evaluation In Human Performance  
Lecture and discussion on assessment in human performance, both authentic and traditional. Computer analysis procedures in descriptive and inferential statistics through ANOVA. Designated lab time for specialty areas.

Prerequisites: UPDV FOR MIN. SCORE OF 1

PED3950  Senior Seminar  
Readings and discussion centering on concepts learned in the professional content sequence and their applicability to teaching in the physical education setting.

Prerequisites: (PED 3000 FOR LEVEL UG WITH MIN. GRADE OF D- AND PED 3100 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (PED 3130 FOR LEVEL UG WITH MIN. GRADE OF D- AND PED 3140 FOR LEVEL UG WITH MIN. GRADE OF D-) AND UPDV FOR MIN. SCORE OF 1

PED4100  Design And Administration Of Physical Activity Programs  
Procedures for development of curriculum and program design. Administrative issues, problems and concerns for organization and direction of facilities and equipment.

Prerequisites: UPDV FOR MIN. SCORE OF 1

PED4700  The Law And Sport  
The purpose of this course is to describe the requirements of the law and sports governing bodies, potential problems, possible courses of action and ways to work with legal counsel in the administration of sports activities.

PED4920  Student Teaching Seminar: Physical Education  
This course will focus on reflection and feedback on student teaching, portfolio development, interviewing and resume writing.

Prerequisites: UPDV FOR MIN. SCORE OF 1

Corequisite: PED 4930

PED4930  Student Teaching In Physical Education  
Intensive field experience in school classrooms under the direction of university supervisors and master teachers. Observation of teaching of experienced teachers accompanied by full responsibility by student teacher. Student teachers will be expected to

Prerequisites: UPDV FOR MIN. SCORE OF 1
### PED4940 Internship-Practicum
- **Credit Hours:** 2-15

### PED4950 Workshop In Physical Education
- **Credit Hours:** 1-5
- Workshop developed around topics of interest and concern for preservice and inservice teachers and other professionals involved in health, wellness and physical activity.

### PED4990 Independent Study In Exercise Science/Physical Education
- **Credit Hours:** 1-3
- Directed individual study. Specialty title and seminar sheet required.

### PED5170 Adapted Physical Education
- **Credit Hours:** 3
- Study of disabling conditions as related to physical education. Assessment and consequent development of IEP. Exercise prescription analysis and technique. Program implications for inclusion.

### PED5250 Curriculum In Physical Education
- **Credit Hours:** 3
- Perspectives in curriculum theory and design for physical education. Procedures for development of curriculum K-12.

### PED5610 Trends And Issues In Physical Education
- **Credit Hours:** 3
- Analysis of contemporary trends and issues facing the physical educator. Content varies per semester: Children and Sport, Sport Sociology, Elementary/Secondary Teaching.

### PED5620 Effective Supervision In Physical Education
- **Credit Hours:** 3
- Procedures and methods appropriate for supervision of student teachers or inservice teachers in the area of physical education. Computer analysis, observation techniques, conferencing skills and evaluation procedures are stressed.
PED5950   Workshop In Exercise Science And Physical Education  Credit Hours:  1-4
Topical workshops developed around areas of interest and concern to inservice teachers and/or exercise scientists. Credit cannot be applied towards a degree program without prior consent of adviser.

PED6920   Master's Project In Exercise Science/Physical Education  Credit Hours:  1-4
A research project is required for the M.Ed. program for the culminating experience.

PED6940   Internship In Exercise Science  Credit Hours:  1-12
A field internship designed to supplement classroom experience by providing participation in the area of exercise science through participant-observer experience.

PED6960   Master's Thesis In Exercise Science/Physical Education  Credit Hours:  1-4
Research thesis is required for M.S. and M.Ed. programs for the culminating experience.

PED6990   Independent Study In Exercise Science/Physical Education  Credit Hours:  1-4
The student will participate in independent readings, laboratory research, field experience and other activities not suited for class instruction. May be repeated for course credit.

PED7170   Adapted Physical Education  Credit Hours:  3
Study of disabling conditions as related to physical education. Assessment and consequent development of IEP. Exercise prescription analysis and technique. Program implications for inclusion.

PED7250   Curriculum In Physical Education  Credit Hours:  3
Perspectives in curriculum theory and design for physical education. Procedures for development of curriculum K-12.
PED7610  Trends And Issues In Physical Education  Credit Hours: 3
Analysis of contemporary trends and issues facing the physical educator. Content varies per semester: Children and Sport, Sport Sociology, Elementary/Secondary Teaching.

PED7620  Effective Supervision In Physical Education  Credit Hours: 3
Procedures and methods appropriate for supervision of student teachers or inservice teachers in the area of physical education. Computer analysis, observation techniques, conferencing skills and evaluation procedures are stressed.

PED7950  Workshop In Exercise Science And Physical Education  Credit Hours: 1-4
Topical workshops developed around areas of interest and concern to inservice teachers and/or exercise scientists. Credit cannot be applied towards a degree program without prior consent of adviser.

PED8490  Internship In Exercise Science  Credit Hours: 1-12
A field internship designed to supplement classroom experience by providing participation in the area of exercise science through participant-observer experience.

PED8990  Independent Study In Exercise Science/Physical Education  Credit Hours: 1-4
The student will participate in independent readings, laboratory research, field experience and other activities not suited for class instruction. May be repeated for course credit.

PEDS701  Pediatrics  Credit Hours: 0-9
Pediatrics (6 weeks)
Corequisite: FMMD 701 OBGY 701 PSCH 701

PEDS703  Adolescent Medicine  Credit Hours: 0-6
The rotation will focus primarily on assessing adolescent health in an outpatient setting. Appropriate educational materials will be provided and discussed in didactic sessions.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
<td>PEDS704</td>
<td>Peds Allergy/Immunology</td>
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<td>During this elective, the student</td>
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<td>will acquire the clinical skills to</td>
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<td>identify and initiate appropriate</td>
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<td>management of patients with allergic</td>
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<td>disorders, asthma and immunodeficiencies.</td>
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<td>patients with these disorders in the</td>
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<tr>
<td>PEDS706</td>
<td>Pediatric Cardiology</td>
<td>0-6</td>
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<tr>
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<td>The student will be required to</td>
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<td>participate in daily activities of</td>
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<td>the Division of Pediatric Cardiology</td>
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<td>including inpatient and outpatient</td>
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<td>clinic settings. The student will</td>
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<td>observe echocardiography and heart</td>
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<td>catheterization procedures as well as</td>
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<td>PEDS707</td>
<td>Developmntl and Behavioral Ped</td>
<td>0-6</td>
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<tr>
<td>PEDS708</td>
<td>Pediatric Endocrinology</td>
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<td>He/she should develop a general</td>
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<td>diagnostic approach to the endocrine</td>
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<td>PEDS710</td>
<td>Pediatrics Genetics</td>
<td>0-6</td>
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<tr>
<td>PEDS711</td>
<td>Peds Hematology/Oncology</td>
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<td>The student will participate actively</td>
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<td>pediatric oncology patients. The</td>
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<td>student will answer consults and</td>
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<td>develop the diagnostic work-up for</td>
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<td>new patient</td>
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<tr>
<td>PEDS712</td>
<td>Pediatric Infectious Disease</td>
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<td>hosts and immune compromised patients.</td>
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<td>infectious diseases in the pediatric</td>
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</table>
PEDS713  Pediatric Intensive Care  Credit Hours: 0-6
Students will be designated as an Acting Intern with increased responsibility for patient management under supervision.

PEDS714  Neonatal Medicine  Credit Hours: 0-6
Students will be designated as an Acting Intern with increased responsibility for patient management under supervision.

PEDS715  Pediatric Nephrology  Credit Hours: 6
Students will be expected to participate in all activities of the Division of Pediatric Nephrology including inpatient rounds, clinics, consultations, procedures, renal pathology seminars and case conferences. Students will also be exposed to the management.

PEDS717  Pediatric Pulmonology  Credit Hours: 0-6
The pediatric pulmonary medicine elective is composed of both an outpatient and inpatient rotation. The inpatient rotation consists of the patients who are hospitalized at Mercy Children's Hospital under the primary pulmonary service or on a consultation.

PEDS718  Acting Internship Pediatrics  Credit Hours: 0-6
Students will be designated as an Acting Intern with increased responsibility for patient management under supervision.

PEDS719  Child Abuse/Neglect  Credit Hours: 0-6
The student will explore various subjects involved in child abuse, including sexual abuse, physical abuse, shaken baby syndrome, and Munchausen Syndrome by Proxy. Exposure will occur through direct clinical experience, inpatient consults, one-on-one disc

PEDS720  Pediatric Community Health Edu  Credit Hours: 0-6
The student, with the aid of the AHEC Center Director will meet with the community and school leaders to determine what school needs are pertaining to health education. The student will focus on issues deemed most important by the schools, develop an app.
PEDS722  Peds Emergency Medicine  Credit Hours: 0-6

PEDS723  Child Health Advocacy  Credit Hours: 0-6
The goal of this rotation is to: 1. Expose the student to various community experiences in which they have the opportunity to be an advocate for children. (elementary school, shelter for battered women, billing office, counseling services, Early Intervent

PEDS724  General Outpatient Pediatrics  Credit Hours: 6
We are a small town pediatric practice, and as such see a wide variety in our patient population. We give care to children of migrant families, self-insured farm families, factory workers and university professors. There is diversity in the medical pro

PEDS725  Pediatric Community Health Edu  Credit Hours: 0-3
The student with the aid of the AHEC Center Director will meet with the community and school leaders to determine what school needs are pertaining to health education. The student will focus on issues deemed most important by the schools, develop an appr

PEDS727  Peds Ethics Palliative Care  Credit Hours: 6

PEDS728  Pediatric Ophthalmology  Credit Hours: 3
The student will learn to screen for strabismus, amblyopia, congenital cataracts and congenital glaucoma in the primary care setting. The student will learn diagnostic criteria for common eye diseases of childhood.

PEDS729  Pediatric Physical Medicine  Credit Hours: 3
PEDS730  Peds Ethics Palliative Care  Credit Hours: 3
The student with the aid of the AHEC Center Director will meet with the community and school leaders to determine what school needs are pertaining to health education. The student will focus on issues deemed most important by the schools, develop an appr

PEDS734  General Outpatient Pediatrics  Credit Hours: 3
We are a small town pediatric practice, and as such see a wide variety in our patient population. We give care to children of migrant families, self insured farm families, factory workers and university professors. There is diversity in the medical pro

PEDS740  Pediatrics: Req Remediation  Credit Hours: 6

PEDS745  Pediatrics Clinical Training for MD/PhD Students during Graduate Research Years  Credit Hours: 1-2
In the summer after the second year of medical school, MD/PhD students will identify a clinical mentor who will be responsible for overseeing clinical training for the student during a portion of his/her graduate school phase of the program, and will prov

PEDS750  Pediatric Away Elective  Credit Hours: 0-6

PEDS751  Pediatric Away Elective  Credit Hours: 3

PEDS755  Pediatric International Health  Credit Hours: 0-6
Course Descriptions 2009-2010

PEDS789  Independent Study Pediatrics  Credit Hours:  0-6

PHCL2220  Drugs, Medicine And Society  Credit Hours:  3
The course conveys a general knowledge of drugs, including how and where drugs act and the general pharmacology of specific classes of drugs, e.g., central nervous system active agents, bronchodilators, etc.

PHCL2600  Functional Anatomy And Pathophysiology I  Credit Hours:  4
A study of functional anatomy, physiology and pathophysiology to serve as background for the understanding of the action of drugs.
Prerequisites: CHEM 1240 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1290 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 2150 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 2160 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 2170 FOR LEVEL UG WITH MIN. GRADE OF D-

PHCL2620  Functional Anatomy And Pathophysiology II  Credit Hours:  4
A continuation of PHCL 2600.
Prerequisites: PHCL 2600 FOR LEVEL UG WITH MIN. GRADE OF D-

PHCL3700  PHARMACOLOGY I: PRINCIPLES OF PHARMACOLOGY, AUTONOMIC PHARMACOLOGY AND RELATED PHARMA  Credit Hours:  3
An introduction to the principles of pharmacology and the pharmacology of the autonomic nervous system.

PHCL3720  PHARMACOLOGY II: ENDOCRINE, NSAID AND CARDIOVASCULAR PHARMACOLOGY  Credit Hours:  2
The pharmacology of drugs acting upon the endocrine and reproductive systems will be discussed followed by a discussion of the non-steroidal antiinflammatory agents and the drugs used to treat hypertension and hyperlipidemia.
Prerequisites: PHCL 3700 FOR LEVEL UG WITH MIN. GRADE OF D-

PHCL3730  BSPS PHARMACOLOGY II : ENDOCRINE AND CNS PHARMACOLOGY  Credit Hours:  3
The pharmacology of drugs acting upon the endocrine and reproductive systems as well as for the management of sleep disorders, anxiety, affective illness, schizophrenia and seizure disorders.
Prerequisites: PHCL 3700 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHCL3810</td>
<td>Pharmacology And Toxicology Laboratory</td>
<td>1</td>
<td>The course will teach undergraduate students current methods in pharmacology and toxicology with an emphasis on practical, hands-on experience. Students will learn a variety of techniques commonly used in the pharmaceutical and toxicology industries.</td>
<td>PHCL 3700 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>PHCL4140</td>
<td>Interpretation Of Pharmaceutical Data</td>
<td>3</td>
<td>A course designed to emphasize the interpretation of statistical data as it appears in pharmacy literature. The fundamental concepts of statistics will be discussed. Experimental design as well as appropriateness of analytical methodology and conclusions.</td>
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<tr>
<td>PHCL4150</td>
<td>Biopharmaceutics And Pharmacokinetics</td>
<td>4</td>
<td>Application of kinetic models to the processes of drug absorption, distribution, biotransformation and excretion. The influence of dosage form and physiology on these processes. Application of pharmacokinetic principles to clinical situations.</td>
<td>PHPR 3080 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>PHCL4300</td>
<td>Selected Topics In Pharmacology</td>
<td>2</td>
<td>The pharmacology of selected classes of agents will be discussed. Discussions will include the pharmacology of: Drugs used to treat asthma, antihistamines, drugs used to treat migraine, drugs to manage movement disorders, local anesthetics and antineoplas.</td>
<td>PHCL 3700 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>PHCL4600</td>
<td>Epidemiology</td>
<td>4</td>
<td>This course is intended to provide fundamental concepts of epidemiology and its basic research methods. The course is designed as a prerequisite for pharmacoepidemiology.</td>
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<tr>
<td>PHCL4620</td>
<td>Pharmacoepidemiology</td>
<td>4</td>
<td>This course is intended to give an overview of and terminology commonly used in pharmacoepidemiology and to teach students how to review and comprehend pharmacoepidemiologic studies.</td>
<td>PHCL 4600 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>PHCL4630</td>
<td>Cancer Chemotherapy</td>
<td>3</td>
<td>An examination of cancer as a disease, the biology of cancer and an in depth study of the drugs currently used to treat this family of diseases.</td>
<td>PHCL 3720 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
</tbody>
</table>
Course Descriptions 2009-2010

PHCL4700  Pharmacology III: Cns And Cardiovascular Pharmacology  
Credit Hours: 3
The pharmacology of central nervous system active agents such as opioid analgesics and alcohol. Continues from PHCL 3720. Agents acting on the cardiovascular and renal systems are also discussed.

Prerequisites: PHCL 3720 FOR LEVEL UG WITH MIN. GRADE OF D-

PHCL4720  Pharmacology IV: Chemotherapeutic Agents  
Credit Hours: 3
The pharmacology of anti-infective chemotherapeutic agents is presented. Issues such as the mechanism of antimicrobial action, disposition, resistance and problems attending the use of antimicrobial drugs will be discussed.

Prerequisites: (PHCL 4700 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHCL 4150 FOR LEVEL UG WITH MIN. GRADE OF D- AND MBC 3800 FOR LEVEL UG WITH MIN. GRADE OF D-)

PHCL4730  Toxicology I  
Credit Hours: 3
A synopsis of the basic elements of toxicology including dose-response, lethal dose-50, margin of safety, mechanisms of toxicity and nature of toxic injuries including mutagenesis and carcinogenesis. Treatments for poisonings will not be treated in detail

Corequisite: PHCL 3700

PHCL4740  Introduction To Clinical Toxicology  
Credit Hours: 2
An introduction to the diagnosis and treatment of human poisoning and risk assessment will be discussed utilizing the lecture and case presentation format.

Prerequisites: PHCL 4700 FOR LEVEL UG WITH MIN. GRADE OF D-

PHCL4750  Toxicology II  
Credit Hours: 3
This course provides the students with an overview of environmental toxicology, which emphasizes both air and water pollution. It also reviews the applications of different areas of toxicology, such as food toxicology emphasizing the safety standards of f

Prerequisites: PHCL 3700 FOR LEVEL UG WITH MIN. GRADE OF D-

PHCL4760  Toxicokinetics  
Credit Hours: 3
The theory and practice of using kinetic principles to model the time course of toxic chemicals in the body and in the environment. Relation of the chemical time course to negative outcomes and application to risk assessment. Hands-on practice with kineti

PHCL4770  Toxicological Risk Assessment  
Credit Hours: 3
Study of human health risk assessment based on National Research Council paradigm. Topics (pharmacokinetic/dynamic modeling, etc.) are designed to provide the student with the tools necessary to conduct quantitative risk assessment.
PHCL4780     Practicum In Pharmacology/Toxicology
Credit Hours: 6-12
In this experiential course students will acquire practical knowledge and hands-on experience in the areas of pharmacology and/or toxicology by working at private or government laboratories.
Prerequisites:(PHCL 3720 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHCL 3810 FOR LEVEL UG WITH MIN. GRADE OF D- AND MBC 3320 FOR LEVEL UG WITH MIN. GRADE OF D- AND MBC 3560 FOR LEVEL UG WITH MIN. GRADE OF D-)

PHCL4800     Human-Xenobiotic Interactions
Credit Hours: 3
This course will summarize the ways in which xenobiotics affect the human condition both in the context of therapeutic benefit and also chemically-induced diseases. Existing strategies for developing xenobiotics to control disease and for managing xenobio
Prerequisites:(PHCL 4140 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHCL 4700 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHCL 4730 FOR LEVEL UG WITH MIN. GRADE OF D-)

PHCL4810     BPS PHARMACOLOGY: III CNS AND CARDIOVASCULAR PHARMACOLOGY
Credit Hours: 3
The pharmacology of central nervous system active agents such as opioid analgesics and alcohol and agents acting on the cardiovascular and renal systems.
Prerequisites:PHCL 3730 FOR LEVEL UG WITH MIN. GRADE OF D-

PHCL4820     BPS PHARMACOLOGY IV: CHEMOTHERAPEUTIC AGENTS
Credit Hours: 3
The pharmacology of anti-infective chemotherapeutic agents including their mechanism of antimicrobial action, disposition, resistance and issues related to use.
Prerequisites:PHCL 4810 FOR LEVEL UG WITH MIN. GRADE OF D-

PHCL4850     Drug Disposition
Credit Hours: 2
The influence of host factors such as disease states, drug-drug interactions and environmental chemical exposure will be discussed within the framework of basic principles of drug absorption, distribution, metabolism and excretion.
Prerequisites:PHCL 4150 FOR LEVEL UG WITH MIN. GRADE OF D-

PHCL4900     Honors Seminar In Pharmacology
Credit Hours: 1-3
An examination of a specific question in the context of the primary literature in pharmacology and in the context of the student's own findings based on his/her thesis research.

PHCL4910     Problems In Pharmacology
Credit Hours: 1-3
An examination of a specific question in pharmacology which can be answered through application of experimental work.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHCL4960</td>
<td>Honors Thesis In Pharmacology</td>
<td>2-5</td>
<td>An examination of a specific question in pharmacology which can be answered through application of experimental work.</td>
</tr>
<tr>
<td>PHCL5140</td>
<td>Interpretation Of Pharmaceutical Data</td>
<td>2</td>
<td>A course designed to emphasize the presentation, analysis and interpretation of data in the pharmaceutical sciences. The concepts of statistics will be discussed. Experimental design as well as appropriateness of analytical methodology and conclusions will be discussed.</td>
</tr>
<tr>
<td>PHCL5300</td>
<td>Selected Topics In Pharmacology</td>
<td>2</td>
<td>This course discusses the pharmacodynamics and pharmacotherapeutics of selected classes of pharmacologic agents. The pathophysiology of the disease states for which these agents are commonly employed will be described.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prerequisites: PHCL 3700 FOR LEVEL UG WITH MIN. GRADE OF D- OR PHCL 5700 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>PHCL5420</td>
<td>Advanced Neuroscience</td>
<td>2</td>
<td>This course will explore in depth the anatomy, physiology and chemistry of neurological systems with emphasis on the role of the brain in behavior and the etiology of neurological disorders.</td>
</tr>
<tr>
<td>PHCL5600</td>
<td>Research Methods In Epidemiology</td>
<td>4</td>
<td>This course is intended to provide fundamental concepts of epidemiology and its basic research methods. The course is designed as a prerequisite for pharmacoepidemiology.</td>
</tr>
<tr>
<td>PHCL5620</td>
<td>Pharmacoepidemiology</td>
<td>4</td>
<td>This course is intended to give an overview of and terminology commonly used in pharmacoepidemiology and to teach students how to review and comprehend pharmacoepidemiologic studies.</td>
</tr>
<tr>
<td>PHCL5630</td>
<td>Cancer Chemotherapy</td>
<td>3</td>
<td>An overview of cancer as a disease and an in depth study of the drugs currently used to treat this family of diseases.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prerequisites: PHCL 3720 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
</tbody>
</table>
PHCL5700  Pharmacology I-Principles Of Pharmacology, Autonomic Pharmacology And Non-steroidal Anti-inflammation  Credit Hours: 3
An introduction to the principles of pharmacology and the pharmacology of the autonomic system. Non-steroidal anti inflammatory agents are also discussed.

PHCL5720  Pharmacology II: Endocrine And Cns Pharmacology  Credit Hours: 3
The pharmacology of drugs acting upon the endocrine and reproductive systems will be discussed, followed by a treatment of drugs used in the management of sleep disorders, anxiety, affective illness, schizophrenia and seizure disorders.
Prerequisites:PHCL 5700 FOR LEVEL GR WITH MIN. GRADE OF D-

PHCL5730  Toxicology I  Credit Hours: 3
This course reviews the basic elements of toxicology. It includes those principles most frequently involved in a full understanding of toxicologic events, such as dose-response, lethal dose-50 (LD50) and margin of safety. It also identifies toxic chemical
Corequisite:PHCL 5700

PHCL5750  Toxicology II  Credit Hours: 3
This course provides the students with an overview of environmental toxicology, which emphasizes both air and water pollution. It also reviews the applications of different areas of toxicology, such as food toxicology emphasizing the safety standards of f
Prerequisites:PHCL 5700 FOR LEVEL GR WITH MIN. GRADE OF D-

PHCL5760  Toxicokinetics  Credit Hours: 3
The theory and practice of using kinetic principles to model the time course of toxic chemicals in the body and in the environment. Relation of the chemical time course to negative outcomes and application to risk assessment. Hands-on practice with kineti

PHCL5900  Drug Disposition  Credit Hours: 2
The influence of host factors such as disease states, drug-drug interactions and environmental chemical exposure will be discussed within the framework of basic principles of drug absorption, distribution, metabolism and excretion.

PHCL5990  Problems In Pharmacology  Credit Hours: 1-6
Tutorial or directed individual research in pharmacology.
PHCL6150  Advanced Pharmacokinetics  Credit Hours: 2
A study of the mathematical models describing the time course of drugs in the body and their application in the interpretation of in vivo data.

PHCL6600  Seminar In Pharmacology  Credit Hours: 1
Pharmacology students will attend seminar presentations offered through the seminar/colloquia programs in the departments of Biology and Chemistry and in the College of Pharmacy, and must present at least one seminar.

PHCL6700  Pharmacology III: CNS And Cardiovascular/Renal Pharmacology  Credit Hours: 3
The pharmacology of central nervous system active agents such as the opiod analgesics and alcohol continues from PHCL 5720. Agents acting on the cardiovascular and renal systems are discussed.
Prerequisites: PHCL 5720 FOR LEVEL GR WITH MIN. GRADE OF D-

PHCL6720  Pharmacology IV; Chemotherapeutics  Credit Hours: 3
The pharmacology of anti-infective chemotherapeutic agents is presented. Issues such as the mechanism of antimicrobial action, disposition, resistance and problems attending the use of antimicrobial drugs will be discussed.
Prerequisites: PHCL 6700 FOR LEVEL GR WITH MIN. GRADE OF D-

PHCL6770  Toxicological Risk Assessment  Credit Hours: 3
Study of human health risk assessment on NRC paradigm of: hazard identification, effects characterization, exposure characterization and risk characterization. Topics to be covered (pharmacokinetic/pharmacodynamic modeling, etc.) are designed to provide
Prerequisites: PHCL 5760 FOR LEVEL GR WITH MIN. GRADE OF D- OR PHCL 6150 FOR LEVEL GR WITH MIN. GRADE OF D-

PHCL6900  M.S. Thesis Research In Pharmacology  Credit Hours: 1-6
M.S. thesis research in pharmacology.

PHCL6920  M.S. Thesis Research In Pharmacology  Credit Hours: 1-6
M.S. thesis research in pharmacology.
PHCL7420 Advanced Neuroscience Credit Hours: 2
This course will explore in depth the anatomy, physiology and chemistry of neurological systems with emphasis on the role of the brain in behavior and the etiology of neurological disorders.

PHIL1010 Introduction To Logic Credit Hours: 3
(not for major credit) An introduction to the symbolic analysis of argument components and structures. Topics include definition, syllogistic reasoning, semantics, sentential logic and probability.

PHIL1020 Critical Thinking Credit Hours: 3
(not for major credit) A study of principles and patterns of good reasoning and writing, including the evaluation and construction of arguments and the identification and avoidance of fallacies.

PHIL2200 Introduction To Philosophy Credit Hours: 3
An introduction to philosophical reflection on such issues as the existence of God, free will, knowledge and objectivity, social justice and moral responsibility. Humanities core course.

PHIL2400 Contemporary Moral Problems Credit Hours: 3
A study of topics such as abortion, euthanasia, environmental responsibility, famine relief, affirmative action and sexuality. Attention is paid to moral argument and the bases of moral decisions.

PHIL3000 Symbolic Logic Credit Hours: 3
A study of propositional and predicate logic, techniques used to evaluate deductive arguments. Topics may include computability, set theory, Bayesianism and other formal systems with philosophical and mathematical relevance.

PHIL3060 Philosophy Of Language Credit Hours: 3
A historical and critical examination of topics in the philosophy of language such as truth, reference, representation, metaphor and interpretation.
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<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>PHIL3120</td>
<td>Business Ethics</td>
<td>3</td>
<td>An examination of the ethical dimensions of the relationships between a business and employees, consumers, other businesses, society, government, the law and the environment.</td>
</tr>
<tr>
<td>PHIL3140</td>
<td>Computers And Culture</td>
<td>3</td>
<td>A study of the philosophical issues computers raise which affect and reflect human values. Topics include censorship and privacy on the internet, virtual reality and the possibility of artificial intelligence.</td>
</tr>
<tr>
<td>PHIL3180</td>
<td>Environmental Ethics</td>
<td>3</td>
<td>An examination of our relation and responsibility to the natural environment. Topics include risk assessment, the value of non-human living things, resource use, economics, technology, environmental racism and ecology.</td>
</tr>
<tr>
<td>PHIL3210</td>
<td>Ancient And Medieval Philosophy</td>
<td>3</td>
<td>A study of ancient and medieval philosophy from the pre-Socratics to Aquinas.</td>
</tr>
<tr>
<td>PHIL3230</td>
<td>Modern Philosophy</td>
<td>3</td>
<td>A study of early modern philosophy from Descartes to Kant. Writing intensive course.</td>
</tr>
<tr>
<td>PHIL3240</td>
<td>Existentialism</td>
<td>3</td>
<td>A study of existential philosophers, including Nietzsche, Kierkegaard, Sartre, Camus, Jaspers, Heidegger and others. Topics may include anxiety, meaning and meaninglessness, freedom, and human sociability.</td>
</tr>
<tr>
<td>PHIL3250</td>
<td>Current European Philosophy</td>
<td>3</td>
<td>An examination of some of the most influential developments in European thought since 1960, such as structuralism, hermeneutics, deconstruction, feminism and post-modernism.</td>
</tr>
</tbody>
</table>
PHIL3300  Philosophy Of Biology  Credit Hours: 3
An examination of philosophical topics raised by evolutionary biology including the relation between theory and fact, the characterization of natural kinds, teleology, reductionism and the history of human morality.

PHIL3310  Science And Society  Credit Hours: 3
A study of twentieth-century science and its relationships with government, industry, religion and medicine, including the emergence of Big Science and the future of science education and research.

PHIL3370  Medical Ethics  Credit Hours: 3
The application of ethics to the practice of medical professionals. Topics include authority, paternalism, truth-telling, informed consent, health care reform, genetic manipulation, abortion, infanticide and euthanasia.

PHIL3400  Ethical Theory  Credit Hours: 3
A study of the moral philosophies of Aristotle, Hume, Kant, Mill and their critics, focusing on knowledge and justification, virtue, justice, happiness, conflicts of obligation and ideals of community.

PHIL3500  Eastern Thought  Credit Hours: 3
An examination of major philosophies of Asia and the Far East, their specific concerns and their relevance to contemporary problems.

PHIL3510  Zen Philosophy  Credit Hours: 3
An intensive examination of the philosophical, literary and historical roots of Zen (Ch'an) teachings and meditative praxis as found in Madhyamika, Yogacara, Hua-yen and Taoism and an exploration of the ontological and phenomenological dimensions of Zen t

PHIL3540  Feminism And Philosophy  Credit Hours: 3
An examination of feminist perspectives in philosophy, exploring the relevance of gender to central questions in ethics, political theory and epistemology.
PHIL3550  Philosophy Of Culture  Credit Hours:  3
Examines the relevance of cultural differences to values and modes of thought through case studies in non-Western culture. Topics may include cultural relativism and cultural imperialism.

PHIL3560  Aesthetics  Credit Hours:  3
An analysis and evaluation of aesthetic topics such as the definition of art, truth in the arts, the role of representation, the nature of aesthetic value and the character of aesthetic experience.

PHIL3570  Philosophy Of Religion  Credit Hours:  3
A critical and philosophical analysis of topics in religion including the problem of evil, faith and reason, the existence of God and the nature of the religious experience.

PHIL3600  Theory Of Knowledge  Credit Hours:  3
An historical and contemporary inquiry into the nature and limits of knowledge and justification. Topics include truth, skepticism, objectivity and relativism.

PHIL3630  Philosophy Of Psychology  Credit Hours:  3
A philosophical examination of problems concerning the nature of mind such as the relation between mind and body, self knowledge, free will and personal identity.

PHIL3710  Philosophy Of Law  Credit Hours:  3
A study of philosophical issues raised by law such as the relation of law to morality, obligation to obey the law, paternalism, censorship and free speech.

PHIL3750  Social And Political Philosophy  Credit Hours:  3
A study of classic and contemporary treatments of justice, authority, the relations between individual and community, the meaning of freedom and equality, power and violence, and race and gender.
PHIL3760  Crime And Punishment  Credit Hours: 3
A philosophical study of topics such as crime, responsibility, justice and punishment. Special attention is paid to current practices in the criminal justice system.

PHIL3900  Seminar  Credit Hours: 3
Topics vary.

PHIL4210  Ancient Philosophy Seminar  Credit Hours: 3
An intensive study of the texts and arguments of Presocratic philosophers, Plato, Aristotle, or Hellenistic philosophers. Course may be repeated as topics vary.

PHIL4230  Modern Philosophy Seminar  Credit Hours: 3
An intensive study of one or more Continental or British philosophers from the sixteenth through eighteenth centuries. Course may be repeated as topics vary.

PHIL4240  19th C. European Philosophy  Credit Hours: 3
An intensive study of European philosophy after Kant, including Hegel, Marx, Kierkegaard and Nietzsche.

PHIL4250  Phenomenology  Credit Hours: 3
An intensive study of major works from phenomenological philosophers, such as Husserl, Heidegger, Sartre, or Merleau-Ponty. Course may be repeated as topics vary.

PHIL4260  Recent European Philosophy  Credit Hours: 3
An examination of texts and problems in the Frankfurt school, post-structuralism, deconstruction and post-modernism, or of such thinkers as Habermas, Foucault, Derrida and Lyotard. Course may be repeated as topics vary.
<table>
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<tr>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>PHIL4270</td>
<td>American Philosophy</td>
<td>3</td>
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<tr>
<td></td>
<td>A study of the development of American Philosophy, or one or more of Pierce, James, Dewey, or Mead. Course may be repeated as topics vary.</td>
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<tr>
<td>PHIL4280</td>
<td>20th C. Analytic Philosophy</td>
<td>3</td>
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<td></td>
<td>Selected readings from Frege, Russell, Wittgenstein, the Vienna Circle, the Ordinary Language school, and American neo-pragmatists such as Quine, Rorty and Davidson. Course may be repeated as topics vary.</td>
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<tr>
<td>PHIL4400</td>
<td>Ethics Seminar</td>
<td>3</td>
</tr>
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<td></td>
<td>Selected topics or philosophers in ethical theory. Course may be repeated as topics vary.</td>
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<tr>
<td>PHIL4500</td>
<td>Buddhist Philosophy</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>An examination of significant developments in Buddhist philosophical thought including that of Abhidharmika, Madhyamika, Yogacara, Hua-yen and Ch'lan (Zen).</td>
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<tr>
<td>PHIL4650</td>
<td>Philosophy Of Mind</td>
<td>3</td>
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<td></td>
<td>Advanced study of issues in the philosophy of mind such as: intentionality and misrepresentation, rationality and interpretation, supervenience and reductionism, folk psychology and eliminative materialism. Course may be repeated as topics vary.</td>
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<tr>
<td>PHIL4900</td>
<td>Advanced Seminar</td>
<td>2-4</td>
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<tr>
<td></td>
<td>Topics vary.</td>
<td></td>
</tr>
<tr>
<td>PHIL4920</td>
<td>Directed Readings</td>
<td>1-4</td>
</tr>
</tbody>
</table>
PHIL4990  Independent Study-Honors  Credit Hours:  3

PHIL5210  Ancient Philosophy Seminar  Credit Hours:  3
An intensive study of the texts and arguments of Presocratic philosophers, Plato, Aristotle, or Hellenistic philosophers. Course may be repeated as topics vary.

PHIL5230  Modern Philosophy Seminar  Credit Hours:  3
An intensive study of one or more Continental or British philosophers from the sixteenth through eighteenth centuries. Course may be repeated as topics vary.

PHIL5240  19th Century European Philosophy  Credit Hours:  3
An intensive study of European philosophy after Kant, including Hegel, Marx, Kierkegaard and Nietzsche.

PHIL5250  Phenomenology  Credit Hours:  3
An intensive study of major works from phenomenological philosophers, such as Husserl, Heidegger, Sartre, or Merleau-Ponty. Course may be repeated as topics and texts vary.

PHIL5260  Recent European Philosophy  Credit Hours:  3
An examination of texts and problems in the Frankfurt School, post-structuralism, deconstruction, post-modernism, or of such thinkers as Habermas, Foucault, Derrida and Lyotard. Course may be repeated as topics vary.

PHIL5270  American Philosophy  Credit Hours:  3
A study of the development of American philosophy, or of one or more of Pierce, James, Dewey, or Mead. Course may be repeated as topics vary.
PHIL5280 20th Century Analytic Philosophy

Credit Hours: 3

Selected readings from Frege, the Russell, Wittgenstein, the Vienna Circle, the Ordinary Language school and American neopragmatists such as Quine, Rorty and Davidson. Course may be repeated as topics vary.

PHIL5400 Ethics Seminar

Credit Hours: 3

Selected topics or philosophers in ethical theory. Course may be repeated as topics vary.

PHIL5600 Epistemology

Credit Hours: 3

An advanced study of issues in the theory of knowledge, such as: the nature and limits of knowledge, a priori and empirical knowledge, skepticism, empiricism and pragmatism.

PHIL5650 Philosophy Of Mind

Credit Hours: 3

Advanced study of issues in the philosophy of mind such as: intentionality and misrepresentation, rationality and interpretation, supervenience and reductionism, folk psychology and eliminative materialism. Course may be repeated as topics vary.

PHIL5750 Political Philosophy Seminar

Credit Hours: 3

Selected topics or philosophers in political philosophy. Course may be repeated as topics vary.

PHIL5920 Readings In Philosophy

Credit Hours: 3

Critical inquiry into selected works of a particular philosopher or a specific philosophical problem.

PHIL5990 Independent Study

Credit Hours: 1-3

Directed study in philosophy under supervision of a philosophy faculty member.
PHIL6000  Advanced Logic  
A study of propositional and predicate logic, as well as examination of issues in the philosophy of logic.

PHIL6370  Ethics And Health Care  
Advanced level course in ethics for health care related majors. An emphasis on ethical theory and its application to ethical problems in health care practices. Not open to philosophy majors.

PHIL6800  Proseminar  
Participation in departmental faculty-graduate student colloquia and mentoring program. Credit will carry the grade of S or U, and will not count toward credit hour requirements for the M.A. degree.

PHIL6930  Seminar  
Advanced philosophy seminar open only to graduate students.

PHIL6960  Thesis  

PHPR1000  Orientation  
Lectures and small group discussions include University, Freshman Orientation, FYI subjects, plus introductory elements of Pharmacy professional culture.

PHPR2010  Introduction To Patient Care  
Introduction to the primary dimensions of the profession of pharmacy with an emphasis on the pharmacist's responsibility to assure that drug therapy is used appropriately to improve patient outcomes.
PHPR3010  Pharmaceutical Calculations  
This course is intended to present the principles involved in solving any mathematical problem which may be encountered in the practice of pharmacy-logical thought processes will be used.

PHPR3020  Pharmaceutical Technology I  
A lecture and laboratory introduction to the principles, theory, and processes involved in the manufacture and compounding of fundamental classes of dosage forms.

Corequisite: PHPR 3010

PHPR3030  Pharmaceutical Technology  
A continuation of PHPR 3020 as a lecture and laboratory to the principles, theory, and processes involved in the manufacture and compounding of fundamental classes of dosage forms.

Prerequisites: PHPR 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

PHPR3070  PPD-1  
Course considers the principles and thought processes involved in solving pharmacy-related mathematical problems and the theory and processes involved in the manufacture and extemporaneous compounding of dosage forms.

PHPR3080  PPD-2  
Further exploration of the principles, theory and processes involved in the development and preparation of parenteral, ophthalmic and other non-oral drug delivery systems.

Prerequisites: PHPR 3070 FOR LEVEL UG WITH MIN. GRADE OF D-

PHPR3130  PPT-1  
Discussion of pathophysiology, clinical presentation, etiologic causes, laboratory findings, diagnosis and therapy of attention deficit hyperactivity disorder, sleep disorders, acid-base, fluid & electrolytic imbalances, pain and substance abuse.

Corequisite: PHCL 3700 MBC 3550 MBC 3310

PHPR3140  PPT-2  
Discussion of pathophysiology, clinical presentation, etiologic causes, laboratory findings, diagnosis and therapy of endocrine disorders and reproduction.

Corequisite: MBC 3320 MBC 3560
PHPR3260 PHCAD-1  Credit Hours: 2
Description and analysis of the organization, financing and delivery of healthcare in the U.S.. Development of communication skills for pharmacists to function optimally in the system is emphasized.

Prerequisites:ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

PHPR3510 Pharmaceutical Dimensions Of Health Care System  Credit Hours: 3
Description and analysis of the organization, financing and delivery of healthcare in the U.S. Development of communication skills for pharmacists to function optimally in the system is emphasized.

Prerequisites:ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

PHPR3920 Introductory Pharmacy Practice Experience I  Credit Hours: 1
First professional year course designed to enhance professional growth through an introduction to clinical skill development and direct patient care activities within institutional and community pharmacy practice settings. Prerequisite: Admission into the

PHPR3940 Introductory Pharmacy Practice  Credit Hours: 1
The purpose of this course is to increase students’ awareness and involvement in areas related to the contemporary practice of pharmacy. Students will participate in projects that nurture their professional growth.

PHPR4250 Sterile Product Technology  Credit Hours: 2
Study of the design, formulation, production, packaging and manipulation of parenteral products used as for therapeutic and nutritional purposes, including the use of blood and blood-related products.

Prerequisites:PHPR 3010 FOR LEVEL UG WITH MIN. GRADE OF D-

PHPR4330 RESEARCH DESIGN AND DRUG LITERATURE EVALUATION 1  Credit Hours: 2
Concepts of research design, statistical analysis, literature evaluation and evidence based medicine are introduced and integrated in a manner that depicts their practical relevance to pharmacy practice.

Prerequisites:PHPR 4130 FOR LEVEL UG WITH MIN. GRADE OF D-

Corequisite:PHPR 4080

PHPR4400 Human Interaction In Healthcare  Credit Hours: 2
An introduction to interpersonal communication with emphasis upon application of one-to-one communication in a variety of healthcare contexts, especially patient counseling.

Prerequisites:PHPR 3510 FOR LEVEL UG WITH MIN. GRADE OF D-
PHPR4410  Professional Practice Development I  
Credit Hours: 3
Instruction in the broad dimension of professional pharmacy practice and identification of the pharmacist's responsibility for providing pharmaceutical care, including medication distribution, patient education and use of drug information resources.

Prerequisites: PHCL 3720 FOR LEVEL UG WITH MIN. GRADE OF D-

PHPR4420  Professional Practice Development II  
Credit Hours: 3
Building on competencies from PHPR 4400 and 4410, this course enhances professional development to meet specific patient and health care practitioner needs. Instruction includes effective literature analysis, presentation of care plans and pharmacy jurisprudence.

Prerequisites: (PHPR 3510 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHPR 4410 FOR LEVEL UG WITH MIN. GRADE OF D-)

PHPR4430  Pathophysiology And Pharmacotherapy (ppt): Introduction  
Credit Hours: 1
An introduction to clinical practice and concepts which will be utilized in the PPT course sequence.

Prerequisites: PHPR 3080 FOR LEVEL UG WITH MIN. GRADE OF D-

PHPR4440  Pathophysiology And Pharmacotherapy (ppt): Immunology  
Credit Hours: 2
This course will consider current concepts and applications of immunological principles for disease prevention, for transplantation, and for treatment of cancer, autoimmune and infectious disease, using a seminar-discussion-student presentation format.

PHPR4450  Pathophysiology And Pharmacotherapy: Renal  
Credit Hours: 3
Discussion of pathophysiology, clinical presentation, etiological causes, laboratory findings, diagnosis and therapy of renal disease states.

PHPR4520  Pharmaceutical Management And Marketing  
Credit Hours: 3
An introduction to the theoretical concepts and applied techniques for resource management and marketing issues that affect the delivery of pharmaceutical care.

Corequisite: PHPR 4420

PHPR4550  Analysis Of The Pharmaceutical Environment  
Credit Hours: 3
A theoretical and practical examination of the pharmaceutical environment and drug distribution system using the science of marketing as a tool for analysis.
PHPR4590  READINGS IN ACCESS AND CULTURAL COMPETENCE  Credit Hours:  2
Examination of the literature related to access and cultural competence in the US health care system. Various types of readings will be used to analyze the relationships that exist between access, cultural competence and positive health care outcomes.
Prerequisites: PHPR 4520 FOR LEVEL UG WITH MIN. GRADE OF D-

PHPR4600  SEMINAR IN PHARMACY ADMINISTRATION  Credit Hours:  1
This course provides a global perspective on pharmacy administration and healthcare related issues, including economic, humanistic, clinical, and other aspects of disease management. Prerequisite: Enrollment in the BSPS in Pharmacy Administration program

PHPR4610  PHARMACOECONOMICS AND OUTCOMES I  Credit Hours:  3
This course emphasizes introductory concepts, methods, and practical procedures for pharmacoeconomic analysis and outcomes research. The student will understand and develop instruments for assessing patients' health status, quality of life, satisfaction a

PHPR4680  Parenteral Manufacturing  Credit Hours:  2
The theory and technology of parenteral and ophthalmic formulation design, production, sterilization, packaging and stability.
Prerequisites: (PHPR 3010 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHPR 3070 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHPR 3080 FOR LEVEL UG WITH MIN. GRADE OF D-)

PHPR4690  Dosage Form Design  Credit Hours:  3
The utilization of pharmaceutical principles and practices for the design and manufacture of modern commercial dosage forms such as tablets, aerosols, emulsions, suspensions and solutions emphasizing biopharmaceutically efficacious products.
Prerequisites: (PHPR 3070 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHPR 3080 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHPR 3010 FOR LEVEL UG WITH MIN. GRADE OF D-)

PHPR4700  Equilibrium Phenomena  Credit Hours:  2
A theoretical and practical examination of the principles of chemical equilibrium and the techniques used in their calculation. Physical and chemical concepts focus on pharmaceutical systems as well as selected areas of chemistry.
Prerequisites: (PHPR 3010 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHPR 3070 FOR LEVEL UG WITH MIN. GRADE OF D-)

PHPR4710  Selected Topics In Pharmaceutical Technology  Credit Hours:  3
Discussion, evaluation, experimentation and production of selected dosage forms. A forum for the discussion of new dosage form technology and advances.
Prerequisites: (PHPR 3010 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHPR 3070 FOR LEVEL UG WITH MIN. GRADE OF D-)
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<tr>
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<tbody>
<tr>
<td>PHPR4720</td>
<td>Pharmaceutical Rate Processes</td>
<td>3</td>
</tr>
<tr>
<td>PHPR4780</td>
<td>Practicum In Pharmacy Administration</td>
<td>6-12</td>
</tr>
<tr>
<td>PHPR4810</td>
<td>Finance and Personal Planning for Pharmacists</td>
<td>1</td>
</tr>
<tr>
<td>PHPR4880</td>
<td>Practicum In Pharmaceutics</td>
<td>6-12</td>
</tr>
<tr>
<td>PHPR4900</td>
<td>Honors Seminar In Pharmacy Practice</td>
<td>1-3</td>
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<tr>
<td>PHPR4910</td>
<td>Pharmacy Practice Problems</td>
<td>1-5</td>
</tr>
<tr>
<td>PHPR4920</td>
<td>Introductory Pharmacy Practice Experience II</td>
<td>1</td>
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</tbody>
</table>
**PHPR4960  Honors Thesis In Pharmacy Practice**

An examination of a specific research question in pharmacy practice which can be answered through application of experimental work.

**Credit Hours:** 2-5

**PHPR5680  Parenteral Manufacturing**

The theory and technology of parenteral and ophthalmic formulation design, production, sterilization, packaging and stability.

Prerequisites: (PHPR 3010 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHPR 3070 FOR LEVEL UG WITH MIN. GRADE OF D-)

**Credit Hours:** 2

**PHPR5690  Dosage Form Design**

The utilization of pharmaceutical principles and practices for the design and manufacture of modern commercial dosage forms such as tablets, aerosols, emulsions, suspensions and solutions emphasizing biopharmaceutically efficacious products.

Prerequisites: (PHPR 3010 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHPR 3070 FOR LEVEL UG WITH MIN. GRADE OF D-)

**Credit Hours:** 3

**PHPR5700  Equilibrium Phenomenon**

A theoretical and practical examination of the principles of chemical equilibrium and the techniques used in their calculation. Physical and chemical concepts focus on pharmaceutical systems as well as selected areas of chemistry.

**Credit Hours:** 2

**PHPR5710  Selected Topics In Pharmaceutical Technology**

Discussion, evaluation, experimentation and production of selected dosage forms. A forum for the discussion of new dosage form technology and advances.

Prerequisites: (PHPR 3010 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHPR 3070 FOR LEVEL UG WITH MIN. GRADE OF D-)

**Credit Hours:** 2-3

**PHPR5720  Pharmaceutical Rate Processes**

A theoretical and practical application of kinetic principles applied to pharmaceutic and cosmetic systems in liquid and solid state. A mathematical treatment and development of the equations which support each reaction mechanism.

**Credit Hours:** 3

**PHPR5810  FINANCE AND PERSONAL PLANNING FOR PHARMACISTS**

Practical topics on financial, professional, and personal situation to better prepare students to make knowledgeable decisions that affect future security and success. (Prerequisites: Third Professional Year PharmD or permission of instructor.)

**Credit Hours:** 1
PHPR5990  Problems In Pharmacy Practice  Credit Hours: 1-6
Tutorial or directed, individual research problems in administrative pharmacy, or other related fields.

PHPR6160  Advanced Applied Pharmacokinetic  Credit Hours: 3
Detailed discussion of pharmacokinetic characteristics of drugs which are commonly included in therapeutic drug monitoring including clinical application.
Prerequisites: PHCL 6150 FOR LEVEL GR WITH MIN. GRADE OF D- OR PHCL 4150 FOR LEVEL UG WITH MIN. GRADE OF D-

PHPR6210  Introduction To Research Methods  Credit Hours: 2
General overview and introduction to research process as it pertains to clinical pharmacy practice. Special emphasis given to design issues, particularly those involving human subjects.

PHPR6230  Patient Care Rounds I  Credit Hours: 3
The course will provide students with advanced experiences in applying and integrating biomedical, psychosocial and pharmacoeconomic principles to patient care. Students will present and discuss how they would identify, prevent and resolve the medication-

PHPR6240  Patient Care Rounds II  Credit Hours: 3
The course will provide students with advanced experiences in applying and integrating biomedical, psychosocial and pharmacoeconomic principles to patient care. Students will present and discuss how they would identify, prevent and resolve the medication-
Prerequisites: PHPR 6230 FOR LEVEL GR WITH MIN. GRADE OF D-

PHPR6250  Self-Care  Credit Hours: 3
The course will discuss issues surrounding the self-medication decision-making process. Special emphasis will be placed on how pharmacists should help patients safely and effectively treat common medical problems. The course will provide information about
Prerequisites: PHPR 6230 FOR LEVEL GR WITH MIN. GRADE OF D-

PHPR6370  Nutrition  Credit Hours: 1
An overview of the fundamental principles of nutritional support and the pharmacist's role in providing nutritional support services.
PHPR6380  Pathophysiology And Pharmacotherapy: Endocrinology  
Discussion of the pathophysiology, clinical presentation, etiologic causes, laboratory findings, diagnosis and therapy of endocrine disorders.

PHPR6420  Pathophysiology And Pharmacotherapy: Cardiology  
Discussion of pathophysiology, clinical presentation, etiological causes, laboratory findings, diagnosis and therapy of cardiovascular disease states.

PHPR6430  Pathophysiology And Pharmacotherapy: Pulmonary  
Discussion of pathophysiology, clinical presentation, etiological causes, laboratory findings, diagnosis and therapy of pulmonary disease states.

PHPR6440  Pathophysiology And Pharmacotherapy: Infectious Disease  
Discussion of pathophysiology, clinical presentation, etiological causes, laboratory findings, diagnosis and therapy of infectious disease states.

PHPR6450  Pathophysiology And Pharmacotherapy: Renal  
Discussion of pathophysiology, clinical presentation, etiological causes, laboratory findings, diagnosis and therapy of renal disease states.

PHPR6490  Pathophysiology And Pharmacotherapy: Hematology And Oncology  
Discussion of pathophysiology, clinical presentation, etiological causes, laboratory findings, diagnosis and therapy of hematologic and oncologic disease states.

PHPR6510  Pathophysiology And Pharmacotherapy: Poison Management  
Discussion of pathophysiology, clinical presentation, etiological causes, laboratory findings, diagnosis and therapy of poisoning and drug overdose management.
PHPR6520 Analysis Of The Pharmaceutical Environment
Credit Hours: 3
A theoretical and practical examination of the pharmaceutical environment and drug distribution system using administrative pharmacy sciences as a tool for analysis.
Prerequisites: PHPR 4520 FOR LEVEL UG WITH MIN. GRADE OF D-

PHPR6530 Research Methods In Pharmacy Practice
Credit Hours: 3
An introduction to research methods and principles used in designing, planning, implementing, analyzing and interpreting research projects in pharmacy practice.

PHPR6550 Management Topics For Clinical Practice
Credit Hours: 2
Description of nature of management, basic management concepts and tools and environmental concerns pertinent to pharmacy practice in all of its practice settings.

PHPR6600 Seminar In Administrative Pharmacy
Credit Hours: 1
A critical analysis of current problems in pharmacy practice with individual case presentations.

PHPR6610 Seminar I
Credit Hours: 1
Instruction on preparation and presentation of clinical and/or scientific seminars.

PHPR6800 Monitoring Therapy
Credit Hours: 1
An introduction to medical terminology and procedures with reference to physical exam, patient history, common diagnostic procedures and applications to drug and disease state monitoring.

PHPR6810 Hospital Pharmacy Administration
Credit Hours: 3
An examination of the administrative and supervisory aspects of hospital pharmacy practice. Emphasis is placed on management techniques rather than functions performed.
**PHPR6820  Selected Topics In Hospital Pharmacy**  
Credit Hours: 3  
A treatment of contemporary trends which influence the practice of hospital pharmacy such as drug distribution systems. Emphasis is placed upon these concepts in light of the resources present.

**PHPR6830  Advanced Community Pharmacy Administration**  
Credit Hours: 3  
An advanced analysis of concepts, practices and issues related to retail pharmacy management.

**PHPR6840  Selected Topics In Community Pharmacy**  
Credit Hours: 3  
Examination of contemporary trends influencing community pharmacy, such as home healthcare and prescription drug programs. Emphasis is placed on the impact of these trends on community pharmacy management.

**PHPR6850  Product Development**  
Credit Hours: 3  
A study of various stages of development of pharmaceutical products. The student will develop formulations, using stability data and production technology for three products.

Prerequisites: PHPR 5690 FOR LEVEL GR WITH MIN. GRADE OF D-

**PHPR6890  M.s. Project In Administrative Pharmacy**  
Credit Hours: 1-4  
Development of a practical project in the pharmacy environment on a practicum basis. A written, bound report and oral presentation are required.

**PHPR6920  IPPE-3**  
Credit Hours: 1  
Third professional year course designed to enhance professional growth through application of skills and knowledge gained in IPPE-1 and IPPE-2 to various areas of pharmacy practice to provide the best possible patient care.

Prerequisites: PHPR 4920 FOR LEVEL GR WITH MIN. GRADE OF D-

**PHPR6940  Early Practice Exposure**  
Credit Hours: 2  
Supervised instruction and participation in pharmacy practice at actual practice sites such as community, hospital, managed care, long-term care and nuclear pharmacies.
PHPR6950  Seminar In Industrial Pharmacy  Credit Hours:  1
A seminar course composed of graduate student presentations on their research and special topics as well as outside speakers from both the community and pharmaceutical industry.

PHPR6960  M.s. Thesis Research In Pharmacy  Credit Hours:  1-6
Advanced and in-depth study of an issue pertinent to contemporary pharmacy practice. Part of degree requirement for M.S. in Pharmaceutical Sciences.

PHPR6980  Special Topics  Credit Hours:  1-5
Selected study of topics in Pharmacy Practice. New pharmacy and healthcare strategies are examined in detail.

PHPR8260  Jurisprudence & Ethics For Pharmacy  Credit Hours:  1
Discussion of federal, state and local laws affecting the profession and practice of pharmacy. Ethical principles involved in patient care will be reviewed and applied.

PHPR8390  Pathophysiology And Pharmacotherapy: Gastroenterology  Credit Hours:  2
Discussion of the pathophysiology, clinical presentation, etiologic causes, laboratory findings, diagnosis and therapy of gastrointestinal disorders.

PHPR8470  Pathophysiology And Pharmacotherapy: Rheumatology  Credit Hours:  1
Discussion of the pathophysiology, clinical presentation, etiologic causes, laboratory findings, diagnosis and therapy of rheumatologic disease states.

PHPR8480  Pathophysiology And Pharmacotherapy: Neurology And Psychiatry  Credit Hours:  3
Discussion of pathophysiology, clinical presentation, etiological causes, laboratory findings, diagnosis and therapy of neurologic and psychiatric disease states.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>PHPR8500</td>
<td>Pathophysiology And Pharmacotherapy: Geriatrics And Pediatrics</td>
<td>2</td>
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<tr>
<td></td>
<td>Discussion of pathophysiology, clinical presentation, etiological causes, laboratory findings, diagnosis and therapy of geriatric and pediatric disease states.</td>
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<tr>
<td>PHPR8540</td>
<td>Geriatric Monitoring Principles</td>
<td>3</td>
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<tr>
<td></td>
<td>Application of didactic geriatric drug therapy principles in a geriatric patient care environment. Emphasis will be placed on geriatric drug monitoring skills.</td>
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<tr>
<td></td>
<td>Corequisite: PHPR 8500</td>
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<tr>
<td>PHPR8620</td>
<td>Seminar II</td>
<td>1</td>
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<tr>
<td></td>
<td>Discussion of current topics relating to pharmacy practice.</td>
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<tr>
<td>PHPR8630</td>
<td>Seminar III</td>
<td>2</td>
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<tr>
<td></td>
<td>Presentation of clinical and/or scientific seminar and completion of in-depth pharmacy practice related paper.</td>
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<tr>
<td>PHPR8640</td>
<td>Ppt: Capstone</td>
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<tr>
<td></td>
<td>Advanced experiences in applying and integrating biomedical, psychosocial and pharmacoeconomic principles to drug literature evaluation and patient care.</td>
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<td>Prerequisites: PHPR 6240 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>PHPR8940</td>
<td>Clinical Clerkship</td>
<td>4</td>
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<tr>
<td></td>
<td>Advanced clinical experience in various specialties of medicine and pharmacy. This course will consist of 340 practicum/internship hours for each section (2 months).</td>
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<tr>
<td>PHPR8980</td>
<td>Special Topics</td>
<td>1-5</td>
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<tr>
<td></td>
<td>Selected study of topics in Pharmacy Practice. New Pharmacy and healthcare strategies are examined in detail.</td>
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<tr>
<td>Course Code</td>
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<tr>
<td>PHRM502</td>
<td>Medical Pharmacology II</td>
<td>5</td>
</tr>
<tr>
<td>PHRM525</td>
<td>Fundament Medical Pharmacology</td>
<td>2</td>
</tr>
<tr>
<td>PHRM607</td>
<td>Receptors and Signal Transduct</td>
<td>3</td>
</tr>
<tr>
<td>PHRM620</td>
<td>Read Mechanism Hormone Action</td>
<td>0-4</td>
</tr>
<tr>
<td>PHRM631</td>
<td>Cardiovascular Pharmacology</td>
<td>4</td>
</tr>
<tr>
<td>PHRM633</td>
<td>Neurophrm Tolerance and Depend</td>
<td>4</td>
</tr>
<tr>
<td>PHRM640</td>
<td>Read Biophys/Pharma Bio Membr</td>
<td>0-2</td>
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</tbody>
</table>

The first part of the course consists of a series of lectures covering the fundamental principles of drug action which are the basis for understanding the use of drugs in modern medicine. In the second half, students will choose a class of drugs to review.

An introduction to drug receptors and the diverse signal mechanisms by which drugs initiate cellular responses. Topics to be covered include: macro-molecular structure of receptors dose-response relationships and principles of signal transduction. The course may be repeated for credit.

The properties of hormone receptors and the biochemical consequences of hormone-receptor interactions. May be repeated for credit.

Research-oriented presentation of the pharmacology of cardiovascular drugs with special emphasis on antiarrhythmic agents and cardiac glycosides. May be repeated for credit.

The neurochemical and neurophysiological basis of tolerance and dependence on drugs of abuse. Some laboratory work may be required. May be repeated for credit.

Function of membranes and drug action on membranes. May be repeated for credit.
## Course Descriptions 2009-2010

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>PHRM641</td>
<td>Read Phrm Aspct Membrn Trnsprt</td>
<td>2 has to be</td>
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<tr>
<td>PHRM642</td>
<td>Bioerg/Ion Trnsprt Mitchndr I</td>
<td>2</td>
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<tr>
<td></td>
<td>Designed to integrate the mitochondrial membrane</td>
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<td>processes of energy conservation. Included are</td>
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<td>detailed discussions of respiration-linked H+</td>
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<td></td>
<td>flux, coupled oxidative phosphorylation, ion</td>
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<td></td>
<td>diffusion and carrier mediated transport of</td>
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<tr>
<td></td>
<td>cations, substrate anion</td>
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</tr>
<tr>
<td>PHRM643</td>
<td>Bioenrg Ion Trnsprt Mitchmd II</td>
<td>0-3</td>
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<tr>
<td></td>
<td>Advanced readings in current problems in energy</td>
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<td></td>
<td>conservation and mitochondrial ion transport.</td>
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<tr>
<td></td>
<td>Theoretical and experimental aspects of</td>
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<td></td>
<td>bioenergetics will be discussed. May be repeated</td>
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<td></td>
<td>for credit.</td>
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<tr>
<td>PHRM655</td>
<td>Jrnl Review in Pharmacology</td>
<td>1 has to be</td>
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<tr>
<td></td>
<td>A weekly report on recent advances in</td>
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<td></td>
<td>pharmacology taken from original papers to give</td>
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<td></td>
<td>students an opportunity to find, assess, and</td>
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<td>report on important developments in the field.</td>
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<td></td>
<td>May be repeated for credit.</td>
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<tr>
<td>PHRM656</td>
<td>Read Biochemical Pharmacology</td>
<td>0-3</td>
</tr>
<tr>
<td></td>
<td>Library research project on special topics in</td>
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<td></td>
<td>the biochemical interactions between drugs and</td>
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<tr>
<td></td>
<td>biological systems. May be repeated for credit.</td>
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<tr>
<td>PHRM658</td>
<td>Read in Neuropharmacology</td>
<td>0-3</td>
</tr>
<tr>
<td></td>
<td>Discussion of mechanism of action of drugs</td>
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<td></td>
<td>acting on the CNS based on reading original</td>
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<tr>
<td></td>
<td>research articles. May be repeated for credit.</td>
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<tr>
<td>PHRM660</td>
<td>Prblds in Biochem Pharmacology</td>
<td>0-5</td>
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<tr>
<td></td>
<td>Discussion of mechanism of action of drugs</td>
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<td></td>
<td>acting on the CNS based on reading original</td>
<td></td>
</tr>
<tr>
<td></td>
<td>research articles. May be repeated for credit.</td>
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</tr>
</tbody>
</table>
PHRM661  Prblms Autonom Nrvs Sys Pharm  Credit Hours:  0-5
Introduction to laboratory research on a selected research topic. May be repeated for credit.

PHRM672  Current Topics in Pharmacology  Credit Hours:  0-4
A lecture and/or seminar course on topics of current interest in pharmacology with special emphasis on the fundamentals of mammalian, especially human, life under normal, experimental, or pathological conditions. Students and department faculty will prese

PHRM673  Research in Pharmacology  Credit Hours:  0-8
Students will participate in selected ongoing research programs of members of the department faculty. May be repeated for credit.

PHRM702  Medical Pharmacology II  Credit Hours:  5

PHRM725  Fundamental Medical Pharmacol  Credit Hours:  2
The first part of the course consists of a series of lectures covering the fundamental principles of drug action which are the basis for understanding the use of drugs in modern medicine. In the second half, students will choose a class of drugs to revi

PHRM807  Receptors and Signal Transduct  Credit Hours:  3
An introduction to drug receptors and the diverse signal mechanisms by which drugs initiate cellular responses. Topics to be covered include: macromolecular structure of receptors dose-response relationships and principles of signal transduction. The cor

PHRM820  Read Mechanism Hormone Actio  Credit Hours:  0-4
The properties of hormone receptors and the biochemical consequences of hormone-receptor interactions. May be repeated for credit.
PHRM831  Cardiovascular Pharmacology  
Research-oriented presentation of the pharmacology of cardiovascular drugs with special emphasis on antiarrhythmic agents and cardiac glycosides. May be repeated for credit.

PHRM833  Neurophrm Tolerance and Depend  
The neurochemical and neurophysiological basis of tolerance and dependence on drugs of abuse. Some laboratory work may be required. May be repeated for credit.

PHRM840  Read Biophys/Pharma Bio Membrn  
Function of membranes and drug action on membranes. May be repeated for credit.

PHRM841  Read Phrm Aspct Membrn Trnsprt

PHRM842  Bioenrg/Ion Trnsprt Mitchndr I  
Designed to integrate the mitochondrial membrane processes of energy conservation. Included are detailed discussions of respiration-linked H+ flux, coupled oxidative phosphorylation, ion diffusion and carrier mediated transport of cations, substrate anion.

PHRM843  Bioenrg/Ion trnsprt Mitchnd II  
Advanced readings in current problems in energy conservation and mitochondrial ion transport. Theoretical and experimental aspects of bioenergetics will be discussed. May be repeated for credit.

PHRM855  Jrl Review in Pharmacology  
A weekly report on recent advances in pharmacology taken from original papers to give students an opportunity to find, assess, and report on important developments in the field. May be repeated for credit.
PHRM856  Read Biochemical Pharmacology  
Library research project on special topics in the biochemical interactions between drugs and biological systems. May be repeated for credit.

PHRM858  Read in Neuropharmacology  
Discussion of mechanism of action of drugs acting on the CNS based on reading original research articles. May be repeated for credit.

PHRM860  Prblms in Biochem Pharmacology  
Discussion of mechanism of action of drugs acting on the CNS based on reading original research articles. May be repeated for credit.

PHRM861  Prblms Autonom Nrvs Sys Pharm  
Introduction to laboratory research on a selected research topic. May be repeated for credit.

PHRM872  Current Topics in Pharmacology  
A lecture and/or seminar course on topics of current interest in pharmacology with special emphasis on the fundamentals of mammalian, especially human, life under normal, experimental, or pathological conditions. Students and department faculty will prese

PHRM873  Research in Pharmacology  
Students will participate in selected ongoing research programs of members of the department faculty. May be repeated for credit.

PHSL505  Human Physiology  
This course addresses cellular, regulatory and organ system physiology including blood and immune system, cardiovascular, respiratory, gastrointestinal, renal reproductive and endocrine physiology
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>PHSL505M</td>
<td>Human Physiology</td>
<td>3</td>
</tr>
<tr>
<td>PHSL510</td>
<td>Basic Genomics</td>
<td>3</td>
</tr>
<tr>
<td>PHSL613</td>
<td>Psychophysiology</td>
<td>3</td>
</tr>
<tr>
<td>PHSL620</td>
<td>Advanced Human Physiology</td>
<td>6</td>
</tr>
<tr>
<td>PHSL622</td>
<td>Reproductive Physiology</td>
<td>4</td>
</tr>
<tr>
<td>PHSL625</td>
<td>Reproductive Endocrinology</td>
<td>1-3</td>
</tr>
<tr>
<td>PHSL632</td>
<td>Physiology Kidney/Body Fluids</td>
<td>1-3</td>
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</tbody>
</table>

A basic course on the fundamental concept and techniques employed to study nucleus, chromosomes, cell cycle, DNA, DNA damage and repair, gene expression, genetic analysis of complex traits, and functional genomics.

This course will address the basic and advanced topics on cardiovascular, respiratory, renal, gastrointestinal, endocrine and reproductive physiology. The students will acquire fundamental knowledge in human system physiology. This course is intended pr
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>PHS650</td>
<td>Seminar in Physiology</td>
<td>1</td>
</tr>
<tr>
<td>PHS655</td>
<td>Jnl Paper Review Physiology</td>
<td>1</td>
</tr>
<tr>
<td>PHS657</td>
<td>Readings Behavioral Medicine</td>
<td>0-2</td>
</tr>
<tr>
<td>PHS657</td>
<td>Readings Behavioral Medicine</td>
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<tr>
<td></td>
<td>Readings in theory, physiological</td>
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<td>basis and applications of behavioral</td>
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<td></td>
<td>medicine.</td>
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<tr>
<td>PHS672</td>
<td>Current Topics in Physiology</td>
<td>0-3</td>
</tr>
<tr>
<td>PHS673</td>
<td>Research in Physiology</td>
<td>1-3</td>
</tr>
<tr>
<td>PHS689</td>
<td>Indep Study in Physiology</td>
<td>0-12</td>
</tr>
<tr>
<td>PHS701</td>
<td>Medical Physiology I</td>
<td>5</td>
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<tr>
<td>Course Code</td>
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<tr>
<td>PHSL702</td>
<td>Medical Physiology II</td>
<td>5</td>
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<tr>
<td>PHSL803</td>
<td>Experimental Physiology</td>
<td>1-3</td>
</tr>
<tr>
<td>PHSL813</td>
<td>Psychophysiology</td>
<td>3</td>
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<tr>
<td>PHSL820</td>
<td>Advanced Human Physiology</td>
<td>6</td>
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<tr>
<td>PHSL822</td>
<td>Reproductive Physiology</td>
<td>4</td>
</tr>
<tr>
<td>PHSL825</td>
<td>Reproductive Endocrinology</td>
<td>1-3</td>
</tr>
<tr>
<td>PHSL832</td>
<td>Physiology Kidney/Body Fluids</td>
<td>1-3</td>
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<td>Course Code</td>
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<tr>
<td>PHSL850</td>
<td>Seminar in Physiology</td>
<td>1</td>
</tr>
<tr>
<td>PHSL855</td>
<td>Jnl Paper Review Physiology</td>
<td>1</td>
</tr>
<tr>
<td>PHSL857</td>
<td>Readings Behavioral Medicine</td>
<td>1-2</td>
</tr>
<tr>
<td>PHSL872</td>
<td>Current Topics in Physiology</td>
<td>0-3</td>
</tr>
<tr>
<td>PHSL873</td>
<td>Research in Physiology</td>
<td>1-3</td>
</tr>
<tr>
<td>PHSL889</td>
<td>Indep Study in Physiology</td>
<td>0-12</td>
</tr>
<tr>
<td>PHYA501</td>
<td>Introduction to PA Profession</td>
<td>1</td>
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</tbody>
</table>

A lecture and/or seminar course on topics of current interest in physiology with special emphasis on the fundamentals of mammalian, especially human, life under normal, experimental, or pathological conditions. Students and department faculty members will participate in this course. Intensive study in field of interest including theoretical and experimental work. May be repeated for credit.

An overview of the history and philosophy of the physician assistant profession. Includes a review of current professional issues relevant to the PA profession.
Course Descriptions 2009-2010

PHYA510  Prin. Interview/Medical History  Credit Hours:  3
An introduction to the art of patient/practitioner communication and effective interviewing for the purpose of establishing a health database and follow-up care.

PHYA513  Patient Evaluation  Credit Hours:  3
Students will develop the knowledge and skills to competently perform a complete physical examination, recognizing normal and abnormal findings and communicating their findings verbally and in written form.

PHYA514  Health Care Teams and Systems  Credit Hours:  2
Introduction to issues and systems related to the delivery of health care in the U.S. to include settings, costs, and reimbursement issues and the evaluation of health care quality.

PHYA521  Diag and Therapeutic Skills I  Credit Hours:  2
Introduction to the use and interpretation of commonly used diagnostic and therapeutic tools, including laboratory studies, radiographic studies, and electrocardiography.

PHYA522  Diag Therapeutic Skills II  Credit Hours:  1
Introduction to the use and interpretation of commonly used diagnostic and therapeutic tools, including laboratory studies, radiographic studies, and electrocardiography.

PHYA523  Diag Therapeutic Skills III  Credit Hours:  2
Introduction to the use and interpretation of commonly used diagnostic and therapeutic tools, including laboratory studies, radiographic studies, and electrocardiography.

PHYA531  Clinical Medicine I  Credit Hours:  4
An intensive, three semester sequence of study which examines human diseases and disorders from the perspectives of etiology, epidemiology, clinical manifestations, diagnosis, management, potential complications and prognosis.
PHYA531M  Clinical Medicine  Credit Hours:  4

PHYA533  Clinical Medicine III  Credit Hours:  6
An intensive, three semester sequence of study which examines human diseases and disorders from the perspectives of etiology, epidemiology, clinical manifestations, diagnosis, management, potential complications, and prognosis.

PHYA534  Clinical Medicine II  Credit Hours:  3
An intensive, three semester sequence of study which examines human diseases and disorders from the perspectives of etiology, epidemiology, clinical manifestations, diagnosis, management, potential complications and prognosis.

PHYA540  Pathophysiology I  Credit Hours:  2
An overview of physiological and pathologic processes that influence the human organism at the cellular, organ and systemic levels.

PHYA540M  Pathophysiology  Credit Hours:  2

PHYA541  Pathophysiology II  Credit Hours:  2
An overview of physiological and pathologic processes that influence the human organism at the cellular, organ and systemic levels.

PHYA551  Fundamentals of Pharmacology I  Credit Hours:  2
A study of the general principles of pharmacotherapeutics and the rational use of drugs for the diagnosis, prevention and treatment of diseases.
PHYA551M  Fundamentals of Pharmacology I  Credit Hours: 2

PHYA552  Fundamentals Pharmacology II  Credit Hours: 2
A study of the general principles of pharmacotherapeutics and the rational use of drugs for the diagnosis, prevention and treatment of diseases.

PHYA553  Fundamentals Pharmacology III  Credit Hours: 2
A study of the general principles of pharmacotherapeutics and the rational use of drugs for the diagnosis, prevention and treatment of diseases.

PHYA601  Basic Genetics  Credit Hours: 1

PHYA603  Introduction to Long Term Care  Credit Hours: 1

PHYA605  Ethics for PA Profession  Credit Hours: 2
This course provides the foundation for ethics in the primary care clinical setting. Analyze common bioethical issues confronting physician assistants, and give the student the opportunity to share their experiences with peers.

PHYA611  Hlth Promo Disease Prevention  Credit Hours: 1
An introduction to basic concepts of health promotion and disease prevention, analysis of risk factors for disease, and an emphasis on strategies to modify lifestyles to promote health in the individual and community.
Course Descriptions 2009-2010

PHYA613  Prin of Research and Statistics  Credit Hours:  2
Presentation of methods of research and their application to clinical research in clinical practice. Present useful knowledge and understanding of the basic language, logic and methods of research design and statistical analysis.

PHYA615  Behavioral Science  Credit Hours:  2
Study of concepts and practices related to evaluation and management of psychiatric diseases and conditions as well as behavioral issues which impact upon the health and well-being of patients.

PHYA641  Clinical Practice - ER  Credit Hours:  2
To provide the students with the opportunity to gain medical knowledge, develop proficiency and directed practical experience working directly with patients and health care personnel.

PHYA642  Clinical Practice-Family Med  Credit Hours:  2
To provide the students with the opportunity to gain medical knowledge, develop proficiency and directed practical experience working directly with patients and health care personnel.

PHYA643  Clinical Prac-Internal Med  Credit Hours:  2
To provide the students with the opportunity to gain medical knowledge, develop proficiency and directed practical experience working directly with patients and health care personnel.

PHYA644  Clinical Practice-Pediatrics  Credit Hours:  2
To provide the students with the opportunity to gain medical knowledge, develop proficiency and directed practical experience working directly with patients and health care personnel.

PHYA645  Clinical Practice-Surgery  Credit Hours:  2
To provide the students with the opportunity to gain medical knowledge, develop proficiency and directed practical experience working directly with patients and health care personnel.
PHYA646  Clin Prac-GYN/Prenatal  Credit Hours:  2
To provide the students with the opportunity to gain medical knowledge, develop proficiency and directed practical experience working directly with patients and health care personnel.

PHYA647  Clinical Practice Elective  Credit Hours:  2
To provide the students with the opportunity to gain medical knowledge, develop proficiency and directed practical experience working directly with patients and health care personnel.

PHYA648  Clin Prac - Long Term Care  Credit Hours:  2
To provide the students with the opportunity to gain medical knowledge, develop proficiency and directed practical experience working directly with patients and health care personnel.

PHYA650  Intro to Clinical Practice  Credit Hours:  1
Students will review history taking and patient interview skills and patient evaluation skills. Clinical orientation will consist of clinical assignments and review of clinical manual. Students will acquire ACLS certification.

PHYA660  Research Practicum  Credit Hours:  1
Students will develop and implement a scholarly project under the supervision of the student's major advisor.

PHYA661  Scholarly Project I  Credit Hours:  1
Students will develop and implement a scholarly project related to their professional goals. The project is negotiated between the student and the student's advisory committee.

PHYA662  Scholarly Project II  Credit Hours:  1
Students will develop and implement a scholarly project related to their professional goals. The project is negotiated between the student and the student's advisory committee.
PHYA663 Scholarly Project III  
Credit Hours: 1
Students will develop and implement a scholarly project related to their professional goals. The project is negotiated between the student and the student's advisory committee.

PHYA676 Clinical Preceptorship  
Credit Hours: 4

PHYA689 PA Independent Study  
Credit Hours: 0-4
The student and instructor will agree on a program of study that will enable the student to achieve his/her objectives. Requires approval of the Program Director. May be repeated for credit.

PHYS1050 The World Of Atoms  
Credit Hours: 3
The atomic structure of matter and the ideas of quantum physics. The sizes of objects from galaxies to nucleons. Molecules, solids, the wave nature of the electron, quarks and gluons.

PHYS1300 Physics In Everyday Life  
Credit Hours: 3
Not for major credit. Selected subjects of current interest, with their relation to the principles and concepts of physics. Content may vary from year to year. No special science or mathematics background needed.

PHYS1310 Physics Of Music And Sound  
Credit Hours: 3

PHYS1320 Jurassic Physics  
Credit Hours: 3
Not for major credit. Mechanics, energy, sound and thermodynamics of dinosaurs. The physics of vision and hearing. Fluids and flight. Radioactivity. Climate and the effects of an asteroid collision with the Earth.
PHYS1330  Physics Of Light And Color  Credit Hours:  3
Not for major credit. Physics of light and human vision. Atmospheric phenomena, images, depth perception, color analysis, pigments and dyes, color perception, the physics of art, the reproduction of color, thin film interference and holography.

PHYS1340  The Nature Of Science  Credit Hours:  3
An interdisciplinary course that discusses major scientific discoveries, the role of hypothesis testing in science, the use of mathematics in science; data presentation; and moral and ethical issues that stem from science.

PHYS1750  Introduction To Physics  Credit Hours:  4
Not for major credit. High school mathematics including plane geometry, trigonometry and two years of algebra is strongly recommended. Fundamental laws of nature pertaining to mechanics, thermodynamics, waves, electricity, magnetism, optics, atoms and pa

PHYS1910  Frontiers Of Physics And Astronomy  Credit Hours:  3
An examination of our current understanding of the physical world at the conceptual level. Topics may include the ultimate structure of matter, quantum theory, relativity, astrophysics, cosmology and contemporary applications.

PHYS2010  Technical Physics I  Credit Hours:  4
Topics include measurement, statics, Newton's laws, friction, work, energy, power, impulse and momentum, and simple machines. Includes integrated laboratory.
Prerequisites:MATH 1340 FOR LEVEL UG WITH MIN. GRADE OF D-

PHYS2020  Technical Physics II  Credit Hours:  4
Topics include thermodynamics, electricity, and magnetism, electromagnetic radiation, optics, atomic and nuclear physics. Includes integrated laboratory.
Prerequisites:MATH 1340 FOR LEVEL UG WITH MIN. GRADE OF D-

PHYS2070  General Physics I  Credit Hours:  0-5
Calculus not required. Mechanics of energy and motion, gravitation, harmonic motion, fluids, heat, entropy and the laws of thermodynamics. Four hours lecture and discussion, two hours laboratory per week.
PHYS2080  General Physics II  Credit Hours: 0-5
Calculus not required. Electricity and magnetism, capacitors and inductors, electromagnetic waves, optics, atomic physics, nuclear physics, and elementary particles. Four hours lecture and discussion, two hours laboratory per week.
Prerequisites: PHYS 2070 FOR LEVEL UG WITH MIN. GRADE OF D-

PHYS2100  Physics With Calculus  Credit Hours: 2
A bridge course for students wishing to continue in physics after taking PHYS 2070-2080. The application of calculus and elementary differential equations in various physical contexts. No credit for students who take PHYS 2130-2140.
Prerequisites: (PHYS 2080 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 1860 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (PHYS 2080 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 1840 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (PHYS 2080 FOR LEVEL UG WITH MIN. GRADE OF 

PHYS2130  Physics For Science And Engineering Majors I  Credit Hours: 0-5
Calculus based general physics. Mechanics of motion and energy, rotation, gravitation, harmonic motion, waves, fluids and the laws of thermodynamics. Five hours lecture and discussion, two hours laboratory per week.
Prerequisites: MATH 1830 FOR LEVEL UG WITH MIN. GRADE OF C OR MATH 1850 FOR LEVEL UG WITH MIN. GRADE OF C OR MATH 1920 FOR LEVEL UG WITH MIN. GRADE OF C

PHYS2140  Physics For Science And Engineering Majors II  Credit Hours: 0-5
Calculus based general physics. Electricity and magnetism, capacitors and inductors, electromagnetic oscillations, Maxwell's equations and electromagnetic radiation, optics, images, interference, and diffraction. Five hours lecture and discussion, two hours laboratory per week.
Prerequisites: PHYS 2130 FOR LEVEL UG WITH MIN. GRADE OF D-

PHYS3150  Methods Of Theoretical Physics  Credit Hours: 3
Basic theoretical methods of physics. Topics include mechanical oscillations, wave propagation, electromagnetic fields, symm and eigenfunctions. Emphasis is on techniques that are common to many areas of physics and astrophysics.
Prerequisites: (MATH 1890 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 2850 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D-)

PHYS3180  Intermediate Laboratory  Credit Hours: 3
Physical measurements laboratory related to the development of modern physics, emphasizing techniques such as electronics, computer-aided experimental control and data acquisition, and data analysis. May be offered as writing intensive.
Prerequisites: PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D- OR PHYS 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

PHYS3310  Quantum Physics I  Credit Hours: 3
Quantum mechanics: atomic and molecular structure and spectra.
Prerequisites: (PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 1840 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 1860 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF
PHYS3320  Quantum Physics II  Credit Hours:  3
Quantum statistics, applications of quantum mechanics and quantum statistics in laser physics and solid state physics, nuclear physics.

Prerequisites: PHYS 3310 FOR LEVEL UG WITH MIN. GRADE OF D-

PHYS3400  PHYSICAL PRINCIPLES FOR ENERGY SOURCES FOR HUMANS  Credit Hours:  3
This course will involve the study of various conventional and unconventional sources of energy for human consumption. Past, present, and future energy sources will be examined on scientifically established principles and data.

Prerequisites: PHYS 2080 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHEM 1240 FOR LEVEL UG WITH MIN. GRADE OF D-

PHYS3410  Thermal Physics  Credit Hours:  3
Statistical mechanics, kinetic theory and thermodynamics from a unified microscopic point of view, with applications to a variety of topics from different areas of physics.

Prerequisites: PHYS 3310 FOR LEVEL UG WITH MIN. GRADE OF D-

PHYS3610  Optics And Lasers  Credit Hours:  3
Electromagnetic theory, ray and wave optics including matrix methods, polarization, interference, diffraction, basic laser physics and survey of current laser systems.

Prerequisites: PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D-

PHYS4130  Computational Physics  Credit Hours:  3
Working knowledge of computer operations and programming required. Numerical accuracy, advanced programming, graphics and spreadsheet packages, numerical techniques for differentiation, integration, matrices, solving differential equations and eigenvalue

PHYS4210  Theoretical Mechanics  Credit Hours:  3
Statics and dynamics of particles, work, energy, Lagrange equations of motion, small oscillations, dynamics of rigid bodies.

Prerequisites: (PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 1890 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 2890 FOR LEVEL UG WITH MIN. GRADE OF D

PHYS4230  Electricity And Magnetism I  Credit Hours:  3
Mathematical formulation of electrostatic and magnetostatic fields, potential theory solution of boundary value problems, method of images, dielectric and magnetic materials.

Prerequisites: (PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 1890 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (PHYS 2140 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 2890 FOR LEVEL UG WITH MIN. GRADE OF D}
PHYS4240  Electricity And Magnetism II  Credit Hours:  3  Maxwell's field equations, production and propagation of electromagnetic waves, solution of boundary value problems with application to the laws of optics and guided waves.
Prerequisites:PHYS 4230 FOR LEVEL UG WITH MIN. GRADE OF D-

PHYS4310  Quantum Mechanics  Credit Hours:  3  Formalism and applications of quantum mechanics: Hilbert space, time-independent and time-dependent perturbation theories, atomic and molecular structure and spectra, and scattering theory.
Prerequisites:(PHYS 3320 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 3860 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 1890 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (PHYS 3320 FOR LEVEL UG WITH MIN. GRADE OF D- AND MATH 2890 FOR LEVEL UG WITH MIN. GRADE OF D-

PHYS4400  PRINCIPLES AND VARIETIES OF SOLAR ENERGY  Credit Hours:  3  Types and extent of solar energy used in human society including photosynthesis, photovoltaic, solar thermal, and concentrating solar electric; scope of the necessary energy storage and long distance electricity transmission.
Prerequisites:CHEM 1240 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 2080 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 3400 FOR LEVEL UG WITH MIN. GRADE OF D-

PHYS4510  Physics Of Condensed Matter  Credit Hours:  3  Crystal lattices and structures, reciprocal lattice and kinematical diffraction theory, binding in crystals, lattice dynamics and phonons, thermodynamic, electronic, and optical properties of insulators, semiconductors, metals and alloys.
Prerequisites:(PHYS 3320 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 3410 FOR LEVEL UG WITH MIN. GRADE OF D-)

PHYS4580  Molecular And Condensed Matter Laboratory  Credit Hours:  3  Experiments in molecular and condensed matter physics such as Raman scattering and photoluminescence X-ray diffraction, Mossbauer effect, Hall effect, NMR and scanning tunneling microscopy. One 4 hour lab and 1 hour lecture per week. May be offered as writing intensive.
Prerequisites:PHYS 3320 FOR LEVEL UG WITH MIN. GRADE OF D-

PHYS4620  The Physics Of Lasers  Credit Hours:  3  Longitudinal and transverse coherence, stimulated emission, optical pumping, resonator structures, Q-switching, mode-locking and laser systems (gas, dye, diode, doped insulator and free electron lasers).
Prerequisites:PHYS 3320 FOR LEVEL UG WITH MIN. GRADE OF D-

PHYS4780  Atomic And Nuclear Physics Laboratory  Credit Hours:  3  Detectors and electronics, beta, gamma, and X-ray spectroscopy, grating and interferometric spectroscopy, laser applications, solar spectroscopy. One 4 hour lab and 1 hour lecture per week. May be offered as writing intensive.
Prerequisites:PHYS 3320 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>PHYS4910</td>
<td>Research Problems-Physics And Astronomy</td>
<td>1-3</td>
<td>Individual experimental or theoretical projects selected with the approval of the department.</td>
</tr>
<tr>
<td>PHYS4940</td>
<td>Internship in Renewable Energy</td>
<td>1-4</td>
<td>Experiential learning in an advisor-approved business, non-profit, or academic organization. Maximum of three hours may count toward minor. Credit hours 1-4; may be repeated once for credit. Prerequisites: PHYS 3400 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>PHYS4980</td>
<td>Special Topics In Physics</td>
<td>1-4</td>
<td>Individual or small group study of selected topics not covered in regular undergraduate courses.</td>
</tr>
<tr>
<td>PHYS510</td>
<td>Basic Genomics</td>
<td>3</td>
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</tr>
<tr>
<td>PHYS5210</td>
<td>Theoretical Mechanics</td>
<td>3</td>
<td>Kinematics and dynamics of particles and rigid bodies. Lagrangian and Hamiltonian equations of motion.</td>
</tr>
<tr>
<td>PHYS5230</td>
<td>Classical Electricity And Magnetism I</td>
<td>3</td>
<td>Electrostatics: the equations of Laplace and Poisson-Maxwell's equations and their solutions.</td>
</tr>
<tr>
<td>PHYS5240</td>
<td>Electricity And Magnetism II</td>
<td>3</td>
<td>Maxwell's equations and their solutions; electromagnetic radiation. Prerequisites: PHYS 5230 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
</tr>
</tbody>
</table>
PHYS5310  Quantum Mechanics  Credit Hours: 3
Formalism and applications of quantum mechanics: Hilbert space, time independent and time-dependent perturbation theories, atomic and molecular structure and spectra, and scattering theory.

PHYS5510  Condensed Matter Physics  Credit Hours: 3

PHYS5620  The Physics Of Lasers  Credit Hours: 3
Longitudinal and transverse coherence, stimulated emission, optical pumping, resonator structures, Q-switching, mode-locking and laser systems (gas, dye, diode, doped insulator and free electron lasers).

PHYS5800  Astronomy In The Planetarium  Credit Hours: 3
Theory and practice of astronomical outreach programming. Sky and calendar, mythology, constellations, astrophysics, buying and using small telescopes, operating and maintaining planetarium projectors, sky simulation software, projects and program product

PHYS5810  Astrophysics I  Credit Hours: 3
Spherical coordinate systems, astronomical time, celestial mechanics, the solar system and planetary physics, photometry, radiative transfer, stellar spectra and classification, binary stars and stellar masses.

PHYS5820  Astrophysics II  Credit Hours: 3
Stellar structure and evolution, close binaries, origin of the elements, the sun, variable stars, star clusters, the interstellar medium, the Milky Way Galaxy, stellar statistics, galaxy structure and evolution, cosmology.
Prerequisites: PHYS 5810 FOR LEVEL GR WITH MIN. GRADE OF D-

PHYS5880  Astrophysics Laboratory  Credit Hours: 3
Astronomical, optical and electronic principles of operation of a modern astronomical observatory.Observing with the 1-meter telescope of Ritter Observatory, reduction, analysis and interpretation of astronomical spectra, Six hours laboratory per week.

Corequisite: PHYS 5810
<table>
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</thead>
<tbody>
<tr>
<td>PHYS5900</td>
<td>Research Techniques In Physics And Astronomy</td>
<td>1-6</td>
<td>Research work under the guidance of a member of the graduate faculty. Designed to prepare the student to propose and carry out the thesis research required for the M.S. degree.</td>
</tr>
<tr>
<td>PHYS5950</td>
<td>Education Workshop In The Physical Sciences</td>
<td>1-4</td>
<td>For teachers in grades K-12. Introduction to modern physical science concepts suitable for classroom use; lecture and laboratory. Not acceptable for physics degree program.</td>
</tr>
<tr>
<td>PHYS6010</td>
<td>Physics And Astronomy Colloquium</td>
<td>2</td>
<td>Topical lectures by visiting and local professionals.</td>
</tr>
<tr>
<td>PHYS6020</td>
<td>Physics And Astronomy Journal Seminar</td>
<td>1</td>
<td>Literature review seminar.</td>
</tr>
<tr>
<td>PHYS6140</td>
<td>Fundamentals Of Modern Physics</td>
<td>3</td>
<td>An intensive course which reviews the fundamentals of atomic, statistical and condensed matter physics. Provides a common foundation for entering graduate students for succeeding courses in physics and astronomy.</td>
</tr>
<tr>
<td>PHYS6180</td>
<td>Modern Physics Laboratory</td>
<td>2-3</td>
<td>Experiments in atomic, condensed matter and nuclear physics, such as Zeeman, Raman, Mossbauer and Hall Effects, Doppler shifts, X-ray diffraction, NMR, STM, and alpha, beta and gamma ray spectroscopies.</td>
</tr>
</tbody>
</table>

Prerequisites: PHYS 6140 FOR LEVEL GR WITH MIN. GRADE OF D-
<table>
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</thead>
<tbody>
<tr>
<td>PHYS6220</td>
<td>Classical Mechanics</td>
<td>3</td>
<td>Advanced classical mechanics, including the variational principles, Lagrange and Hamilton mechanics, and linear and nonlinear systems.</td>
</tr>
<tr>
<td>PHYS6250</td>
<td>Classical Electrodynamics I</td>
<td>3</td>
<td>Solutions to Poisson's equation in Cartesian, spherical and cylindrical coordinates with Dirichlet, Neuman and mixed boundary conditions. Maxwell's equations and their solutions applied to waveguides and nonlinear materials.</td>
</tr>
<tr>
<td>PHYS6260</td>
<td>Classical Electrodynamics II</td>
<td>3</td>
<td>Solutions to the wave equation with time dependent source terms, energy loss from high energy charged particles in dense materials, special relativity, classical field theory, invariant Lagrangians and conserved quantities.</td>
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<td><strong>Prerequisites:</strong> PHYS 6250 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>PHYS6320</td>
<td>Quantum Mechanics I</td>
<td>3</td>
<td>Quantum theory and its application to physical problems. Topics include dynamics in the Schrodinger and Heisenberg pictures, invariance principles and angular momentum theory, perturbation theory, the variational method.</td>
</tr>
<tr>
<td>PHYS6330</td>
<td>Quantum Mechanics II</td>
<td>3</td>
<td>The quantum theory of scattering, electromagnetic interactions, quantization of the electromagnetic field and introduction to the Dirac equation.</td>
</tr>
<tr>
<td>PHYS6450</td>
<td>Statistical Mechanics</td>
<td>3</td>
<td>A fundamental quantum-mechanical development of statistical thermodynamics. Non-interacting and weakly interacting many-particle systems in the classical and quantum regimes, with applications to various fields of physics.</td>
</tr>
<tr>
<td>PHYS6490</td>
<td>Current Issues In Theoretical Physics</td>
<td>3</td>
<td>Problems in theory relative to the research programs pursued at the University.</td>
</tr>
</tbody>
</table>
PHYS6520  Condensed Matter Physics I  Credit Hours: 3
A study of the electromagnetic, thermal and elastic properties of condensed matter through the quantum-mechanical treatment of the electrons and elementary excitations.

Prerequisites: PHYS 6330 FOR LEVEL GR WITH MIN. GRADE OF D-

PHYS6530  Condensed Matter Physics II  Credit Hours: 3
A survey of condensed matter phenomena of interest to experimentalists, as elucidated by theory.

Prerequisites: PHYS 6330 FOR LEVEL GR WITH MIN. GRADE OF D-

PHYS6540  Structure, Defects And Diffusion  Credit Hours: 4
A generic materials science approach to the study of crystalline structure, defects (point, line and planar) in crystalline materials, and the mechanisms and kinetics of diffusion in the condensed state.

PHYS6550  Thermodynamics And Phase Transformations In Condensed Systems  Credit Hours: 4
A materials science approach to the thermodynamics of condensed state equilibria and phase transformation kinetics.

Prerequisites: PHYS 6450 FOR LEVEL GR WITH MIN. GRADE OF D-

PHYS6630  Semiconductors I  Credit Hours: 3

Prerequisites: PHYS 4510 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 4400 FOR LEVEL UG WITH MIN. GRADE OF D-

PHYS6690  Current Issues In Optics  Credit Hours: 3
Current research in optics and the optical excitation of material modes.

PHYS6710  Atomic Physics  Credit Hours: 3
A study of the fundamental properties of atoms, their theoretical description and experimental measurement. Topics include atomic structure, radiative transitions, external field interactions and atomic collisions.
PHYS6720  Atomic & Molecular Spectroscopy  Credit Hours: 3
Theory and experimental methods of atomic and molecular spectroscopy. Topics include the theory of interpretation of atomic and molecular spectra and the experimental means to measure the spectra.
Prerequisites: PHYS 6710 FOR LEVEL GR WITH MIN. GRADE OF D-

PHYS6770  Accelerator Physics  Credit Hours: 3
Basic electrodynamic functioning of charged-particle accelerators, particle dynamics of non-relativistic and relativistic accelerators, accelerator applications, static field and dynamic field accelerator designs.

PHYS6810  Stellar Astrophysics I  Credit Hours: 3

PHYS6820  Stellar Astrophysics II  Credit Hours: 3
Stellar structure and evolution. Equation of state, nuclear reactions and nucleosynthesis, stellar formation, evolution and death, enrichment of the interstellar medium, formation of planetary systems, solar physics and helioseismology.

PHYS6830  Galactic Astronomy I  Credit Hours: 3
Stellar spectra, colors, compositions and ages; star clusters; pulsating stars; calibration of distance indicators. Interstellar dust, interstellar extinction, interstellar gas, nebulae; structure of the interstellar medium.

PHYS6840  Galactic Astronomy II  Credit Hours: 3
Structure and dynamics of the Galaxy, shocks and explosions, stellar kinematics, galactic rotation, and dynamical and chemical evolution.

PHYS6960  M.s. Thesis Research  Credit Hours: 1-15
Thesis research required for the M.S. degree.
PHYS6980  Special Topics
Course reserved for visiting lecturers and topics not covered otherwise.

PHYS6990  Independent Study

PHYS7130  Computational Physics For Research

PHYS7140  Fundamentals Of Modern Physics
An intensive course which reviews the fundamentals of atomic, statistical and condensed matter physics. Provides a common foundation for entering graduate students for succeeding courses in physics and astronomy.

PHYS7180  Modern Physics Laboratory
Experiments in atomic, condensed matter and nuclear physics, such as Zeeman, Raman, Mossbauer, and Hall Effects, Doppler shifts, X-ray diffraction, NMR, STM, and alpha, beta and gamma ray spectroscopies.

Prerequisites: PHYS 6140 FOR LEVEL GR WITH MIN. GRADE OF D- OR PHYS 7140 FOR LEVEL GR WITH MIN. GRADE OF D-

PHYS7220  Classical Mechanics
Advanced classical mechanics, including the variational principles, Lagrange and Hamilton mechanics, and linear and nonlinear systems.

PHYS7250  Classical Electrodynamics I
Solutions to Poisson's equation in Cartesian, spherical and cylindrical coordinates with Dirichlet, Neuman and mixed boundary conditions. Maxwell's equations and their solutions applied to waveguides and nonlinear materials.
PHYS7260  Classical Electrodynamics II  Credit Hours:  3
Solutions to the wave equation with time dependent source terms, energy loss from high energy charged particles in dense materials, special relativity, classical field theory, invariant Lagrangians and conserved quantities.

Prerequisites: PHYS 6250 FOR LEVEL GR WITH MIN. GRADE OF D- OR PHYS 7250 FOR LEVEL GR WITH MIN. GRADE OF D-

PHYS7320  Quantum Mechanics I  Credit Hours:  3
Quantum theory and its application to physical problems. Topics include dynamics in the Schrodinger and Heisenberg pictures, invariance principles and angular momentum theory, perturbation theory, the variational method.

PHYS7330  Quantum Mechanics II  Credit Hours:  3
The quantum theory of scattering, electromagnetic interactions, quantization of the electromagnetic field and introduction to the Dirac equation.

PHYS7450  Statistical Mechanics  Credit Hours:  3
A fundamental quantum-mechanical development of statistical thermodynamics. Non-interacting and weakly interacting many-particle systems in the classical and quantum regimes, with applications to various fields of physics.

PHYS7520  Condensed Matter Physics I  Credit Hours:  3
A study of the electromagnetic, thermal and elastic properties of condensed matter through the quantum-mechanical treatment of the electrons and elementary excitations.

Prerequisites: PHYS 6330 FOR LEVEL GR WITH MIN. GRADE OF D-

PHYS7530  Condensed Matter Physics II  Credit Hours:  3
A survey of condensed matter phenomena of interest to experimentalists, as elucidated by theory.

Prerequisites: PHYS 6330 FOR LEVEL GR WITH MIN. GRADE OF D-

PHYS7710  Atomic Physics  Credit Hours:  3
A study of the fundamental properties of atoms, their theoretical description and experimental measurement. Topics include atomic structure, radiative transitions, external field interactions and atomic collisions.
Course Descriptions 2009-2010

PHYS7720  Atomic & Molecular Spectroscopy  Credit Hours:  3
Theory and experimental methods of atomic and molecular spectroscopy. Topics include the theory of interpretation of atomic and molecular spectra and the experimental means to measure the spectra.
Prerequisites: PHYS 6710 FOR LEVEL GR WITH MIN. GRADE OF D-

PHYS7810  Stellar Astrophysics I  Credit Hours:  3

PHYS7820  Stellar Astrophysics II  Credit Hours:  3
Stellar structure and evolution. Equation of state, nuclear reactions and nucleosynthesis, stellar formation, evolution and death, enrichment of the interstellar medium, formation of planetary systems, solar physics and helioseismology.

PHYS7830  Galactic Astronomy I  Credit Hours:  3
Stellar spectra, colors, compositions, and ages; star clusters; pulsating stars; calibration of distance indicators. Interstellar dust, interstellar extinction, interstellar gas, nebulae; structure of the interstellar medium.

PHYS7840  Galactic Astronomy II  Credit Hours:  3
Structure and dynamics of the Galaxy, shocks and explosions, stellar kinematics, galactic rotation, and dynamical and chemical evolution.

PHYS7910  Advanced Research In Physics And Astronomy  Credit Hours:  1-15
Research work under the guidance of a member of the graduate faculty. Designed to prepare the student to propose and carry out the thesis research required for the Ph.D. degree.

PHYS8010  Physics And Astronomy Colloquium  Credit Hours:  2
Topical lectures by visiting and local professionals.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>PHYS8020</td>
<td>Physics And Astronomy Journal Seminar</td>
<td>1</td>
<td>Literature review seminar.</td>
</tr>
<tr>
<td>PHYS8490</td>
<td>Current Issues In Theoretical Physics</td>
<td>3</td>
<td>Problems in theory relative to the research programs pursued at the University.</td>
</tr>
<tr>
<td>PHYS8540</td>
<td>Structure, Defects And Diffusion</td>
<td>4</td>
<td>A generic materials science approach to the study of crystalline structure, defects (point, line and planar) in crystalline materials, and the mechanisms and kinetics of diffusion in the condensed state.</td>
</tr>
<tr>
<td>PHYS8550</td>
<td>Thermodynamics And Phase Transformations In Condensed Systems</td>
<td>4</td>
<td>A materials science approach to the thermodynamics of condensed state equilibria and phase transformation kinetics.</td>
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<td></td>
<td></td>
<td></td>
<td>Prerequisites: PHYS 6540 FOR LEVEL GR WITH MIN. GRADE OF D- OR PHYS 8540 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>PHYS8590</td>
<td>Current Issues In Condensed Matter And Material Science</td>
<td>3</td>
<td>A survey of various areas in the physics of condensed matter and materials. Content will vary with instructor and from year to year.</td>
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<td></td>
<td>Prerequisites: PHYS 4510 FOR LEVEL UG WITH MIN. GRADE OF D- AND EECS 4400 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>PHYS8690</td>
<td>Current Issues In Optics</td>
<td>3</td>
<td>Current research in optics and the optical excitation of material modes.</td>
</tr>
</tbody>
</table>
Course Descriptions 2009-2010

PHYS8860  General Relativity  Credit Hours:  3
Differential geometry, exterior calculus of tensors, the stress-energy tensor and Einstein field equation, stellar evolution and black holes, gravitational lensing, tests of the theory, and gravitational wave detection.
Prerequisites: PHYS 7260 FOR LEVEL GR WITH MIN. GRADE OF D-

PHYS8870  Cosmology  Credit Hours:  3
Cosmological solutions for Einstein's field equation, the standard cosmological model, particle physics, nucleosynthesis and the cosmic background radiation. Inflation, dark matter and mass distribution, gravitational evolution, and formation of galaxies
Prerequisites: PHYS 8860 FOR LEVEL GR WITH MIN. GRADE OF D-

PHYS8960  Ph. D. Thesis Research  Credit Hours:  1-15
Thesis research required for the Ph.D. degree.

PHYS8980  Special Topics  Credit Hours:  1-4
Course reserved for visiting lecturers and topics not covered otherwise.

PHYS8990  Independent Study  Credit Hours:  1-4

PHYT500  Gross Anatomy  Credit Hours:  4
Students will study the structure of the human body using the structure-function relationship as the course paradigm. Musculoskeletal, vascular, and peripheral nervous system anatomy will be emphasized, as will the coordinated role of these structures, bo

PHYT501  Lifespan I  Credit Hours:  3
Examination of typical lifespan development from conception to adolescence. Emphasis on physical therapy assessment, gross motor development and movement analysis. Includes overview of fine motor development, cognition, public laws, child abuse, maternal
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>PHYT502</td>
<td>Lifespan I</td>
<td>2</td>
<td>The first of two, this course examines typical lifespan development from birth to adolescence. Emphasis is on theoretical constructs, gross motor development, physical therapy examination, diagnosis, prognosis and evaluation of findings. Also includes an</td>
</tr>
<tr>
<td>PHYT504</td>
<td>Health Care Systems</td>
<td>1</td>
<td>This course will familiarize students with various health care delivery systems in use and how they influence the practice of physical therapy. Attention is given to the role of government and regulatory policy and practices and how they influence decisi</td>
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<tr>
<td>PHYT505</td>
<td>Analysis of Movement I</td>
<td>3</td>
<td>The first of two, this course is an integrated study of kinesiology through the application of the concepts of biomechanics, and neuromusculoskeletal anatomy as they relate to human movement. As the student develops skill in understanding normal movement</td>
</tr>
<tr>
<td>PHYT506</td>
<td>Analysis of Movement II</td>
<td>1</td>
<td>Second of two, this is an integrated study of applied kinesiology in the study of human gait, and the neuromuscular control of simple and complex movement. Observational skills are emphasized in analyzing gait and neuromuscular control (normal and pathol</td>
</tr>
<tr>
<td>PHYT507</td>
<td>Neuroscience</td>
<td>3</td>
<td>An integrated study of structure-function relationship in the central and peripheral nervous systems, emphasizing the neuromuscular control of movement. Content serves as the foundation for discussion in PHYT508.</td>
</tr>
<tr>
<td>PHYT508</td>
<td>Neuroscience Seminar</td>
<td>1</td>
<td>Principles of neurophysiological and neuropathological sensory and motor function will be applied to clinical manifestations of neurological impairments commonly seen in PT settings. Procurement of basic assessment skills for clients with neuromuscular i</td>
</tr>
<tr>
<td>PHYT510</td>
<td>Research Design</td>
<td>2</td>
<td>Using scientific inquiry as a foundation, the student will formulate a relevant research question and design a research proposal as the first step in completing the required scholarly project.</td>
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<td>Course Code</td>
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<tr>
<td>PHYT511</td>
<td>Clinical Pathophysiology</td>
<td>3</td>
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<td></td>
<td>Integrated study of physiological and pathophysiological processes that influence the human body at the cellular, organ and systemic levels. Emphasis on mechanisms of and clinical manifestations of common diseases with discussion of potential impact.</td>
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<td>PHYT515</td>
<td>Scholarly Project in PT I</td>
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<td>The student will initiate the formal research proposal through refinement of a scholarly project proposal and submission of the proposal to the Institutional Review Board for Human Subjects (IRB) for approval.</td>
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<tr>
<td>PHYT516</td>
<td>Scholarly Project in PT II</td>
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<td></td>
<td>Includes completion of data collection, analysis of the data, and preparation of a scholarly project.</td>
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<tr>
<td>PHYT517</td>
<td>Research Desn and Measurement</td>
<td>2</td>
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<tr>
<td></td>
<td>Introduction to scientific inquiry and research design. Content focuses on developing research skills to search, retrieve and organize scientific evidence. Various Evidence Based Practice perspectives will guide review and critique of research methodology.</td>
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<td>PHYT518</td>
<td>Applied Biostatistics</td>
<td>2</td>
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<td></td>
<td>Builds on PHTY517. Topics include descriptives, correlation, linear regression, comparison of means, and categorical data analysis (chi-square and logistic regression). Statistics for comparison of results across studies will be discussed (e.g., effects).</td>
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<tr>
<td>PHYT520</td>
<td>Health Promotion</td>
<td>2</td>
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<td></td>
<td>Discussion and application of the elements of health and wellness as described by Healthy People 2010. Emphasis on health assessment, obesity, physical activity, nutrition, complementary/alternative management, and behavior modification strategies.</td>
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<tr>
<td>PHYT521</td>
<td>Therapeutic Interventions I</td>
<td>2</td>
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</table>
|             | Treatment planning throughout the continuum of care focusing on concepts of acute care. Integration of theoretical basis for application techniques of patient positioning and mobility and thermal modalities as they relate to inflammation, tissue repair, p
Course Descriptions 2009-2010

PHYT522  Therapeutic Interventions II  Credit Hours: 3
An integrated study of the theoretical basis for and the application of mechanical and electrical modalities used for the evaluation and management of clients. Current scientific literature will be used to determine the efficacy of these modalities.

PHYT525  Applied Exercise in Physiology  Credit Hours: 3
Continued exploration of principles of exercise physiology as applied to physical therapy settings and promotion of clients' health and wellness. Emphasis on client assessment, identification of needs, design of exercise programs.

PHYT526  Cardiovascular/Pulmonary PT  Credit Hours: 3
Explore impact of cardiovascular-pulmonary disease/dysfunction on health and functional status. Emphasis on role of physical therapy in interdisciplinary management of clients with cardiopulmonary dysfunction across the lifespan and continuum of care.

PHYT527  Applied Exercise Physiology  Credit Hours: 3
Exploration of exercise physiology principles as related to promotion of PT patients/clients' health and wellness. Emphasizes physiological and biochemical changes with exercise/training and exercise testing and prescription for PT patients/clients.

PHYT528  Therapeutic Interventions I  Credit Hours: 2
The theory and practice of physical therapy in the acute care setting as it relates to improvement of functional mobility, prevention of complications, and preparation for next level of care.

PHYT530  Therapeutic Exercise  Credit Hours: 1
Application of scientific principles in anatomy, applied biomechanics, and exercise physiology to develop sound therapeutic exercise procedures. Emphasis on development of skills associated with therapeutic exercise for patients with musculoskeletal and/

PHYT531  Therapeutic Exercise  Credit Hours: 3
Application of sciences of exercise physiology, anatomy, and applied biomechanics to develop sound therapeutic exercise procedures. Emphasis is on musculoskeletal systems and movement dysfunction. Focuses on empirical evidence of validity for exercise pre
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<tr>
<th>Course Code</th>
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<th>Credit Hours</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>PHYT535</td>
<td>Intro to Examination</td>
<td>2</td>
<td>Introduction to the physical examination process, including history-taking, systems review and screening. Emphasis on basic PT examination skills of the cardiovascular, musculoskeletal, and integumentary systems. Skills include: assessment of tolerance</td>
</tr>
<tr>
<td>PHYT540</td>
<td>Clinical Reasoning II</td>
<td>2</td>
<td>Presentation of selected case studies with an emphasis placed on clinical decision-making based on advanced evaluation skills, integrated assessment and treatment planning, and one’s individual problem-solving process.</td>
</tr>
<tr>
<td>PHYT545</td>
<td>Foundations of PT</td>
<td>2</td>
<td>Addresses the professional socialization process. Professional codes and guides of behavior will be discussed in relation to delivery of competent, ethical, legal and compassionate PT services. Topics include: therapeutic communication, cultural compete</td>
</tr>
<tr>
<td>PHYT550</td>
<td>Musculoskeletal Rehab I</td>
<td>4</td>
<td>Theories and principles of pathophysiology and musculoskeletal screening. This course will emphasize pertinent examination, evaluation, assessment (physical therapy diagnosis and prognosis), and intervention principles. Focus will be on the extremities.</td>
</tr>
<tr>
<td>PHYT551</td>
<td>Musculoskeletal Rehab II</td>
<td>3</td>
<td>Continuation of theories and principles of pathophysiology and musculoskeletal screening. Emphasizes pertinent examination, evaluation, assessment, and intervention principles. Focuses on spine (cervical, thoracic, pelvic) and lower quarter biomechanical</td>
</tr>
<tr>
<td>PHYT560</td>
<td>Neuromuscular Rehab I</td>
<td>3</td>
<td>Theories and principles of therapeutic exercise related to the client with neuromuscular impairment across the lifespan. Emphasizes motor control, motor learning, neurofacilitation, analysis of abnormal movement and client assessment and treatment.</td>
</tr>
<tr>
<td>PHYT561</td>
<td>Neuromuscular Rehab II</td>
<td>3</td>
<td>An integrated study of the principles of the rehabilitation process for clients with long-term disability. Theories, philosophies, and evaluation treatment strategies will be explored as well as the complex psychodynamics associated with disability/chroni</td>
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<td>Course Code</td>
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<tr>
<td>PHYT565</td>
<td>Pharmacology of PT</td>
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<td></td>
<td>Integrated study of pharmacology that presents the pharmacodynamics and pharmaco-terapeutics of common classes of drugs. Drugs covered include: anti-inflammatory, analgesic, muscle relaxant, psychotropic, anti-microbial, and diabetic medications. Emphasis</td>
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<tr>
<td>PHYT572</td>
<td>Special Topic Physical Therapy</td>
<td>0-3</td>
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<td>Intensive exploration of a topic influencing the delivery of physical therapy services, which is designed to meet the student's special interest and professional goals. Subject matter will vary upon demand. Current topics: Manual Therapy - Diagnosis and</td>
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<tr>
<td>PHYT575</td>
<td>Clinical Reasoning I</td>
<td>1</td>
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<td></td>
<td>Introduction to basic concepts of problem solving and critical thinking used in PT, including evidence-based practice. Includes an overview of professional decision-making models and an examination of the steps associated with the student's method of dec</td>
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<tr>
<td>PHYT580</td>
<td>Clinical Practicum I</td>
<td>2</td>
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<tr>
<td></td>
<td>Clinical observation and supervised application of appropriate assessment and treatment skills/procedures. An emphasis is placed on professional socialization, basic examination skills and basic treatment planing/progression skills. 160 hours/4 weeks.</td>
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<tr>
<td>PHYT581</td>
<td>Clinical Practicum II</td>
<td>2</td>
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<tr>
<td></td>
<td>Clinical observation and supervised application of appropriate assessment and treatment skills/procedures. Emphasis is placed on further professional socialization, integrative evaluation skills, and treatment planning progression. 320 hours/8 weeks.</td>
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<tr>
<td>PHYT585</td>
<td>Clinical Practicum I</td>
<td>1</td>
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<tr>
<td></td>
<td>Clinical observation and supervised application of appropriate examination and intervention skills/procedures. An emphasis is placed on professional socialization, demonstration of further development of the generic abilities of the profession, and self-</td>
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<tr>
<td>PHYT586</td>
<td>Clinical Practicum II</td>
<td>1</td>
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<tr>
<td></td>
<td>Clinical observation and supervised application of advancing physical therapy skills at the same clinical facility as Clinical Practicum I. An emphasis will be on continued progression in the generic abilities and a more focused approach toward the devel</td>
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</table>
**Course Descriptions 2009-2010**

**PHYT599  Independent Study in PT**  
Credit Hours: 0-4  
In-depth study of clinically related problems or topic of interest. May be repeated for credit.

**PHYT601  Lifespan II**  
Credit Hours: 3  
Principles of aging with emphasis on the developmental, physiological, functional, and psychosocial changes manifested in the transition from middle age to old age. Integrating previous course work, the student will analyze and synthesize complex evaluati

**PHYT602  Lifespan II**  
Credit Hours: 2  
The principles of normal aging including the physiological, functional, and psychosocial changes associated with aging, and a review of diseases and disorders common to the aging population.

**PHYT604  Supervision/Management**  
Credit Hours: 3  
Examination of management and supervisory issues encountered in a contemporary physical therapy practice. Topics include: organizational structure and behavior, human resources, finance and operations management, and marketing.

**PHYT605  Hlth Care Policy and Delivery**  
Credit Hours: 1  
Overview of the origins and components of the American health care system and major policy initiatives that influence it. Access, cost, and quality factors in health care delivery will be explored. Serves as a starting point for the student's study of the

**PHYT615  Scholarly Project PT III**  
Credit Hours: 3  
Includes completion of data collection, analysis of the data, and preparation of a scholarly project. The student will present the scholarly project.

**PHYT617  Scholarly Project I**  
Credit Hours: 2  
The student will initiate the formal research process through refinement of a research/scholarly project proposal and, if necessary, submission of the proposal to the Institutional Review Board for human subjects for approval.
PHYT618  Scholarly Project II  Credit Hours: 2
Includes completion of data collection, analysis of the data, and initial preparation of a scholarly paper, in accordance with specific manuscript guidelines.

PHYT619  Scholarly Project III  Credit Hours: 1
Includes the final preparation of a scholarly paper which must meet the guidelines established by the College of Graduate Studies, and the oral defense/presentation of the scholarly project as required by the College of Graduate Studies.

PHYT625  Advanced Evaluation  Credit Hours: 3
Further exploration of the physical therapy examination and evaluation process, with emphasis on differential diagnosis. Emphasis on dysfunctions that mimic neuro-musculoskeletal dysfunction. Determination of need for referral to another member of the hea

PHYT626  Cardiovascular-Pulmonary PT  Credit Hours: 3
Integrative study of the role of PT in interdisciplinary management of patients with cardiovascular and/or pulmonary dysfunction. Application of skills associated with PT examination, evaluation, diagnosis, prognosis and interventions for patients with C

PHYT628  Therapeutics Interventions II  Credit Hours: 2
Study of the theoretical basis for, and the application of thermal, mechanical, and electrical modalities used for the PT management of clients. Emphasis is on evidence-based practice, critical thinking, and clinical decision-making using a case-based fo

PHYT645  Teaching and Learning II  Credit Hours: 1
Continued exploration of the principles of patient education, group differences, and development of appropriate educational materials. An emphasis will be placed on health promotion, in-service education and instruction of client and families.

PHYT646  Teaching and Learning  Credit Hours: 2
Study of a physical therapist's role as educator of peers, patients and families, community members, and students in the clinical setting. Emphasis on instructional design, instructional strategies, teaching methods, and evaluation of learning.
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<tr>
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<tbody>
<tr>
<td>PHYT650</td>
<td>Musculoskeletal Rehab I</td>
<td>3</td>
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<tr>
<td></td>
<td>First of two courses, focused on the synthesis of principles of pathophysiology and screening and examination of musculoskeletal system. Emphasis on pertinent special examination techniques, principles of evaluation, PT diagnosis and prognosis, and inter</td>
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<tr>
<td>PHYT651</td>
<td>Musculoskeletal Rehab II</td>
<td>3</td>
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<td></td>
<td>Second of two courses, continued discussion of the principles of pathophysiology and musculoskeletal examination, evaluation, PT diagnosis and prognosis, and intervention. Emphasis on spine and lower quarter biomechanical examination and evaluation as it</td>
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<tr>
<td>PHYT660</td>
<td>Neuromuscular Rehab I</td>
<td>3</td>
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<tr>
<td></td>
<td>Theories and principles of client examination, evaluation, PT diagnosis, prognosis, and therapeutic intervention for clients with stroke and spinal cord injury. Historic and modern evidence-based treatment approaches for the neurologic patient, in genera</td>
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<tr>
<td>PHYT661</td>
<td>Neuromuscular Rehab II</td>
<td>3</td>
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<tr>
<td></td>
<td>Principles of rehabilitation for clients with chronic neuromuscular impairments and long-term disability. Emphasis on theories, philosophies, and the PT plan of care including examination, evaluation, and intervention strategies. Includes pediatric modul</td>
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<tr>
<td>PHYT670</td>
<td>Professional Issues</td>
<td>1</td>
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<td></td>
<td>Prerequisite: PHYT685Discussion of current events and issues faced by the profession of physical therapy as identified by the APTA and other pertinent sources, and as encountered during clinical education experiences.</td>
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<tr>
<td>PHYT672</td>
<td>Special Topics in PT</td>
<td>2</td>
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<td>Intensive exploration of a topic related to the profession of physical therapy and designed to meet the student's special interest and professional goals. Subject matter will vary depending upon student interest.</td>
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<td>PHYT675</td>
<td>Clinical Reasoning II</td>
<td>1</td>
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<td>Second of two, emphasizes the application of problem solving and critical thinking for a variety of diagnoses and practice settings using complex patient scenarios. An emphasis is placed on evidence-based decision-making, comprehensive evaluation, progre</td>
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<tr>
<td>PHYT685</td>
<td>Clinical Practicum III</td>
<td>4</td>
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<tr>
<td>PHYT689</td>
<td>Clinical Internship</td>
<td>8</td>
</tr>
<tr>
<td>PHYT690</td>
<td>Graduate Symposium</td>
<td>2</td>
</tr>
<tr>
<td>PHYT699</td>
<td>Independent Study in PT</td>
<td>0-4</td>
</tr>
<tr>
<td>PHYT705</td>
<td>Practice Management</td>
<td>2</td>
</tr>
<tr>
<td>PHYT708</td>
<td>Integrated Movement</td>
<td>1</td>
</tr>
<tr>
<td>PHYT721</td>
<td>Advanced Interventions</td>
<td>1</td>
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</table>
PHYT735  Advanced Exam and Evaluation  Credit Hours: 2
Further exploration of the PT examination and evaluation process, emphasizing PT differential diagnosis. Focus on systemic dysfunction mimicking neuromusculoskeletal dysfunction, applied pharmacology, and introduction to principles of radiological-nuclear

PHYT762  Trauma Rehab  Credit Hours: 2
Integrated study of the principles of rehabilitation for clients who have sustained substantial trauma including, but not limited to: TBI, multiple fractures and burns. Students will be asked to integrate previous coursework in making decisions regarding

PHYT789  Clinical Internship I  Credit Hours: 4
Clinical observation and supervised application of comprehensive PT examination, evaluation, and intervention skills/procedures. An emphasis is placed on further professional socialization and development of entry-level PT skills and competency.

PHYT790  Clinical Internship II  Credit Hours: 4
Clinical observation and supervised application of comprehensive PT examination, evaluation, and intervention skills/procedures. An emphasis is placed on further professional socialization and development of entry-level PT skills and competency.

PHYT799  Specialty Internship  Credit Hours: 4
Extended period of supervised, advanced clinical practice and/or formal experience in administrative or professional organizational environments, which is designed to meet the student's special interests and professional goals.

PMED1000  Hospital Field Experience  Credit Hours: 1-3
Supervised independent study designed to provide pre-medical students with volunteer experiences in a health care institution. To receive 1 hr credit, students must complete 4 hrs of volunteer work per week. May be taken only as PS/NC.

PMNR701  Physical Medicine & Rehab  Credit Hours: 2-6
The PM&R clinical elective focuses on the impairments and disabilities which may accompany a variety of illnesses. The student in a two-week rotation may choose to focus in musculoskeletal or neurological rehabilitation. Students in the 4-week rotation
PMNR705  Physical Medicine and Rehab  Credit Hours: 0-3
The PM&R clinical elective focuses on the impairments and disabilities which may accompany a variety of illnesses. The student in a two-week rotation may choose to focus in musculoskeletal or neurological rehabilitation. Students in the 4-week rotation

PMNR750  PMNR Away Elective  Credit Hours: 0-6

PMNR751  PMNR Away Elective  Credit Hours: 0-3

PMNR789  Independent Study in PMNR  Credit Hours: 0-6

POLS6200  Public Admin and Public Policy  Credit Hours: 3

PORT1000  Portfolio Credit  Credit Hours: 0-22

PSC1200  American National Government  Credit Hours: 3
An introductory survey of the institutions, processes and politics of the government of the United States and its relationship to state governments. (not for major credit)
PSC1300  Multicultural Perspectives  
Credit Hours:  3
Studies the history and institutions of US government emphasizing the dynamics of difference, including race, class and gender, amongst the governed and governing groups.

PSC1400  Current Issues In U.s. Public Policy  
Credit Hours:  3
A course designed to introduce the student to the policy process in the United States through an examination of current social, social, economic and political issues facing local, state and national governments.

PSC1710  Current International Problems  
Credit Hours:  3
A course designed to give the student a perspective on world affairs through an examination of some contemporary international problems.

PSC2210  Women And Politics  
Credit Hours:  3
An exploration of women and gender relations in US political life. Special attention is paid to differences among women, their socializing experiences, political power bases, and legal status. Multicultural course.

PSC2300  Principles Of State And Local Government  
Credit Hours:  3
A study of the political processes and institutions of American state and local governments, with attention given to selected areas of public policy and intergovernmental relations.

Prerequisites: PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1400 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1300 FOR LEVEL UG WITH MIN. GRADE OF D-

PSC2400  Topics in Political Science  
Credit Hours:  3
Examination of current topics in Political Science. Area and topic to be determined by instructor.

PSC2610  Government Of Great Britain  
Credit Hours:  3
An analysis of British parliamentary democracy and an examination of modern British politics. Recommended: PSC 1200 or 1400.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSC2620</td>
<td>Comparative Politics: Continental Europe</td>
<td>3</td>
<td>A comparative analysis of the politics of continental Europe focusing on the French and German political systems. Recommended: PSC 1200 or 1400.</td>
</tr>
<tr>
<td>PSC2660</td>
<td>Politics In Africa</td>
<td>3</td>
<td>The character and development of African political institutions and processes with a special emphasis on patterns in the post-independence period and prospects for the future.</td>
</tr>
<tr>
<td>PSC2700</td>
<td>Principles Of International Relations</td>
<td>3</td>
<td>An examination of such basic forces as nationalism, ideology and power that promote conflict and cooperation among states in the international community.</td>
</tr>
<tr>
<td>PSC2790</td>
<td>Political Science Study Abroad</td>
<td>1-3</td>
<td>An examination of topics in political science or public administration requiring study and travel in other countries. Topics vary.</td>
</tr>
<tr>
<td>PSC2800</td>
<td>Principles Of Political Theory</td>
<td>3</td>
<td>An investigation of important themes in classical and contemporary political theory, including: justice, liberty and democracy. These issues are approached through discussion of a number of original works by political theorists.</td>
</tr>
<tr>
<td>PSC3110</td>
<td>Social Science Statistics</td>
<td>3</td>
<td>Descriptive statistics, introduction to inferential statistics, data processing and computer applications in the social sciences.</td>
</tr>
<tr>
<td>PSC3210</td>
<td>Political Parties</td>
<td>3</td>
<td>An analysis of the theory, organization, techniques and dynamics of the American party system.</td>
</tr>
</tbody>
</table>

Prerequisites: PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1300 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1400 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSC3250</td>
<td>Public Opinion</td>
<td>3</td>
<td>A study of American public opinion with attention to polling and voting data and analysis.</td>
</tr>
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<td></td>
<td>Prerequisites: PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1400 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1300 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>PSC3260</td>
<td>Government And The Economy</td>
<td>3</td>
<td>An examination of the politics of the American economic system including the role of government in both the public and private sectors of the economy.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Prerequisites: PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1400 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1300 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>PSC3310</td>
<td>Municipal Government</td>
<td>3</td>
<td>A survey of urban government and politics, including the philosophy of local government, urban political processes, structural problems and relations with other units of government.</td>
</tr>
<tr>
<td>PSC3420</td>
<td>Principles Of Public Administration</td>
<td>3</td>
<td>An overview of public administration including organization theory, decision making, budgeting, public policy and the changing role of public institutions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prerequisites: PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1400 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>PSC3500</td>
<td>Principles Of Law</td>
<td>3</td>
<td>An overview of law, legal procedures and the legal professions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prerequisites: PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1400 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1300 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>PSC3510</td>
<td>Constitutional Law I</td>
<td>3</td>
<td>The development of the American legal system and the implications of judicial decisions affecting the institutions and powers of government, the federal system and the relationship of the individual to government.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prerequisites: PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1400 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1300 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>PSC3520</td>
<td>Constitutional Law and Politics II</td>
<td>3</td>
<td>Prerequisite(s): 6 hours in PSC or 9 hours in social sciences, or permission of instructorCatalog Description: Examines the role of the Supreme Court in the US system of civil liberties, the relationship between judicial decisions and state actions afte</td>
</tr>
</tbody>
</table>
PSC3730  American Foreign Policy  Credit Hours:  3
An examination of the American foreign policy-making process as well as an analysis of the major problems facing the United States in its interaction with the international environment.

Prerequisites:(PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1300 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (PSC 1400 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1710 FOR LEVEL UG WITH MIN. GRADE OF D-) OR PSC 2700 FOR LEVEL UG WITH MIN. GRADE OF D-

PSC3800  Sexual Politics  Credit Hours:  3
This course examines sexual politics through studying canonical literature of Western political theory, feminism and postmodern theory.

PSC3820  Contemporary Political Ideas  Credit Hours:  3
Surveys trends in 20th century political and social thought, including critical theory, post-structuralist theory, feminism and anti-racist politics. Particular issues addressed include bureaucracy, mass society, state and civil violence, and identity po

PSC3900  Honors Seminar  Credit Hours:  3
Seminar focused on timely topics in political science chosen by rotating faculty in the department.

PSC3990  Independent Study For Honors Students  Credit Hours:  3
Individual reading and research in selected topics for honors students.

PSC4230  Presidency  Credit Hours:  3
The nomination, election, responsibilities and performance of the American president. The course includes decision making, policy making, personality, and relations with Congress, the courts, news media and interest groups.

Prerequisites:PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1400 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1300 FOR LEVEL UG WITH MIN. GRADE OF D-

PSC4250  Intergovernmental Relations  Credit Hours:  3
A study of the relationships among the various types and levels of government in the United States with an examination of the fields in which the major governmental contacts occur.

Prerequisites:PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1400 FOR LEVEL UG WITH MIN. GRADE OF D-
Course Descriptions 2009-2010

PSC4280 U.s. Congress  Credit Hours: 3
An intensive study of the development, functions, committees, party and factional organizations of the U.S. Congress and state legislatures.

Prerequisites: PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1400 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1300 FOR LEVEL UG WITH MIN. GRADE OF D-

PSC4320 Urban Policy And Administration  Credit Hours: 3
An examination of the policy process in modern cities, focusing on the interactions between the principal political and administrative organizations in formulating and implementing policy.

Prerequisites: (PSC 3310 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSC 3420 FOR LEVEL UG WITH MIN. GRADE OF D-)

PSC4330 Health Care Policy  Credit Hours: 3
An examination of United States health care policy and its progression to the current era of cost controls. In addition, the principal actors and theories influencing health care policy are analyzed.

Prerequisites: PSC 3420 FOR LEVEL UG WITH MIN. GRADE OF D-

PSC4340 Environmental Policy  Credit Hours: 3
Policy for air and water pollution control, hazardous wastes, nuclear wastes. Examination of EPA, Congressional committees, state and city agencies. Some international issues.

Prerequisites: PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 1400 FOR LEVEL UG WITH MIN. GRADE OF D-

PSC4350 Health Care Delivery Systems  Credit Hours: 3
An overview of the United States health care delivery system. The roles, responsibilities and relationships of various components are discussed and analyzed, with emphasis on interrelationships between government, providers and institutions.

Prerequisites: (PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSC 3420 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (PSC 1400 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSC 3420 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (PSC 1300 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSC 3420 FOR LEVEL UG WITH MIN. GRADE OF D-)

PSC4360 Ethics In Public Policy And Administration  Credit Hours: 3
Examination of values and principles which influence public policy and public administration. Applications to policy problems and responsibilities of public administrators will be emphasized.

Prerequisites: PSC 3420 FOR LEVEL UG WITH MIN. GRADE OF D-

PSC4410 Management Of Nonprofit Organizations  Credit Hours: 3
Examination of forces that influence management of nonprofit organizations in the United States, and their roles and responsibilities. Consideration of organizational structures, leadership, fiscal administration, and relations with citizens and other org

Prerequisites: PSC 3420 FOR LEVEL UG WITH MIN. GRADE OF D-
PSC4430  Public Personnel Administration  Credit Hours: 3
The organization, operation and problems of public personnel systems in the functions of selection, training, classification and employee relations.

Prerequisites: PSC 3420 FOR LEVEL UG WITH MIN. GRADE OF D-

PSC4440  Budgeting And Financial Administration  Credit Hours: 3
An examination of the institutions and techniques of financial administration, including government accounting, budgeting, financial management and governmental choice.

Prerequisites: PSC 3420 FOR LEVEL UG WITH MIN. GRADE OF D-

PSC4470  Public Organization Theory  Credit Hours: 3
A systematic consideration of theories of political organization and administration, including institutional, behavioral, sociological, psychological and political theories, with emphasis on decision-making in governmental organizations.

Prerequisites: PSC 3420 FOR LEVEL UG WITH MIN. GRADE OF D-

PSC4490  Current Topics In Public Administration  Credit Hours: 3
Examination of selected current problems in public policy and administration. Topics vary and are listed in each term's schedule of classes.

Prerequisites: PSC 3420 FOR LEVEL UG WITH MIN. GRADE OF D-

PSC4530  Civil Rights  Credit Hours: 3
Prerequisite(s): 6 hours in PSC or 9 hours in social sciences, or permission of instructor. Catalog Description: A study of judicial policy-making and administrative implementation involving issues related to race, gender and sexual orientation.

PSC4540  Race And Public Policy  Credit Hours: 3
This course examines theories of race relations and applies these theories to select public policy issues, such as affirmative action, welfare, criminal justice and others.

PSC4550  Issues In Contemporary Law  Credit Hours: 3
Examines current controversies in US law and politics drawing on recent research in political theory, constitutional history, and legal doctrine. Includes issues such as freedom of speech, presidential war powers, and religious freedom.

Prerequisites: PSC 3500 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 3510 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 3520 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSC4580</td>
<td>International Law</td>
<td>3</td>
<td>An examination of the legal status of nation states and dependencies and of the rules concerning international diplomacy, treatment of persons and peaceful settlement of disputes. Recommended: PSC 1710 or PSC 2700</td>
</tr>
<tr>
<td>PSC4610</td>
<td>Comparative Government</td>
<td>3</td>
<td>A study of political functions such as elections, political parties, interest groups, executive-legislative relations and centralization of powers in various nations. Recommended: PSC 2610 or PSC 2620</td>
</tr>
<tr>
<td>PSC4630</td>
<td>Government Of Canada</td>
<td>3</td>
<td>The government and politics of Canada with particular emphasis on federalism and the operation of parliamentary government in a changing party system. Recommended: PSC 1200 or 1400.</td>
</tr>
<tr>
<td>PSC4640</td>
<td>The European Union</td>
<td>3</td>
<td>An analysis of the evolution, institutional structure and operation of the European Union.</td>
</tr>
<tr>
<td>PSC4650</td>
<td>International Political Economy</td>
<td>3</td>
<td>An examination of the relationship between political and economic structures, organizations and events, including such issues as the politics of trade, foreign aid and economic development.</td>
</tr>
<tr>
<td>PSC4660</td>
<td>Governmental &amp; Political Institutions Of Africa</td>
<td>3</td>
<td>An examination of political behavior in selected African states using a case method to examine alternative courses of action available to decision makers.</td>
</tr>
<tr>
<td>PSC4670</td>
<td>Governments Of The Middle East</td>
<td>3</td>
<td>A survey of the institutions of government, political processes, parties and interest groups and problems of development in the Middle East. Recommended: PSC 1710 or PSC 2610 or PSC 2620.</td>
</tr>
</tbody>
</table>
PSC4690  Government Of China  Credit Hours: 3
A study of the development of Chinese governmental institutions and political process, interest groups, political culture, political participation, economic development, national defense and foreign relations.

PSC4710  Theories Of International Politics  Credit Hours: 3
An analysis of the major concepts of international politics that attempt to construct a general theory of behavior in world affairs. Recommended PSC 2800.

PSC4720  International Organization  Credit Hours: 3
A study of the background, general concepts and problems of international organizations including the United Nations, historical models, regional organizations and non-governmental organizations. Recommended: PSC 2700

PSC4730  The United Nations  Credit Hours: 3
An investigation of the origins, organization, political practices, administrative activities and problems of the United Nations and its related agencies. Recommended: PSC 1710 or PSC 2700

PSC4740  International Relations Middle East  Credit Hours: 3
An examination of political, economic and geographic actors affecting international relations of the Middle East, including the role of the major world and regional powers. Recommended: PSC 1710 or PSC 2700

PSC4860  Feminist Political Theory  Credit Hours: 3
An analysis and discussion of contemporary feminist political theory.

PSC4900  Seminar In Asian Affairs  Credit Hours: 3
An interdisciplinary and comparative study of the major issues in Asia with special emphasis on political and economic development and international relations in Asia.
PSC4940 Applied Politics Internship  Credit Hours: 3
A study of electoral politics, public decision-making or policy implementation through internships with candidates, political parties, public officials or governmental or nonprofit agencies.
Prerequisites: PSC 2300 FOR LEVEL UG WITH MIN. GRADE OF D-

PSC4960 Senior Honors Thesis  Credit Hours: 3
Supervised research and writing for honors students only.

PSC4980 Current Topics In Political Science  Credit Hours: 3
Timely examination of emerging issues within the various segments of the discipline of political science.

PSC4990 Independent Study In Political Science  Credit Hours: 1-3
Individual study in selected topic.

PSC5110 Social Science Statistics  Credit Hours: 3
A course covering descriptive statistics and providing an introduction to inferential statistics, data processing and computer applications specifically tailored for the needs of the social sciences.

PSC5140 Intermediate Social Science Statistics  Credit Hours: 3
An approach to regression analysis designed for social scientists. Development of a common conceptual basis for correlation and regression analysis and analyses of variance and covariance.

PSC5230 Presidency  Credit Hours: 3
The nomination, election, responsibilities and performance of the American president. The course includes decision making, policy making, personality, and relations with Congress, the Courts, news media and interest groups.
PSC5250  Intergovernmental Relations  Credit Hours:  3
National, state and local governmental relationships are examined with emphasis on grant-in-aid, formal and informal cooperative devices, and current problems of the federal system in the United States.

PSC5280  Legislative Process  Credit Hours:  3
An intensive study of the development, functions, committees, party and factional organizations of the U.S. Congress, state legislatures and non-American legislative bodies.

PSC5320  Urban Policy & Administration  Credit Hours:  3
An examination of the policy process in modern cities, focusing on the interactions between the principal political and administrative organizations in formulating and implementing policy.

PSC5330  Health Care Policy  Credit Hours:  3
An examination of United States health care policy and its progression to the current era of cost controls. In addition, the principal actors and theories influencing health care policy are analyzed.
Prerequisites:PSC 3420 FOR LEVEL UG WITH MIN. GRADE OF D-

PSC5340  Environmental Policy And Administration  Credit Hours:  3
Policy for air and water pollution control, hazardous wastes, nuclear wastes. Examination of EPA, Congressional committees, state and city agencies as well as some international issues.

PSC5350  Health Care Delivery Systems  Credit Hours:  3
An overview of the United States health care delivery system. The roles, responsibilities and relationships of various components are discussed and analyzed with emphasis on interrelationships between government, providers and institutions.
Prerequisites:PSC 3420 FOR LEVEL UG WITH MIN. GRADE OF D-

PSC5360  Ethics In Public Policy And Administration  Credit Hours:  3
Examination of values and principles which guide public policy formation and public administration. Applications of philosophical concepts to policy problems and the responsibilities of public administrators will be emphasized.
PSC5390 Applied Politics Internship
Credit Hours: 3
A study of electoral politics, public decision-making or policy implementation through internships with candidates, political parties, public officials or governmental or nonprofit agencies.

PSC5410 Management Of Nonprofit Organizations
Credit Hours: 3
Examination of social, cultural, organizational, economic and political forces that influence management of nonprofit organizations in the United States. Historical and theoretical origins of their roles and responsibilities.

PSC5430 Public Personnel Administration
Credit Hours: 3
A study of developments and problems in the recruitment and management of public employees.

PSC5440 Budgeting And Financial Administration
Credit Hours: 3
An examination of the institutions and techniques of financial administration, including government accounting, budgeting, financial management and governmental choice.
Prerequisites: PSC 3420 FOR LEVEL UG WITH MIN. GRADE OF D-

PSC5470 Public Organization Theory
Credit Hours: 3
Relates a diverse body of literature known as "organization theory" to the behavior of public organizations in their political setting.
Prerequisites: PSC 3420 FOR LEVEL UG WITH MIN. GRADE OF D-

PSC5490 Current Topics In Public Administration
Credit Hours: 3
Examination and analysis of a current policy or administrative issue. Topics vary and are listed in each term's schedule of courses.

PSC5530 Civil Rights
Credit Hours: 3
A study of policy-making and implementation related to issues of race, gender and sexual orientation.
PSC5540  Race And Public Policy  Credit Hours:  3
This course examines theories of race relations and applies these theories to select public policy issues, such as affirmative action, welfare, criminal justice and others.

PSC5550  Contemporary Issues In Law and Politics  Credit Hours:  3
Examines current controversies in U.S. law and politics, drawing on recent research in political theory, constitutional history, and legal doctrine. Includes issues such as freedom of speech, presidential powers, and religious freedom.

PSC5580  International Law  Credit Hours:  3
A study of the legal system governing interstate relations. Cases will be reviewed. State jurisdiction and responsibilities will be examined, emphasizing the rules of war.

PSC5610  Comparative Government  Credit Hours:  3
An examination of selected topics in comparative politics, with special emphasis on the problems of advanced industrial democracies.

PSC5630  Government Of Canada  Credit Hours:  3
An examination of the political institutions and parties of Canada with special attention to the effect of federalism on a parliamentary system of government.

PSC5640  The European Union  Credit Hours:  3
An analysis of the evolution, institutional structure and operation of the European Unions.

PSC5650  International Political Economy  Credit Hours:  3
An analysis of the interaction of the international political and economic systems with focus on the political aspects of the international economy. Topics include economic development, interdependence, trade and multilateral institutions.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>PSC5670</td>
<td>Governments Of The Middle East</td>
<td>3</td>
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<tr>
<td></td>
<td>A survey within a historical context of the states in the Middle East. Study of political processes and structures. Conferences with the instructor and a paper are required.</td>
<td></td>
</tr>
<tr>
<td>PSC5710</td>
<td>Theories Of International Politics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>An analysis of the leading approaches to the study of international politics that contribute to the construction of a general theory.</td>
<td></td>
</tr>
<tr>
<td>PSC5720</td>
<td>International Organizations</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>A study of the background, aims, purposes and problems of international organizations. An examination of the functions of the specialized agencies and other organizations of the United Nations system.</td>
<td></td>
</tr>
<tr>
<td>PSC5730</td>
<td>The United Nations</td>
<td>3</td>
</tr>
<tr>
<td>PSC5740</td>
<td>International Relations - Middle East</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>A survey of geopolitical, economic and sociocultural factors affecting foreign policy processes; an examination of the role of the Big Powers and the United Nations. Conferences with the instructor are required.</td>
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</tr>
<tr>
<td>PSC5860</td>
<td>Feminist Political Theory</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>An analysis and discussion of contemporary feminist political theory.</td>
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<tr>
<td>PSC5950</td>
<td>Mpa Research Report</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Independent research, under the direction of a faculty adviser, analyzing experience as a public official.</td>
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</tr>
</tbody>
</table>
PSC5980 Current Topics In Political Science
Examination of emerging issues within the various segments and subfields of the discipline of political science.

Credit Hours: 3

PSC5990 Independent Study In Political Science
Individual study in selected topic.

Credit Hours: 1-3

PSC6110 Scope And Methods Of Political Science
An examination of the development, fields of study and methodological approaches of political science and of research techniques and the process of thesis writing.

Credit Hours: 3

PSC6200 Seminar In American Politics
A seminar in selected topics of American political behavior.

Credit Hours: 3

PSC6410 Proseminar In Public Administration
An extensive examination of the field of public administration designed to acquaint advanced students with the major academic literature of the major subfields.

Credit Hours: 3

PSC6420 Quantitative Methods In Decision Making
Examination of analytical techniques appropriate for public sector decision making and applications to specific problems. Decision analysis, cost benefit analysis and tools for evaluating public policies will be considered.

Prerequisites:
(PSC 3420 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSC 5140 FOR LEVEL GR WITH MIN. GRADE OF D- AND PSC 6430 FOR LEVEL GR WITH MIN. GRADE OF D-)

Credit Hours: 3

PSC6430 Seminar In Public Policy Theory And Analysis
Models, theories, approaches and techniques used to analyze public policy with application to policy areas such as discrimination, welfare, mental health or the environment.

Credit Hours: 3
PSC6440  Health Systems Management  Credit Hours:  3
An overview of the management process and the opportunity to develop skills to apply the process of health-related settings. Emphasis is placed on the premise that an effective manager must be a leader.
Prerequisites: PSC 3420 FOR LEVEL UG WITH MIN. GRADE OF D-

PSC6500  Seminar In Public Law  Credit Hours:  3
A seminar in selected topics of constitutional administrative or international law.

PSC6600  Seminar In Comparative Politics  Credit Hours:  3
A seminar in selected topics of comparative political processes or area of studies.

PSC6700  Seminar In International Politics  Credit Hours:  3
A seminar in selected topics of international politics or national foreign policies.

PSC6800  Seminar In Political Theory  Credit Hours:  3
A seminar in selected political theorists or political ideas.

PSC6940  Public Service Internship  Credit Hours:  1-6
Internship in public or nonprofit agency and preparation of an internship paper analyzing the internship experience.

PSC6960  Thesis Seminar  Credit Hours:  1-6
Supervision of master's thesis writing.
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>PSCH681</td>
<td>Behavioral Science</td>
<td>4</td>
</tr>
<tr>
<td>PSCH701</td>
<td>Psychiatry</td>
<td>0-9</td>
</tr>
</tbody>
</table>

Corequisite: FMMD 701 OBGY 701 PEDS 701

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSCH704</td>
<td>Clinical Medical Ethics</td>
<td>6</td>
</tr>
<tr>
<td>PSCH705</td>
<td>Behavioral Medicine</td>
<td>3-6</td>
</tr>
<tr>
<td>PSCH706</td>
<td>Spirituality, Bioethics &amp; Med</td>
<td>6</td>
</tr>
<tr>
<td>PSCH707</td>
<td>Psychiatry Consults/Liaison</td>
<td>3-6</td>
</tr>
<tr>
<td>PSCH708</td>
<td>Inpatient Psychiatry</td>
<td>6</td>
</tr>
</tbody>
</table>

The student participating in this acting internship will be working primarily on NBH-Toledo Unit A-400, an acute care unit for psychiatric stabilization of individuals with serious psychiatric illness. Initial evaluations of individuals to be admitted to
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>PSCH709</td>
<td>Child/Adolescent Acting Intern</td>
<td>6</td>
</tr>
<tr>
<td>PSCH712</td>
<td>Public &amp; Community Psychiatry</td>
<td>3-6</td>
</tr>
<tr>
<td></td>
<td>The student will meet with the director of the elective at least two months prior to the start of the elective so that a schedule of activities incorporating the student's special interests can be arranged. The student will travel to a number of sites th</td>
<td></td>
</tr>
<tr>
<td>PSCH720</td>
<td>Public &amp; Community Psychiatry</td>
<td>3</td>
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<tr>
<td>PSCH735</td>
<td>Soc &amp; Personality Development</td>
<td>3</td>
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<tr>
<td>PSCH740</td>
<td>Psychiatry: Req Remediation</td>
<td>6</td>
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<tr>
<td>PSCH750</td>
<td>Psychiatry Away Elective</td>
<td>0-6</td>
</tr>
<tr>
<td>PSCH751</td>
<td>Psychiatry Away Elective</td>
<td>3</td>
</tr>
</tbody>
</table>
PSCH789 Independent Study in Psych

Credit Hours: 3-6

PSLS3000 Sales Career Orientation And Management

This course is designed to provide an overview of careers in professional selling. This course will also deal with resume writing, interviewing, business etiquette and dressing for success.

Credit Hours: 1

PSLS3080 Purchasing And Business Relationship Management

This course looks at the purchasing function from a strategic and behavioral perspective, using role plays, simulations, exercises and cases to investigate issues relating to negotiation, relationship management and other strategic purchasing issues.

Credit Hours: 3

Prerequisites: BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D-

PSLS3440 Professional Sales

Techniques for prospecting and qualifying potential customers and making presentations and demonstrations are considered, as well as personal management of the selling function. Analyzes the role of selling in Marketing.

Credit Hours: 3

Prerequisites: BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D-

PSLS3450 Account And Territory Management

Introduction to activities involved in supporting buyer-seller interactions. Exposes students to software and analysis skills needed for prospecting, sales paperwork, technology, time and territory management, and customer follow-up.

Credit Hours: 3

Prerequisites: BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D-

PSLS4710 Salesforce Leadership

The role and functions of the first line sales manager will be examined, including sales force size and organization, and management of the sales force. Issues related to hiring, training, supervising, compensating and evaluating salespersons are also em

Credit Hours: 3

Prerequisites: PSL 3440 FOR LEVEL UG WITH MIN. GRADE OF D-

PSLS4740 Advanced Sales

The course provides in-depth study of advanced sales concepts including relationship management, negotiation, proposal writing and account management. Course involves presentations by business, field work, video-taped role-playing.

Credit Hours: 3

Prerequisites: (PSLS 3440 FOR LEVEL UG WITH MIN. GRADE OF D- AND BUAD 3010 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSL 3450 FOR LEVEL UG WITH MIN. GRADE OF D-)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>PLS54940</td>
<td>Integrative Capstone: Sales Internship</td>
<td>3</td>
</tr>
<tr>
<td>PSRG711</td>
<td>Plastic Surgery</td>
<td>6</td>
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<tr>
<td>PSRG750</td>
<td>Plastic Surg Away Elective</td>
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<td>PSRG751</td>
<td>Plastic Surg Away Elective</td>
<td>3</td>
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<tr>
<td>PSRG789</td>
<td>Ind Study in Plastic Surgery</td>
<td>0-6</td>
</tr>
<tr>
<td>PSY1010</td>
<td>Principles Of Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY2100</td>
<td>Statistical Methods</td>
<td>3</td>
</tr>
</tbody>
</table>

**Integrative Capstone: Sales Internship**
Receive practical business experience working in an organization.

**PSRG711 Plastic Surgery**

**PSRG750 Plastic Surg Away Elective**

**PSRG751 Plastic Surg Away Elective**

**PSY1010 Principles Of Psychology**
A survey of the branches of psychology and the scientific approach to the study of behavior.

**PSY2100 Statistical Methods**
Descriptive and inferential statistics as applied to research in basic behavioral science and to clinical application.

**Prerequisites:**
MATH 1320 FOR LEVEL UG WITH MIN. GRADE OF C- OR MATH 1330 FOR LEVEL UG WITH MIN. GRADE OF C- OR MATH 1340 FOR LEVEL UG WITH MIN. GRADE OF C- OR MATH 1750 FOR LEVEL UG WITH MIN. GRADE OF C- OR MATH 1830 FOR LEVEL UG WITH MIN. GRADE OF C- OR M
PSY2200  Abnormal Psychology  Credit Hours:  3
Disordered human behavior; its etiology, classification and treatment. Consideration of different theories.
Prerequisites: PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

PSY2400  Cognitive Psychology  Credit Hours:  3
Theoretical and empirical approaches to the role of pattern recognition, attention, memory, language, problem solving and decision making in human thinking.
Prerequisites: PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

PSY2500  Developmental Psychology  Credit Hours:  3
Emphasizes change and continuity in development, with a focus on research and theory during infancy, childhood and adolescence.
Prerequisites: PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

PSY2510  Lifespan Developmental Psychology  Credit Hours:  3
Emphasizes research and theory from conception through old age, and integrates important developmental issues within a lifespan approach.
Prerequisites: PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

PSY2600  Psychobiology  Credit Hours:  3
The neural bases of behavior; topics include organization of the nervous system, perception and movement, learning and memory, emotion and motivation, drugs, language, and mental disorders.

PSY2610  Learning And Motivation  Credit Hours:  3
Extended treatment of learning, conditioning and motivation including operant learning, reinforcement schedules, symbolic reward, generalization and related theoretical developments.
Prerequisites: PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

PSY2700  Social Psychology  Credit Hours:  3
Theoretical and empirical treatment of socially-based perception and cognition, interpersonal influence, small group processes and interpersonal relations.
Prerequisites: PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF D-
PSY3010  Culture And Psychology  Credit Hours: 3
Theoretical and empirical examination of the generality of psychological concepts across cultural and ethnic groups. A cultural analysis of key topics in clinical, cognitive, developmental and social psychology.
Prerequisites: PSY 2200 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSY 2400 FOR LEVEL UG WITH MIN. GRADE OF D- OR (PSY 2500 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSY 2510 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSY 2700 FOR LEVEL UG WITH MIN. GRADE OF D-)

PSY3110  Research Methods In Psychology  Credit Hours: 4
Design, execution, analysis and reporting of research in psychology. Lecture and laboratory.
Prerequisites: PSY 2100 FOR LEVEL UG WITH MIN. GRADE OF C-

PSY3120  Understanding Psychological Research  Credit Hours: 3
Emphasis on the interpretation (as opposed to execution) of psychological research. Features overview of statistical methods and experimental design principles. Required for Psychology majors on liberal Arts track.
Prerequisites: PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

PSY3200  Personality And Individual Differences  Credit Hours: 3
Overview of major theoretical ideas and empirical research in personality and individual differences.

PSY3210  Clinical Psychology  Credit Hours: 3
An overview of the field of Clinical Psychology including clinical assessment, psychotherapy, community intervention methods and professional/ethical issues.
Prerequisites: PSY 2200 FOR LEVEL UG WITH MIN. GRADE OF D-

PSY3220  Psychopathology Of Childhood  Credit Hours: 3
Clinical and experimental perspectives on behavioral, developmental and emotional disturbances in childhood.
Prerequisites: (PSY 2500 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSY 2200 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (PSY 2510 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSY 2200 FOR LEVEL UG WITH MIN. GRADE OF D-)

PSY3400  Cognitive Neuropsychology  Credit Hours: 3
Analysis of the neural basis of higher level mental functions (e.g., perception, language, emotion), with an emphasis on anatomic and functional differences between the left and right cerebral hemispheres.
Prerequisites: PSY 2400 FOR LEVEL UG WITH MIN. GRADE OF D-
Course Descriptions 2009-2010

PSY3500 Adolescence  
Credit Hours: 3  
Views the biological and psychosocial changes during adolescence from a systems perspective. Emphasizes issues of identity and cognitive growth.

Prerequisites: PSY 2500 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSY 2510 FOR LEVEL UG WITH MIN. GRADE OF D-

PSY3510 The Adult Years  
Credit Hours: 3  
Emphasizes growth and change throughout adulthood. Issues of personality and cognitive change are investigated, and theory and research are highlighted.

Prerequisites: PSY 2500 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSY 2510 FOR LEVEL UG WITH MIN. GRADE OF D-

PSY3520 Perceptual And Cognitive Development  
Credit Hours: 3  
Emphasizes both theory and research in perceptual and cognitive development, with a focus on infants, children and adolescents.

Prerequisites: PSY 2500 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSY 2510 FOR LEVEL UG WITH MIN. GRADE OF D-

PSY3610 Behavioral Neuroscience  
Credit Hours: 3  
In-depth treatment of the structure and function of neurons and their mediation of behavior, both normal and abnormal: circadian rhythms, eating, emotions, sexual behavior, memory, language and mental disorders. The scientific study of the brain and met

Prerequisites: PSY 2600 FOR LEVEL UG WITH MIN. GRADE OF D-

PSY3620 Sensory Processes  
Credit Hours: 3  
In-depth treatment of the neural organization of the sensory and motor systems. A comparative and evolutionary approach to the study of perception is emphasized.

PSY3630 Everyday Behavior Analysis  
Credit Hours: 3  
Application of learning and motivation in the home, classroom and workplace. Covers how to define and measure behavior principles of positive and negative reinforcement, and the effects of aversive control.

PSY3710 Psychology And The Law  
Credit Hours: 3  
Emphasizes the utilization of theoretical and empirical notions of psychological science as they apply to both civil and criminal law.

Prerequisites: PSY 2700 FOR LEVEL UG WITH MIN. GRADE OF D-
Course Descriptions 2009-2010

PSY3730  Stereotyping, Prejudice, & Discrimination  Credit Hours:  3  
This course will examine issues of and related to stereotyping, prejudice, and discrimination from a social psychological perspective with a special emphasis on racism and sexism.

Prerequisites: PSY 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

PSY3800  Honors Proposal  Credit Hours:  1-3  
Literature review and design of an experiment that will form the basis for an Honors Thesis; a formal written proposal will be prepared in conjunction with, and approved by, the thesis advisor and must be submitted to the departmental honors advisor.

Prerequisites: PSY 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

PSY3820  Honors Meeting For Juniors  Credit Hours:  1  
Topics include advanced research tools, research design, practical approach to experiments, ethics in research and career planning. Admission to Psychology Honors and consent of instructor.

PSY3910  Honors Research  Credit Hours:  1-3  
Data collection for research that will form the basis for the Honors Thesis. Admission to Psychology Honors and consent of instructor.

PSY3940  Externship In Psychology  Credit Hours:  1-4  
Supervised work experience in Psychology-related employment settings.

PSY4100  Research Practicum  Credit Hours:  1-4  
Directed by experience in empirical psychological research by students participating in faculty laboratories. Section number denotes field of research: 030-Developmental psychology 040-Social psychology 060-Cognitive and biological psychology 070-Clin

PSY4110  Qualitative Research Methods  Credit Hours:  4  
Study and training in systematic, open-ended, nonquantitative methods for studying human beings, with an emphasis on grounded theory and phenomenological research methods.

Prerequisites: PSY 3110 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSY 3210 FOR LEVEL UG WITH MIN. GRADE OF D-
PSY4200  Research In Clinical Psychology  Credit Hours: 4
Experience in designing and analyzing research in clinical psychology.

Prerequisites: PSY 3110 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSY 3210 FOR LEVEL UG WITH MIN. GRADE OF D-

PSY4500  Research In Developmental Psychology  Credit Hours: 4
Study and analysis of research methods, as applied to the development of perception, learning, socialization, cognition and language. Experience in designing and carrying out research in some of these areas.

Prerequisites: (PSY 2500 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSY 3110 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (PSY 2510 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSY 3110 FOR LEVEL UG WITH MIN. GRADE OF D-)

PSY4600  Research In Psychobiology And Learning  Credit Hours: 4
Experience in designing and carrying out research in learning and motivation with animals.

PSY4700  Research In Social Psychology  Credit Hours: 4
Experience in designing research in social psychology, including a research project.

PSY4800  Psychology Honors Conference  Credit Hours: 4
Intensive reading and discussion of some aspect of psychology. Content varies.

PSY4820  Honors Meeting For Seniors  Credit Hours: 1
Topics include scientific graphics and visualizing data, professional publishing, scientific oral and poster presentations.

PSY4910  Independent Research  Credit Hours: 1-4
This course will be offered every semester and will fill the requirement for an advanced research course. A student will carry out an empirical research project of his or her own design under the guidance of a member of the faculty.

Prerequisites: PSY 3110 FOR LEVEL UG WITH MIN. GRADE OF D-
PSY4950  Senior Thesis  Credit Hours:  4
In-depth reading and evaluation of a topic in psychology by a student near the end of the undergraduate career, under the guidance of an individual faculty member. Topic must be approved in advance.

PSY4960  Honors Thesis  Credit Hours:  2-3
Analysis, interpretation and reporting of research aimed at understanding some aspect of behavior or its underlying mechanisms. The reports include a formal written thesis, a scientific poster and an oral presentation.

Prerequisites: (PSY 3110 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSY 3800 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSY 3820 FOR LEVEL UG WITH MIN. GRADE OF D-)

PSY4980  Special Topics In Psychology  Credit Hours:  3
Seminar discussion of selected topics in psychology to allow for a more comprehensive treatment than possible in other available courses; or technical laboratory course in neuroanatomical techniques. Topics will vary depending on student demand and avail

PSY4990  Independent Study  Credit Hours:  1-4
This course is a tutorial consisting of directed independent reading, conferences with the instructor to discuss the readings and assess the student's understanding of their significance, and a paper in which the student summarizes the read material, inte

PSY6000  History Of Psychology  Credit Hours:  3
Intensive historical treatment of the development of modern psychology from the 19th century. Theoretical psychological and related philosophical positions are emphasized.

PSY6030  Research Practicum  Credit Hours:  1-3
Developing, conducting, analyzing and preparing reports of research projects under faculty supervision. May be repeated.

PSY6040  Teaching Practicum  Credit Hours:  3
Supervised experience in the teaching of psychology. May be repeated for credit.
PSY6060 Ethical Issues In Scientific Research  
Seminar examining the responsibilities of scientists including: protecting human and animal subjects, data collection and publication, authorship, reviewing, conflict of interest, mentoring, and misconduct.

PSY6100 Quantitative Methods In Psychology I  
Probability theory, descriptive and inferential statistics, hypothesis testing, correlation.

PSY6110 Quantitative Methods In Psychology II  
Analysis of variance, regression analyses, non-parametric analyses.

PSY6130 Design And Evaluation Of Psychological Research  
Readings and discussion of problems of research design and analysis.

PSY6140 Advanced Research Methods  
Overview of inquiry methods for applied research, including relevant philosophy of science; qualitative and quantitative data collection and analysis; common research designs; and specialized analysis methods (e.g., meta-analysis).

PSY6150 Psychometrics and Scale Development  
Procedures for developing and examining the reliability and validity of test scales, including theories of measurement, item analysis, factor analysis, and diagnostic efficiency statistics.

Prerequisites: PSY 6100 FOR LEVEL GR WITH MIN. GRADE OF D- AND PSY 6110 FOR LEVEL GR WITH MIN. GRADE OF D-

PSY6200 Systems Of Personality  
Advanced historical overview of the main systems for understanding human beings: sources of motivation, coping, dysfunction, strengths/virtues. Emphasizes philosophical understandings of personality systems, analysis of major contributions and multi-pers
PSY6210  Psychopathology  Credit Hours: 3
Critical analysis of diagnostic classification models, etiological conceptualizations and therapeutic interventions form mental disorders.

PSY6220  Cognitive Assessment  Credit Hours: 4
Assessment of cognitive functioning, utilizing tests of cognitive abilities and achievement.

PSY6230  Personality Assessment  Credit Hours: 4
Assessment of personality functioning utilizing objective tests.

Prerequisites: PSY 6220 FOR LEVEL GR WITH MIN. GRADE OF D-

PSY6250  Seminar In Clinical Psychology  Credit Hours: 3
Advanced seminar focusing on selected topics from the general area of clinical psychology. -001 Clinical neuropsychology -002 Child psychopathology -003 Child Clinical Intervention -004 Marital & Family Therapy -005 Psychotherapy research & program evalua

PSY6260  Professional And Ethical Issues  Credit Hours: 3
Exploration of ethical and professional issues faced by clinical psychologists. Detailed analysis of the American Psychological Association's Ethical Principles of Psychologists and Code of Conduct.

PSY6310  Psychotherapy With Children And Adolescents  Credit Hours: 3
Presentation and explanation of techniques of psychotherapy with children and adolescents.

Prerequisites: PSY 6390 FOR LEVEL GR WITH MIN. GRADE OF D-

PSY6320  Experiential Psychotherapy  Credit Hours: 3
Presentation of theory and practice of experiential psychotherapy, including practice with clients and optional experiential training workshop.

Prerequisites: PSY 6390 FOR LEVEL GR WITH MIN. GRADE OF D-
PSY6330  Psychodynamic Psychotherapy  Credit Hours: 3
Didactic course covering psychoanalytic/psychodynamic theories, case conceptualization, therapy techniques, and relevant empirical research.

PSY6340  Cognitive-Behavioral Psychotherapy  Credit Hours: 3
Presentation and exploration of the theory and techniques of cognitive-behavioral assessment and therapy. Emphasis on understanding the theoretical and empirical base for cognitive-behavioral interventions and implications for application in clinical and

PSY6350  Family And Couple Therapy  Credit Hours: 3
Presentation and exploration of family and couple therapy as a discipline, theoretical perspectives and empirical research on couple/family interaction and therapeutic techniques used with families and couples.
Prerequisites:PSY 6390 FOR LEVEL GR WITH MIN. GRADE OF D-

PSY6390  Clinical Laboratory  Credit Hours: 3
Clinical interviewing, diagnostic assessment, case conceptualization and oral presentation of clinical cases. Diagnostic, therapeutic and professional issues are addressed via didactic coursework and practicum work with clients in the Psychology Clinic.

PSY6400  Cognitive Psychology  Credit Hours: 3
An intensive examination of human information processing. Topics include neural bases of cognition, perceptual and attentional processing, mental imagery, memory, problem solving and reasoning.

PSY6410  Seminar In Cognitive Psychology  Credit Hours: 3
An advanced seminar focusing on selected topics from the general area of Cognitive Psychology.

PSY6500  Developmental Psychology  Credit Hours: 3
Advanced treatment of the theoretical and empirical literature in developmental psychology, and of the major issues of the field.
PSY6510    Seminar In Developmental Psychology
Readings and evaluative discussions of the primary research literature in developmental psychology.

Prerequisites: PSY 6500 FOR LEVEL GR WITH MIN. GRADE OF D-

PSY6600    Behavioral Neuroscience
Structure and function of neurons and the neural mediation of behavior, both normal and abnormal.

PSY6610    Seminar In Psychobiology And Learning
Readings and evaluative discussions of the primary research literature in psychobiology, behavioral neuroscience, neuroanatomy, learning, motivation and perception.

PSY6630    Sensory Processes
In-depth treatment of the neural organization of the sensory and motor systems. A comparative and evolutionary approach to the study of perception is emphasized.

PSY6700    Social Psychology
Social cognition and behavior, interpersonal influence and social relations will be addressed.

PSY6710    Seminar In Social Psychology
In-depth treatment of selected topics in Social Psychology.

PSY6810    Child And Adolescent Therapy Practicum
Supervision of psychotherapy with children and adolescents seen through the University of Toledo Psychology Clinic.

Prerequisites: PSY 6390 FOR LEVEL GR WITH MIN. GRADE OF D-
Course Descriptions 2009-2010

PSY6820  Experiential Therapy Practicum  Credit Hours:  3
Group and Individual supervision of experiential psychotherapy with adults seen through the University of Toledo Clinic and elsewhere.

Prerequisites: PSY 6390 FOR LEVEL GR WITH MIN. GRADE OF D-

PSY6830  Psychodynamic Psychotherapy Practicum  Credit Hours:  3
Supervision of students' psychodynamic psychotherapy cases seen through The Psychology Clinic.

Prerequisites: PSY 6390 FOR LEVEL GR WITH MIN. GRADE OF D-

PSY6840  Cognitive-Behavior Therapy Practicum  Credit Hours:  3
Supervision of cognitive-behavior therapy with children, adolescents, and adults seen through The University of Toledo Psychology Clinic.

Prerequisites: PSY 6390 FOR LEVEL GR WITH MIN. GRADE OF D-

PSY6850  Family And Couple Practicum  Credit Hours:  3
Supervision of psychotherapy with families and couples seen through The University of Toledo Psychology Clinic.

PSY6860  Advanced Assessment Practicum  Credit Hours:  3
Clinical supervision of psychological assessments using multiple methods of assessment with clients seen through The University of Toledo Psychology Clinic.

Prerequisites: PSY 6210 FOR LEVEL GR WITH MIN. GRADE OF D- AND PSY 6220 FOR LEVEL GR WITH MIN. GRADE OF D- AND PSY 6230 FOR LEVEL GR WITH MIN. GRADE OF D-

PSY6930  Seminar In Psychology  Credit Hours:  3
Readings and evaluative discussions of the primary research literature in psychology.

PSY6940  Supervised Clinical Practicum  Credit Hours:  1-3
Supervised applied assessment, therapeutic and consultative experience in community settings.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
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<tr>
<td>PSY6960</td>
<td>M.a. Thesis</td>
<td>1-6</td>
<td>Developing, conducting and analyzing the thesis research project, writing the thesis.</td>
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<tr>
<td>PSY6980</td>
<td>Special Topics</td>
<td>1-3</td>
<td>Professional issues in academic and scientific psychology.</td>
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<tr>
<td>PSY6990</td>
<td>Independent Study</td>
<td>1-15</td>
<td>Directed reading and/or experimentation on a topic selected by the study in conjunction with a faculty mentor.</td>
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<tr>
<td>PSY7000</td>
<td>History Of Psychology</td>
<td>3</td>
<td>Intensive historical treatment of the development of modern psychology from the 19th century. Theoretical psychological and related philosophical positions are emphasized.</td>
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<tr>
<td>PSY7030</td>
<td>Research Practicum</td>
<td>1-3</td>
<td>Developing, conducting, analyzing and preparing reports of research projects under faculty supervision. May be repeated.</td>
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<tr>
<td>PSY7040</td>
<td>Teaching Practicum</td>
<td>3</td>
<td>Supervised experience in the teaching of psychology. May be repeated for credit.</td>
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<tr>
<td>PSY7100</td>
<td>Quantitative Methods In Psychology I</td>
<td>3</td>
<td>Probability theory, descriptive and inferential statistics, hypothesis testing, correlation.</td>
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<tr>
<td>PSY7110</td>
<td>Quantitative Methods In Psychology II</td>
<td>3</td>
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<td>Analysis of variance, regression analyses, non-parametric analyses.</td>
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<td>PSY7130</td>
<td>Design And Evaluation Of Psychological Research</td>
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<td></td>
<td>Readings and discussion of problems of research design and analysis.</td>
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<td>PSY7200</td>
<td>Systems Of Personality</td>
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<td>Advanced historical overview of the main systems for understanding human beings: sources of motivation, coping, dysfunction, strengths/virtues. Emphasizes philosophical understandings of personality systems, analysis of major contributions and multi-pers</td>
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<td>PSY7210</td>
<td>Psychopathology</td>
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<td>Critical analysis of diagnostic classification models, etiological conceptualizations and therapeutic interventions form mental disorders.</td>
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<td>PSY7220</td>
<td>Cognitive Assessment</td>
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<td>Assessment of cognitive functioning, utilizing tests of cognitive abilities and achievement.</td>
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<td>PSY7230</td>
<td>Personality Assessment</td>
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<td>Assessment of personality functioning utilizing objective tests.</td>
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<td>Prerequisites: PSY 6220 FOR LEVEL GR WITH MIN. GRADE OF D- OR PSY 7220 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>PSY7250</td>
<td>Seminar In Clinical Psychology</td>
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<td>Advanced seminar focusing on selected topics from the general area of clinical psychology. -001 Clinical neuropsychology -002 Child psychopathology -003 Child Clinical Intervention -004 Marital &amp; Family Therapy -005 Psychotherapy research &amp; program evalua</td>
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**Course Descriptions 2009-2010**

**PSY7260  Professional And Ethical Issues**
Credit Hours: 3
Exploration of ethical and professional issues faced by clinical psychologists. Detailed analysis of the American Psychological Association's Ethical Principles of Psychologists and Code of Conduct.

**PSY7310  Psychotherapy With Children And Adolescents**
Credit Hours: 3
Presentation and explanation of techniques of psychotherapy with children and adolescents.

Prerequisites: PSY 6390 FOR LEVEL GR WITH MIN. GRADE OF D-

**PSY7320  Experiential Psychotherapy**
Credit Hours: 3
Presentation of theory and practice of experiential psychotherapy, including practice with clients and optional experiential training workshop.

Prerequisites: PSY 7280 FOR LEVEL GR WITH MIN. GRADE OF D-

**PSY7330  Psychodynamic Psychotherapy**
Credit Hours: 3
Didactic course covering psychoanalytic/psychodynamic theories, case conceptualization, therapy techniques, and relevant empirical research.

Prerequisites: PSY 7390 FOR LEVEL GR WITH MIN. GRADE OF D-

**PSY7340  Cognitive-Behavioral Psychotherapy**
Credit Hours: 3
Presentation and exploration of the theory and techniques of cognitive-behavioral assessment and therapy. Emphasis on understanding the theoretical and empirical base for cognitive-behavioral interventions and implications for application in clinical and

**PSY7350  Family And Couple Therapy**
Credit Hours: 3
Presentation and exploration of family and couple therapy as a discipline, theoretical perspectives and empirical research on couple/family interaction and therapeutic techniques used with families and couples.

Prerequisites: PSY 6390 FOR LEVEL GR WITH MIN. GRADE OF D-

**PSY7390  Clinical Laboratory**
Credit Hours: 3
Clinical interviewing, diagnostic assessment, case conceptualization and oral presentation of clinical cases. Diagnostic, therapeutic and professional issues are addressed via didactic coursework and practicum work with clients in the Psychology Clinic.
PSY7400  Cognitive Psychology  
Credit Hours: 3  
An intensive examination of human information processing. Topics include neural bases of cognition, perceptual and attentional processing, mental imagery, memory, problem solving and reasoning.

PSY7410  Seminar In Cognitive Psychology  
Credit Hours: 3  
An advanced seminar focusing on selected topics from the general area of Cognitive Psychology.

PSY7500  Developmental Psychology  
Credit Hours: 3  
Advanced treatment of the theoretical and empirical literature in developmental psychology, and of the major issues of the field.

PSY7510  Seminar In Developmental Psychology  
Credit Hours: 3  
Readings and evaluative discussions of the primary research literature in developmental psychology.

Prerequisites: PSY 6500 FOR LEVEL GR WITH MIN. GRADE OF D-

PSY7600  Behavioral Neuroscience  
Credit Hours: 3  
Structure and function of neurons and the neural mediation of behavior, both normal and abnormal.

PSY7610  Seminar In Psychobiology And Learning  
Credit Hours: 3  
Readings and evaluative discussions of the primary research literature in psychobiology, behavioral neuroscience, neuroanatomy, learning, motivation and perception.

PSY7700  Social Psychology  
Credit Hours: 3  
Social cognition and behavior, interpersonal influence and social relations will be addressed.
PSY7710  Seminar In Social Psychology  Credit Hours:  3
In depth treatment of selected topics in Social Psychology.

PSY7810  Child And Adolescent Therapy Practicum  Credit Hours:  3
Supervision of psychotherapy with children and adolescents seen through the University of Toledo Psychology Clinic.

Prerequisites:PSY 6390 FOR LEVEL GR WITH MIN. GRADE OF D-

PSY7820  Experiential Therapy Practicum  Credit Hours:  3
Group and Individual supervision of experiential psychotherapy with adults seen through the University of Toledo Psychology Clinic and elsewhere.

Prerequisites:PSY 6390 FOR LEVEL GR WITH MIN. GRADE OF D-

PSY7830  Psychodynamic Psychotherapy Practicum  Credit Hours:  3
Supervision of students' psychodynamic psychotherapy cases seen through The University of Psychology Clinic.

Prerequisites:PSY 6390 FOR LEVEL GR WITH MIN. GRADE OF D-

PSY7840  Cognitive-Behavior Therapy Practicum  Credit Hours:  3
Supervision of cognitive-behavior therapy with children, adolescents, and adults seen through The University of Toledo Psychology Clinic.

Prerequisites:PSY 6390 FOR LEVEL GR WITH MIN. GRADE OF D-

PSY7850  Family And Couple Practicum  Credit Hours:  3
Supervision of psychotherapy with families and couples seen through The University of Toledo Psychology Clinic.

PSY7860  Advanced Assessment Practicum  Credit Hours:  3
Clinical supervision of psychological assessments using multiple methods of assessment with clients seen through The University of Toledo Psychology Clinic.

Prerequisites:PSY 7210 FOR LEVEL GR WITH MIN. GRADE OF D- AND PSY 7220 FOR LEVEL GR WITH MIN. GRADE OF D- AND PSY 7230 FOR LEVEL GR WITH MIN. GRADE OF D-
PSY7930  Seminar In Psychology  Credit Hours:  3
Readings and evaluative discussions of the primary research literature in psychology.

PSY7940  Supervised Clinical Practicum  Credit Hours:  1-3
Supervised applied assessment, therapeutic and consultative experience in community settings.

PSY7960  M.a. Thesis  Credit Hours:  1-6
Developing, conducting and analyzing the thesis research project, writing the thesis.

PSY7980  Special Topics  Credit Hours:  1-3
Professional issues in academic and scientific psychology.

PSY7990  Independent Study  Credit Hours:  1-15
Directed reading and/or experimentation on a topic selected by the study in conjunction with a faculty mentor.

PSY8060  Ethical Issues In Scientific Research  Credit Hours:  3
Seminar examining the responsibilities of scientists including: protecting human and animal subjects, data collection and publication, authorship, reviewing, conflict of interest, mentoring, and misconduct.

PSY8960  Phd Dissertation  Credit Hours:  1-15
Developing, conducting and analyzing the dissertation research project; writing the dissertation.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>PUBH401</td>
<td>Spanish for Healthcare Profess</td>
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<tr>
<td>PUBH411</td>
<td>Intro Spanish for Healthcare</td>
<td>1-3</td>
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<tr>
<td>PUBH412</td>
<td>Adv Med Spanish Hlth Care Pro</td>
<td>3</td>
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<tr>
<td>PUBH501</td>
<td>Principles Occupational Health</td>
<td>3</td>
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<td>PUBH502</td>
<td>Occ Hlth Sci Regs Management</td>
<td>3</td>
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<tr>
<td>PUBH503</td>
<td>Issues in Global Health</td>
<td>3</td>
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<tr>
<td>PUBH506</td>
<td>Occ Safe Sci Regs Management</td>
<td>3</td>
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</table>

**PUBH411** Intro Spanish for Healthcare

This course introduces the Spanish language in a medical context. Through development of oral and aural skills, enables more effective communication with Spanish speaking patients.

**PUBH412** Adv Med Spanish Hlth Care Pro

Prerequisites: Previous experience in Spanish language and/or completion of PUBH411. Builds upon previous Spanish in a medical context and development of oral and aural skills for more effective communication, improving interaction with Spanish speaking patients.

**PUBH502** Occ Hlth Sci Regs Management

Scientific, regulatory and management principles applicable to the anticipation, recognition, evaluation and control of physical, chemical, and biological agents and ergonomic and psychological factors associated with illnesses in occupational environments.

**PUBH503** Issues in Global Health

Course examines current issues and trends that affect international health, including delivery systems in other countries, and examines a variety of environmental, economic, and political factors that play a role in the transmission and treatment of human diseases.

**PUBH506** Occ Safe Sci Regs Management

Scientific, regulatory and management principles applicable to anticipation, identification, investigation and control of mechanical hazards, unsafe work practices, and ergonomic and behavioral factors associated with accidents and injuries in occupation.
PUBH515  Principle Environmental Health
Credit Hours:  3

PUBH516  Env Hlth Sci Regs and Mgmt
Credit Hours:  3
Scientific, regulatory and management principles applicable to human disease associated with food, water, air and soil contamination. Focuses on biology and chemistry of contamination and transformation, exposure monitoring and contaminant control.

PUBH526  Haz Mat and Emerg Response
Credit Hours:  3
Scientific, regulatory and managerial principles applicable to characteristics, exposure control, storage, transport and disposal of chemical, biological and radiological agents; accidental and intentional (terrorism) disaster preparedness and emergency

PUBH531  Chem Agent Tox, Eval and Ctrl
Credit Hours:  3
Scientific principles and practices applicable to the toxicology, evaluation, and control of chemical agents associated with human diseases resulting from various environmental exposures. Content includes normal/abnormal human physiology, exposure assess

PUBH532  Statistical Methods I
Credit Hours:  3
Introduction to statistical methods with emphasis on problems in the biomedical sciences. Included are descriptive statistics, probability theory, statistical inference, experimental design and simple statistical tests.

PUBH541  Air Contaminant Model Vent Res
Credit Hours:  3

PUBH550  Public Health Microbiology
Credit Hours:  3
The course is designed so students can achieve a broad knowledge and understanding of microorganisms, especially those involved in human disease. Topics include the body's defenses, the organism's capabilities for spreading and for virulence; important s
Course Descriptions 2009-2010

PUBH552  Bio Agents Path Eval and Ctrl  Credit Hours: 3
Scientific principles and practices applicable to the pathogenicity, evaluation and control of microbiological agents, parasitic agents, and some biological vectors associated with human diseases resulting from various environmental exposures. Content in

PUBH562  Phys Agents-Eff Eval and Ctrl  Credit Hours: 3

PUBH570  Risk Assess Mgmt Communication  Credit Hours: 3

PUBH600  Biostatistics  Credit Hours: 3
An introduction to descriptive statistics including measurement of central tendency, dispersion, relative position, correlation, and regression. Inferential statistical theory, selected nonparametric methods, application of computers, and also occupationa

PUBH601  Public Health Epidemiology  Credit Hours: 3
The course will present principles of the epidemiology method including problem solving. Various study designs will be discussed, including prospective and retrospective studies, analytic, and experimental methods.

PUBH603  Advanced Epidemiology  Credit Hours: 3
This course covers principles and methods of epidemiology in depth. The topics include causal inference, risk and effect, confounding, interaction, randomization, and matching. Special emphasis is given to design and interpretation of epidemiological stud

PUBH604  Public Health Administration  Credit Hours: 3
This course provides a basic understanding of the nature of public health administration, focusing on fundamentals, the recent changes, associated administrative and organizational arrangements that have been developed and the roles and responsibilities o
PUBH605  Concepts Issues Environ Hlth  Credit Hours:  3
A survey of the major environmental issues facing global society and their relationship to personal, public and ecological health. Issues encompass the developing and developed worlds, current conditions and future trends, and all major settings where envi

PUBH606  Advanced Biostatistics  Credit Hours:  3
Advanced statistical techniques with particular emphasis on problems in public health. Multiple regression, methods of analysis of variance, categorical data analysis including logistic regression, non parametric and survival analysis. Problems whose solu

PUBH607  Genetic Epidemiology  Credit Hours:  3
Introduces genetic epidemiology methods, principles of population genetics including linkage and association studies used in assessing familial aggregation, and transmission patterns for identifying the genetic basis of common diseases.
Prerequisites:(PUBH 600 FOR LEVEL GR WITH MIN. GRADE OF C OR PUBH 800 FOR LEVEL GR WITH MIN. GRADE OF C) AND (PUBH 601 FOR LEVEL GR WITH MIN. GRADE OF C OR PUBH 801 FOR LEVEL GR WITH MIN. GRADE OF C)

PUBH610  Environ/Occup Epidemiology  Credit Hours:  3
The course focuses on the application of epidemiological techniques to the study of effects of occupational and environmental exposures.Prerequisite: PUBH600 and 601.

PUBH611  Categorical Data Analysis  Credit Hours:  3
This course introduces the theory and application of methods for categorical data, with emphasis on biomedical and public health applications. Topics include contingency tables, log-linear, logistic regression and Rasch models, multivariate methods for m

PUBH612  Epidemiology Infectious Diseas  Credit Hours:  3
Provides an overview of major infectious diseases affecting public health in the U.S. and worldwide; introducing the basic epidemiologic methods for surveillance and investigation of infectious disease outbreaks.

PUBH613  Molecular Epidemiology  Credit Hours:  3
The course focuses on the application of epidemiological techniques to the study of effects of occupational and environmental exposures.
PUBH615  Clinical Epidemiology  Credit Hours:  3
This course focuses on epidemiologic concepts and methods in clinical medicine. Topics include clinical measurements and outcomes, risk, prognostic factors, clinical diagnosis, study design, decision analysis, clinical research and meta-analysis.

PUBH617  Molec and Genomic Epidemiology  Credit Hours:  3
Presents concepts and methods of molecular and genetic epidemiology relevant to the study of prevalent diseases in the population. Topics include biomarkers, polymorphism and gene-environment interaction. The evolution and function of the genomics and a

PUBH618  Cancer Epidemiology  Credit Hours:  3
Focuses on a number of cancers, including the most incident cancers in the United States. Provides a broad overview of cancer epidemiology and basic substantive knowledge regarding many cancers and their risk factors, prevention, and biology and pathogen

PUBH621  Management Pub Hlth Agencies  Credit Hours:  3
Management of Public Health Agencies (3). Students develop a deeper understanding of the principles of management and their application indirecting a public health agency. While the primary focus is on human resource management, strategic management, str

PUBH622  Budget Finance in Public Hlth  Credit Hours:  3
An examination of the basic components of budgeting and fiscal management as applied to public health organizations. Prerequisite: PUBH 604.

PUBH625  Nutritional Epidemiology  Credit Hours:  3

PUBH630  Community Health Organization  Credit Hours:  3
Focuses on techniques to bring about change in a community's health status through assessment, public advocacy, coalition building, decision-making, planning, policy development, and political influence. Applications will be emphasized.
### PUBH633 Public Health and Aging
**Credit Hours:** 3

Examines public health and aging issues in contemporary society. Introduces physical, cognitive and affective function from a public health perspective. Prevention and health promotion models are included.

### PUBH635 Public Health Law
**Credit Hours:** 3

Development of knowledge necessary for functioning as a health care professional; includes an introduction to our legal system in contexts that are important for public health, as well as a detailed analysis of the law related to issues of primary concern.

### PUBH637 Cancer Epidemiology
**Credit Hours:** 3

Focuses on a number of cancers, including the most incident cancers in the United States. Provides a broad overview of cancer epidemiology and basic substantive knowledge regarding many cancers and their risk factors, prevention, and biology and pathogen.

### PUBH640 Independent Study Epidemiology
**Credit Hours:** 0-3

This course is intended to address a particular area of epidemiology not covered by a regular course offering and provides students knowledge and experience in that area. Course content, assignments, meeting times and grade requirements are arranged with

### PUBH646 Health Promotion Programs
**Credit Hours:** 3

### PUBH6520 Public Health Nutrition
**Credit Hours:** 3

### PUBH655 Chronic Disease Epidemiology
**Credit Hours:** 3

Epidemiology of selected chronic diseases and non-infectious conditions: cancer, cardiovascular diseases, musculoskeletal diseases and other chronic diseases. Emphasis on classification, rates, associations, etiology, prevention and control.

Prerequisites: PUBH 601 FOR LEVEL GR WITH MIN. GRADE OF C
PUBH656  Epi Infectious Diseases  Credit Hours:  3

PUBH660  Health Behavior  Credit Hours:  3
Examines the role of behaviors on health status and how to influence and understand behavior through use of cognitive models and change theory.

PUBH664  Issues in Public Health  Credit Hours:  3
Examination of various contemporary issues in public health. Includes social, economic, political, and community problems in the provision of health services, health manpower, and payment for health care.

PUBH673  Research Environmental Health  Credit Hours:  3
Students will participate in selected ongoing research programs of members of the faculty. May be repeated for credit.

PUBH679  Indep Study in Biostatistics  Credit Hours:  0-3
This course addresses areas of biostatistics not covered by a regular course offering. It is intended to provide students the knowledge and experience needed in that area. This course is designed for public health students and could be beneficial to Ph.

PUBH680  Evaluation of Health Programs  Credit Hours:  3
An exploration of types of program evaluation, evaluation models, data collection, types of data, data quality, evaluation reports, standard data collection instruments and ethical issues in health program evaluation (UT-Main). Prerequisites: HEAL 6460/H

PUBH681  Independent Study  Credit Hours:  3
PUBH683 Internship in Public Health
Credit Hours: 3
Supervised internship in public health. May be repeated for credit. Internship for all PHA and some PHN majors. (BGSU).

PUBH684 Project in Public Health
Credit Hours: 3
Supervised practicum experience in public health or completion of a project related to public health. Scholarly project for all PHA and some PHN majors.

PUBH685 Capstone Seminar
Credit Hours: 3
Integrative Seminar in Public Health (3). Systematic study of chosen topics in public health (BGSU).

PUBH689 Indep Stdy Environmental Health
Credit Hours: 0-3
The student and instructor will agree on a program of study that will enable the student to achieve specific learning objectives in environmental health. May be repeated for credit.

PUBH696 Internship in Public Health
Credit Hours: 0-3
Comprehensive or focused practical training in environmental and occupational health at a designated agency, organization, or company.

PUBH697 Project in Public Health
Credit Hours: 0-3
Independent development by a student with approval and guidance by a Major Advisor, of a paper, manual, software, etc. applicable to a specific area of environmental and occupational health.

PUBH698 Seminar in Public Health
Credit Hours: 0-3
A systematic study of selected topics in public health. Course meets for three consecutive semesters. Students may begin any semester, but must complete in sequence. Students register for one credit each term for a cumulative total of three consecutive se
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>PUBH699</td>
<td>Thesis Research</td>
<td>0-8</td>
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<tr>
<td>PUBH732</td>
<td>Statistical Methods I</td>
<td>3</td>
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<td></td>
<td>Introduction to statistical methods with emphasis on problems in the biomedical sciences. Included are descriptive statistics, probability theory, statistical inference, experimental design and simple statistical tests.</td>
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<tr>
<td>PUBH800</td>
<td>Biostatistics</td>
<td>3</td>
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<tr>
<td>PUBH801</td>
<td>Public Health Epi</td>
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<td></td>
<td>This course will present principles of the epidemiology method including problem solving. Various study designs will be discussed, including prospective and retrospective studies, analytical, and experimental methods.</td>
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<tr>
<td>PUBH803</td>
<td>Advanced Epidemiology</td>
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<td>The course covers principles and methods of epidemiology in depth. The topics include causal inference, risk and effect, confounding, interaction, randomization, and matching. Special emphasis is given to design and interpretation of epidemiological stud</td>
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<tr>
<td>PUBH806</td>
<td>Advanced Biostatistics</td>
<td>3</td>
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<tr>
<td>PUBH811</td>
<td>Categorical Data Analysis</td>
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</tbody>
</table>
PUBH812 Infectious Disease Ep Credit Hours: 3
Provides an overview of major infectious diseases affecting public health in the U.S. and worldwide; introducing the basic epidemiologic methods for surveillance and investigation of infectious disease outbreaks.

PUBH815 Clinical Epidemiology Credit Hours: 3
This course focuses on epidemiologic concepts and methods in clinical medicine. Topics include clinical measurements and outcomes, risk, prognostic factors, clinical diagnosis, study design, decision analysis, clinical research and meta-analysis.

PUBH817 Molecular and Genomic Ep Credit Hours: 3

PUBH818 Cancer Epidemiology Credit Hours: 3
Focuses on a number of cancers, including the most incident cancers in the United States. Provides a broad overview of cancer epidemiology and basic substantive knowledge regarding many cancers and their risk factors, prevention, and biology and pathogen

PUBH855 Chronic Disease Epidemiology Credit Hours: 3
Epidemiology of selected chronic diseases and non-infectious conditions: cancer, cardiovascular diseases, musculoskeletal diseases and other chronic diseases. Emphasis on classification, rates, associations, etiology, prevention and control.
Prerequisites: PUBH 601 FOR LEVEL GR WITH MIN. GRADE OF C

PUBH864 Issues in Public Health Credit Hours: 3
Examination of various contemporary issues in public health. Included are social, economic, political and community problems in the provision of health services, health manpower and payment for health care.

RADI610 Int: Comp Rad Tx Credit Hours: 2
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<th>Course Code</th>
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<td>RADI625</td>
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<td>RADI661</td>
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<td>RADI663</td>
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<td>RADI664</td>
<td>Photon Elec Alg</td>
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<td>RADI666</td>
<td>Internal Dosime</td>
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<td>RADI669</td>
<td>Portal Imaging</td>
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<td>RADI671</td>
<td>3D Dose Compens</td>
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<td>RADI680</td>
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<td>RADI699</td>
<td>Indp Sty Rad Therapy</td>
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<td>RADI702</td>
<td>Radiology Diagnostic Imaging</td>
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<tr>
<td>RADI705</td>
<td>Radiology</td>
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<tr>
<td>RADI750</td>
<td>Radiology Away Elective</td>
<td>0-6</td>
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</table>

**RADI702 Radiology Diagnostic Imaging**: Four one week blocks covering all imaging modalities dealing with the Central and Spinal Nervous System, the Musculoskeletal System including vascular, the Cardio-Pulmonary System, and the Gastro-Intestinal and Genito-Urinary System. Lectures on the basis of imaging modalities.

**RADI705 Radiology**: This clerkship will offer the student a two-week rotation spent with the physician in the Radiology Department at DefianceClinic or Fulton County Health Center. The student will study the diagnosis and treatment of diseases with the use of radiologic techniques.
**Course Descriptions 2009-2010**

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<th>Course Title</th>
<th>Credit Hours</th>
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<td>RADI789</td>
<td>Independent Study Radiology</td>
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<tr>
<td>RADI805</td>
<td>Radiation Dosimetry III</td>
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<td>RADI810</td>
<td>Int:Comp Rad Tx</td>
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<td>RADI811</td>
<td>Practical Measurements in Rad</td>
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<tr>
<td>RADI825</td>
<td>Prin Rad Saf In</td>
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<td>RADI861</td>
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<td>RADI862</td>
<td>Sterotactic Radiosurgery</td>
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<td>RADI863</td>
<td>Electron Arc Th</td>
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<td>RADI869</td>
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<td>RADI871</td>
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<td>RCA1010</td>
<td>Sports And Physical Activity</td>
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<td>RCA1020</td>
<td>Aquatic Activity</td>
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<tr>
<td>RCA1030</td>
<td>Popular Outdoor Pursuits</td>
<td>1</td>
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</table>

RADI869 Portal Imaging

RADI871 3D Dose Compens

RADI880 Elec Med Physic

RADI889 Ind Study Radiology

RCA1010 Sports And Physical Activity

RCA1020 Aquatic Activity

RCA1030 Popular Outdoor Pursuits

Basic instruction in rules, knowledge and skill development and strategy in designated sport or activity. Physical Education majors must take six different classes.

Different sections of the course will offer a variety of aquatic activities: beginning-intermediate-advanced swimming techniques, emergency water safety, lifeguard training and water safety instructor.

Study of and participation in the skills and knowledge of various outdoor recreational activities in natural settings. Two weekend trips usually required. Courses are graded P/NC. Lab fee may be required.
RCBS3010 Respiratory Care Fundamentals  Credit Hours: 4
A study of the anatomy and physiology of the respiratory and cardiovascular systems, including the physics of gas exchange, ventilation, and blood flow.
Corequisite: RCBS 3020

RCBS3020 Respiratory Care Practice I  Credit Hours: 4
An introductory experience in the basic assessment and care of the patient with cardiopulmonary disease. Ethical issues, interpersonal communication, and infection control in the healthcare setting will also be covered.
Corequisite: RCBS 3010

RCBS3110 Respiratory Care Therapeutics I  Credit Hours: 4
Etiology, pathophysiology, clinical manifestations, and treatment of selected diseases of pulmonary and cardiovascular systems with emphasis on pharmacologic principles and agents used in the treatment of those diseases.
Prerequisites: (RCBS 3010 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 3020 FOR LEVEL UG WITH MIN. GRADE OF D-)

RCBS3120 Respiratory Care Practice II  Credit Hours: 7
Didactic, laboratory, and introductory clinical experiences with a variety of equipment and procedures that are used to establish and maintain a patent airway, and to monitor and treat patients with cardiopulmonary diseases.
Prerequisites: (RCBS 3010 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 3020 FOR LEVEL UG WITH MIN. GRADE OF D-)

RCBS3130 Cardiopulmonary Diagnostics I  Credit Hours: 4
Discussion of the theory and selected techniques used in cardiopulmonary diagnostics, including analysis of blood gases, cardiac rhythms, hemodynamic monitoring values, spirometry results, and chest x-rays.
Prerequisites: (RCBS 3010 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 3020 FOR LEVEL UG WITH MIN. GRADE OF D-)

RCBS3210 Respiratory Care Therapeutics II  Credit Hours: 4
Continuation of RCBS 3110 with consideration of disease states of the pulmonary and cardiovascular systems not previously considered. Emphasis on analysis of assessment, diagnosis and treatment of individual patients by students.
Prerequisites: (RCBS 3110 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 3120 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 3130 FOR LEVEL UG WITH MIN. GRADE OF D-)

RCBS3220 Respiratory Care Practice III  Credit Hours: 7
Theoretical principles involved in the initiation, maintenance, and discontinuance of mechanical ventilation. Laboratory experiences with a variety of adult mechanical ventilators. Clinical experiences providing respiratory care for patients requiring m
Prerequisites: (RCBS 3110 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 3120 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 3130 FOR LEVEL UG WITH MIN. GRADE OF D-)
 Course Descriptions 2009-2010

RCBS3230  Cardiopulmonary Diagnostics II  Credit Hours: 3
Classroom and laboratory experiences in the theory and practice of selected cardiopulmonary diagnostic procedures including measures of pulmonary volumes, flows, gas distribution, and gas diffusion. Capnography, exercise tasting, and specialized test reg

Prerequisites: (RCBS 3110 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 3120 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 3130 FOR LEVEL UG WITH MIN. GRADE OF D-)

RCBS3300  Advanced Cardiac Life Support  Credit Hours: 1
American Heart Association Advanced Cardiac Life Support course designed to aid in the management of cardiopulmonary emergencies. Students must have previous knowledge of cardiac pharmacology and rhythms, and current CPR certification.

RCBS4140  Integrated Clinical Practice I  Credit Hours: 4
Clinical experiences in the acute care setting that requires the application of theory related to the diagnosis, treatment and management of adult, neonatal and pediatric patients with cardiopulmonary disease.

Prerequisites: (RCBS 3210 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 3220 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 3230 FOR LEVEL UG WITH MIN. GRADE OF D-)

RCBS4150  Neonatal/Pediatric Respiratory Care  Credit Hours: 4
A discussion of the etiology, pathophysiology and treatment of neonatal and pediatric disorders. Laboratory exercises designed to familiarize student with neonatal and pediatric resuscitation and ventilation.

Prerequisites: (RCBS 3210 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 3220 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 3230 FOR LEVEL UG WITH MIN. GRADE OF D-)

RCBS4160  Clinical Assessment  Credit Hours: 3
This course will provide the students with knowledge and enhance their critical thinking skills related to patient assessment and the development and modification of patient respiratory care plans.

Prerequisites: (RCBS 3210 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 3220 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 3230 FOR LEVEL UG WITH MIN. GRADE OF D-)

RCBS4240  Integrated Clinical Practice II  Credit Hours: 3
Clinical experiences with a primary focus on advanced skills used in the management of cardiopulmonary patients of all ages in the acute and subacute care settings.

Prerequisites: (RCBS 4150 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 4140 FOR LEVEL UG WITH MIN. GRADE OF D-)

RCBS4510  Respiratory Care In Alternate Sites  Credit Hours: 3
The delivery of care to cardiopulmonary patients outside of the acute care facility will be discussed. Standards of care in addition to the funding of this care will be investigated. Special procedures in respiratory care will be presented.
RCBS4700  Research Analysis In Respiratory Care  Credit Hours:  3
Review of appropriate statistical knowledge required to analyze applied/clinical and basic published research. Includes a review of the elements of basic research design, reliability and validity, and critical review of cardiopulmonary research literature.

RCBS4740  Polysomnography I  Credit Hours:  3
Examination of the physical and physiologic/neuromuscular basis for sleep disorders, including sleep apnea syndrome and obstructive sleep apnea syndrome. Practical application of overnight diagnostic screening, emergency procedures, patient safety, equip

RCBS4760  Polysomnography II  Credit Hours:  3
Examination of the pathology and morbidity associated with sleep dysfunction and sleep disorders. Continued practical application of overnight testing procedures and specialized treatment procedures, i.e., continuous positive airway pressure, supplementa
Prerequisites: RCBS 4740 FOR LEVEL UG WITH MIN. GRADE OF D-

RCBS4800  Issues In Professional Practice  Credit Hours:  3
A capstone course designed to prepare the senior student for professional practice. Decision-making skills in complex clinical situations are developed through the use of clinical simulations and student case presentations.
Prerequisites: (RCBS 4140 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 4150 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCBS 4160 FOR LEVEL UG WITH MIN. GRADE OF D-) AND RCBS 4700 FOR LEVEL UG WITH MIN. GRADE OF D-

RCBS4810  Preparation For Professional Practice  Credit Hours:  1
This laboratory course is designed to complement the corequisite RCBS 4800 lecture course. Emphasis on enhancing the students' ability to integrate complex cognitive and psychomotor skills in preparation for professional practice.

RCBS4990  Independent Study  Credit Hours:  1-4
Independent study of specific topics and issues under the supervision of a faculty member of the department of health promotion and human performance. The student will participate in independent reading, clinical/laboratory research, field experience and

RCRT1300  Introduction To Recreation And Leisure Studies  Credit Hours:  3
A general introductory course which gives an overview of recreation and leisure in educational, governmental, institutional and professional settings. Explores historical, social and economic implications from personal and professional perspectives.
RCRT1310  Recreation Programming  
Theories and principles of programming, preparation of materials and resources, and practical experiences in organization and development of exemplary programs and scheduling.

Prerequisites: RCRT 1300 FOR LEVEL UG WITH MIN. GRADE OF D-

RCRT1400  Camping And Outdoor Recreation  
Major areas covered include: equipment, nutrition, first aid, planning, ethics and conservation. Overnight trip and lab fee required. Includes discussions on economics, land planning, understanding conservation problems, trends and projections.

RCRT2300  Recreation Leadership And Group Dynamics  
The concepts of recreation leadership will be introduced. These concepts will emphasize group dynamics, group behavior and development creativity in recreational leadership, and problem solving as related to recreation.

RCRT2310  Volunteerism  
Volunteerism addresses the history, value, recruitment, training, evaluation, and recognition of volunteers. It also requires volunteer participation and reporting.

RCRT3310  Recreation And Adaptation For Special Populations  
An introductory course into mainstreaming as applied to the delivery of recreation services to individuals with disabilities. Thirty hour volunteer component required.

RCRT3710  Adventure Programming In Recreation And Recreational Therapy  
An introduction to theory and techniques of adventure programming as a treatment protocol and/or leisure education tool.

Prerequisites: (RCRT 1310 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 2300 FOR LEVEL UG WITH MIN. GRADE OF D-)

RCRT3940  Recreation Application Experience  
The student will gain personal experience in the field of parks and recreation at an appropriate agency. The student will participate in a wide range of agency activities.

Prerequisites: RCRT 1300 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 1310 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 2300 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 3310 FOR LEVEL UG WITH MIN. GRADE OF D-
RCRT4330  Administration In Recreation And Recreational Therapy  Credit Hours: 3
The political and economic policy and decision making in recreation and recreational therapy are investigated. Content includes the investigation of financial resources, management and marketing of recreation and recreational therapy from an administrati

RCRT4340  Leisure Recreation And Aging  Credit Hours: 3
This course provides a study of leisure and recreation activities for the older adult by investigating the aging process and the impact of leisure and recreation programming in the process.

Prerequisites:(RCRT 1310 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 2300 FOR LEVEL UG WITH MIN. GRADE OF D-)

RCRT4430  Interpretive Services  Credit Hours: 3
Lectures and laboratory exercises to analyze the role and the skills of the park naturalist, including outdoor education techniques. In addition, students will identify appropriate means of interpreting park features and facilities to the public.

RCRT4440  Park And Recreation Planning  Credit Hours: 3
An integration of landscape architecture, facility design and location, as well as the functional aesthetic considerations of park and recreational facility planning. Emphasis will be on plan-formulation procedures.

RCRT4450  Research Applications In Recreation And Recreational Therapy  Credit Hours: 3
A critical study of the problems relating to the evaluation of park and recreation programs. Students will conduct assigned field studies to become familiar with current recreation program research practices.

RCRT4520  Urban Park And Open Space Administration  Credit Hours: 3
Social inquiry of United States wildlife, their habitat and implications for management on the federal, state and local level, including urban parks set aside as natural preserves.

RCRT4530  Recreation Policy And Leadership  Credit Hours: 3
An extended field trip to major wilderness areas and national parks and forests of the United States and Canada. Includes a comprehensive analysis of major resource areas and small group dynamics, as well as practical exercises in survival, rescue techniq
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCRT4600</td>
<td>Therapeutic Arts</td>
<td>1</td>
<td>Provides the student with fundamental skills needed to implement therapeutic outcomes using crafts.</td>
</tr>
<tr>
<td>RCRT4610</td>
<td>Rt Intervention: Horticulture Therapy</td>
<td>1</td>
<td>Provides the student with fundamental skills needed to implement therapeutic outcomes using plants.</td>
</tr>
<tr>
<td>RCRT4620</td>
<td>Animal Assisted Therapy</td>
<td>1</td>
<td>Provides the student with fundamental skills needed to implement therapeutic outcomes using animals.</td>
</tr>
<tr>
<td>RCRT4630</td>
<td>Therapeutic Activities</td>
<td>1</td>
<td>Provides the student with fundamental skills needed to implement therapeutic outcomes using games, humor and play activities.</td>
</tr>
<tr>
<td>RCRT4640</td>
<td>Rt Intervention: Therapeutic Groups</td>
<td>1</td>
<td>Provides the student with fundamental skills needed to implement therapeutic outcomes using groups.</td>
</tr>
<tr>
<td>RCRT4660</td>
<td>Relaxation And Stress Management</td>
<td>1</td>
<td>Provides the student with fundamental skills needed to implement therapeutic outcomes using relaxation and stress management techniques.</td>
</tr>
<tr>
<td>RCRT4670</td>
<td>Rt Intervention: Leisure Education</td>
<td>1</td>
<td>Provides the student with fundamental skills needed to implement therapeutic outcomes using leisure education activities, including social skills, values clarification and leisure: awareness, resources and knowledge.</td>
</tr>
</tbody>
</table>
RCRT4680  Rt Intervention: Assistive Technology And Techniques  Credit Hours: 1
Provides the student with fundamental skills needed to implement therapeutic outcomes using assistive technology and techniques.

RCRT4690  Rt Intervention: Aquatic Therapy  Credit Hours: 1
Provides the student with fundamental skills needed to implement therapeutic outcomes using swimming and aquatic programming.

RCRT4720  Introduction To Therapeutic Recreation  Credit Hours: 3
Theories, principles and the history of therapeutic recreation will be discussed. Using lectures, discussions and self-directed learning activities, the course will examine the structure and function of therapeutic recreation for individuals with limitat

RCRT4730  Medical And Clinical Aspects Of Therapeutic Recreation  Credit Hours: 3
This course was designed to give students an in-depth knowledge of the medical aspects relating to impairments and their implications for therapeutic recreation practice.

RCRT4740  Assessment And Documentation In Therapeutic Recreation  Credit Hours: 3
This course was designed to introduce the student to documentation and assessment skills needed for therapeutic recreation practice including: initial evaluation, treatment plan, progress note and discharge summary.

RCRT4750  Group Dynamics In Recreational Therapy  Credit Hours: 3
The concepts and theories of therapeutic group process applied to Recreational Therapy group dynamics. These concepts will emphasize group goals, communications, decision making and leadership.
Prerequisites:RCRT 1310 FOR LEVEL UG WITH MIN. GRADE OF D-

RCRT4760  Research Administrative Programming In Therapeutic Recreation  Credit Hours: 3
Course will focus on current issues and techniques relating to comprehensive research program design, implementation and evaluation relating to the practice of therapeutic recreation.
Prerequisites:(RCRT 4720 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 4730 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 4740 FOR LEVEL UG WITH MIN. GRADE OF D-)
Course Descriptions 2009-2010

**RCRT4770**  Project Design  Credit Hours:  1-3
This course is designed to give the student an opportunity to design a research project in affiliation with his/her full-time internship in recreation or recreational therapy.

**RCRT4780**  Project Evaluation  Credit Hours:  1-3
This course is designed to give the student an opportunity to implement and evaluate a research project in affiliation with his/her full-time internship in recreation or recreational therapy.

**RCRT4790**  Medical & Clinical Aspects In Therapeutic Recreation II  Credit Hours:  3
This course is designed to introduce students to those conditions or disabilities that would typically be related to mental retardation/developmental disability, pediatrics and psychiatry. Students will gain an in-depth knowledge of the medical aspects re

Prerequisites:RCRT 4730 FOR LEVEL UG WITH MIN. GRADE OF D-

**RCRT4800**  Clinical: Physical Rehabilitation  Credit Hours:  1
Provides the students with a structured environment to practice assessment, documentation and treatment interventions in a physical rehabilitation or subacute rehabilitation facility.

Prerequisites:(RCRT 4720 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 4730 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 4740 FOR LEVEL UG WITH MIN. GRADE OF D-)

**RCRT4810**  Clinical: Psychiatric Rehabilitation  Credit Hours:  1
Provides the student with a structured environment to practice assessment, documentation and treatment interventions in a psychiatric rehabilitation facility.

Prerequisites:(RCRT 4720 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 4730 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 4740 FOR LEVEL UG WITH MIN. GRADE OF D-)

**RCRT4820**  Clinical: Mental Retardation/Developmental Disability  Credit Hours:  1
Provides the student with a structured environment to practice assessment, documentation and habilitation interventions in a mental retardation/developmental disability facility.

Prerequisites:(RCRT 4720 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 4730 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 4740 FOR LEVEL UG WITH MIN. GRADE OF D-)

**RCRT4830**  Clinical: Geriatric  Credit Hours:  1
Provides the student with a structured environment to practice assessment, documentation, and habilitation and maintenance interventions in a geriatric facility.

Prerequisites:(RCRT 4720 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 4730 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 4740 FOR LEVEL UG WITH MIN. GRADE OF D-)

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RCRT4840  Clinical: Pediatric  Credit Hours: 1
Provides the student with a structured environment to practice assessment, documentation, and treatment and education interventions in a pediatric facility.

Prerequisites:(RCRT 4720 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 4730 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 4740 FOR LEVEL UG WITH MIN. GRADE OF D-)

RCRT4850  Internship Preparation  Credit Hours: 1
This course is designed to introduce and explain the project design, project evaluation, internship requirements and the National Council on Therapeutic Recreation certification and/or Certified Park and Recreation Professional requirements.

RCRT4860  Therapeutic Fitness  Credit Hours: 1
Provides the student with fundamental skills needed to implement therapeutic outcomes using exercise, weightlifting fitness techniques.

Prerequisites:(RCRT 1310 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 4720 FOR LEVEL UG WITH MIN. GRADE OF D-)

RCRT4870  Program Planning In Recreational Therapy  Credit Hours: 3
Application of the Recreation Therapy process (assessment, planning, implementation, evaluation) to design comprehensive treatment programs, protocols and discharge plans.

Prerequisites:RCRT 4720 FOR LEVEL UG WITH MIN. GRADE OF D-

RCRT4900  Seminar In Recreation And Leisure  Credit Hours: 1-3
This course was designed to provide a consideration of problems and provide advanced study in recreation and leisure education not offered as part of the current curriculum.

RCRT4930  Senior Internship  Credit Hours: 4
An opportunity for the student to become totally involved as an intern in functionally related tasks which will help prepare for an appropriate role as a professional in the field. Not available for therapeutic recreation students. This course may be take

RCRT4940  Internship In Recreational Therapy  Credit Hours: 4
This course is designed to give the student a comprehensive full-time experience in recreational therapy. The student will complete 40 hours per week per credit hour. This course may be taken twice in the same semester.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCRT4990</td>
<td>Independent Study In Recreation And Leisure Studies</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Designed to provide students with the opportunity to work individually on professional problems under the direction of faculty of the department of health promotion and human performance. All individual studies must have a specialty title. Seminar sheet</td>
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</tr>
<tr>
<td>RCRT5300</td>
<td>Recreation And Adaptation For Special Education</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>An introductory course into mainstreaming as applied to the delivery of recreation services to individuals with disabilities. Thirty hour volunteer component required.</td>
<td></td>
</tr>
<tr>
<td>RCRT5310</td>
<td>Leisure And Popular Culture</td>
<td>3</td>
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<tr>
<td></td>
<td>This course provides a comprehensive study of leisure and culture. The course consists of three areas: history of leisure, leisure and its association with culture, and leisure philosophy.</td>
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<tr>
<td>RCRT5320</td>
<td>Administration In Recreation And Recreational Therapy</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>The political and economic policy and decision making in recreation and recreational therapy are investigated. Content includes the investigation of financial resources, management and marketing of recreation and recreational therapy from an administrati</td>
<td></td>
</tr>
<tr>
<td>RCRT5340</td>
<td>Leisure, Recreation And Aging</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>This course provides a study of leisure and recreation activities for the older adult by investigating the aging process and the impact of leisure and recreation programming in the process.</td>
<td></td>
</tr>
<tr>
<td>RCRT5400</td>
<td>Naturalist And Interpretive Services</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Lectures and laboratory exercises to analyze the role and the skills of the park naturalist including outdoor education techniques. Additionally, students will identify appropriate means of interpreting park features and facilities to the public.</td>
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<tr>
<td>RCRT5410</td>
<td>Park And Recreation Planning</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>An integration of landscape architecture, facility design and location, as well as the functional aesthetic consideration of park and recreational facility planning. Emphasis will be on plan-formulation procedures.</td>
<td></td>
</tr>
</tbody>
</table>
**RCRT5420  Leisure Program Research Techniques**
Credit Hours: 3
A critical study of the research problems relating to the evaluation of park and recreation programs. Students will conduct assigned field studies to become familiar with current recreation program research practices.

**RCRT5500  Wildlife Management**
Credit Hours: 3
Social inquiry of United States wildlife, their habitat and implications for management. State and national wildlife areas, endangered species, recreational safari areas and the behavior aspects of the hunter, fisherman and naturalist will be investigated.

**RCRT5510  Wilderness Policy And Management**
Credit Hours: 3
An extended field trip to major wilderness areas and national parks and forests of the United States and Canada. Includes a comprehensive analysis of major resource areas and small group dynamics, as well as practical exercises in survival, rescue techniques.

**RCRT5610  Adventure Therapy Programming**
Credit Hours: 3
An introduction to the philosophy, theory and historical foundations of adventure therapy as a treatment protocol. Therapeutic uses of outdoor/challenge activities for various special population groups will be explored.

Prerequisites: RCRT 4940 FOR LEVEL UG WITH MIN. GRADE OF D-

**RCRT5620  Animal Assisted Therapy**
Credit Hours: 1
Provides the student with fundamental skills needed to implement therapeutic outcomes using animals.

Prerequisites: (RCRT 1310 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 4720 FOR LEVEL UG WITH MIN. GRADE OF D-)

**RCRT5630  Therapeutic Activities**
Credit Hours: 1
Provides the student with fundamental skills needed to implement therapeutic outcomes using games, humor and play activities.

**RCRT5640  Rt Intervention: Therapeutic Groups**
Credit Hours: 1
Provides the student with fundamental skills needed to implement therapeutic outcomes using groups.
Course Descriptions 2009-2010

RCRT5660 Relaxation And Stress Management
Provides the student with fundamental skills needed to implement therapeutic outcomes using relaxation and stress management techniques.

Credit Hours: 1

Prerequisites: (RCRT 1310 FOR LEVEL UG WITH MIN. GRADE OF D- AND RCRT 4720 FOR LEVEL UG WITH MIN. GRADE OF D-)

RCRT5670 Rt Intervention: Leisure Education
Provides the student with fundamental skills needed to implement therapeutic outcomes using leisure education activities, including social skills, values clarification and leisure awareness, resources and knowledge.

Credit Hours: 1

RCRT5680 Rt Intervention: Assistive Technology & Techniques
Provides the student with fundamental skills needed to implement therapeutic outcomes using assistive technology and techniques.

Credit Hours: 1

RCRT5690 Rt Intervention: Aquatic Therapy
Provides the student with fundamental skills needed to implement therapeutic outcomes using swimming and aquatic programming.

Credit Hours: 1

RCRT5720 Introduction To Therapeutic Recreation
Theories, principles and the history of therapeutic recreation will be discussed. Using lectures, discussions and self-directed learning activities, the course will examine the structure and function of therapeutic recreation for individuals with limitat

Credit Hours: 3

RCRT5730 Medical & Clinical Aspects Of Therapeutic Recreation
This course is designed to give students an in-depth knowledge of the medical aspects relating to physical rehabilitation and geriatric impairments and their implications for therapeutic recreation practice.

Credit Hours: 3

RCRT5750 Group Dynamics In Recreational Therapy
The concepts and theories of therapeutic group process applied to recreational therapy dynamics. The concepts will emphasize group goals, communications, decision making and leadership.

Credit Hours: 3
RCRT5790 Medical & Clinical Aspects Of Therapeutic Recreation II  Credit Hours:  3
This course is designed to introduce student to those conditions or disabilities that would typically be related to Mental Retardation/Developmental Disability, pediatrics and psychiatry. Students will gain an in-depth knowledge of the medical aspects re

RCRT5800 Clinical: Physical Rehabilitation  Credit Hours:  1
Provides the student with a structured environment to practice assessment, documentation and treatment interventions in a physical rehabilitation or subacute rehabilitation facility.

RCRT5810 Clinical: Psychiatric Rehabilitation  Credit Hours:  1
Provides the student with a structured environment to practice assessment, documentation and treatment interventions in a psychiatric rehabilitation facility.

RCRT5820 Clinical: Mental Retardation/Developmental Disability  Credit Hours:  1
Provides the student with a structured environment to practice assessment, documentation and habilitation interventions in a mental retardation/developmental disability facility.

RCRT5830 Clinical: Geriatric  Credit Hours:  1
Provides the student with a structured environment to practice assessment, documentation and habilitation and maintenance interventions in a geriatric facility.

RCRT5860 Therapeutic Fitness  Credit Hours:  1
Provides the student with fundamental skills needed to implement therapeutic outcomes using exercise, weightlifting fitness techniques.

RCRT5870 Program Planning In Recreational Therapy  Credit Hours:  3
Application of the Recreational Therapy process (assessment, planning, implementation, evaluation) to design comprehensive treatment programs, protocols and discharge plans.
Prerequisites: RCRT 5720 FOR LEVEL GR WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>RCRT5900</td>
<td>Rt Intervention: Craft Therapy</td>
<td>1</td>
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<tr>
<td></td>
<td>Provides the student with fundamental skills needed to implement therapeutic outcomes using crafts.</td>
<td></td>
</tr>
<tr>
<td>RCRT5910</td>
<td>Rt Intervention: Horticulture Therapy</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Provides the student with fundamental skills needed to implement therapeutic outcomes using plants.</td>
<td></td>
</tr>
<tr>
<td>RCRT5940</td>
<td>Internship In Recreation And Leisure</td>
<td>1-6</td>
</tr>
<tr>
<td></td>
<td>An opportunity for the student specializing in Outdoor Recreation, National Parks and Community Recreation Programs to work in an internship experience under the supervision of a recreation specialist.</td>
<td></td>
</tr>
<tr>
<td>RCRT6000</td>
<td>Issues And Trends In Recreation/Recreational Therapy</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Provides the advanced student with an in-depth analysis of the trends and issues related to the practice of recreation and recreational therapy.</td>
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<tr>
<td>RCRT6020</td>
<td>Financial Resources Of Recreation And Recreational Therapy</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Provides the advanced student with an in-depth analysis of the financial management concepts related to the practice of recreation and recreational therapy.</td>
<td></td>
</tr>
<tr>
<td>RCRT6920</td>
<td>Master's Project In Recreation And Leisure</td>
<td>1-4</td>
</tr>
<tr>
<td></td>
<td>Master’s Research Project in Recreation. Open to graduate students who elect the completion of a research project to fulfill the research requirements of the master's degree program.</td>
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</tr>
<tr>
<td>RCRT6930</td>
<td>Seminar In Recreation And Leisure</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>This course is designed to provide a consideration of problems and provide advanced study in recreation and leisure education not offered as part of the current curriculum.</td>
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</tr>
</tbody>
</table>
RCRT6940  Internship  Credit Hours:  1-4
Course will incorporate advanced recreational therapy programming skills within an internship environment using expressive techniques.

RCRT6960  Master's Thesis In Recreation And Leisure  Credit Hours:  1-4
Master's Research Thesis in Recreation. Open to graduate students who elect the completion of a master's thesis to fulfill the research requirements of the master's degree program.

RCRT6990  Independent Study In Recreation And Leisure  Credit Hours:  1-3
Independent study of specific problems under the supervision of a Recreation and Leisure Studies faculty member. The student should obtain the consent of the faculty member who will supervise the study.

RDON701  Radiation Oncology  Credit Hours:  0-6
Students will participate or observe inpatient/outpatient functions including clinical and surgical procedures. Clinic hours are 8:00 a.m. to 4:30 p.m., Monday through Friday without exception. Absence from the clinic must be pre-authorized by the Chair.

RDON750  Radiation Oncology Away Elect  Credit Hours:  0-6

RDON751  Radiation Oncology Away Elect  Credit Hours:  0-3

RDON789  Ind Study Radiation Oncology  Credit Hours:  0-6
REL1220  World Religions  
A study of the major religions of the world, with an emphasis on non-Western religions.

REL2000  Introduction To Religion  
Critical and thematic study of the concepts, values, practices and world-views intrinsic to the religious life.

REL2070  Early Judaism  
Institutions, culture and religion from the earliest times through the Biblical period to the Medieval period.

REL2090  Modern Jewish History  
Institutions, culture and religion from the Medieval period to the present, including ghetto, emancipation, Zionism, Holocaust and third Jewish commonwealth Israel.

REL2300  Understanding The Monotheistic Religions  
A study of the similarities as well as the differences between Judaism, Christianity and Islam.

REL2310  Old Testament/Tanakh  
An examination of the history and ideas of Jewish scriptures, emphasizing the Jewish interpretations, with some reference to Christian appropriations of those scriptures.

REL2330  New Testament History And Ideas  
Examination of the history and ideas of the New Testament.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>REL2350</td>
<td>Bible And Church Authority</td>
<td>3</td>
</tr>
<tr>
<td>REL2380</td>
<td>Topics In Catholic Thought</td>
<td>3</td>
</tr>
<tr>
<td>REL2410</td>
<td>Introduction To Christian Thought</td>
<td>3</td>
</tr>
<tr>
<td>REL2610</td>
<td>Religious Studies Topics In The Humanities</td>
<td>3</td>
</tr>
<tr>
<td>REL2980</td>
<td>Special Topics In Religious Studies</td>
<td>3</td>
</tr>
<tr>
<td>REL3080</td>
<td>Jewish Biblical Studies</td>
<td>3</td>
</tr>
<tr>
<td>REL3100</td>
<td>Islam</td>
<td>3</td>
</tr>
</tbody>
</table>

This course will explore issues related to the sources and exercise of religious authority within Christianity, with an extended consideration given to a particular Christian tradition determined by the instructor.

Critical examination of selected topics in contemporary Catholic thought and life, offered by the visiting professor of Catholic thought.

This course will introduce students to the fundamental creedal commitments of Christianity, with an extended consideration given to a particular Christian tradition determined by the instructor.

Cross-listings with 2000-level courses offered in the humanities departments. Specific topics vary, and course may be repeated for credit as topics vary. Check course schedules for specific subject and prerequisites.

Special topics courses. Course may be repeated for credit as topics vary.

An examination of the texts and methods of historical and contemporary Jewish scriptural studies.
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<th>Credit Hours</th>
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</tr>
</thead>
<tbody>
<tr>
<td>REL3130</td>
<td>European Middle Ages I</td>
<td>3</td>
<td>The history of Western Europe from its beginnings to the eve of the First Crusade.</td>
</tr>
<tr>
<td>REL3140</td>
<td>European Middle Ages II</td>
<td>3</td>
<td>Europe from the First Crusade to the late 13th century.</td>
</tr>
<tr>
<td>REL3210</td>
<td>Ancient And Medieval Philosophy</td>
<td>3</td>
<td>A study of ancient and medieval philosophy from the pre-Socratics to Aquinas.</td>
</tr>
<tr>
<td>REL3420</td>
<td>Christian Ethical Perspectives</td>
<td>3</td>
<td>This course will study fundamental ethical concerns in Christian thought, with an extended consideration given to a particular Christian tradition determined by the instructor.</td>
</tr>
<tr>
<td>REL3500</td>
<td>Eastern Thought</td>
<td>3</td>
<td>An examination of major philosophies of Asia and the Far East, their specific concerns and their relevance to contemporary problems.</td>
</tr>
<tr>
<td>REL3510</td>
<td>Comparative Religion: Living Non-Western Religions</td>
<td>3</td>
<td>Study of the major attitudes toward life, human existence and the world embodied in such major religions of the world as Buddhism, Confucianism, Hinduism, Islam and Taoism.</td>
</tr>
<tr>
<td>REL3520</td>
<td>Zen Philosophy</td>
<td>3</td>
<td>A study of the thought and practice of historical and contemporary Zen philosophy.</td>
</tr>
</tbody>
</table>
REL3570  Philosophy Of Religion  
Credit Hours:  3
A critical and philosophical analysis of topics in religion including the problem of evil, faith and reason the existence of God and the nature of religious experience.

REL3600  Religious Studies Topics In The Arts  
Credit Hours:  3
Cross listings with 3000-level courses offered in the visual and performing arts departments. Specific topics vary, and course may be repeated for credit as topics vary. Check course schedules for specific subject and prerequisites.

REL3610  Religious Studies Topics In The Humanities  
Credit Hours:  3
Cross listings with 3000-level courses offered in the humanities departments. Specific topics vary, and course may be repeated for credit as topics vary. Check course schedules for specific subject and prerequisites.

REL3670  Christian Worship And Ritual  
Credit Hours:  3
This course will explore the history of both Christian ritual practice and the diverse theological understandings of that practice, with a focus on a particular Christian tradition determined by the instructor.

REL3710  Literature Of The Old Testament  
Credit Hours:  3
A study of the Old Testament from the literary point of view, including ancient poetry, history, romance, short story, hymn, prophecy and wisdom writing. Recommended: ENGL 2700 or 2800.

REL3720  Literature And Mythology  
Credit Hours:  3
Study of classical and biblical mythologies in modern Western literature, private mythologies and literary adaptations of patterns from legend and folklore. Recommended: ENGL 2700 or 2800.

REL3760  European Literature To The Renaissance  
Credit Hours:  3
The literary European heritage from its biblical and classical origins to the 16th century. Includes (in English translation) such writers as Homer, Virgil and Dante. Recommended: ENGL 2700, 2800 or 3790.
REL3900  Seminar-Contemporary Religious Thought  Credit Hours: 3
A critical examination of selected topics in the area of religion.

REL3980  Special Topics In Religious Studies  Credit Hours: 3
Special topics courses. Course may be repeated for credit as topics vary.

REL4520  History Of The Middle East From 600 - 1500  Credit Hours: 3
A survey of Middle East history from the emergence of Islam and the formation of Islamic states until the establishment of the Ottoman and Persian empires in the 15th-16th centuries.

REL4600  Religious Studies Topics In The Arts  Credit Hours: 3
Cross listings with 4000-level courses offered in the visual and performing arts departments. Specific topics vary, and course may be repeated for credit as topics vary. Check course schedules for specific subject and prerequisites.

REL4610  Religious Studies Topics In The Humanities  Credit Hours: 3
Cross listings with 4000-level courses offered in the humanities departments. Specific topics vary, and course may be repeated for credit as topics vary. Check course schedules for specific subject and prerequisites.

REL4620  Religious Studies Topics In The Social Sciences  Credit Hours: 3
Cross listings with 4000-level courses offered in the social sciences departments. Specific topics vary, and course may be repeated for credit as topics vary. Check course schedules for specific subject and prerequisites.

REL4820  Anthropology Of Religion  Credit Hours: 3
A cross-cultural approach to the description and analyses of magical and religious beliefs and practices in Asia, Africa, Latin America and Indigenous North America.
Prerequisites: ANTH 2800 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>REL4900</td>
<td>Seminar In Religious Studies</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Topics vary. Course may be repeated for credit as topics vary. See adviser for Seminar Request Form.</td>
<td></td>
</tr>
<tr>
<td>REL4920</td>
<td>Directed Readings In Religious Studies</td>
<td>1-4</td>
</tr>
<tr>
<td></td>
<td>Critical inquiry of selected works under the guidance of an instructor on a topic not offered as a regular course.</td>
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</tr>
<tr>
<td>REL4960</td>
<td>Senior Thesis for Honors</td>
<td>3</td>
</tr>
<tr>
<td>REL4980</td>
<td>Special Topics In Religious Studies</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Topics vary. Course may be repeated for credit as topics vary.</td>
<td></td>
</tr>
<tr>
<td>REL4990</td>
<td>Independent Study In Religious Studies</td>
<td>1-4</td>
</tr>
<tr>
<td></td>
<td>Directed study in religious studies under the supervision of a religious studies instructor.</td>
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</tr>
<tr>
<td>REL5930</td>
<td>Seminar In Religion</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Advanced academic study of a thinker or topic in religion.</td>
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<tr>
<td>RESM4100</td>
<td>Educational Statistics</td>
<td>3</td>
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<td></td>
<td>Introduction to major concepts of statistical description; central tendency, dispersion, and relative position and relationship. Inferential methods such as t-tests, one-way analysis of variance and multiple comparisons are also presented.</td>
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</tr>
</tbody>
</table>
RESM4200  Classroom Assessment
Credit Hours: 3
Familiarizes preservice teachers with concepts and principles of classroom assessment. Examines formal and informal strategies for assessing student achievement and explores conceptual and practical issues in assessment and grading.

RESM4990  Independent Study In Educational Research
Credit Hours: 1-4
The study of a current topic in educational research, measurement, statistics, or program evaluation. The student meets with the instructor at arranged intervals without formal classes.

RESM5110  Quantitative Methods I
Credit Hours: 3
Introduction to major concepts of statistical description; central tendency, dispersion, and relative position and relationship. Inferential methods such as t-tests, one-way analysis of variance, and multiple comparisons are also presented.

RESM5210  Educational Testing And Grading
Credit Hours: 3
Development, administration and interpretation of teacher-made tests and other pupil assessments; basic principles underlying norm- and criterion-referenced tests; problems and issues in grading systems and assigning grades.

RESM5310  Educational Research
Credit Hours: 3
This course offers an introduction to the history and foundations of research processes. It incorporates the purposes and strengths of both qualitative and quantitative approaches for understanding research problems.

RESM5330  Qualitative Research I: Introduction And Basic Methods
Credit Hours: 3
Introduction to history and theoretical underpinnings of qualitative research. Students then learn and practice fundamental methods of participant-observation, fieldnotes, interviewing, and transcription, and explore common models of qualitative research.

RESM5950  Workshop In Research And Measurement
Credit Hours: 3
Each workshop is developed around a topic of interest and concern to inservice teachers and other educational personnel. Practical application of workshop topics will be emphasized.
RESM6120  Quantitative Methods II  Credit Hours:  3
Course covers the major inferential statistical techniques common to the behavioral sciences. Correlation, analysis of variance, linear regression and analysis of covariance are major topics. Computer applications are included.

Prerequisites: RESM 5110 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 5970 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM6130  Multivariate Statistics  Credit Hours:  3
Study of multivariate analysis of variance, canonical correlation, discriminant analysis, repeated measures and factor analysis. Computer applications are included.

Prerequisites: RESM 6120 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 8120 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM6140  Advanced Quantitative Methods  Credit Hours:  3
The study of various experimental designs such as complete and fractional factorial designs, repeated measures designs, and nested designs. Both the conceptual rationale and the computational procedures are covered.

Prerequisites: RESM 6120 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 8120 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM6150  Structural Equation Modeling  Credit Hours:  3
Structural equation modeling serves as a statistical method to assess the strengths of a priori relations among variables. Topics include path analysis and confirmatory factor analysis. Computer applications with LISREL.

Prerequisites: RESM 6120 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 8120 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM6160  Nonparametric Statistics  Credit Hours:  3
Study of classical nonparametric statistical techniques and recent developments in this field. Coverage includes contingency tables, binomial distribution tests, several rank tests and other distribution-free statistics.

Prerequisites: RESM 5110 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 7110 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM6220  Measurement I  Credit Hours:  3
Introduction to psychometric theories, with emphasis on classical test theory; reliability theory, including generalizability theory; approaches to validation; practical applications such as standard setting.

Prerequisites: RESM 5110 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 7110 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 7210 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM6230  Measurement II  Credit Hours:  3
Primary focus on Item Response Theory, with emphasis on 1-2- and 3-parameter logistic models. Also covers applied issues such as test equating, scaling, item/test bias detection methods and current issues.

Prerequisites: RESM 6220 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 8220 FOR LEVEL GR WITH MIN. GRADE OF D-
<table>
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<tr>
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<tr>
<td>RESM6320</td>
<td>Research Design</td>
<td>3</td>
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<tr>
<td></td>
<td>The study of research approaches that are used in theses and dissertations. Competing designs for addressing research questions are compared. The purpose is to prepare students for their dissertation experience.</td>
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<tr>
<td></td>
<td>Prerequisites: RESM 5110 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 7110 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
<td></td>
</tr>
<tr>
<td>RESM6340</td>
<td>Qualitative Research II: Design And Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Students design, conduct and write up a qualitative study. Topics include theoretical frameworks and research design; managing, analyzing and interpreting data; collaboration between researcher and researched; using computers in analysis.</td>
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<td></td>
<td>Prerequisites: RESM 5330 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 7330 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>RESM6350</td>
<td>Methods Of Survey Research</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>The design of large scale surveys with emphasis on sampling. Methods for telephone surveys, face-to-face interviews and mail surveys are included.</td>
<td></td>
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<tr>
<td></td>
<td>Prerequisites: RESM 6120 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>RESM6360</td>
<td>Program Evaluation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>An overview of prominent human services program evaluation methods including objectives-based, experimental, statistical and economic approaches. Evaluation criteria, issues, ethics and politics are considered.</td>
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<tr>
<td></td>
<td>Prerequisites: RESM 5110 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>RESM6370</td>
<td>Fundamentals Of Grant Writing</td>
<td>3</td>
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<tr>
<td></td>
<td>This seminar will teach participants about fundamentals of grant writing. Topics covered will include: locating sources of funding, writing grants, designing evaluation instruments and administering grants.</td>
<td></td>
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<tr>
<td>RESM6940</td>
<td>Internships In Measurement, Evaluation, Research &amp; Statistics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Supervised field experiences in measurement, evaluation, research design, or statistics in a variety of settings.</td>
<td></td>
</tr>
<tr>
<td>RESM6960</td>
<td>Master's Thesis In Educational Research</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Open to a graduate student who elects the completion of a research thesis in fulfilling the research requirement of the master's degree.</td>
<td></td>
</tr>
</tbody>
</table>
RESM6980  Master's Project In Educational Research  
Credit Hours: 1-3
A formal independent project applying principles of research and/or measurement to solve a particular problem and culminating in a written discourse.

RESM6990  Master's Independent Study In Educational Research  
Credit Hours: 1-3
The study of a current topic in educational research, measurement, statistics, or program evaluation. The student meets with the instructor at arranged intervals without formal classes.

RESM7110  Quantitative Methods I  
Credit Hours: 3
Introduction to major concepts of statistical description; central tendency, dispersion, and relative position and relationship. Inferential methods such as t-tests, one-way analysis of variance, and multiple comparisons are also presented.

RESM7210  Educational Testing And Grading  
Credit Hours: 3
Development, administration and interpretation of teacher-made tests and other pupil assessments; basic principles underlying norm- and criterion-referenced tests; problems and issues in grading systems and assigning grades.

RESM7310  Educational Research  
Credit Hours: 3
This course offers an introduction to the history and foundations of research processes. It incorporates the purposes and strengths of both qualitative and quantitative approaches for understanding research problems.

RESM7330  Qualitative Research I: Introduction And Basic Methods  
Credit Hours: 3
Introduction to history and theoretical underpinnings of qualitative research. Students then learn and practice fundamental methods of participant-observation, fieldnotes, interviewing, and transcription, and explore common models of qualitative research.

RESM7950  Workshop In Research And Measurement  
Credit Hours: 3
Each workshop is developed around a topic of interest and concern to inservice teachers and other educational personnel. Practical application of workshop topics will be emphasized.
RESM7980  Special Topics In Research, Measurement, Statistics And Evaluation  Credit Hours: 3
The study of a current topic or set of related topics in educational research, measurement, statistics, or program evaluation. The course is typically taught as a seminar.

Prerequisites: RESM 7110 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM8120  Quantitative Methods II  Credit Hours: 3
Course covers the major inferential statistical techniques common to the behavioral sciences. Correlation, analysis of variance, linear regression and analysis of covariance are major topics. Computer applications are included.

Prerequisites: RESM 5110 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 5970 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM8130  Multivariate Statistics  Credit Hours: 3
Study of multivariate analysis of variance, canonical correlation, discriminant analysis, repeated measures and factor analysis. Computer applications are included.

Prerequisites: RESM 6120 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 8120 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM8140  Advanced Quantitative Methods  Credit Hours: 3
The study of various experimental designs such as complete and fractional factorial designs, repeated measures designs and nested designs. Both the conceptual rationale and the computational procedures are covered.

Prerequisites: RESM 6120 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 8120 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM8150  Structural Equation Modeling  Credit Hours: 3
Structural equation modeling serves as a statistical method to assess the strengths of a priori relations among variables. Topics include path analysis and confirmatory factor analysis. Computer applications with LISREL.

Prerequisites: RESM 6120 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 8120 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM8160  Nonparametric Statistics  Credit Hours: 3
Study of classical nonparametric statistical techniques and recent developments in this field. Coverage includes contingency tables, binomial distribution tests, several rank tests and other distribution-free statistics.

Prerequisites: RESM 5110 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 7110 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM8180  Interdisciplinary Seminar In Educational Psychology, Research, And Social Foundations  Credit Hours: 1
The proseminar will enable doctoral students to improve their understanding of the research process. Students will learn to ask research questions, choose alternative methodologies and interpret the validity of conclusions.
RESM8220  Measurement I  Credit Hours:  3
Introduction to psychometric theories, with emphasis on classical test theory; reliability theory, including generalizability theory; approaches to validation; practical applications such as standard setting.
Prerequisites: RESM 5110 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 7110 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 7210 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM8230  Measurement II  Credit Hours:  3
Primary focus on Item Response Theory, with emphasis on 1- 2- and 3-parameter logistic models. Also covers applied issues such as test equating, scaling, item/test bias detection methods and current issues.
Prerequisites: RESM 6220 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 8220 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM8320  Research Design  Credit Hours:  3
The study of research approaches that are used in theses and dissertations. Competing designs for addressing research questions are compared. The purpose is to prepare students for their dissertation experience.
Prerequisites: RESM 5110 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 7110 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM8340  Qualitative Research II: Design And Analysis  Credit Hours:  3
Students design, conduct and write up a qualitative study. Topics include theoretical frameworks and research design; managing, analyzing and interpreting data; collaboration between researcher and researched; using computers in analysis.
Prerequisites: RESM 5330 FOR LEVEL GR WITH MIN. GRADE OF D- OR RESM 7330 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM8350  Methods Of Survey Research  Credit Hours:  3
The design of large scale surveys with emphasis on sampling. Methods for telephone surveys, face-to-face interviews and mail surveys are included.
Prerequisites: RESM 8120 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM8360  Program Evaluation  Credit Hours:  3
An overview of prominent human services program evaluation methods including objectives-based, experimental, statistical and economic approaches. Evaluation criteria, issues, ethics and politics are included.
Prerequisites: RESM 7110 FOR LEVEL GR WITH MIN. GRADE OF D-

RESM8370  Fundamentals Of Grant Writing  Credit Hours:  3
This seminar will teach participants about fundamentals of grant writing. Topics covered will include: locating sources of funding, writing grants, designing evaluation instruments and administering grants.
RESM8940  Internships In Measurement, Evaluation, Research & Statistics  Credit Hours:  3
Supervised field experiences in measurement, evaluation, research design, or statistics in a variety of settings.

RESM8960  Dissertation Research In Foundations Of Education  Credit Hours:  1-12
A formal independent study culminating in a written discourse central to the advancement of knowledge in educational research design, statistics, measurement, or evaluation.

RESM8990  Doctoral-Independent Study  Credit Hours:  1-6
The study of a current topic in educational research, measurement, statistics, or program evaluation. The student meets with the instructor at arranged intervals without formal classes.

RPCP601  Research in Primary Care I  Credit Hours:  3

RPCP602  Research in Primary Care II  Credit Hours:  3

RPCP603  Research in Primary Care III  Credit Hours:  2

SB56410  Theory And Research: Emotional Behavioral Disorders  Credit Hours:  3
This course provides in-depth readings on problems of emotionally and behaviorally disturbed/disordered children and youth. Intense study on two levels: (1) theoretical considerations and (2) treatments pertinent to diverse educational settings.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>SBS6420</td>
<td>Public School Emotional Behavior Disorders</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>This course provides supervised practice in classroom participation with students identified as Emotionally Behaviorally Disturbed/Disordered. Public school settings include: self-contained, resource, transition, mainstreamed and consultative-collaborative.</td>
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</tr>
<tr>
<td>SBS6430</td>
<td>Alternative School Setting: Ebd</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>This course provides supervised practice in classroom participation with students identified as Emotionally Behaviorally Disturbed/Disordered. The alternative school setting includes: self-contained, transition-mainstreamed and consultative-collaborative.</td>
<td></td>
</tr>
<tr>
<td>SBS6440</td>
<td>Teaching Children And Youth With Emotional Behavior Disorders</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>This course provides evaluation and application techniques of research based methodologies for teaching students with emotional behavioral disorders/disturbances. Psychosocial educational best practices within the least restrictive environment are present.</td>
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<tr>
<td></td>
<td>Prerequisites: SPED 6410 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>SBS6450</td>
<td>Adjudicated-Locked Setting: Ebd</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>This course provides supervised practice in classroom with children and youth identified as Emotionally Behaviorally Disturbed/Disordered. The adjudicated-locked setting includes: self-contained, remedial plus consultative-collaborative teaching roles.</td>
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<tr>
<td></td>
<td>Prerequisites: (SPED 6420 FOR LEVEL GR WITH MIN. GRADE OF D- AND SPED 6430 FOR LEVEL GR WITH MIN. GRADE OF D-)</td>
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<tr>
<td>SBS6460</td>
<td>Hospital Setting: Ebd</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>This course provides supervised practice teaching children and youth identified as Emotionally Behaviorally Disturbed/Disordered. Hospital setting include: self-contained, individualized and group tutoring, and consultative-collaborative teaching roles.</td>
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</tr>
<tr>
<td>SBS6470</td>
<td>Theory And Research: Autism</td>
<td>3</td>
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<td></td>
<td>This course provides in-depth readings in the field of autism. The course includes intense study on two levels: (1) theoretical considerations and (2) treatment approaches pertinent to populations with autism.</td>
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<tr>
<td></td>
<td>Prerequisites: SBS 6460 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
<td></td>
</tr>
<tr>
<td>SBS6480</td>
<td>Teaching Children And Youth With Autism</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>This course provides research based methodologies for understanding and teaching children and youth with autism. Psychosocial educational best practices within the least restrictive environment are presented.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prerequisites: SBS 6470 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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</tbody>
</table>
SBS6510 Management Of Severe Behaviors Of Incarcerated Children And Youth
Credit Hours: 3
Managing severe behaviors of incarcerated children and youth, including learning knowledge, skills and a solid dispositional commitment to empower cognitive-behavioral change through emotional, neurological, biophysical, sociological and cultural barriers.

SBS6520 Practicum: Child Study Institute
Credit Hours: 1
The Child Study Institute, Lucas County Juvenile Detention Center, offers frontline knowledge-to-skill practicing in the management of incarcerated children and youth with severe, chronic and potentially violent behaviors.

SBS6990 Independent Study: Severe Behavior
Credit Hours: 1-5
Provides advanced graduate students with opportunities to study severe behavior related issues. Individual meetings with sponsoring faculty are scheduled.

SBS8410 Theory And Research: Emotional Behavioral Disorders
Credit Hours: 3
This course provides in-depth readings on problems of emotionally and behaviorally disturbed/disordered children and youth. Intense study on two levels: (1) theoretical considerations and (2) treatments pertinent to diverse educational settings.

SBS8420 Public School: Emotional Behavior Disorders
Credit Hours: 1
This course provides supervised practice in classroom participation with students identified as Emotionally Behaviorally Disturbed/Disordered. Public school settings include: self-contained, resource, transition, transition, mainstreamed and consultative.

SBS8430 Alternative School Setting: Ebd
Credit Hours: 1
This course provides supervised practice in classroom participation with students identified as Emotionally Behaviorally Disturbed/Disordered. The alternative school setting includes: self-contained, transition-mainstreamed and consultative-collaborative.

SBS8440 Teaching Children And Youth With Emotional Behavior Disorders
Credit Hours: 3
This course provides evaluation and application techniques of research based methodologies for teaching students with emotional behavioral disorders/disturbances. Psychosocial educational best practices within the least restrictive environment are present.

Prerequisites: SPED 6410 FOR LEVEL GR WITH MIN. GRADE OF D-
SBS8450  Adjudicated-Locked Setting: Ebd  
This course provides supervised practice in classroom with children and youth identified as Emotionally Behaviorally Disturbed/Disordered. The adjudicated-locked setting includes: self-contained, remedial plus consultative-collaborative teaching roles.

Prerequisites:(SPED 6420 FOR LEVEL GR WITH MIN. GRADE OF D- AND SPED 6430 FOR LEVEL GR WITH MIN. GRADE OF D-)

SBS8460  Hospital Setting: Ebd  
This course provides supervised practice teaching children and youth identified as Emotionally Behaviorally Disturbed/Disordered. Hospital setting include: self-contained, individualized and group tutoring, and consultative-collaborative teaching roles.

Prerequisites:(SBS 8420 FOR LEVEL GR WITH MIN. GRADE OF D- AND SBS 8430 FOR LEVEL GR WITH MIN. GRADE OF D-)

SBS8470  Theory And Research: Autism  
This course provides in-depth readings in the field of autism. The course includes intense study on two levels: (1) theoretical considerations and (2) treatment approaches pertinent to populations with autism.

Prerequisites:SBS 8460 FOR LEVEL GR WITH MIN. GRADE OF D-

SBS8480  Teaching Children And Youth With Autism  
This course provides research based methodologies for understanding and teaching children and youth with autism. Psychosocial educational best practices within the least restrictive environment are presented.

Prerequisites:SBS 8470 FOR LEVEL GR WITH MIN. GRADE OF D-

SBS8510  Management Of Severe Behaviors Of Incarcerated Children And Youth  
Managing severe behaviors of incarcerated children and youth, including learning knowledge, skills and a solid dispositional commitment to empower cognitive-behavioral change through emotional, neurological, biophysical, sociological and cultural barriers

SBS8520  Practicum: Child Study Institute  
The Child Study Institute, Lucas County Juvenile Detention Center, offers frontline knowledge-to-skill practicing in the management of incarcerated children and youth with severe, chronic and potentially violent behaviors.

SBS8990  Independent Study: Severe Behavior  
Provides advanced graduate students with opportunities to study severe behavior related issues. Individual meetings with sponsoring faculty are scheduled.
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<tr>
<td>SISS7010</td>
<td>Spatial Statistics</td>
<td>3</td>
</tr>
<tr>
<td>SISS7020</td>
<td>GEOGRAPHICAL INFORMATION SCIENCE IN SISS</td>
<td>3</td>
</tr>
<tr>
<td>SISS8010</td>
<td>FOUNDATIONS OF SPATIALLY INTEGRATED SOCIAL SCIENCE</td>
<td>3</td>
</tr>
<tr>
<td>SISS8020</td>
<td>SISS THEORY</td>
<td>3</td>
</tr>
<tr>
<td>SISS8030</td>
<td>ADVANCED SPATIAL DATA ANALYSIS</td>
<td>3</td>
</tr>
<tr>
<td>SISS8940</td>
<td>Seminar in Special Topics</td>
<td>3</td>
</tr>
<tr>
<td>SKLS0500</td>
<td>Preparing for Success-College</td>
<td>2</td>
</tr>
</tbody>
</table>

The course deals with statistical theory and applied statistical techniques for spatial data analysis. Topics include descriptive statistics, statistical modeling and hypothesis testing for spatial dependence and spatial heterogeneity.

The course emphasizes the fundamental elements of cartography, geodesy, statistics, mathematics and geo-computational methods that form the foundation for the development of GIS and spatial analysis tools.

This course will examine the historical development of the social sciences, their philosophical and methodological approaches to research, and the emergence of the spatial perspective in social science research.

Advanced study of SISS requiring preparedness in theoretical and methodological aspects of spatial analysis in social sciences focusing on the spatial organization of society and spatial human and social dynamics.

Examination of spatial processes: spatial autoregressive models, gaussian Markov random field models, auto-logistic models, spatial discrete choice models. The topics include spatial panel data models, their applications and estimation methods.

Discussion of the major advances in Spatially Integrated Social Science as presented in the primary research in a selected topic or set of topics.

Prerequisites: SISS 8010 FOR LEVEL GR WITH MIN. GRADE OF D-

Prerequisites: SISS 7010 FOR LEVEL GR WITH MIN. GRADE OF D-

Prerequisites: SISS 7010 FOR LEVEL GR WITH MIN. GRADE OF D- AND SISS 7020 FOR LEVEL GR WITH MIN. GRADE OF D- AND SISS 8010 FOR LEVEL GR WITH MIN. GRADE OF D-
SKLS0750 Review-Punctuation and Grammar
Credit Hours: 1

SKLS0960 Getting Ready For College And The Act
Credit Hours: 4
The course is offered to Toledo Public High School juniors. It is intended to prepare students to achieve higher scores on the ACT exam and for successful transition to college. The course will focus on three main areas: building and strengthening study

SKLS0980 College Reading
Credit Hours: 3
Prepares students for success in academic course of study by upgrading textbook comprehension strategies, developing critical reading strategies and expanding academic reading vocabulary through the textbook and other academic reading materials. Grades d

SKLS0990 Academic Writing
Credit Hours: 4
Coursework introduces students to college-level writing strategies, as well as self-evaluative assessment tools essential for introductory intellectual work. Students who pass SKLS 0990 progress to ENGL 1100 (or ENGL 1110 as determined by placement). Grad

SKLS1100 Introduction to Speech
Credit Hours: 2

SKLS1130 Expressn thru Paint and Design
Credit Hours: 2

SKLS1140 Technical Oral Presentations
Credit Hours: 1
Essentials of delivering oral technical presentations. Awareness of audience, purpose and presentation techniques are emphasized through required weekly presentations.
SKLS1150  College Study Strategies And Orientation  Credit Hours:  3
Acquaints students with the services, policies, procedures and layout of the University, along with relevant study skills and student learning services available campus-wide. Required of all pre-major students; optional for others.

SKLS1160  Writing In The Social Sciences And Humanities  Credit Hours:  1
This course will assist students in planning, organizing, researching and revising papers assigned in social science and humanities courses. Students may work on papers assigned for a class in which they are currently enrolled. Course is offered as a 7-1

SKLS1940  Learning through Service  Credit Hours:  2
Students will be involved four hours a week in various community service projects and analyze and reflect on their experiences through journals, discussion and a final paper in a weekly seminar.

SLP2400  Communication Disorders  Credit Hours:  3
A study of causative factors and characteristics of communicative disorders in comparison to normal speech/language/hearing processes.

SLP3010  Clinical Phonetics  Credit Hours:  4
Understanding of articulatory and acoustic phonetics with emphasis on the development of transcription skills using the International Phonetic Alphabet in recording normal and disordered speech production. Laboratory required for transcription skill deve

SLP3020  Anatomy And Physiology Of Communication Mechanisms  Credit Hours:  4
The study of the anatomy and physiology of the mechanisms used for communication including oral-pharyngeal-esophageal, respiratory, and neurological systems.

SLP3030  Normal Language Acquisition  Credit Hours:  3
This course will include procedures to describe language and the developmental sequence in which it is acquired by children. Basic theories of language acquisition will be discussed. Laboratory experience required.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>SLP3140</td>
<td>Analyzing Language</td>
<td>4</td>
<td>Identification of linguistic structures in standard English. Course focuses on analysis of semantic and syntactic components of language with pragmatic analysis included. Laboratory experience required.</td>
</tr>
<tr>
<td>SLP3150</td>
<td>Speech Science</td>
<td>3</td>
<td>Detailed exploration of the functions of the speech and language production system including neurological components. Aerodynamic and acoustical functions are explored through the phonatory, respiratory and articulatory parameters of speech. Prerequisites: (SLP 3010 FOR LEVEL UG WITH MIN. GRADE OF D- AND SLP 3020 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
</tr>
<tr>
<td>SLP3170</td>
<td>Hearing Science</td>
<td>2</td>
<td>The study of the hearing mechanism with relation to the auditory environment and perception of speech.</td>
</tr>
<tr>
<td>SLP3170</td>
<td>Hearing Science</td>
<td>2</td>
<td>The study of the hearing mechanism with relation to the auditory environment and perception of speech.</td>
</tr>
<tr>
<td>SLP3200</td>
<td>Articulation/Phonological Disorders</td>
<td>4</td>
<td>Assessment techniques and intervention strategies for persons with disorders of the sound system of the language. Theories of phonological acquisition and etiological factors will be discussed during this course. Laboratory experience required.</td>
</tr>
<tr>
<td>SLP3300</td>
<td>Language Disorders</td>
<td>4</td>
<td>Course includes the identification of etiologic bases and characteristics of language disorders. Assessment strategies leading to choice of intervention techniques will be discussed. Laboratory experience required. Prerequisites: SLP 3030 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>SLP3400</td>
<td>Clinical Audiology</td>
<td>3</td>
<td>The student learns to administer and interpret the comprehensive auditory battery consisting of pure-tone air conduction and bone conduction thresholds, speech reception thresholds, speech discrimination tests and acoustic emittance test battery. Prerequisites: SLP 3170 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>SLP3800</td>
<td>Methods For Clinical Intervention</td>
<td>3</td>
<td>Teaches methods of intervention of speech, language and hearing services in various settings. Emphasis on developing skills in observation, report writing, and structuring intervention services and their implementation. Requires 25 hours of observation. Prerequisites: (SLP 3200 FOR LEVEL UG WITH MIN. GRADE OF D- AND SLP 3300 FOR LEVEL UG WITH MIN. GRADE OF D-)</td>
</tr>
</tbody>
</table>
SLP4000  Beginning Clinical Practicum  
**Credit Hours:** 2  
Supervised participation in structured individual or group intervention leading to the accumulation of 25 clinical hours of practicum.

Prerequisites: SLP 3800 FOR LEVEL UG WITH MIN. GRADE OF D-

SLP4300  Advanced Clinical Practicum I  
**Credit Hours:** 2  
Students are assigned individual clients for whom they will plan an intervention program, implement the program and evaluate the results of the intervention under faculty supervision. Mandatory clinic meeting and 1 hour lab duty.

Prerequisites: SLP 4000 FOR LEVEL UG WITH MIN. GRADE OF D-

SLP4350  Concomitant Disorders  
**Credit Hours:** 3  
This capstone course explores literature in advanced speech and language disorders as well as intervention communication disorders.

Prerequisites: (SLP 3200 FOR LEVEL UG WITH MIN. GRADE OF D- AND SLP 3300 FOR LEVEL UG WITH MIN. GRADE OF D-)

SLP4440  Augmentative Communication Systems  
**Credit Hours:** 3  
Technological systems available for persons with the absence of functional speech will be described. Etiological factors, assessment and intervention procedures and hands-on experience with devices will be provided.

SLP4900  Seminar In Speech-Language Pathology  
**Credit Hours:** 1-5  
Seminar provides students with the opportunity to explore, as a group, specific topics with a faculty member. Current issues in the area of speech-language pathology will be the focus.

SLP4910  Directed Research In Speech-Language Pathology  
**Credit Hours:** 1-5  
Directed research provides students the opportunity to explore specific topics and develop individual research with a faculty member. Current questions in the area of speech-language pathology will be the focus.

SLP4920  Readings In Speech-Language Pathology  
**Credit Hours:** 1-5  
Individual Readings is designed to provide students with opportunities to examine literature related to specific issues. The student works under the direction of faculty in the speech-language pathology program.
### Course Descriptions 2009-2010

**SLP4980**  
**Special Topics In Speech-Language Pathology**  
Credit Hours: 1-5  
An advanced course for undergraduate majors in speech-language pathology or majors in related fields covering an important area of communication disorders. Student may repeat this course under different section numbers.

**SLP4990**  
**Independent Study Speech-Language Pathology**  
Credit Hours: 1-5  
Independent study provides students with opportunities to work individually on issues under the direction of the speech-language pathology program faculty. The student meets with instructor without formal classes.

**SLP5440**  
**Augmentative Comm Systems**  
Credit Hours: 3

**SLP6000**  
**Advanced Practicum In Communication Disorders**  
Credit Hours: 2  
Provides students with supervised therapeutic experiences with specific speech and language disorders. Students should have completed or be currently enrolled in graduate level communication disorders course addressing the specific practicum disorder.

**SLP6010**  
**Diagnostic Practicum In Communication Disorders**  
Credit Hours: 2  
Provides a minimum of 30 hours supervised diagnostic practicum with a variety of communicatively disordered cases.

Corequisite: SLP 6100

**SLP6020**  
**Audiological Practicum In Communication Disorders**  
Credit Hours: 2  
Provides the advanced student with supervised practicum hours in the screening, impedance and pure tone threshold testing for audiological diagnosis.

**SLP6030**  
**Research in Speech-Language Pathology**  
Credit Hours: 3  
Early graduate course in research methods with emphasis on analysis of current research, application of single-subject research in clinic practicum, and development of research project.

Prerequisites: SLP 6010 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR SLP 6020 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)
SLP6100  Diagnosis Of Speech And Language Disorders  Credit Hours:  3
Detailed analysis of formal and informal instruments and procedures designed to evaluate speech and language disorders.

SLP6210  Preschool Language Disorders  Credit Hours:  3
The conceptual framework for understanding language disorders in young children. Application and theory of assessment and intervention strategies will be described and discussed.

SLP6220  Language Disorders In School-Age Children  Credit Hours:  2
The conceptual framework for understanding language disorders in school-age children with special emphasis on language assessment and language interventions in school settings.

SLP6300  Phonological And Articulatory Disorders  Credit Hours:  3
Advanced study of phonological and articulatory disorders including developmental apraxia. Focus on phonological differences in multi-cultural society with emphasis on assessment of disorders and current advances in remediation.

SLP6400  Neurological Disorders: Aphasia  Credit Hours:  3
Advanced course in deficits due to neurological alterations resulting in aphasia. Formal and informal assessment procedures for the diagnosis of aphasia as well as techniques and functional strategies for communicative compensation provide the focus of the course.

SLP6450  Neurological Disorders: Brain Injury And Dementia  Credit Hours:  2
Course in cognitive and linguistics deficits due to trauma and disease to central nervous system. Course focuses on identification and intervention in communication disorders as the result of acquired brain injury/disease. Traumatic brain injury, right

SLP6500  Motor Speech Disorders  Credit Hours:  3
Adult apraxia and dysarthrias are discussed in relation to neurological organization, disorders and speech characteristics.
SLP6550  Augmentative And Alternative Communication  Credit Hours:  2
The study and application of assistive communication technology for persons who are nonspeaking. The course includes characteristics of ACC consumers, design features of augmentative communication devices, assessment strategies to choose a system and int

SLP6600  Voice Disorders: Diagnosis And Treatment  Credit Hours:  3
Advanced course in the evaluation and treatment of voice disorders. Major voice disorders in children and adults are emphasized.

SLP6650  Dysphagia And Orpharyngeal Disorders  Credit Hours:  2
Evaluation and intervention procedures for individuals with communication problems related to structural impairments of the oral cavity and pharynx.

SLP6670  Voice Disorders  Credit Hours:  3

SLP6700  Assessment And Remediation Of Fluency Disorders  Credit Hours:  3
An advanced course to develop skills in the assessment and remediation of fluency disorders with special emphasis on current trends in stuttering therapy.

SLP6800  Aural Rehabilitation  Credit Hours:  3
Advanced care and training in the use of individual and group assistive listening devices, auditory trainers and other aids to augment hearing. Methods for using residual hearing and contextual factors to augment technology are addressed.

SLP6900  Independent Research In Speech-Language Pathology  Credit Hours:  1-5
Independent research provides opportunities to work on individual research under the direction of faculty. The student meets with the instructor at intervals and conducts research without formal class meeting.
### Course Descriptions 2009-2010

#### SLP6920  Master’s Research Project In Speech-Language Pathology  
**Credit Hours:** 1-5  
The Master's project is an individually designed product.  
**Prerequisites:** SLP 6930 FOR LEVEL GR WITH MIN. GRADE OF D-

#### SLP6930  Seminars In Speech-Language Pathology  
**Credit Hours:** 1-5  
Seminars will consider problems and provide advanced study in the field of Speech-Language Pathology. A student may register for more than one seminar during a graduate program.

#### SLP6940  Internship In Speech-Language Pathology  
**Credit Hours:** 1-8  
Provides the advanced graduate student with supervised practicum experiences at an off-campus site; including schools, hospitals, agencies, rehabilitation clinics, work training sites and other community sites where persons with disabilities are served.

#### SLP6960  Master Research Thesis In Speech-Language Pathology  
**Credit Hours:** 1-5  
The master's thesis is an individually designed investigation approved by the thesis committee and designed to contribute to the knowledge base of the speech-language pathology. Meets the final activity requirement for completion of the master's degree.  
**Prerequisites:** SLP 6930 FOR LEVEL GR WITH MIN. GRADE OF D-

#### SLP6990  Independent Study In Speech-Language Pathology  
**Credit Hours:** 1-5  
Individual study provides advanced graduate students opportunities to work individually on professional problems with faculty of the Speech-Language Pathology program. Individual meetings with sponsoring faculty are held.

#### SLP8000  Advanced Practicum In Communication Disorders  
**Credit Hours:** 2  
Provides students with supervised therapeutic experiences with specific speech and language disorders. Students should have completed or be currently enrolled in graduate level communication disorders course addressing the specific practicum disorder sele

#### SLP8010  Diagnostic Practicum In Communication Disorders  
**Credit Hours:** 2  
Provides a minimum of 30 hours supervised diagnostic practicum with a variety of communicatively disordered cases.  
**Corequisite:** SLP 8100
<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>SLP8020</td>
<td>Audiological Practicum In Communication Disorders</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Provides the advanced student with supervised practicum hours in the screening, impedance and pure tone threshold testing for audiological diagnosis.</td>
<td></td>
</tr>
<tr>
<td>SLP8100</td>
<td>Diagnosis Of Speech And Language Disorders</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Detailed analysis of formal and informal instruments and procedures designed to evaluate speech and language disorders.</td>
<td></td>
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<tr>
<td>SLP8210</td>
<td>Preschool Language Disorders</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>The conceptual framework for understanding language disorders in young children. Application and theory of assessment and intervention strategies will be described and discussed.</td>
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<td>SLP8220</td>
<td>Language Disorders In School-Age Children</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>The conceptual framework for understanding language disorders in school-age children with special emphasis on language assessment and language interventions in school settings.</td>
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</tr>
<tr>
<td>SLP8300</td>
<td>Phonological And Articulatory Disorders</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Advanced study of phonological and articulatory disorders including developmental apraxia. Focus on phonological differences in multi-cultural society with emphasis on assessment of disorders and current advances in remediation.</td>
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<tr>
<td>SLP8400</td>
<td>Neurological Disorders: Aphasia</td>
<td>3</td>
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<tr>
<td></td>
<td>Advanced course in deficits due to neurological alterations resulting in aphasia. Formal and informal assessment procedures for the diagnosis of aphasia as well as techniques and functional strategies for communicative compensation provide the focus of t</td>
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<td>SLP8450</td>
<td>Neurological Disorders: Brain Injury And Dementia</td>
<td>2</td>
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<tr>
<td></td>
<td>Course in cognitive and linguistics deficits due to trauma and disease to central nervous system. Course focuses on identification and intervention in communication disorders as the result of acquired brain injury/disease. Traumatic brain injury, right</td>
<td></td>
</tr>
</tbody>
</table>
SLP8500  Motor Speech Disorders  
Credit Hours: 3
Adult apraxia and dysarthrias are discussed in relation to neurological organization, disorders and speech characteristics.

SLP8550  Augmentative And Alternative Communication  
Credit Hours: 2
The study and application of assistive communication technology for persons who are nonspeaking. The course includes characteristics of ACC consumers, design features of augmentative communication devices, assessment strategies to choose a system and int

SLP8600  Voice Disorders: Diagnosis And Treatment  
Credit Hours: 3
Advanced course in the evaluation and treatment of voice disorders. Major voice disorders in children and adults are emphasized.

SLP8650  Dysphagia And Orpharyngeal Disorders  
Credit Hours: 2
Evaluation and intervention procedures for individuals with communication problems related to structural impairments of the oral cavity and pharynx.

SLP8670  Voice Disorders  
Credit Hours: 3

SLP8700  Assessment And Remediation Of Fluency Disorders  
Credit Hours: 3
An advanced course to develop skills in the assessment and remediation of fluency disorders with special emphasis on current trends in stuttering therapy.

SLP8800  Aural Rehabilitation  
Credit Hours: 3
Advanced care and training in the use of individual and group assistive listening devices, auditory trainers and other aids to augment hearing. Methods for using residual hearing and contextual factors to augment technology is addressed.

Prerequisites: SLP 3400 FOR LEVEL UG WITH MIN. GRADE OF D-
SLP8900  Independent Research In Speech-Language Pathology  Credit Hours: 1-5
Independent Research provides opportunities to work on individual research under the direction of faculty. The student meets with the instructor at intervals and conducts research without formal class meeting.

SLP8930  Seminars In Speech-Language Pathology  Credit Hours: 1-5
Seminars will consider problems and provide advanced study in the field of Speech-Language Pathology. A student may register for more than one seminar during a graduate program.

SLP8940  Internship In Speech-Language Pathology  Credit Hours: 1-8
Provides the advanced graduate student with supervised practicum experiences at an off-campus site; including schools, hospitals, agencies, rehabilitation clinics, work training sites and other community sites where persons with disabilities are served.

SLP8960  Master Research Thesis In Speech-Language Pathology  Credit Hours: 1-5
The master's thesis is an individually designed investigation approved by the thesis committee and designed to contribute to the knowledge base of the speech-language pathology.

Prerequisites: SLP 6930 FOR LEVEL GR WITH MIN. GRADE OF D-

SLP8990  Independent Study In Speech-Language Pathology  Credit Hours: 1-5
Individual study provides advanced graduate students opportunities to work individually on professional problems with faculty of the Speech-Language Pathology program. Individual meetings with sponsoring faculty are held.

SOC1010  Introduction To Sociology  Credit Hours: 3
(not for major credit) Freshmen and sophomores only. Sociological topics regarding social behavior, institutional dynamics and social change are examined, and the principles and basic concepts used by sociologists are taught.

SOC1750  Social Problems  Credit Hours: 3
(not for major credit) Introduces students to the sociological perspective through the analysis of various social problems including inequality, population, environment, workplace and deviant behavior.
SOC2000  Proseminar In Sociology I  Credit Hours:  1
Students are introduced to the academic and professional nature of Sociology. Topics covered include professional socialization, honor theses, portfolio construction, preparation for graduate studies, and career development.

SOC2010  Sociology Of The Internet  Credit Hours:  3
This course focuses on the rapidly expanding use of the Internet and its impact on society. The course will also be experiential, with Internet based interaction (through on-line, e-mail, list-servs, etc.) an essential component of the course.

SOC2100  American Society  Credit Hours:  3
Examination of American society. Emphasis upon the interplay between cultural ideas and actual behavior as these relate to change in American institutions.

SOC2150  The Changing Family  Credit Hours:  3
Examines changes in the family through history, focusing especially on current changes in the nature of the family and on theoretical explanations for why these changes are occurring and what they may mean for family members.

SOC2500  Women's Roles:  A Global Perspective  Credit Hours:  3
The course focuses on the current and evolving social, economic and political status of women in the United States and selected non-Western societies. For both men and women students.

SOC2640  Race, Class, And Gender  Credit Hours:  3
Introduction to the study of race, class and gender as factors in American stratification.

SOC2750  Sociology Of Sport  Credit Hours:  3
This course examines sport as a microcosm of our society, exploring many sociological issues (socialization, social institutions, and inequality) within the framework of sport that exist in society as whole.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>SOC2900</td>
<td>African American Culture</td>
<td>3</td>
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<tr>
<td></td>
<td>A survey of the sociohistorical and</td>
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<td>cultural factors related to the</td>
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<td>African American experience in the</td>
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<td>United States.</td>
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<tr>
<td>SOC2980</td>
<td>Special Topics</td>
<td>3</td>
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<tr>
<td></td>
<td>Examination of a special topical</td>
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<tr>
<td></td>
<td>area in sociology. May be repeated</td>
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<td></td>
<td>on different topics.</td>
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<tr>
<td>SOC3270</td>
<td>Social Research Methods</td>
<td>3</td>
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<tr>
<td></td>
<td>Introduction to procedures used in</td>
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<td></td>
<td>the various phases of sociological</td>
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<td>research.</td>
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<tr>
<td>SOC3290</td>
<td>Social Statistics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Study of major statistical procedures</td>
<td></td>
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<td></td>
<td>and techniques in sociology.</td>
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<tr>
<td>SOC3640</td>
<td>Social Inequality</td>
<td>3</td>
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<tr>
<td></td>
<td>This course examines the bases,</td>
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<td>varieties and consequences of</td>
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<td></td>
<td>systems of stratification, including</td>
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<td>the development of and changes in</td>
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<td>stratification patterns in the US</td>
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<td></td>
<td>and other societies.</td>
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<tr>
<td>SOC3800</td>
<td>Social Psychology</td>
<td>3</td>
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<tr>
<td></td>
<td>An introduction to theory and research</td>
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<td>concerning social influences on the</td>
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<td>experience and behavior of</td>
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<td></td>
<td>individuals. Includes interaction</td>
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<td></td>
<td>patterns, interpersonal and</td>
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<td></td>
<td>intergroup relations.</td>
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<tr>
<td>SOC4000</td>
<td>Proseminar In Sociology II</td>
<td>2</td>
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<tr>
<td></td>
<td>Discussion among faculty and students</td>
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<tr>
<td></td>
<td>devoted to the study of Sociology</td>
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<td>with a special focus on the</td>
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<td>development of a professional</td>
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<tr>
<td></td>
<td>portfolio for graduate work or career.</td>
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<tr>
<td></td>
<td>Prerequisites: SOC 2000 FOR LEVEL</td>
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<tr>
<td></td>
<td>UG WITH MIN. GRADE OF D-</td>
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</tr>
</tbody>
</table>
SOC4040  Classical Theory  Credit Hours:  3

SOC4100  Community Organizing And Development  Credit Hours:  3
This course focuses on attempt of communities to regain power and wealth lost through urban disinvestment occurring since World War II. The course will involve numerous practical workshops to learn how to do community organizing and community development.

SOC4110  Political Sociology  Credit Hours:  3
Examination of political institutions, organizations and behavior with special attention to participation, power, ideology, decision making and conflict.

SOC4160  Health And Gender  Credit Hours:  3
An examination of gender as a predisposing factor of health status, health behavior, health care delivery, and the structure and posture of health care professionals.

SOC4170  Law And Society  Credit Hours:  3
Dynamics of law and legal institutions; the relationship of sociocultural changes in substantive and procedural aspects of law to the concept of justice, and to the social control of deviance.

SOC4180  Medical Sociology  Credit Hours:  3
An analysis of the sociocultural factors in health and illness, and in medical and paramedical services, and in the field of health practice as a social institution.

SOC4190  Social Gerontology  Credit Hours:  3
A study of the changing proportions of older people in the population, their changing roles and statuses, and the problems and processes of adjustment.
SOC4340 Population And Society
Credit Hours: 3
Examination of the interaction among variables of population (fertility, mortality and migration) and other aspects of societal organization.

SOC4450 Exploring the City
Credit Hours: 3
This course takes an interdisciplinary approach to life in cities around the world, with emphasis on the ethnographic exploration of how power, cultural difference, and social inequality in cities are produced and experienced.

SOC4580 Science, Technology, And Social Change
Credit Hours: 3
The impact of rapidly changing science and technology on North American society: social change in a technological age; the emergence of post industrial society.

SOC4620 Gender And Work
Credit Hours: 3
Analysis of the contemporary position in the U.S. work force focusing on the expansion of the number of women joining the labor force in recent decades, and the persistence of relatively low pay, status and authority in female-dominated occupations.

SOC4650 SOCIOLGY OF LATIN AMERICA AND CARIBBEAN
Credit Hours: 3
An overview of sociological literature on Latin American and the Caribbean. Topics include economic development, political change, gender and ethnicity, disability, culture and international migration.
Prerequisites: SOC 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

SOC4660 Racial And Ethnic Minorities In The Us
Credit Hours: 3
Basic principles of majority/minority relations including the minority groups nature and consequences of prejudice, discrimination, segregation, entitlement and differing cultural practices between such groups.

SOC4670 African Americans In The United States
Credit Hours: 3
Sociological study of African Americans in the United States, focusing on issues of ethnic identity, educational and economic achievement, continuing sources of discrimination, and current movements for change.
SOC4710  Criminology  Credit Hours:  3  
Crime and criminal behavior: nature, types and extent of crime, societal reactions; problems in research and theory, prevention, control and treatment.

SOC4720  Deviant Behavior  Credit Hours:  3  
Study and analysis of the nature, meaning and process of deviant behavior in terms of social norms, control and societal reaction.

SOC4740  Issues In Crime  Credit Hours:  3  
Topics may include legalizing drugs, police violence, plea bargaining, death sentence and mandatory sentencing. Emphasizes liberal/conservative ideology.

SOC4750  Legal Issues  Credit Hours:  3  
Topics may include abortion, three strike sentencing, homosexual rights, hate speech and decriminalizing narcotics. Emphasizes liberal/conservative ideology.

SOC4760  Juvenile Delinquency  Credit Hours:  3  
Delinquency and delinquent behavior, including definitions, extent, process, types and causes; methods of prevention, protective control and treatment; institutional and non-institutional facilities and services.

SOC4770  Criminal Corrections: Theories And Practices  Credit Hours:  3  
Historical and theoretical analysis of ideas concerning punishment. Treatment of offenders as reflected in the type of administration of correctional programs, including probation and parole.

SOC4800  Development In Third World Nations  Credit Hours:  3  
The new emerging ideological, political, social and economic patterns which repeat themselves in and determine the Third World transition from a traditional to a new society.
SOC4810  Gender In Cross-Cultural Perspective  Credit Hours: 3
Analysis of gender stratification and its impact on culture in various nations and across ethnic groups in the United States.

SOC4830  Social Movements  Credit Hours: 3
This course analyzes how and why social protest movements form, and how and why they succeed or fail. Attention will be given to post-World War II social movements, including current examples.

SOC4910  Directed Research In Sociology  Credit Hours: 1-3
Student-selected research topic under the supervision of a sociology faculty member. Permission to enroll is contingent on the instructor's acceptance of the student's research proposal.
Prerequisites: SOC 3270 FOR LEVEL UG WITH MIN. GRADE OF D-

SOC4920  Directed Readings In Sociology  Credit Hours: 1-3
Written proposal required. May be repeated for additional credit. For majors wishing to continue course work in greater depth or seeking contact with unlisted subject areas.

SOC4940  Internship in Sociology  Credit Hours: 3

SOC4960  Honors Thesis  Credit Hours: 3-6

SOC4980  Special Topics In Sociology  Credit Hours: 3
Sociological examination of a developing and/or important social issue or sociological topic. May be repeated for different specialized topics.
SOC4990 Independent Study - Sociology 1
Credit Hours: 1-3

SOC5040 Classical Theory
Credit Hours: 3

SOC5100 Community Organizing and Development
Credit Hours: 3
This course will review the major forms of community and organizing since World War II. Practical issues and theoretical issues will be stressed. Students will engage in intensive case study research applying the course concepts in addition to reading.

SOC5110 Political Sociology
Credit Hours: 3
Examination of political institutions, organizations and behavior with special attention to participation, power, ideology, decision making and conflict.

SOC5160 Health and Gender
Credit Hours: 3
An examination of gender as a predisposing factor of health status, health behavior, health care delivery, and the structure and posture of health care professionals.

SOC5170 Law and Society
Credit Hours: 3
Dynamics of law and legal institutions; the relationship of sociocultural changes in substantive and procedural aspects of law to the concept of justice, and to the social control of deviance.

SOC5180 Medical Sociology
Credit Hours: 3
An analysis of the sociocultural factors in health and illness, and in medical and paramedical services, and in the field of health practice as a social institution.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC5190</td>
<td>Social Gerontology</td>
<td>3</td>
<td>A study of the changing proportions of older people in the population, their changing roles and statuses, and the problems and processes of adjustment.</td>
</tr>
<tr>
<td>SOC5270</td>
<td>Social Research Methods</td>
<td>3</td>
<td>Introduction to procedures used in the various phases of sociological research.</td>
</tr>
<tr>
<td>SOC5290</td>
<td>Social Research Statistics</td>
<td>3</td>
<td>Study of major statistical procedures and techniques in sociology.</td>
</tr>
<tr>
<td>SOC5340</td>
<td>Population And Society</td>
<td>3</td>
<td>Examination of the interaction among variables of population (fertility, mortality and migration) and other aspects of societal organization.</td>
</tr>
<tr>
<td>SOC5450</td>
<td>Exploring the City</td>
<td>3</td>
<td>This course takes an interdisciplinary approach to life in cities around the world, with emphasis on the ethnographic exploration of how power, cultural difference, and social inequality in cities are produced and experienced.</td>
</tr>
<tr>
<td>SOC5580</td>
<td>Science, Technology, And Social Change</td>
<td>3</td>
<td>The impact of rapidly changing science and technology on North American society: social change in a technological age; the emergence of post industrial society.</td>
</tr>
<tr>
<td>SOC5620</td>
<td>Gender And Work</td>
<td>3</td>
<td>Analysis of the contemporary position in the U.S. work force focusing on the expansion of the number of women joining the labor force in recent decades, and the persistence of relatively low pay, status and authority in female-dominated occupations.</td>
</tr>
</tbody>
</table>
SOC5650  ADVANCED TOPICS IN LATIN AMERICAN AND CARIBBEAN  Credit Hours:  3
An examination of social life in Latin America and the Caribbean, focusing on changing political economy, gender and ethnicity, globalization, culture and migration and in and out of the region.

Prerequisites: SOC 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

SOC5660  Racial And Ethnic Minorities In The Us  Credit Hours:  3
Review of current theoretical and empirical work in American sociology on racism, discrimination and other dimensions of racial inequality.

SOC5670  African Americans In The United States  Credit Hours:  3
Sociological study of African Americans in the United States, focusing on issues of ethnic identity, educational and economic achievement, continuing sources of discrimination, and current movements for change.

SOC5710  Criminology  Credit Hours:  3
Crime and criminal behavior: nature, types and extent of crime, societal reactions; problems in research and theory, prevention, control and treatment.

SOC5720  Deviant Behavior  Credit Hours:  3
Study of the analysis of the nature, meaning and process of deviant behavior in terms of social norms, control and societal reaction.

SOC5740  Issues In Crime  Credit Hours:  3
Topics may include legalizing drugs, police violence, plea bargaining, death sentence and mandatory sentencing. Emphasizes liberal/conservative ideology.

SOC5750  Legal Issues  Credit Hours:  3
Topics may include abortion, three strike sentencing, homosexual rights, hate speech and decriminalizing narcotics. Emphasizes liberal/conservative ideology.
SOC5760  Juvenile Delinquency  
Delinquency and delinquent behavior, including definitions, extent, process, types and causes; methods of prevention, protective control and treatment; institutional and non-institutional facilities and services.

SOC5800  Development Of Subordinate Nations  
The new emerging ideological, political, social and economic patterns which repeat themselves in and determine the Third World transition from a traditional to a new society.

SOC5810  Gender In Cross-Cultural Perspective  
Analysis of gender stratification and its impact on culture in various nations and across ethnic groups in the United States.

SOC5830  Social Movements  
This course will focus on social movements and their political context to understand the causes of social movement success and failure. Special attention will be given to the 1960s wave of protest, as well as to contemporary movement forms. Students will

SOC5980  Special Topics In Sociology  
Sociological examination of a developing social issue. May be repeated in different specialized topics.

SOC5990  Directed Readings In Sociology  
Written proposal required. May be repeated for additional credit. For majors wishing to continue course work in greater depth or seeking contact with unlisted subject areas.

SOC6000  Introduction To Graduate Studies In Sociology  
Graduate students are exposed to and get acquainted with the academic and professional nature of the field of sociology from the experience of several faculty members. Some of the topics that will be covered include writing theses, doing internships and s
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<tr>
<th>Course Code</th>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>SOC6040</td>
<td>Advanced Sociological Theory</td>
<td>3</td>
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<td></td>
<td>Building on classical traditions, the course includes readings and lectures on functionalist, neo-Marxist, symbolic interactionist and other significant twentieth century sociological theories.</td>
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<td></td>
<td>Prerequisites: SOC 4040 FOR LEVEL UG WITH MIN. GRADE OF D- OR SOC 5040 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>SOC6050</td>
<td>Advanced Social Theory And Political Economy</td>
<td>3</td>
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<td></td>
<td>This course will analyze and evaluate major social theories drawn from various 19th and 20th century intellectual and ideological traditions. The common subject focus of course readings is state, power and class relations.</td>
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<tr>
<td></td>
<td>Prerequisites: SOC 4040 FOR LEVEL UG WITH MIN. GRADE OF D- OR SOC 5040 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>SOC6270</td>
<td>Advanced Social Research Methods</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Examination of advanced methods of data collection in sociological research.</td>
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<td></td>
<td>Prerequisites: SOC 5270 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>SOC6290</td>
<td>Advanced Social Research Statistics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Examination of advanced methods of data analysis in sociological research.</td>
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<tr>
<td></td>
<td>Prerequisites: SOC 5290 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
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<tr>
<td>SOC6610</td>
<td>Seminar In Social Movements</td>
<td>3</td>
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<td></td>
<td>This course will explore current topics in social movements and protest, with significant student input into design of topics. Students must have previous experience in social movement studies.</td>
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<tr>
<td>SOC6620</td>
<td>Seminar In Work And Occupation</td>
<td>3</td>
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<td></td>
<td>A social scientific analysis of work, including differences between occupations and workplace issues.</td>
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<tr>
<td>SOC6800</td>
<td>Seminar In Theories In Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Intensive sociological study of theory building in social psychology including, among others, paradigms of social cognition and belief, social influence, and social relations.</td>
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</tbody>
</table>
SOC6810  Seminar In Medical Sociology  Credit Hours:  3
Intensive sociological study of selected topics from among those including the illness experience, patient-health provider relations, the organization of medicine and problems inherent in the delivery of health care services.

SOC6900  Independent Research In Sociology  Credit Hours:  1-3
Student-selected research topic under the supervision of a sociology faculty member. Permission to enroll is contingent on the instructor's acceptance of the student's research proposal.

SOC6930  Seminars In Sociology  Credit Hours:  3
Seminar on selected topics in the field of Sociology.

SOC6940  Graduate Internship  Credit Hours:  3
In applied setting in areas of student interest: community organizing - health-probation - gerontology.

Prerequisites: (SOC 6000 FOR LEVEL GR WITH MIN. GRADE OF D- AND SOC 6040 FOR LEVEL GR WITH MIN. GRADE OF D- AND SOC 6270 FOR LEVEL GR WITH MIN. GRADE OF D- AND SOC 6290 FOR LEVEL GR WITH MIN. GRADE OF D-)

SOC6960  Thesis  Credit Hours:  1-6
Topic (proposal) is selected by the student and approved by a thesis committee.

Prerequisites: (SOC 6270 FOR LEVEL GR WITH MIN. GRADE OF D- AND SOC 6290 FOR LEVEL GR WITH MIN. GRADE OF D- AND SOC 6040 FOR LEVEL GR WITH MIN. GRADE OF D- AND SOC 6000 FOR LEVEL GR WITH MIN. GRADE OF D-)

SOC6990  Independent Study In Sociology  Credit Hours:  1-3
Written proposal required. May be repeated for additional credit. For majors wishing to continue coursework work in greater depth or seeking contact with unlisted subject areas.

SOCW1030  Introduction To Social Welfare  Credit Hours:  3
An introduction to the social welfare institution, its history, relation to social values, major social laws and programs, and the systems characteristic of service delivery. (not for major credit)
SOCW2010  Survey Of The Social Work Profession  
A beginning study of the profession of social work, values and ethics, and diversity. The generalist framework, strengths perspective and systems theory are introduced.

Prerequisites: SOCW 1030 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW2210  Field Experience And Lab I  
Supervised field experience. Ninety hours evenly distributed with weekly directed classroom discussion of reflecting the relationship of field experience to social work practice. This course meets the WAC requirements, and journaling and written classroom

Prerequisites: SOCW 2010 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW3020  Social Work Issues In Social & Economic Justice  
Provides an in depth study of the concepts of social and economic justice relative to the practice of social work including power and economic distribution, oppression, discrimination and confronting injustice.

Prerequisites: SOCW 2210 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW3030  Survey Of Social Work Assessment Tools  
Provides an overview of various tools used by social workers in practice including use of DSM IV, individual, family, group, organization and community assessments.

Prerequisites: SOCW 2210 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW3040  Social Work With Older Adults  
History and development of practice with older adults. Trends in aging, services for older adults, health care, social security, retirement, elder abuse, substitute care decision, hospice, loss, death and dying.

Prerequisites: SOCW 2210 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW3050  Crisis Intervention  
Provides an examination of crisis intervention theories and strategies to deal with stress. Emphasis is on observing, formulating, defining and measuring the threats, tasks and opportunities associated with crisis behavior.

Prerequisites: SOCW 2010 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW3060  Social Work Ethics  
Examination of social work values and their professional implications. Provision of working knowledge of Social Work Code of Ethics and licensing and subsequent professional responsibilities. Integration of theoretical models with practice situations.

Prerequisites: SOCW 2210 FOR LEVEL UG WITH MIN. GRADE OF D-
Course Descriptions 2009-2010

SOCW3070   Child Welfare I
Credit Hours: 3
Child welfare history. Knowledge, concepts and skill development concerning child maltreatment and protection, risk assessment and family-centered services.

Prerequisites: SOCW 2010 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW3080   Women In Poverty
Credit Hours: 3
Provides an understanding of women's poverty and its perpetuation through marriage and divorce, women's work and wages, welfare, children, child support and the economics of the unpaid women's labor.

Prerequisites: SOCW 2210 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW3090   Social Work Perspectives On Culture And Oppression
Credit Hours: 3
Focus is on racial/ethnic groups who are among social welfare consumers. Cultural characteristics and group strengths, needs, priorities and experiences within the context of social work are also explored.

Prerequisites: SOCW 2010 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW3110   Social Work Practice I
Credit Hours: 3
An overview of generalist social work practice with various system sizes. Emphasizes strengths, empowerment, social and economic justice, ethical practice and examination of self in relation to professional social work.

Prerequisites: SOCW 2210 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW3120   Social Work Interviewing And Recording
Credit Hours: 4
Develops skills needed for the generalist social work interview and appropriate recording techniques. Integrates computer simulation, role-play and video recording for a participatory learning experience.

Prerequisites: SOCW 3110 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW3170   Child Welfare II
Credit Hours: 3
Addresses the developmental and permanence needs of children, effects of maltreatment on children, placement issues, separation, reunification and adoption. Includes child welfare services for children with developmental disabilities.

Prerequisites: (SOCW 3070 FOR LEVEL UG WITH MIN. GRADE OF D- AND SOCW 2010 FOR LEVEL UG WITH MIN. GRADE OF D-)

SOCW3240   Human Behavior In The Social Environment I
Credit Hours: 3
Theoretical approaches to understanding human behavior and the interrelatedness of biological, psychological, social, cultural and environmental factors affecting individual, family and group behavior within the context of diversity.

Prerequisites: (BIOL 1120 FOR LEVEL UG WITH MIN. GRADE OF D- AND ANTH 2100 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSY 2510 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (BIOL 1120 FOR LEVEL UG WITH MIN. GRADE OF D- AND ANTH 2800 FOR LEVEL UG WITH MIN. GRADE OF D-)
SOCW3250  Human Behavior In The Social Environment II  Credit Hours:  3
Provides an understanding of theories addressing behavior of larger systems including groups, organizations, and communities with a focus on socio-cultural factors and social and economic justice.

Prerequisites: SOCW 3240 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW3300  Social Policy And Legislation  Credit Hours:  3
An examination of current social welfare issues and theories and the significance to the social, economic and political factors which influence policymaking and implementation.

Prerequisites: PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW4010  Social Work Research Methods  Credit Hours:  3
Presentation of basic concepts used in social work research. Practice based methods are emphasized. Course content will focus on scientific methods of building knowledge within the social sciences.

Prerequisites: SOC 3290 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSC 3110 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSY 2100 FOR LEVEL UG WITH MIN. GRADE OF D- OR RESM 4100 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW4120  Social Work Practice II  Credit Hours:  3
Provides advanced theory and skill development as a generalist social worker with individuals, families and groups. Emphasis is on a strengths and empowerment perspective focused on social and economic justice.

Prerequisites: SOCW 3120 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW4130  Social Work Practice III  Credit Hours:  3
Provides advanced theory and skill development as a generalist social worker with organizations and communities. Emphasis is on a strengths and empowerment perspective focused on social and economic justice.

Prerequisites: SOCW 4120 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW4200  Field Laboratory II  Credit Hours:  1
Integration of field experience and proactive principles.

SOCW4210  Field Laboratory III  Credit Hours:  1
Integration of field experience and proactive principles.
SOCW4220  Social Work Field Experience II  Credit Hours:  5
A professional experience in generalist social work practice with an integration of classroom learning with practice in a social agency. Must be taken in successive semesters during a single academic year. Application for entry to field placement must be

SOCW4230  Field Experience III  Credit Hours:  5
A professional experience in generalist social work practice with an integration of classroom learning with practice in a social agency. Must be taken in successive semesters during a single academic year. Application for entry to field placement must be

Prerequisites: SOCW 4220 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW4500  Appreciating Diversity In Social Work Practice  Credit Hours:  3
This course focuses upon the cultural group strengths, needs, priorities and experiences of ethnic/racial groups in the U.S. through a social welfare perspective. Individual and institutional racism are examined.

Prerequisites: SOCW 2210 FOR LEVEL UG WITH MIN. GRADE OF D-

SOCW4960  Honors Thesis  Credit Hours:  1-6
Senior standing and approval of the department honor adviser.

SOCW4980  Special Issues In Social Work  Credit Hours:  1-3
Courses on various social work specialties. May be repeated in different topics.

SOCW4990  Independent Study In Social Work  Credit Hours:  1-3
Designed for advanced students in social work to pursue supervised independent study in unlisted subject areas or to continue course work in greater depth. Written proposal required.

SOCW5010  Social Work Research Methods And Analysis  Credit Hours:  3
Course introduces students to qualitative and quantitative research methodologies, supporting statistical methods as utilized within the social work profession, data analysis technology and evidenced based social work practice concepts.
SOCW5110  Social Work Practice I  
Provides an overview of social work practice theory and paradigms to base practice with individuals, families and groups emphasizing strengths and empowerment, values and ethics, and understanding self.

SOCW5120  Social Work Practice II  
Provides an overview of social work theories guiding social work practice with groups and organizations, including group development, leadership, and models of organizations within a social and economic justice framework.

Prerequisites: SOCW 5110 FOR LEVEL GR WITH MIN. GRADE OF B AND SOCW 5210 FOR LEVEL GR WITH MIN. GRADE OF B

SOCW5130  Social Work Practice III  
Provides historical and contemporary look at the social work profession, its roots in community organizing, theories underpinning group work and community organizing. Strengths and empowerment models and social justice emphasized.

Prerequisites: SOCW 5110 FOR LEVEL GR WITH MIN. GRADE OF B

SOCW5210  Micro Social Work Perspectives In Human Behavior And The Social Environment  
Course is organized on a developmental model including social work perspectives and theory on: biopsychosocial aspects of human growth and development. Critical analysis encouraged through social justice conceptualizations.

SOCW5220  Macro Social Work Perspectives In Human Behavior And The Social Environment  
Course views the behavior of groups, organizations, and communities and their environmental contexts through a social work perspective. Attention focuses on issues of diversity, oppression, and social and economic justice.

Prerequisites: SOCW 5210 FOR LEVEL GR WITH MIN. GRADE OF B

SOCW5330  Policy Issues And Analysis In Social Work  
Course covers the history of social work profession and major institutions. Through current policy issues, methods of policy analysis are provided. Students are introduced to various methods of policy practice.

SOCW5900  FOUNDATION FIELD EXPERIENCE AND INTEGRATIVE SEMINAR I  
The student participates in a weekly seminar to be oriented to field requirements, expectations and safety; and to integrate classroom learning to the field experience. During the 6th week the student adds a field experience in an assigned field agency an

Corequisite: SOCW 5330
SOCW5910 FOUNDATION FIELD EXPERIENCE AND INTEGRATIVE SEMINAR II Credit Hours: 3
The student continues in the field placement which was assigned in SOCW 5900 and attends a weekly integrative field seminar. The student completes 240 field hours at 16 hours per week. SOCW 5900 and 5910 must be taken in consecutive semesters during which

Prerequisites: SOCW 5900 FOR LEVEL GR WITH MIN. GRADE OF B

Corequisite: SOCW 5330

SOCW6030 Research Methods For Macro Social Work Practice Credit Hours: 3
Covers research methods specific to macro social work practice especially needs assessment and program evaluation. Content on research ethics, data management, and evidence based practice are addressed. Prerequisites: All 5000 level courses, advanced standing status or by permission of

Prerequisites: SOCW 5010 FOR LEVEL GR WITH MIN. GRADE OF B

SOCW6040 Research Methods For Micro Social Work Practice Credit Hours: 3
Course covers evaluation of client accomplishments through subject design methods. Content on research Ethics, data management, and evidence based practice are addressed. Prerequisites: all 5000-level courses, advanced standing status or by permission of

Prerequisites: SOCW 5010 FOR LEVEL GR WITH MIN. GRADE OF B

SOCW6110 Advanced Generalist Practice I Credit Hours: 3
Advanced study of generalist social work practice and theory when working with individuals, families, and groups with an intergenerational focus on social and economic justice. All SOCW 5000-level courses, Advanced Standing Status, or Permission.

SOCW6120 Advanced Generalist Practice II Credit Hours: 3
Course provides advanced content on social work practice in organizations including financial management, supervision and planning. Incorporates current theoretical perspectives and research on effective practice. Prerequisite: SOCW 6110 with a B or better

Prerequisites: SOCW 6110 FOR LEVEL GR WITH MIN. GRADE OF B

SOCW6130 Advanced Generalist Practice III Credit Hours: 3
Course provides advanced content on social work practice within the community and with groups. Particular attention is paid to community change processes and social and economic justice. Prerequisite: SOCW 6110 and 6140 with a B or better.

Prerequisites: SOCW 6110 FOR LEVEL GR WITH MIN. GRADE OF B

SOCW6140 Advanced Social Work Assessment Credit Hours: 3
Course provides an overview of theories and methods of social work assessment with an emphasis on psychosocial assessment, macro assessments and various tools used by social workers for assessment purposes. Prerequisites all 5000 level courses, advanced st
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<tbody>
<tr>
<td>SOCW6410</td>
<td>Child And Family Social Work Practice</td>
<td>3</td>
</tr>
<tr>
<td>SOCW6430</td>
<td>Social Work Policy Issues: Child And Family</td>
<td>3</td>
</tr>
<tr>
<td>SOCW6460</td>
<td>Social Work Journal Review Seminar I: Child And Family Services</td>
<td>1</td>
</tr>
<tr>
<td>SOCW6470</td>
<td>Social Work Journal Review Seminar II - Child And Family Services</td>
<td>1</td>
</tr>
<tr>
<td>SOCW6510</td>
<td>Social Work Practice In Mental Health</td>
<td>3</td>
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<tr>
<td>SOCW6530</td>
<td>Social Work Policy Issues In Mental Health</td>
<td>3</td>
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<tr>
<td>SOCW6560</td>
<td>Social Work Journal Review Seminar I - Mental Health Practice</td>
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</tbody>
</table>

Course covers the social worker's role in child and family practice settings including the major theoretical perspectives accepted in the field with an emphasis on strengths and empowerment. Prerequisites: all 5000-level classes, Advanced Standing status.

Course provides knowledge about current social work policy issues concerning child and family services. Major emphasis is placed on social and economic justice in the resolution of policy conflicts.

This course enables students to gain a critical understanding and appreciation of the social work literature and research underpinning social work practice in child and family services. Prerequisite: All 5000-level classes and SOCW 6140. Corequisites: SOC

Course provides a more in depth examination and appreciation of social work literature and research underpinning social work practice with children and family services. Prerequisite: SOCW 6110, 6140, 6410 with a B or better. Corequisite: 6430.

Course enables students to gain a critical understanding and appreciation of the social work literature and research underpinning social work practice in mental health settings. Prerequisites: All 5000-level classes, advanced standing status, and SOCW 614.
SOCW6570  Social Work Journal Review Seminar II - Mental Health Practice  
Course provides a more in depth examination and appreciation of social work literature and research underpinning social work practice in mental health settings. Prerequisites: SOCW 6110, 6140, 6510 with a B or better.

Prerequisites: SOCW 6560 FOR LEVEL GR WITH MIN. GRADE OF B

SOCW6610  Social Work Practice In The Aging Community  
Course provides an understanding of social worker’s role in aging practice settings. Included are major theoretical perspectives currently accepted in the field with emphasis on strengths and empowerment.

SOCW6630  Social Work Policy Issues In Aging  
Course provides knowledge about the current policy issues concerning social work services for the elderly. Major emphasis is placed on social and economic justice in the resolution of policy conflicts.

SOCW6660  Social Work Journal Review Seminar I - Aging Services  
Course provides an understanding and appreciation of the social work literature and research underpinning social work practice with older adults.

SOCW6670  Social Work Journal Review Summer II - Aging Services  
Course provides a more in depth examination and appreciation of the social work literature and research underpinning social work practice with older adults.

Prerequisites: SOCW 6660 FOR LEVEL GR WITH MIN. GRADE OF D-

SOCW6900  ADVANCED FIELD EXPERIENCE AND INTEGRATIVE SEMINAR I  
Students are placed in a social work field agency and participate in a weekly integrative seminar. Students registered for 5 hours must complete 360 field hours at 24 hours per week. Students who have been approved to participate in the extended field exp

Prerequisites: SOCW 5900 FOR LEVEL GR WITH MIN. GRADE OF B AND SOCW 6410 FOR LEVEL GR WITH MIN. GRADE OF B (MAY BE TAKEN CONCURRENTLY) OR SOCW 6510 FOR LEVEL GR WITH MIN. GRADE OF B (MAY BE TAKEN CONCURRENTLY)

SOCW6910  ADVANCED FIELD EXPERIENCE AND INTEGRATIVE SEMINAR II  
Students continue placement in the field agency assigned in SOCW 6900 and participate in a weekly integrative seminar. The student registered for 5 hours must complete 360 field hours at 24 hours per week. Students who have been approved to participate in

Prerequisites: SOCW 6900 FOR LEVEL GR WITH MIN. GRADE OF B AND SOCW 6430 FOR LEVEL GR WITH MIN. GRADE OF B (MAY BE TAKEN CONCURRENTLY) OR SOCW 6530 FOR LEVEL GR WITH MIN. GRADE OF B (MAY BE TAKEN CONCURRENTLY)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW6960</td>
<td>Thesis</td>
<td>1-6</td>
</tr>
<tr>
<td></td>
<td>This course involves research leading to a written thesis. Thesis topic, defense, and final thesis must be approved by the student's thesis committee.</td>
<td></td>
</tr>
<tr>
<td>SOCW6980</td>
<td>Special Topics In Social Work</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Content will vary as instructors present a single concentration on developments, problems, and controversies in social work.</td>
<td></td>
</tr>
<tr>
<td>SOCW6990</td>
<td>Independent Study In Social Work</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Directed study in social work under the supervision of a social work faculty member.</td>
<td></td>
</tr>
<tr>
<td>SOMN600</td>
<td>Basic Life Support</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>The Basic Life Support Healthcare Provider Course is designed to teach the skills of CPR for use in victims of all ages (including ventilation with a barrier device, a bag-mask device, and oxygen); use of an automated external defibrillator(AED); and rel</td>
<td></td>
</tr>
<tr>
<td>SOMN602</td>
<td>Intro to Sports Medicine</td>
<td>0</td>
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<tr>
<td>SOMN603</td>
<td>Adv Cardiac Life Support</td>
<td>1</td>
</tr>
<tr>
<td>SOMN604</td>
<td>Intro to Orthopedic Research</td>
<td>0</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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<tr>
<td>SOMN605</td>
<td>Medical Science Integration</td>
<td>0-9</td>
</tr>
<tr>
<td>SOMN606</td>
<td>Phys Exam:Spine</td>
<td>0</td>
</tr>
<tr>
<td>SOMN610</td>
<td>Medical Spanish</td>
<td>0</td>
</tr>
<tr>
<td>SOMN611</td>
<td>Clinical Human Genetics</td>
<td>0</td>
</tr>
<tr>
<td>SOMN612</td>
<td>Internal Med Subspecialty</td>
<td>0</td>
</tr>
<tr>
<td>SOMN613</td>
<td>Emergency Medicine</td>
<td>0</td>
</tr>
<tr>
<td>SOMN615</td>
<td>USMLE Test Preparation</td>
<td>1-9</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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<tr>
<td>SOMN620</td>
<td>International Health Care</td>
<td>0</td>
</tr>
<tr>
<td>SOMN673</td>
<td>Laboratory Medicine Vignettes</td>
<td>0</td>
</tr>
<tr>
<td>SOMN682</td>
<td>Summer Preceptorship</td>
<td>0</td>
</tr>
<tr>
<td>SOMN683</td>
<td>HIV/AIDS</td>
<td>0</td>
</tr>
<tr>
<td>SOMN684</td>
<td>Introduction to Surgery</td>
<td>0</td>
</tr>
<tr>
<td>SOMN697</td>
<td>Clinical Survey</td>
<td>0</td>
</tr>
<tr>
<td>SOMN700</td>
<td>Principles Occupational Health</td>
<td>0</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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<tr>
<td>SOMN703</td>
<td>Complementary Medicine Practic</td>
<td>0</td>
</tr>
<tr>
<td>SOMN705</td>
<td>Child Development</td>
<td>0</td>
</tr>
<tr>
<td>SOMN706</td>
<td>Dermatology</td>
<td>0</td>
</tr>
<tr>
<td>SOMN708</td>
<td>Intro to Disaster Medicine</td>
<td>0</td>
</tr>
<tr>
<td>SOMN709</td>
<td>Community Health Issues</td>
<td>0</td>
</tr>
<tr>
<td>SOMN710</td>
<td>Family Care Giving - Dementia</td>
<td>0</td>
</tr>
<tr>
<td>SOMN711</td>
<td>Wilderness Medicine</td>
<td>0</td>
</tr>
</tbody>
</table>
## SOMN712  Autopsy Elective

Credit Hours: 0

## SOMN713  Intro/Orientation to Hospice of Northwest Ohio

Credit Hours: 0

## SOMN714  Child & Adolescent Psychiatry

Credit Hours: 0

## SOMN775  Med Start Program

Credit Hours: 0

## SOST1010  Introduction To Social Services

Credit Hours: 3

The historical development of social services as it relates to the present system of delivery of services. Significant writing involved.

## SOST1020  Helping Skills In Social Service

Credit Hours: 3

All social services agencies use a modified form of the Scientific Method. This course will assist the student in executing gathering data, defining problems, generating solutions, implementing solutions and follow-up. Significant writing involved.

Corequisite:SOST 1500

## SOST1040  Introduction To Gerontology

Credit Hours: 3

This course gives an overview of the role of the older adult in contemporary society, including the demography of aging, physical and social environments, specialized services available and stereotypical myths related to the aged. Significant writing involved.
SOST1070  Techniques Of Interviewing  Credit Hours:  3
The knowledge and practice of effective approaches to interviewing. Significant writing involved.

SOST1080  Team Approach In Social Services  Credit Hours:  3
Experiential exploration of the variety of professional teams, the division of responsibility within the professional team and the differences in function of its members. Significant writing involved.

SOST1130  Community Resources  Credit Hours:  3
An explanation of community resources (human services agencies) with focus on their effective use for connecting clientele to services. Significant writing involved.

SOST1150  Applied Creative Expressions  Credit Hours:  3
Exploration of materials and applications of techniques covering a variety of two and three dimensional arts and crafts projects as applied to various age groups.

SOST1500  Self-Management And Interpersonal Relationships  Credit Hours:  3
A course designed to assist the student in learning about human behavior in relation to awareness of oneself and relationships to others. Significant writing involved.

Corequisite:SOST 1020
SOST1510  Client-Caseworker Interface  Credit Hours:  3

SOST1520  Info Mgmt Skls-Human Service  Credit Hours:  3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>SOST1530</td>
<td>Eligibility Determ-Fed Assist</td>
<td>3</td>
</tr>
<tr>
<td>SOST1540</td>
<td>Sup Writing Skills-Human Serv</td>
<td>1</td>
</tr>
<tr>
<td>SOST1550</td>
<td>Overview-Child Support Enforce</td>
<td>3</td>
</tr>
<tr>
<td>SOST1560</td>
<td>Caseworker and Recipient Proc</td>
<td>3</td>
</tr>
<tr>
<td>SOST1570</td>
<td>Conducting CSEA Investigations</td>
<td>3</td>
</tr>
<tr>
<td>SOST1580</td>
<td>Court Orders-Child Support Enf</td>
<td>1</td>
</tr>
<tr>
<td>SOST1590</td>
<td>Motivating and Improving Perfm</td>
<td>3</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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<tr>
<td>SOST1600</td>
<td>Managng Priorities, Time, Info</td>
<td>3</td>
</tr>
<tr>
<td>SOST1610</td>
<td>Comm Skills for Supervisors</td>
<td>3</td>
</tr>
<tr>
<td>SOST1620</td>
<td>Program Support, Policy Interp</td>
<td>1</td>
</tr>
<tr>
<td>SOST1630</td>
<td>Essentials-Fraud and Ovrpaymnt</td>
<td>3</td>
</tr>
<tr>
<td>SOST1640</td>
<td>Intro-Jobs, Leap, Interviewing</td>
<td>3</td>
</tr>
<tr>
<td>SOST1650</td>
<td>Resolving Case Problems Income</td>
<td>1</td>
</tr>
<tr>
<td>SOST1660</td>
<td>Admin Process in Child Support</td>
<td>1</td>
</tr>
</tbody>
</table>
SOST1670  Supervising-Collaboration IV  Credit Hours:  1

SOST1680  Strategies-Achieving Excellence  Credit Hours:  2

SOST1690  Maintaining Professional Safety  Credit Hours:  1

SOST1700  Collab Among IV-A, IV-D, IV-F  Credit Hours:  3

SOST1710  Resolving Case Prob-Child Supt  Credit Hours:  1

SOST1720  Case Management-Jobs and Leap  Credit Hours:  3

SOST2020  Methods In Social Services  Credit Hours:  3

Experientially learning the processes involved in the various methods of giving service casework, (one-to-one approach), group work and community organization. Significant writing involved.

Prerequisites: SOST 2100 FOR LEVEL UG WITH MIN. GRADE OF D-
SOST2030  Financing Health And Social Services  Credit Hours:  3
An in-depth examination of current funding systems in human services, with particular emphasis on Medicare, Medicaid, social security benefits and private health care coverage. Significant writing involved.

SOST2100  Record Keeping  Credit Hours:  3
Assists the student in acquiring recording skills for use in providing service with emphasis on relationship between practice and record keeping. Significant writing involved.

SOST2110  Ethnic Studies In Social Services  Credit Hours:  3
This course explores the effects of living in a multi-cultural society, examines stereotyping, discrimination and racism. Significant writing involved.

SOST2160  Dealing With Death And Dying  Credit Hours:  3
This course explores the meaning of death, as well as adjustment to the deaths of others and the social-emotional consequences. Dealing with those who are terminally ill and who must deal with dying is of concern in this course. Significant writing invo

SOST2210  Adult-Child Relationships  Credit Hours:  3
Understanding the child as an interacting member of family and community. Management techniques and methods to promote mental and emotional health will be studied. Significant writing involved.

SOST2220  Developmental Patterns Of Children  Credit Hours:  3
A study of normal patterns of development from conception through middle childhood. Recognition of abnormal patterns which indicate special physical, mental or emotional problems or needs. Significant writing involved.

SOST2230  Adolescent Psychology  Credit Hours:  3
Investigates the changes and stress in adolescence and the special dynamics of parent-adolescent interaction through use of journal research and class discussions. Significant writing involved.
**SOST2350  Social Services Internship**
Credit Hours: 4
Supervised practice obtained in the equivalent of up to 18 hours a week at an agency. Significant writing involved.

Prerequisites: SOST 2100 FOR LEVEL UG WITH MIN. GRADE OF D-

**SOST2990  Independent Study**
Credit Hours: 1-4
A course designed to provide educational opportunities in a specialized academic area under the direct supervision of a faculty member.

**SPAN1080  Culture & Commerce In The Spanish-Speaking World**
Credit Hours: 3
A study of the Hispanic world with emphasis on the relationship between its culture and business and economic institutions and practices. Taught in English. (Not for major credit)

**SPAN1090  Culture Of Latin America**
Credit Hours: 3
A study of selected artistic, literary, philosophical, political and social aspects of present day Latin American culture. Taught in English. (Not for major credit)

**SPAN1100  Culture Of Spain**
Credit Hours: 3
A study of the events, people and movements that have formed Spain. Taught in English. (Not for major credit)

**SPAN1110  Elementary Spanish I**
Credit Hours: 4
Practice in using and understanding Spanish to develop listening, speaking, reading and writing skills. Pronunciation, grammar, vocabulary and cultural topics. Lab practice required. (Not for major credit)

**SPAN1120  Elementary Spanish II**
Credit Hours: 4
A comprehensive introductory course in Spanish language and culture through the four basic skills: aural comprehension, reading, speaking and writing. Laboratory practice required. (Not for major credit)

Prerequisites: SPAN 1110 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNSP FOR MIN. SCORE OF 1120
SPAN1500  Review Of Elementary Spanish  Credit Hours:  4
Review of first-year college Spanish for students who studied the language in high school and who need to strengthen communication skills, vocabulary, grammar and pronunciation before study at the 2000 level. (Not for major credit)

SPAN2140  Intermediate Spanish I  Credit Hours:  3
Intermediate-level review and development of aural comprehension, speaking, reading and writing skills. Topics in the cultures of the Spanish-speaking world. Lab practice required. (Not for major credit)
Prerequisites:SPAN 1120 FOR LEVEL UG WITH MIN. GRADE OF D- OR SPAN 1500 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNSP FOR MIN. SCORE OF 2140

SPAN2150  Intermediate Spanish II  Credit Hours:  3
Further review and development of aural comprehension, speaking, reading and writing skills. Topics in the cultures of the Spanish-speaking world. Lab practice required. (Not for major credit)
Prerequisites:SPAN 2140 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNSP FOR MIN. SCORE OF 2150

SPAN2190  Study Abroad  Credit Hours:  1-3
Designed to permit and encourage non-majors to spend time in a country where Spanish is spoken. Credit will be given in accordance with established departmental procedures. (Not for major credit.)

SPAN3000  Spanish Grammar  Credit Hours:  3
A study of all Spanish grammatical aspects with special emphasis on those which present greater difficulty for the English speaker.
Prerequisites:SPAN 2150 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNSP FOR MIN. SCORE OF 3000

SPAN3010  Conversation And Composition I  Credit Hours:  3
Practice in speaking, listening, reading and writing. Vocabulary and fluency building in Spanish with special emphasis on oral practice.
Prerequisites:SPAN 2150 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNSP FOR MIN. SCORE OF 3000

SPAN3020  Conversation And Composition II  Credit Hours:  3
Practice in speaking, listening, reading and writing. Vocabulary and fluency building in Spanish with special emphasis on writing practice. A writing-intensive course.
Prerequisites:SPAN 2150 FOR LEVEL UG WITH MIN. GRADE OF D- OR LNSP FOR MIN. SCORE OF 3000
SPAN3170  Business Spanish  Credit Hours: 3
An introduction to the language of the Hispanic world peculiar to the areas of business and commerce.

Prerequisites: SPAN 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

SPAN3210  Survey Of Spanish Literature I  Credit Hours: 3
A survey of Spanish literature from its origins through the seventeenth century.

Prerequisites: SPAN 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

SPAN3220  Survey Of Spanish Literature II  Credit Hours: 3
A survey of Spanish literature from the eighteenth century to the present.

Prerequisites: SPAN 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

SPAN3270  Survey Of Latin American Literature I  Credit Hours: 3
The literature of Latin America from the Colonial period to the end of the nineteenth century.

Prerequisites: SPAN 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

SPAN3280  Survey Of Latin American Literature II  Credit Hours: 3
The literature of Latin America from the beginning of the twentieth century to the present.

Prerequisites: SPAN 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

SPAN3410  Spanish Culture And Civilization  Credit Hours: 3
A study of the events, people and movements that have formed Spain. Attention is also given to the nation's contemporary life-style and culture.

Prerequisites: SPAN 2150 FOR LEVEL UG WITH MIN. GRADE OF D-

SPAN3420  Latin American Civilization  Credit Hours: 3
A study of Latin America's contributions to world culture in such fields as architecture, painting, sculpture, music, literature, folklore, sciences, philosophy and education.

Prerequisites: SPAN 2150 FOR LEVEL UG WITH MIN. GRADE OF D-
SPAN4000  Advanced Spanish Grammar  Credit Hours: 3
An advanced study of Spanish grammar in preparation for higher levels of study in the language and for its use in professional pursuits.

SPAN4010  Syntax And Stylistics  Credit Hours: 4
A thorough study of the grammatical structure of Spanish with special attention to stylistic problems.

Prerequisites: (SPAN 3000 FOR LEVEL UG WITH MIN. GRADE OF D- AND SPAN 3010 FOR LEVEL UG WITH MIN. GRADE OF D- AND SPAN 3020 FOR LEVEL UG WITH MIN. GRADE OF D-)

SPAN4110  Introduction To Spanish Linguistics  Credit Hours: 4
Basic concepts of linguistics as applied to the study of the Spanish language and its dialectal systems. Emphasis on phonetics, phonology, morphology, syntax and semantics.

SPAN4120  Teaching Colloquium  Credit Hours: 3
A course in the theory and practice of teaching Spanish and of second language acquisition in general.

SPAN4170  Latin American Novel II  Credit Hours: 3
A study of the major developments in Latin American novel from the Boom to the present.

Prerequisites: SPAN 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

SPAN4190  Study Abroad  Credit Hours: 1-12
The course permits the Spanish major or minor to spend time in a country where Spanish is spoken. Credit awarded in accordance with established departmental procedures.

Prerequisites: SPAN 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

SPAN4250  Latin American Short Story  Credit Hours: 3
Development of the Latin American short story from its origins with special emphasis on the contemporary authors such as Allende, Borges, Cortazar, Garcia Marquez and Rulfo among others.

Prerequisites: SPAN 3020 FOR LEVEL UG WITH MIN. GRADE OF D-
SPAN4260   Latin American Poetry I  
Credit Hours: 3
The poetry of Latin America from Sor Juana Ines de la Cruz to Ruben Dario.

Prerequisites: SPAN 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

SPAN4270   Latin American Poetry II  
Credit Hours: 3
Latin American poetry from Surrealism to the present, with emphasis on authors such as Borges, Huidobro, Neruda, Paz and Vallejo.

Prerequisites: SPAN 3020 FOR LEVEL UG WITH MIN. GRADE OF D-

SPAN4410   Golden Age Literature  
Credit Hours: 3
Readings in the literature of the fifteenth and sixteenth centuries. Among the authors covered are Lope de Vega, Calderon de la Barca, Gongora and Quevedo.

SPAN4720   20th Century Spanish Novel  
Credit Hours: 3
Critical readings of Spanish novels from the Generation of 1898 to the most recent trends.

SPAN4810   Modern Spanish Poetry  
Credit Hours: 3
Critical readings of Spanish poetry from Romanticism to the present.

SPAN4830   Hispanic Cinema  
Credit Hours: 3
Critical viewings of Spanish-language films from Spain and the Americas. Emphasis on cultural criticism.

SPAN4910   Honors Research In Spanish  
Credit Hours: 3
Independent research in special topics. May be repeated once for credit.
SPAN4980 Special Topics
Study and research in specific areas or authors with considerable reading of Spanish texts plus written reports in Spanish.

Credit Hours: 3

SPAN5000 Advanced Spanish Grammar
An advanced study of Spanish grammar in preparation for higher levels of study in the language and for its use in professional pursuits.

Credit Hours: 3

SPAN5010 Syntax And Stylistics
A thorough study of the grammatical structure of Spanish with special attention to stylistic problems.

Credit Hours: 4

SPAN5110 Introduction To Spanish Linguistics
Basic concepts of linguistics as applied to the study of the Spanish language and its dialectal systems. Emphasis phonetics, phonology, morphology, syntax and semantics.

Credit Hours: 4

SPAN5120 Teaching Colloquia
A practical course in the theories, methods and specific techniques of teaching Spanish.

Credit Hours: 3

SPAN5160 Latin American Novel I
A study of the Latin American novel from the nineteenth century to the authors of the literary Boom of 1963.

Credit Hours: 3

SPAN5170 Latin American Novel II
A study of the major developments in Latin American novel from the Boom to the present.

Credit Hours: 3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN5210</td>
<td>Spanish For Reading Knowledge I</td>
<td>3</td>
<td>Study of those elements of structure and vocabulary most appropriate for preparing graduate students to read effectively in Spanish. (Not for majors)</td>
</tr>
<tr>
<td>SPAN5220</td>
<td>Spanish For Reading Knowledge II</td>
<td>3</td>
<td>Study of those elements of structure and vocabulary most appropriate for preparing graduate students to read effectively in Spanish. (Not for majors)</td>
</tr>
<tr>
<td>SPAN5250</td>
<td>Latin American Short Story</td>
<td>3</td>
<td>Development of the Latin American short story from its origins with special emphasis on the contemporary authors such as Allende, Borges, Cortazar, Garcia Marquez and Rulfo among others.</td>
</tr>
<tr>
<td>SPAN5310</td>
<td>Medieval &amp; Renaissance Spanish Literature</td>
<td>3</td>
<td>Study of major works from the Poema de Mio Cid to the early writers of the Siglo de Oro.</td>
</tr>
<tr>
<td>SPAN5720</td>
<td>20th Century Spanish Novel</td>
<td>3</td>
<td>Critical readings of Spanish novels from the Generation of 1898 to the most recent trends.</td>
</tr>
<tr>
<td>SPAN5830</td>
<td>Hispanic Cinema</td>
<td>3</td>
<td>Critical viewings of Spanish-language films from Spain and the Americas. Emphasis on cultural criticism.</td>
</tr>
<tr>
<td>SPAN5980</td>
<td>Special Topics</td>
<td>3</td>
<td>Study and research in specific areas or authors with considerable reading of Spanish texts plus written reports in Spanish.</td>
</tr>
</tbody>
</table>
SPAN6900  Research In Spanish  
Credit Hours: 1-3  
May be repeated for additional credit when topic varies.

SPAN6930  Seminar: Selected Topics  
Credit Hours: 1-3  
Selected topics from Spanish culture, linguistics, or literature.

SPED2010  Practicum In Special Education  
Credit Hours: 3  
Lecture and fieldwork, consisting of a minimum of 15 clock hours as assistant in each of two placements for persons with disabilities (total of 30 hours)

SPED2040  Perspectives In The Field Of Exceptionalities  
Credit Hours: 3  
Synthesis of the cross-categorical components required of special education. Issues addressed: causes and characteristics for disabling conditions and issues related to persons with disabilities, i.e., identification, intervention strategies, educational

SPED2900  Early Seminar Special Education  
Credit Hours: 1-5  
Seminar provides students with the opportunity to explore, as a group, specific topics with a faculty member. Current issues in the area of Special Education will be the focus.

SPED2910  Cultural Diversity And Disabilities  
Credit Hours: 1  
This is a linking seminar with the urban studies or public administration dual majors. The purpose is to integrate the two majors. Students will learn the relation of cultural diversity and special education. Theoretical as well as pragmatic positions wil

SPED2990  Independent Study In Special Education  
Credit Hours: 1-5  
Designed to provide the student with the opportunity to explore special interests through individual study.
### Course Descriptions 2009-2010

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>SPED3130</td>
<td>Linguistic Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Identification and evaluation of language usage. Course focuses upon development of competence for the analysis of semantic and syntactic components of language. Some pragmatic analysis is included. Lab required.</td>
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<tr>
<td>SPED3350</td>
<td>Child, Family, Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>SPED3380</td>
<td>Fld Exp: S-C Dimensions of Edu</td>
<td>2</td>
</tr>
<tr>
<td>SPED3670</td>
<td>American Sign Language I</td>
<td>3</td>
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<tr>
<td></td>
<td>Principles of manual communication. Course builds an expressive and receptive vocabulary of at least 1,000 signs in American Sign Language (ASL) and Pidgin Signed English. Ten hours of lab required.</td>
<td></td>
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<tr>
<td>SPED3680</td>
<td>American Sign Language II And Basics Of Interpreting</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Emphasis on fluency development in manual communication. Study of various models of interpreting and transliterating processes.</td>
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<tr>
<td></td>
<td>Prerequisites: SPED 3670 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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</tr>
<tr>
<td>SPED3690</td>
<td>American Sign Language III</td>
<td>4</td>
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<td></td>
<td>American Sign Language III is designed to continue the development of proficiency in using the language and understanding the culture of the Deaf. Student will gain knowledge and skill in applying approximately 900 additional vocabulary words. Students</td>
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<tr>
<td></td>
<td>Prerequisites: SPED 3680 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
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<tr>
<td>SPED3700</td>
<td>American Sign Language IV</td>
<td>4</td>
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<td>American Sign Language IV is designed to continue the development of proficiency in using the language and understanding the culture of the Deaf. Student will gain knowledge and skill in applying approximately 900 additional vocabulary words.</td>
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<td>Prerequisites: (SPED 3670 FOR LEVEL UG WITH MIN. GRADE OF C AND SPED 3680 FOR LEVEL UG WITH MIN. GRADE OF C AND SPED 3690 FOR LEVEL UG WITH MIN. GRADE OF C)</td>
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Course Descriptions 2009-2010

SPED3850  Braille I  Credit Hours:  3
Basic course in both reading and writing literary Braille; practical application of this medium to teaching.

SPED3860  Braille II And Other Media For The Blind And Visually Impaired  Credit Hours:  3
Covered in this course will be reading and writing and advanced literary Braille, Nemeth code and other needs.

SPED4010  Atypical Development In Early Childhood: Implications For Development  Credit Hours:  3
Factors that contribute to atypical development in early childhood, appropriate intervention models and implications of delay on young children's development.

SPED4020  Educating Students With Disabilities Within The Regular Education Environment  Credit Hours:  2
Focus on the classroom teacher's role in the development and modification of environment, curriculum and instruction to enable students with disabilities to be educated within the typical educational environment.
Prerequisites: UPDV FOR MIN. SCORE OF 1

SPED4030  Educating Students With Disabilities In The Middle Grades  Credit Hours:  3
Focus on the teacher's role in middle age grade classrooms in the development and modification of environment curriculum and instruction to enable students with disabilities to be educated within an inclusive educational environment. Course must be taken.
Prerequisites: UPDV FOR MIN. SCORE OF 1

SPED4060  Specialized Intervention In Infancy And Early Childhood  Credit Hours:  3
Atypical infant, toddler and early childhood development examined. Intervention strategies in home, school and specialized environments, which are family-centered and developmentally appropriate, will be addressed. Forty (40) clock hour practicum required.
Prerequisites: UPDV FOR MIN. SCORE OF 1

SPED4070  Specialized Intervention In Infancy And Early Childhood  Credit Hours:  3
Atypical infant, toddler and early childhood development examined. Intervention strategies in home, school and specialized environments, which are family-centered and developmentally appropriate, will be addressed. 20 clock hour practicum required.
SPED4080 Curriculum Adaptations & Strategies In Early Childhood Education Credit Hours: 3
Curriculum models and intervention strategies which facilitate the cognitive, academic, social, language, self-help and lay skills of children with disabilities in preschool and primary grades will be examined.
Prerequisites:UPDV FOR MIN. SCORE OF 1

SPED4100 Field Practicum With Students With Mild/Moderate Educational Needs Credit Hours: 3-4
This course must be taken with SPED 4110 or SPED 4370. The purpose is to implement strategies and techniques for teaching students with mild and moderate educational needs. Students will have the opportunity to work in educational settings with experience.
Prerequisites:UPDV FOR MIN. SCORE OF 1

SPED4110 Curriculum And Methodology For Students With Moderate Educational Needs Credit Hours: 3
This course focuses on community-referenced functional curricula approaches to teaching students with moderate educational needs. Topics include inclusionary activities, community-based instruction, social skills.
Prerequisites:UPDV FOR MIN. SCORE OF 1

SPED4120 Curriculum And Methodology For Students With Intensive Educational Needs Credit Hours: 3
Examination of appropriate curriculum models, instructional strategies and adaptations, and related behavior problems for students with intensive education needs. A transdisciplinary team approach is explored. Must be taken concurrently with SPED 4130.
Prerequisites:UPDV FOR MIN. SCORE OF 1

SPED4130 Field Practicum With Students With Moderate/Intensive Educational Needs Credit Hours: 4
This course must be taken concurrently with SPED 4110 and 4120 to implement strategies and techniques in applied settings for teaching students with moderate to intensive educational needs. Through this course students gain experience working with person
Prerequisites:UPDV FOR MIN. SCORE OF 1

SPED4150 Practicum For Teaching Students Who Are Moderately To Severely Developmentally Delayed Credit Hours: 1
This course must be taken with SPED 4160 to implement strategies and techniques for teaching students with moderate to severe developmental delays in the applied settings. Forty hours of required field.

SPED4170 Working With Adults With Disabilities In Community Setting Credit Hours: 3
Study of issues faced by adults with severe and multiple disabilities and their families. Emphasis on supported employment, residential options, self-determination, recreation and quality of life issues. Field experience required.
SPED4220  Diagnostic And Prescriptive Teaching Students With Disabilities  Credit Hours:  4
Exploration of the development of visual, auditory and tactile-kinesthetic learning modalities and implications for social and academic learning with curricular consideration for math and language arts. Field experience required.

SPED4230  Field Practicum For Diagnostic And Prescriptive Teaching  Credit Hours:  2
Provides opportunities for field experience to use and refine the teaching of basic skills presented in SPED 4220. Eighty hours of field required. Must be taken concurrently with SPED 4220.

SPED4240  Teaching Phonics, Contextual Reading And Writing To Learners With Special Needs  Credit Hours:  3
Methods for teaching reading and writing to diverse learners. Emphasis on individualized and small-group approach using structured, explicit phonics in a balanced literacy program. Twenty-four hours of field required.

SPED4250  Teaching Career And Vocational Skills To Youths With Disabilities  Credit Hours:  3
This course covers career and vocational education activities for youths with disabilities. Special emphasis is placed on developing and implementing an Individual Transition Plan (ITP) and coordination with adult service providers.
Prerequisites:UPDV FOR MIN. SCORE OF 1

SPED4260  Family And Professional Partnership In Special Education  Credit Hours:  3
Effective parent and professional partnerships will be explored. Interpersonal communication skills, legal issues, effective models for home-school communication, and differences in culture, values and family expectations will be discussed.
Prerequisites:UPDV FOR MIN. SCORE OF 1

SPED4310  Learning And Behavior Problems Of Children  Credit Hours:  4
The purpose of this course is to present causes and characteristics of learning and behavioral problems. Emphasis of course: (a)theoretical models and considerations, (b)techniques of instruction and (3) the IEP.

SPED4320  Field Practicum For Learning And Behavior Problems  Credit Hours:  1
Provides opportunities to use, refine and implement strategies for working with persons with specific learning disabilities presented in SPED 4310. Forty hours of field required. Taken concurrently with SPED 4310.
SPED4330  Child Study Institute: Ebd  Credit Hours:  1
Provides educational settings for preservice teachers to practice effective behavioral/academic managing of children and youth experiencing emotional stress/trauma. Thirty hours of field required.

SPED4340  Effective Management Of Students With Special Needs In Educational Settings  Credit Hours:  3
Techniques for managing student behavior. Topics include analyzing environments and problems, implementing and evaluating interventions, data collection and analysis, and handling aggression and noncompliance. Case-backed approach. Integrated field compon
Prerequisites:UPDV FOR MIN. SCORE OF 1

SPED4350  Advanced Methods In Learning Disabilities  Credit Hours:  3
An in-depth study of instructional methods and strategies for persons with learning disabilities. The focus will be on organization, study skills and self-advocacy strategies.

SPED4360  Clinical Practice In Specific Learning Disabilities  Credit Hours:  1
Provides students with supervised practice in developing and implementing learning strategies and study skills for persons with learning problems. Required 15 hours instructional practice with weekly meetings with supervisors/instructors.

SPED4370  Curriculum And Methods For Students With Mild Educational Needs  Credit Hours:  3
Study of causes and characteristics of mild disorders. Discussion will be on theoretical considerations as well as intervention approaches pertinent to the school and clinic setting. Taken concurrently with SPED 4100 and SPED 4110.
Prerequisites:UPDV FOR MIN. SCORE OF 1

SPED4480  Integrt Fld Exp: Best Practice  Credit Hours:  5

SPED4510  Instruction Of Students With Physical And Other Health Impairments  Credit Hours:  3
Appropriate curriculum models, learning objectives and teaching strategies for students with physical or health impairing conditions are examined. Modification of materials, assessment options and alternative response modes will be discussed.
SPED4600  Professional Reflective Seminar  Credit Hours:  3
This seminar is taken concurrently with student teaching/internship. Students will evaluate their behavior in relation to the classroom environment. The students will develop alternative strategies in the educational setting.
Prerequisites: UPDV FOR MIN. SCORE OF 1

SPED4620  Linguistic Diversity Issues In Speech-Language Pathology  Credit Hours:  1
Explores the relationship of disorders of communication with the concept of community language as it impacts language development in children.

SPED4630  Collaboration For The Speech-Language Pathologist  Credit Hours:  1
Develops an understanding of the roles and expertise of the professionals; enhances skills which benefit the communicatively disordered client by contributing to diagnostic and intervention terms.
Prerequisites: UPDV FOR MIN. SCORE OF 1

SPED4800  Introduction to Vision Impairment and Blindness  Credit Hours:  3
This course covers the anatomy and physiology of the eye, visual impairments and their implication for learning, working and independent living, as well as general issues and concepts related to blindness, the blind and the visually impaired.
Prerequisites: SPED 2040 FOR LEVEL UG WITH MIN. GRADE OF D- AND SPED 2910 FOR LEVEL UG WITH MIN. GRADE OF D- AND UPDV FOR MIN. SCORE OF 1

SPED4810  Implications Of Low Vision  Credit Hours:  3
This course covers low vision conditions as well as instruction of persons with low vision. Advantages and disadvantages of specialized equipment are discussed alongside strategies for instruction. Rehearsal with the equipment is required.
Prerequisites: UPDV FOR MIN. SCORE OF 1

SPED4820  Introduction to Research in Vision  Credit Hours:  3-5
Exposes undergraduate vision students to basic research skills and enables them to conduct research in areas of interests.
Prerequisites: SPED 2040 FOR LEVEL UG WITH MIN. GRADE OF D- AND SPED 2910 FOR LEVEL UG WITH MIN. GRADE OF D-

SPED4830  Assessment in Vision  Credit Hours:  3-5
Covers general assessment in special education but emphasizes assessment vision. This emphasis allows students to critique and administer vision assessment tools.
Prerequisites: SPED 2040 FOR LEVEL UG WITH MIN. GRADE OF D- AND SPED 2910 FOR LEVEL UG WITH MIN. GRADE OF D-
SPED4870  Education Of The Blind And Visually Impaired  Credit Hours: 3
The course focuses on methods of instruction of the blind and visually impaired in different settings; cultural diversity, instruction of the blind with additional disabilities, and various types of assessments and methodologies for curriculum adaptation.

SPED4880  Independence Skills and Technologies for the Blind and Visually Impaired  Credit Hours: 3
This course focuses on the general independence of persons who are blind or visually impaired. Covered are skills and strategies for independent living, adaptive technology, and orientation and mobility skills for the blind and visually impaired.

Prerequisites: SPED 2040 FOR LEVEL UG WITH MIN. GRADE OF D- AND SPED 2910 FOR LEVEL UG WITH MIN. GRADE OF D- AND UPDV FOR MIN. SCORE OF 1

SPED4900  Seminar In Special Education  Credit Hours: 1-5
Seminar provides students with the opportunity to explore, as a group, specific topics with a faculty member. Current issues in the area of Special Education will be the focus.

SPED4910  Directed Research In Special Education  Credit Hours: 1-5
Directed research provides students the opportunity to explore specific topics and develop individual research with a faculty member. Current questions in the area of Special Education will be the focus.

SPED4920  Readings In Special Education  Credit Hours: 1-5
Individual Readings is designed to provide students with opportunities to examine literature related to specific issues. The student works under the direction of staff in the Department of Special Education Services.

SPED4930  Student Teaching In Special Education  Credit Hours: 4-12
Planned field experience in public school classrooms under the direction of University supervisors. Full responsibility for the classroom is expected by the end of the student teaching experience.

Prerequisites: UPDV FOR MIN. SCORE OF 1

SPED4940  Internship/Externship In Special Education  Credit Hours: 4-12
Provides advanced undergraduate students with supervised practicum experiences at off-campus site, including schools, hospitals, rehabilitation clinics, work training sites and other community sites where persons with disabilities are served.

Prerequisites: UPDV FOR MIN. SCORE OF 1
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>SPED4980</td>
<td>Special Topics In Special Education</td>
<td>1-5</td>
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<tr>
<td></td>
<td>An advanced course for undergraduate majors in special education or majors in related fields covering an important area of special education. Student may repeat this course under different section numbers.</td>
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<tr>
<td>SPED4990</td>
<td>Independent Study - Special Education</td>
<td>1-5</td>
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<td>Individual study provides students with opportunities to work individually on issues under the direction of department of Special Education Services faculty. The student meets with instructor without formal classes.</td>
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<tr>
<td>SPED5000</td>
<td>Issues In Special Education</td>
<td>3</td>
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<td>Examination of causes and characteristics, identification procedures, and potential of learners who significantly deviate from the norm mentally, physically and behaviorally. Issues related to services for persons with disabilities will be studied.</td>
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<td>SPED5010</td>
<td>Atypical Development In Early Childhood: Implications For Development</td>
<td>3</td>
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<td>Factors that contribute to atypical development in early childhood, appropriate intervention models and implications of delay on young children's development.</td>
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<td>SPED5080</td>
<td>Curriculum Adaptations and Strategies in Early Childhood Education</td>
<td>3</td>
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<tr>
<td>SPED5120</td>
<td>Students With Special Needs: Developmental And Educational Implication</td>
<td>3</td>
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<td></td>
<td>In-depth study of personality, psychological and physical development, and educational needs of atypical children: including current research issues in areas of social, legal and environmental aspects of exceptional populations.</td>
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<td>SPED5150</td>
<td>Advanced Practicum For Teaching Students With Moderate Educational Needs</td>
<td>1</td>
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<td>This course is taken with SPED 5160 to apply strategies and techniques for teaching students with moderate educational needs. Forty hours of required field.</td>
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</table>
SPED5160  Advanced Instructional Methods For Teaching Students With Moderate Educational Needs  Credit Hours:  3
This course focuses on a community-referenced functional curricula approach to teaching children and youths with moderate to severe delays. An in-depth study of inclusionary activities, community-based instruction, social skills.

SPED5170  Supporting Youths And Adults With Disabilities Living And Working In The Community  Credit Hours:  3
In-depth study of issues faced by adults with severe and multiple disabilities and their families. Emphasis on supported employment, residential options, self-determination, recreation and quality of life issues. Field experience required.

SPED5180  Advanced Instructional Methods For Teaching Students With Intensive Educational Needs  Credit Hours:  3
An in-depth examination of appropriate curriculum models, instructional strategies and adaptations, and related behavior problems for students with severe and multiple disabilities. A transdisciplinary team approach is explored.

SPED5190  Advanced Practicum For Students With Intensive Needs  Credit Hours:  1
This course is taken with SPED 5180 to apply strategies and techniques for teaching students with intensive needs. Forty field hours are required.

SPED5220  Research And Practice In Teaching Phonics, Reading And Writing To Students With Special Needs  Credit Hours:  3
Current trends and issues in teaching reading and writing to students with disabilities. Examination of research supporting various methods. Application of research-based methods into practical strategies for classroom implementation. Twenty-four hours

SPED5230  Advanced Field Practicum In Diagnostic And Prescriptive Teaching  Credit Hours:  1
Provides the laboratory to rehearse and refine the teaching skills presented in SPED 5/7220. Required of persons seeking initial special education certification. Forty field hours required. Taken concurrently with SPED 5220.

SPED5250  Career And Vocational Education For Students With Disabilities  Credit Hours:  3
This course covers career and vocational education activities for youths with disabilities. Special emphasis placed on developing and implementing an Individual Transition Plan (ITP) and coordination with adult service providers.
SPED5260  Family And Professional Relations In Special Education  Credit Hours:  3
Effective parent and professional partnerships will be explored.  Interpersonal communication skills, legal issues, effective models for home-school communication, and differences in culture, values and family expectations will be discussed.

SPED5270  Team Models And Community Networking In Early Intervention  Credit Hours:  3
Theoretical and conceptual bases of instruction for students with mild disabilities.  Analysis of a range of intervention models.

SPED5280  Management Of The Learning Environment In Early Childhood Special Education  Credit Hours:  3
Aspects of quality environments, in the home and in early childhood centers for young children with special needs.  Of particular interest is identifying characteristics of natural environments that promote positive child outcomes.

SPED5300  Teaching Literacy Skills To Adolescents With Disabilities  Credit Hours:  3
This course will review existing theories and research regarding teaching literacy to students with disabilities in 4th through 12th grades (those who did not learn to read by 3rd grade).

SPED5310  Advanced Instructional Methods For Teaching Students With Mild Educational Needs  Credit Hours:  3
A study of the research on theoretical models and considerations about the causes and characteristics of learning and behavioral problems.  Emphasis of course:  (1) techniques of instruction and (2) the IEP process.

SPED5320  Advanced Field Practicum For Students With Mild Educational Needs  Credit Hours:  1
Provides opportunities for field experience to use and refine the strategies for persons with mild disabilities presented in SPED 5310.  Forty hours of field required.

SPED5330  Advanced Child Study Institute: Ebd  Credit Hours:  1
Provides quality educational settings to inservice teachers to practice effective behavioral and academic managing of children and youth experiencing continuous emotional stress and trauma.
SPED5340  Advanced Behavior Management  Credit Hours:  3
This course provides training inservice teachers to become managers of intra-communication and interpersonal relationships in diverse special education settings. Nonviolent Crisis Prevention/Intervention (CPI) training required.

SPED5510  Curriculum And Teaching Strategies: Physical And Other Health Impairments  Credit Hours:  3
Appropriate curriculum models, learning objectives and teaching strategies for students with physical or health impairing conditions are examined. Modification of materials, assessment options and alternatives response modes will be discussed.

SPED5600  ADVANCED PROFESSIONAL REFLECTIVE SEMINAR  Credit Hours:  3
The focus of this seminar is on teaching as a profession. Student will complete The Student Teaching Portfolio Project, a performance-based assessment approach to licensure and professional development. Additionally, this internship seminar provides a f

Corequisite:SPED 6940

SPED5800  Practical And Theoretical Implication Of Vision Impairment  Credit Hours:  3
A study of the research on the anatomy and physiology of the eye, visual impairments and the practical implication for learning, working and independent living.

SPED5810  Low Vision: Theory & Research  Credit Hours:  3
An in-depth study of the field of low vision. Conditions, equipment and instruction will be reviewed and analyzed for their implication to the field of vision.

SPED5870  Educational And Curriculum Issues Of Persons With Visual Impairment  Credit Hours:  3
This course focuses on the practical and philosophical pedagogy of teaching persons who are blind or visually impaired. Research on spectrum of learning environments is explored.

SPED5880  Advanced Study Of Technology And Independent Daily Living For The Persons With Visual Impairment  Credit Hours:  3
This course includes the research regarding technology, strategies and an analytical evaluation of the independent living of the blind and visually impaired.
Course Descriptions 2009-2010

SPED5950 Workshop In Special Education

A workshop developed around topics of interest and concern for in-service teachers and other education personnel. Practical application of workshop topics will be emphasized.

SPED5980 Special Topics In Special Education

An advanced course for graduate students in special education or related fields. Topics are selected based on needs of the population. Student may repeat this course under different section numbers.

SPED5990 Independent Study In Special Education

Individual study provides graduate students with opportunities to work individually on professional problems with faculty of the Department of Special Education Services. Individual meetings with sponsoring faculty are held.

SPED6070 Curriculum Models And Intervention Strategies In Early Childhood Special Education

Atypical infant, toddler and early childhood development will be examined. Specialized intervention techniques, their research and practice base and appropriate curriculum models will be explored. 20 clock hour practicum required.

SPED6080 Clinical And Educational Evaluation Of Students With Disabilities

An in-depth study of instruments used by school psychologists and classroom teachers to access and evaluate students. The diagnostic uses and the understanding of the results will be the focus.

SPED6220 Collaboration For Inclusive Schools

Provides information and competencies to develop, implement and evaluate collaborative programs. Educators will enhance their ability to collaborate so that they can better meet the needs of their students.

SPED6250 Issues And Research In Transition And Post-Secondary Outcomes For Student With Disabilities

In-depth study of transition issues and outcomes focusing on: a) best practices, b) the roles and responsibilities of a transition specialist, c) inter-agency collaboration, d) team building, and e) program development, implementation and evaluation.
SPED6350  Educational And Instructional Implications In Specific Learning Disabilities  Credit Hours: 3
Students will examine current trends in research and program development in Specific Learning Disabilities. The focus will be on learning and study skills: their implication in the development of learning.

SPED6360  Clinical Practicum: Learning Strategies For Students With Specific Learning Disabilities  Credit Hours: 1
Provides advanced graduate student with supervised practice in developing and implementing strategies and study skills for persons with learning problems. Required 15 hours instructional practice and weekly meetings with supervisors.

SPED6410  Theory And Research: Emotional Behavioral Disorders  Credit Hours: 3
This course provides in-depth readings on problems of emotionally and behaviorally disturbed/disordered children and youth. Intense study on two levels: (1) theoretical considerations and (2) treatments pertinent to diverse educational settings.

SPED6420  Public School Emotional Behavior Disorders  Credit Hours: 1
This course provides supervised practice in classroom participation with students identified as Emotionally Behaviorally Disturbed/Disordered. Public School settings include: self-contained, resource, transition, mainstreamed and consultative-collaborative.

SPED6440  Teaching Children And Youth With Emotional Behavior Disorders  Credit Hours: 3
This course provides evaluation and application techniques of research based methodologies for teaching students with emotional behavioral Disorders/disturbances. Psycho-social educational best practices within the least restrictive environment are presented.

SPED6470  Theory And Research: Autism  Credit Hours: 3
This course provides in-depth readings in the field of autism. The course includes intense study on two levels: (1) theoretical considerations and (2) treatment approaches pertinent to populations with autism.

SPED6480  Teach Youth/Child With Autism  Credit Hours: 3
This course provides research based methodologies for understanding and teaching children and youth with autism. Psycho-Social Educational best practices within the least restrictive environment are presented.
SPED6720  Advanced Language And Speech For Persons With Hearing Impairments  Credit Hours:  3
Clinical evaluation model in descriptive linguistics and interaction in the use of a process approach to developing language with children with hearing impairments. Includes relation of hearing impairment to language development.

SPED6730  Synthesis Of Principles Of Educating Children With Hearing Impairments  Credit Hours:  3
Historical, Philosophical, psychological and social aspects of educating the hearing impaired. Factors affecting successful public school instruction are covered.

SPED6740  Curriculum And Assessment Issues Of The Education Of Persons With Hearing Impairments  Credit Hours:  3
Principles of educational assessment and curriculum development for students with hearing impairment. Assessment and curriculum issues will be discussed as they relate to current research trends in hearing impairment.

SPED6900  Independent Research In Special Education  Credit Hours:  1-5
Independent Research provides opportunities to work on individual research under the direction of faculty. The student meets with the instructor at intervals and conducts research without formal class meeting.

SPED6920  Master’s Research Project In Special Education  Credit Hours:  1-5
The master's project is an individually designed product which meets the final activity requirement for completion of the masters degree.

SPED6930  Seminars In Special Education  Credit Hours:  1-5
Seminars will consider problems and provide advanced study in the field of Special Education. A student may register for more than one seminar during a graduate program.

SPED6940  Internship/Externship In Special Education  Credit Hours:  1-8
Provides the advanced graduate student with supervised practicum experiences at an off-campus site; including schools, hospitals, agencies, rehabilitation clinics, work training sites and other community sites where persons with disabilities are served.
SPED6960  Master Research Thesis In Special Education  Credit Hours: 1-5
The master's thesis is an individually designed research study which meets the final activity requirement for completion of the master's degree.

SPED6990  Independent Study In Special Education  Credit Hours: 1-5
Individual study provides advanced graduate students opportunities to work individually on professional problems with faculty of the Department of Special Education Services. Individual meetings with sponsoring faculty are held.

SPED7000  Issues In Special Education  Credit Hours: 3
Examination of causes and characteristics, identification procedures, and potential of learners who significantly deviate from the norm mentally, physically and behaviorally. Issues related to services for persons with disabilities will be studied.

SPED7120  Students With Special Needs: Developmental And Educational Implication  Credit Hours: 3
In-depth study of personality, psychological and physical development, and educational needs of atypical children: including current research issues in areas of social, legal and environmental aspects of exceptional populations.

SPED7150  Advanced Practicum For Teaching Students With Moderate Educational Needs  Credit Hours: 1
This course is taken with SPED 5160 to apply strategies and techniques for teaching students with moderate educational needs. Forty hours of required field.

SPED7160  Advanced Instructional Methods For Teaching Students With Moderate Educational Needs  Credit Hours: 3
This course focuses on a community-referenced functional curricula approach to teaching children and youths with moderate to severe delays. An in-depth study of inclusionary activities, community-based instruction, social skills.

SPED7170  Supporting Youths And Adults With Disabilities Living And Working In The Community  Credit Hours: 3
In-depth study of issues faced by adults with severe and multiple disabilities and their families. Emphasis on supported employment, residential options, self-determination, recreation and quality of life issues. Field experience required.
SPED7180  Advanced Instructional Methods For Teaching Students With Intensive Educational Needs  
Credit Hours: 3  
An in-depth examination of appropriate curriculum models, instructional strategies and adaptations, and related behavior problems for students with severe and multiple disabilities. A transdisciplinary team approach is explored.

SPED7190  Advanced Practicum For Students With Intensive Needs  
Credit Hours: 1  
This course is taken with SPED 7180 to apply strategies and techniques for teaching students with intensive needs. Forty field hours are required.

SPED7220  Research And Practice In Teaching Phonics, Reading And Writing To Students With Special Needs  
Credit Hours: 3  
Current trends and issues in teaching reading and writing to students with disabilities. Examination of research supporting various methods. Application of research-based methods into practical strategies for classroom implementation. Twenty-four hours

SPED7230  Advanced Field Practicum In Diagnostic And Prescriptive Teaching  
Credit Hours: 1  
Provides the laboratory to rehearse and refine the teaching skills presented in SPED 5/7220. Required of persons seeking initial special education certification. Forty field hours required. Taken concurrently with SPED 7220.

SPED7250  Career And Vocational Education For Students With Disabilities  
Credit Hours: 3  
This course covers career and vocational education activities for youths with disabilities. Special emphasis placed on developing and implementing an Individual Transition Plan (ITP) and coordination with adult service providers.

SPED7260  Family And Professional Relations In Special Education  
Credit Hours: 3  
Effective parent and professional partnerships will be explored. Interpersonal communication skills, legal issues, effective models for home-school communication, and differences in culture, values and family expectations will be discussed.

SPED7270  Team Models And Community Networking In Early Intervention  
Credit Hours: 3  
Focus of course is on effective service coordination strategies in early intervention and early childhood special education. Issues related to peer coaching and collaborative consultation also will be examined.
SPED7280  Management Of The Learning Environment In Early Childhood Special Education  Credit Hours:  3
Aspects of quality environments, in the home and in early childhood centers for young children with special needs. Of particular interest is identifying characteristics of natural environments that promote positive child outcomes.

SPED7310  Advanced Instructional Methods For Teaching Students With Mild Educational Needs  Credit Hours:  3
Theoretical and conceptual bases of instruction for students with mild disabilities. Analysis of a range of intervention models.

SPED7320  Advanced Field Practicum For Students With Mild Educational Needs  Credit Hours:  1
Provides opportunities for field experience to use and refine the strategies for persons with mild disabilities presented in SPED 7310. Forty hours of field required.

SPED7330  Advanced Child Study Institute: Ebd  Credit Hours:  1
Provides quality educational settings to inservice teachers to practice effective behavioral and academic managing of children and youth experiencing continuous emotional stress and trauma.

SPED7340  Advanced Behavior Management  Credit Hours:  3
This course provides training in-service teachers to become managers of intra-communication and interpersonal relationships in diverse special education settings. Nonviolent Crisis Prevention/Intervention (CPI) training required.

SPED7510  Curriculum And Teaching Strategies: Physical And Other Health Impairments  Credit Hours:  3
Appropriate curriculum models, learning objectives and teaching strategies for students with physical or health impairing conditions are examined. Modification of materials, assessment options and alternatives response modes will be discussed.

SPED7800  Practical And Theoretical Implication Of Vision Impairment  Credit Hours:  3
A study of the research on the anatomy and physiology of the eye, visual impairments and the practical implication for learning, working and independent living.
SPED7810  Low Vision: Theory & Research  
Credit Hours:  3  
An in-depth study of the field of low vision. Conditions, equipment and instruction will be reviewed and analyzed for their implication to the field of vision.

SPED7880  Advanced Study Of Technology And Independent Daily Living For The Persons With Visual Impairment  
Credit Hours:  3  
This course includes the research regarding technology, strategies and an analytical evaluation of the independent living of the blind and visually impaired.

SPED7950  Workshop In Special Education  
Credit Hours:  1-5  
A workshop developed around topics of interest and concern for in-service teachers and other education personnel. Practical application of workshop topics will be emphasized.

SPED7980  Special Topics In Special Education  
Credit Hours:  1-5  
An advanced course for graduate students in special education or related fields. Topics are selected based on needs of the population. Student may repeat this course under different section numbers.

SPED7990  Independent Study In Special Education  
Credit Hours:  1-5  
Individual study provides graduate students with opportunities to work individually on professional problems with special education faculty. Individual meetings with sponsoring faculty are held.

SPED8070  Curriculum Models And Intervention Strategies In Early Childhood Special Education  
Credit Hours:  3  
Atypical infant, toddler and early childhood development will be examined. Specialized intervention techniques, their research and practice base, and appropriate curriculum models will be explored. 20 clock hour practicum required.

SPED8080  Clinical And Educational Evaluation Of Students With Disabilities  
Credit Hours:  3  
An in-depth study of instruments used by school psychologists and classroom teachers to access and evaluate students. The diagnostic uses and the understanding of the results will be the focus.
### Course Descriptions 2009-2010

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<tbody>
<tr>
<td>SPED8220</td>
<td>Collaboration For Inclusive Schools</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Provides information and competencies to develop, implement and evaluate collaborative programs. Educators will enhance their ability to collaborate so that they can better meet the needs of their students.</td>
<td></td>
</tr>
<tr>
<td>SPED8250</td>
<td>Issues And Research In Transition And Post-Secondary Outcomes For Students With Disabilities</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>In-depth study of transition issues and outcomes focusing on: a) best practices, b) the roles and responsibilities of a transition specialist, c) inter-agency collaboration, d) team building, and e) program development, implementation and evaluation.</td>
<td></td>
</tr>
<tr>
<td>SPED8350</td>
<td>Educational And Instructional Implications In Specific Learning Disabilities</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Students will examine current trends in research and program development in Specific Learning Disabilities. The focus will be on learning and study skills: their implication in the development of learning.</td>
<td></td>
</tr>
<tr>
<td>SPED8360</td>
<td>Clinical Practicum: Learning Strategies For Students With Specific Learning Disabilities</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Provides advanced graduate student with supervised practice in developing and implementing strategies and study skills for persons with learning problems. Required 15 hours instructional practice and weekly meetings with supervisors.</td>
<td></td>
</tr>
<tr>
<td>SPED8410</td>
<td>Theory And Research: Emotional Behavioral Disorders</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>This course provides in-depth readings on problems of emotionally and behaviorally disturbed/disordered children and youth. Intense study on two levels: (1) theoretical considerations and (2) treatments pertinent to diverse educational settings.</td>
<td></td>
</tr>
<tr>
<td>SPED8420</td>
<td>Public School Emotional Behavior Disorders</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>This course provides supervised practice in classroom participation with students identified as Emotionally Behaviorally Disturbed/Disordered. Public School settings include: self-contained, resource, transition, mainstreamed and consultative-collaborative</td>
<td></td>
</tr>
<tr>
<td>SPED8440</td>
<td>Teaching Children And Youth With Emotional Behavior Disorders</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>This course provides evaluation and application techniques of research based methodologies for teaching students with emotional behavioral Disorders/disturbances. Psycho-social educational best practices within the least restrictive environment are presen</td>
<td></td>
</tr>
</tbody>
</table>
SPED8470  Theory And Research: Autism  Credit Hours:  3
This course provides in-depth readings in the field of autism. The course includes intense study on two levels: (1) theoretical considerations and (2) treatment approaches pertinent to populations with autism.

SPED8480  Teach Youth/Child With Autism  Credit Hours:  3
This course provides research based methodologies for understanding and teaching children and youth with autism. Psycho-Social Educational best practices within the least restrictive environment are presented.

SPED8720  Advanced Language And Speech For Persons With Hearing Impairments  Credit Hours:  3
Clinical evaluation model in descriptive linguistics and interaction in the use of a process approach to developing language with children with hearing impairments. Includes relation of hearing impairment to language development.

SPED8730  Synthesis Of Principles Of Educating Children With Hearing Impairments  Credit Hours:  3
Historical, Philosophical, psychological and social aspects of educating the hearing impaired. Factors affecting successful public school instruction is covered.

SPED8740  Curriculum And Assessment Issues Of The Education Of Persons With Hearing Impairments  Credit Hours:  3
Principles of educational assessment and curriculum development for students with hearing impairment. Assessment and curriculum issues will be discussed as they relate to current research trends in hearing impairment.

SPED8900  Independent Research In Special Education  Credit Hours:  1-5
Independent Research provides opportunities to work on individual research under the direction of faculty. The student meets with the instructor at intervals and conducts research without formal class meeting.

SPED8930  Seminars In Special Education  Credit Hours:  1-5
Seminars will consider problems and provide advanced study in the field of Special Education. A student may register for more than one seminar during a graduate program.
**SPED8940 Internship/Externship in Special Education**  
Credit Hours: 1-8  
Provides the advanced graduate student with supervised practicum experiences at an off-campus site; including schools, hospitals, agencies, rehabilitation clinics, work training sites and other community sites where persons with disabilities are served.

**SPED8960 Doctoral Dissertation in Curriculum & Instruction**  
Credit Hours: 1-12  
The doctoral dissertation is an original scholarly product required of all students completing the doctoral degree in Special Education Services.

**SPED8990 Independent Study in Special Education**  
Credit Hours: 1-5  
Individual study provides advanced graduate students opportunities to work individually on professional problems with faculty of the Department of Special Education Services. Individual meetings with sponsoring faculty are held.

**SPSY5030 Role And Function Of The School Psychologist**  
Credit Hours: 3  
An introduction to issues in school psychology and the differing roles and responsibilities of the school psychologist as a member of the school staff. Includes onsite observations in regular and special classrooms. Legal and ethical issues as well as a h

**SPSY5040 Legal And Ethical Issues For School Psychologists And Counselors**  
Credit Hours: 3  
Covers the ethical standards and legal regulation in school psychology and school counseling. Ethical standards, litigation and legal regulation are examined in regard to professional practice.

Prerequisites: SPSY 5030 FOR LEVEL GR WITH MIN. GRADE OF D-

**SPSY5060 School Observation**  
Credit Hours: 2  
Orientation to the organization of schools for school psychology students without teaching experience. Students will serve a wide range of educational settings and integrate their observations through discussion and readings.

**SPSYS170 Consultation I: Theories And Techniques**  
Credit Hours: 3  
Addresses the theories and techniques of collaborative problem solving; includes an examination of variables affecting the consultation process.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>SPSY5300</td>
<td>Psychoeducational Assessment And Interventions I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Training in direct and standardized academic assessment techniques and in designing appropriate interventions.</td>
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<tr>
<td></td>
<td>Prerequisites: SPSY 5030 FOR LEVEL GR WITH MIN. GRADE OF D-</td>
<td></td>
</tr>
<tr>
<td>SPSY5310</td>
<td>Psychoeducational Assessment And Interventions II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Training indirect and standardized assessment techniques of preschool and low-incidence population, and designing appropriate interventions. Introduces functional behavior assessment.</td>
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<tr>
<td></td>
<td>Prerequisites: SPSY 5300 FOR LEVEL GR WITH MIN. GRADE OF B (MAY BE TAKEN CONCURRENTLY)</td>
<td></td>
</tr>
<tr>
<td>SPSY5980</td>
<td>Special Topics In Counseling, Mental Health, And School Psychology</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>This course is open to a graduate student pursuing a master's, specialist or doctoral degree program and may be a requirement of that program.</td>
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<tr>
<td>SPSY6260</td>
<td>Developmental Child Psychopathology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Examination of disorders of childhood adolescence from an ecological perspective, focusing on understanding characteristics and causes, diagnosis both medical and educational, and identification of interventions for school and home.</td>
<td></td>
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<tr>
<td>SPSY6990</td>
<td>Master’s Independent Study</td>
<td>1-4</td>
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<tr>
<td></td>
<td>Provides students the opportunity to work independently on professional problems under the direction of a faculty member in the Department of Counseling and Mental Health Services.</td>
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<tr>
<td>SPSY7170</td>
<td>Consultation I: Theories And Techniques</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Addresses the theories and techniques of collaborative problem solving; includes an examination of variables affecting the consultation process.</td>
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</tr>
<tr>
<td>SPSY7180</td>
<td>Consultation II: School and Home Collaboration</td>
<td>3</td>
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<tr>
<td></td>
<td>Advanced theory and practice in consultation. Emphasis on system-level techniques for developing and sustaining home and school collaboration. Includes study of prevention programs for promoting student academic success.</td>
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<tr>
<td></td>
<td>Prerequisites: SPSY 5170 FOR LEVEL GR WITH MIN. GRADE OF B OR SPSY 7170 FOR LEVEL GR WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)</td>
<td></td>
</tr>
</tbody>
</table>
SPSY7190  Consulting III:School-Community  Credit Hours:  3
Advanced theory and practice in system-level consultation. Emphasis on techniques for developing and sustaining school and community collaboration. Includes study of prevention programs promoting student mental health and crisis intervention.

SPSY7260  Developmental Child Psychopathology  Credit Hours:  3
Examination of disorders of childhood adolescence from an ecological perspective, focusing on understanding characteristics and causes, diagnosis both medical and educational, and identification of interventions for school and home.

SPSY7310  Psychoeducational Assessment And Interventions II  Credit Hours:  4
Training indirect and standardized assessment techniques of preschool and low-incidence population, and designing appropriate interventions. Introduces functional behavior assessment.
Prerequisites:SPSY 5300 FOR LEVEL GR WITH MIN. GRADE OF B (MAY BE TAKEN CONCURRENTLY)

SPSY7320  Psychoeducational Assessment And Interventions III  Credit Hours:  4
Assessment of cognitive and personality functioning of school-age children using standardized tests, and the interpretation of results.
Prerequisites:SPSY 7310 FOR LEVEL GR WITH MIN. GRADE OF B OR SPSY 5310 FOR LEVEL GR WITH MIN. GRADE OF B

SPSY7330  PRACTICA IN SCHOOL PSYCHOLOGY  Credit Hours:  1-4
Practice in individual evaluation, assessment and intervention design with school age children.
Prerequisites:SPSY 5310 FOR LEVEL GR WITH MIN. GRADE OF B OR SPSY 7310 FOR LEVEL GR WITH MIN. GRADE OF B

SPSY7340  School Psychology Practicum II  Credit Hours:  4
Practice in individual evaluation, assessment and intervention design, with preschool and other special populations. Includes practice in functional behavioral assessment.
Prerequisites:SPSY 7330 FOR LEVEL GR WITH MIN. GRADE OF B

SPSY7510  Supervision In Counseling And School Psychology  Credit Hours:  3
Training in supervision models, methods, roles, ethical issues, research and evaluation. Advanced training in consultation.
SPSY7530  Advanced Theories Of Counseling And Consultation  
Credit Hours: 4
Advanced preparation in theory pertaining to the principles and practice of individual counseling, group work and consultation.

SPSY7920  Specialist Research Project  
Credit Hours: 1-3
In this capstone experience, specialist students review the literature, report implications and produce a project which can be applied in school psychology and counseling-related settings.

SPSY7930  Doctoral Research Seminar  
Credit Hours: 3
Advanced preparation in research problems, design and implementation of quantitative and qualitative research and methodology in the fields of counseling and supervision.

SPSY7940  Internship In School Psychology  
Credit Hours: 1-8
Academic year on-the-job experience in a school supervised by a school psychologist with further supervision by the university. Broad range of assessment, consultation and counseling experiences are emphasized.
Prerequisites: SPSY 7330 FOR LEVEL GR WITH MIN. GRADE OF S

SPSY8480  Advanced Training In Professional, Legal, And Ethical Issues  
Credit Hours: 3
Advanced training in contemporary professional, legal and ethical issues that regulate or affect the work of counselors, psychologists and other mental health professionals.

SPSY8930  Advanced Doctoral Seminar  
Credit Hours: 3
This seminar will consider problems and provide advanced study. Open only to advanced graduate students.

SPSY8950  Workshop In Counseling, Mental Health, And School Psychology  
Credit Hours: 1-6
Workshops developed around topics of interest and concern to counselors, school psychologists, or other mental health care professionals. Practical application of topics will be stressed.
SPSY8960  Doctoral Research Dissertation
Dissertation credit may not total less than 10 semester hours and no greater than 32 hours. A doctoral student may register for such credit in more than one semester.

SPSY8980  Special Topics In Counseling, Mental Health, And School Psychology
This course is open to a graduate student pursuing a master's, specialist or doctoral degree program and may be a requirement of that program.

SPSY8990  Doctoral Independent Study
Provides students the opportunity to work independently on professional problems under the direction of a faculty member in the Department of Counseling and Mental Health Services.

STAB1000  Study Abroad

SURG661  Journal Paper Review in Surgery
Weekly assessment and critical review of the literature devoted to surgical science. Emphasis will be placed on structure and content of literature with the goal of developing the student's ability to evaluate validity. May be repeated for credit.

SURG673  Research in Surgery
Students will participate in ongoing research programs of members of the staff in rotation. May be repeated for credit.

SURG680  Current Topics Surgery I
Lecture and/or seminar course in topics of current interest in general surgery with special emphasis on the fundamentals of life under normal, experimental, or pathological conditions. Will present and moderate the discussion of original and on-going res
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>SURG681</td>
<td>Current Topics in Surgery II</td>
<td>0-4</td>
</tr>
<tr>
<td></td>
<td>Lecture and/or seminar course in topics of current interest in general surgery with special emphasis on the fundamentals of life under normal, experimental, or pathological conditions. Will present and moderate the discussion of original and on-going research.</td>
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</tr>
<tr>
<td>SURG682</td>
<td>Current Topics Surgery III</td>
<td>0-4</td>
</tr>
<tr>
<td></td>
<td>Lecture and/or seminar course in topics of current interest in general surgery with special emphasis on the fundamentals of life under normal, experimental, or pathological conditions. Will present and moderate the discussion of original and on-going research.</td>
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<tr>
<td>SURG689</td>
<td>Independent Study of Surgery</td>
<td>0-12</td>
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<tr>
<td></td>
<td>Intensive study in field of interest, including theoretical and experimental work. May be repeated for credit.</td>
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<tr>
<td>SURG703</td>
<td>Surgery</td>
<td>0-18</td>
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<tr>
<td></td>
<td>Surgery (12 weeks)</td>
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<tr>
<td>SURG704</td>
<td>Cardiothoracic Surgery</td>
<td>0-6</td>
</tr>
<tr>
<td></td>
<td>Students will be given an individualized opportunity to participate in the activities of the Division of Cardiothoracic Surgery. Opportunities may be available for clinical experience in the operating room, in management of adult and pediatric cardiac surgery.</td>
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<tr>
<td>SURG705</td>
<td>General/Trauma Surgery</td>
<td>0-6</td>
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<tr>
<td></td>
<td>Students will be designated as an Acting Intern with increased responsibility for patient management under supervision.</td>
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<tr>
<td>SURG706</td>
<td>Trauma Surgical Intensive Care</td>
<td>0-6</td>
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<td></td>
<td>Students will be designated as an Acting Intern with increased responsibility for patient management under supervision.</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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<tr>
<td>SURG708</td>
<td>Ophthalmology</td>
<td>0-6</td>
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<tr>
<td></td>
<td>The student will have the opportunity to evaluate eye disorders in the outpatient setting. Techniques for eye examination will be stressed with special emphasis on diagnosis of diabetic retinopathy, macular degeneration, cataract, and glaucoma. Viewing</td>
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<tr>
<td>SURG710</td>
<td>Pediatric Surgery</td>
<td>6</td>
</tr>
<tr>
<td>SURG711</td>
<td>Plastic Surgery</td>
<td>6</td>
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<tr>
<td></td>
<td>The focus will be to develop a more sophisticated understanding of basic and clinical sciences as they pertain to reconstructive and cosmetic surgical procedures. Evaluation of pre and post operative management of the plastic surgical patient.</td>
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<tr>
<td>SURG714</td>
<td>Vascular Surgery</td>
<td>0-6</td>
</tr>
<tr>
<td></td>
<td>Students will be designated as an Acting Intern with increased responsibility for patient management under supervision.</td>
<td></td>
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<tr>
<td>SURG715</td>
<td>Emergency Medicine</td>
<td>0-6</td>
</tr>
<tr>
<td></td>
<td>Students will be designated as an Acting Intern with increased responsibility for patient management under supervision.</td>
<td></td>
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<tr>
<td>SURG716</td>
<td>Acting Internship in Surgery</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Students will be designated as an Acting Intern with increased responsibility for patient management under supervision.</td>
<td></td>
</tr>
<tr>
<td>SURG730</td>
<td>Ophthalmology</td>
<td>0-3</td>
</tr>
<tr>
<td></td>
<td>The student will have the opportunity to evaluate eye disorders in the outpatient setting. Techniques for eye examination will be stressed with special emphasis on diagnosis of diabetic retinopathy, macular degeneration, cataract, and glaucoma. Viewing</td>
<td></td>
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</tbody>
</table>
SURG731  Cardiothoracic Surgery
Credit Hours:  3
Students will be given an individualized opportunity to participate in the activities of the Division of Cardiothoracic Surgery. Opportunities may be available for clinical experience in the operating room, in management of adult and pediatric cardiac sur

SURG740  Surgery: Required Remediation
Credit Hours:  6

SURG745  Surgery Clinical Training for MD/PhD Students during Graduate Research Years
Credit Hours:  1-2
In the summer after the second year of medical school, MD/PhD students will identify a clinical mentor. This faculty member will be responsible for the clinical training program of the student, and will provide formative and summative feedback concerning

SURG750  Surgery Away Elective
Credit Hours:  0-6

SURG751  Surgery Away Elective
Credit Hours:  0-3

SURG755  International Health
Credit Hours:  0-6

SURG789  Independent Study in Surgery
Credit Hours:  0-6
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>THR1010</td>
<td>Creative Process</td>
<td>3</td>
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<tr>
<td></td>
<td>Using theatre games and theatrical techniques, students explore the nature of creativity and its relationship to their own processes of creative expression.</td>
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<tr>
<td>THR1030</td>
<td>Stagecraft</td>
<td>3</td>
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<tr>
<td></td>
<td>Introduction to scenic design and construction using the tools and techniques of theatre including properties and scene painting. Lectures, readings and projects with practical laboratory experience.</td>
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<tr>
<td>THR1040</td>
<td>Stage Lighting And Sound</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Introduction to theory and practice in stage lighting and sound. Students will use lighting and sound tools and equipment in production crews on department productions.</td>
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<tr>
<td>THR1050</td>
<td>Costuming</td>
<td>3</td>
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<tr>
<td></td>
<td>Introduction to the theory and practice of stage costuming. Lectures, readings and projects offer practical laboratory experiences. Students will use tools and equipment of the costume shop on production crews.</td>
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<tr>
<td>THR1100</td>
<td>Introduction To Theatre</td>
<td>3</td>
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<tr>
<td></td>
<td>Introductory survey of the development of theatre and drama from the ancient world to the present day; discussion of representative plays; slides and films complement lectures. (Not recommended or required for majors.)</td>
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<tr>
<td>THR1ELD</td>
<td>Theatre Elective-Design/Tech</td>
<td>0-5</td>
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<tr>
<td>THR1ELP</td>
<td>Theatre Elective-Performance</td>
<td>0-5</td>
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</tbody>
</table>
THR1ELT  Theatre Elective-Theatre Studies  Credit Hours:  0-5

THR2000  Theatre Practicum  Credit Hours:  1
Students will be assigned a crew position for one of the department productions.

THR2200  Perspectives On Theatre  Credit Hours:  3
A study of contemporary theatrical organization and styles; theatre compared with film and television; Broadway, regional and experimental theatre; research skills development; exploration of career opportunities in theatre and related fields.

THR2420  Makeup For The Actor  Credit Hours:  2
Principles and techniques of makeup for stage. Practical execution of stage makeup problems. Students are required to purchase supplies.

THR2610  Acting I  Credit Hours:  3
An introduction to the art and craft of acting. Through scene work and improvisation, students learn to use acting terminology, identify dramatic beats, develop character objectives and play actions.
Prerequisites: THR 1010 FOR LEVEL UG WITH MIN. GRADE OF D-

THR2620  Acting II  Credit Hours:  3
Students are exposed to a range of techniques explicated by primary acting theorists/practitioners, including diagnosis of individual skills, work in voice, movement, textual analysis and scene preparation.
Prerequisites: THR 2610 FOR LEVEL UG WITH MIN. GRADE OF D-

THR2640  Voice And Movement  Credit Hours:  2
Theory and practice of vocal and physical techniques for the actor. Repeatable for up to 8 hours of credit. (BFA Performance majors should enroll in the course every semester up to the maximum credit.)
THR2990 Special Projects  Credit Hours:  1-3
Individual study provides a student an opportunity to work independently on a problem of special interest in theatre under the direction of the faculty. (Seminar forms available in the department office.)

THR2ELD Theatre Elective-Design/Tech  Credit Hours:  0-5

THR2ELP Theatre Elective-Performance  Credit Hours:  0-5

THR2ELT Theatre Elective-Theatre Studi  Credit Hours:  0-5

THR3110 World Theatre I  Credit Hours:  3
Developments and trends in theatre and drama from the ancient world through the Renaissance, including traditional forms of theatre in India, China and Japan.

THR3120 World Theatre II  Credit Hours:  3
Developments and trends in theatre and drama from the late 17th Century to the present day, including developments in Latin America and Africa.

THR3210 Playwriting  Credit Hours:  3
Creative writing for the theatre analyzing traditional and contemporary structure and style.

Prerequisites: ENGL 2720 FOR LEVEL UG WITH MIN. GRADE OF D- OR THR 2200 FOR LEVEL UG WITH MIN. GRADE OF D-
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>THR3410</td>
<td>Stage Lighting Design</td>
<td>3</td>
<td>Principles and theories of lighting design for theatrical productions are explored. Develop skills of script analysis, light study, light plot and related graphics for conceptualization and communication of design ideas.</td>
<td>THR 1040 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>THR3440</td>
<td>Stage Design</td>
<td>3</td>
<td>Theory and principles of scenic design for stage are the focus. Conceptualization and communication of design ideas are explored through renderings, models, ground plans and elevations. Students are required to purchase supplies.</td>
<td>THR 1030 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>THR3470</td>
<td>Theatre Sound</td>
<td>3</td>
<td>Students study the methods and techniques of sound production and design used in the theatre. Tools and techniques of audio production are used in laboratory recording and mixdown.</td>
<td>THR 1040 FOR LEVEL UG WITH MIN. GRADE OF D- OR MUS 2270 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>THR3480</td>
<td>Costume Design</td>
<td>3</td>
<td>Principles and theories of costume design for theatrical productions are explored. Develop skills of script analysis, sketching, fabric study and rendering for conceptualization and communication of design ideas. Students are required to purchase suppl</td>
<td>THR 1050 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>THR3610</td>
<td>Acting For The Camera</td>
<td>3</td>
<td>Performing dramatic material for camera with an emphasis on the differences between stage and screen performing.</td>
<td>THR 2620 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>THR3620</td>
<td>Acting: Contemporary Styles</td>
<td>3</td>
<td>Contemporary, nonrealistic theatre requires adjustments for actors trained in the Stanislavski tradition. This course examines the theory and praxis of artists such as Brecht, Artaud, Grotowski, Boal and others.</td>
<td>THR 2620 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
<tr>
<td>THR3640</td>
<td>Voice And Diction</td>
<td>2</td>
<td>Theories and practice of vocal techniques for the actor. Diagnosis of individual skills continues work begun in voice and movement.</td>
<td>THR 2640 FOR LEVEL UG WITH MIN. GRADE OF D-</td>
</tr>
</tbody>
</table>
THR3650 Stage Movement Credit Hours: 2
Theories and practice of physical techniques for the actor. Diagnosis of individual skills continues the work begun in voice and movement.

Prerequisites: THR 2610 FOR LEVEL UG WITH MIN. GRADE OF D- OR THR 2640 FOR LEVEL UG WITH MIN. GRADE OF D-

THR3710 Directing I Credit Hours: 3
The director's approach to analyzing a script, formulating a production concept and realizing that concept on stage. Discussions and exercises progress to directing scenes or short plays in class.

Prerequisites: (THR 2610 FOR LEVEL UG WITH MIN. GRADE OF D- AND THR 2640 FOR LEVEL UG WITH MIN. GRADE OF D- AND THR 3110 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (THR 2610 FOR LEVEL UG WITH MIN. GRADE OF D- AND THR 2640 FOR LEVEL UG WITH MIN. GRADE OF D- AND

THR3800 Production Credit Hours: 1-3
Through study and practice the student contributes significantly to department productions. This course is for students who have auditioned for roles or applied for design/tech positions in department productions.

THR3830 Costume Construction Credit Hours: 1-3
Through study and practice students contribute significantly as members of the costume shop and wardrobe crew on productions. As a laboratory course students must see instructor to arrange lab time.

THR3ELD Theatre Elective-Design/Tech Credit Hours: 0-5

THR3ELP Theatre Elective-Performance Credit Hours: 0-5

THR3ELT Theatre Elective-Theatre Studi Credit Hours: 0-5
THR4110 Modern American Theatre  Credit Hours: 3
Developments and trends in the American Theatre since 1945.

THR4130 American Musical Theatre  Credit Hours: 3
A history of the American musical theatre from the 19th century to the present.

THR4400 Seminar Topics In Design  Credit Hours: 3
Individual and group investigations of particular topics in all phases of design and technology, i.e. scene painting, advanced design and rendering technique, new technology.

THR4500 Professional Aspects Of Theatre  Credit Hours: 2
Study of the professional theatre as a business: contracts, unions, the theatre marketplace, preparation of resumes, portfolios, audition pieces, interview.
Prerequisites:THR 2200 FOR LEVEL UG WITH MIN. GRADE OF D-

THR4620 Acting: Historical Styles  Credit Hours: 3
Advanced training in acting with emphasis on effective vocal and rhetorical techniques and the use of poetic rhythm and imagery in creating a role psychologically as well as physically.
Prerequisites:(THR 2610 FOR LEVEL UG WITH MIN. GRADE OF D- AND THR 2620 FOR LEVEL UG WITH MIN. GRADE OF D- AND THR 2640 FOR LEVEL UG WITH MIN. GRADE OF D-)

THR4700 Majors Seminar  Credit Hours: 1
Survey of the full range of professional opportunities and practices in Theatre. Students in designated program tracks are instructed in resume, portfolio and interview processes.

THR4900 Special Topics: Theatre And Drama  Credit Hours: 3
Exploration of a special topic in the history and criticism of theatre and drama - e.g., Modern Theories of Theatre Art or Stanislavski's Heritage or Baroque Theatre Architecture and Its Scenic Conventions.
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<th>Course Code</th>
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<td>THR4940</td>
<td>Internship</td>
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<td>Internship with an approved program, company, or agency in theatre. Students must submit proposal for approval of instructor. (Repeatable for 6 hours credit.)</td>
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<td>THR4950</td>
<td>Honors Thesis</td>
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<td>Research or a creative project on a topic in theatre. Required of all candidates seeking department honors. (Repeatable for 6 hours credit.)</td>
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<td>THR4990</td>
<td>Special Projects</td>
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<td>Individual study provides a student an opportunity to work independently on a problem of special interest in theatre under the direction of the faculty.</td>
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<tr>
<td>THR4ELD</td>
<td>Theatre Elective-Design/Tech</td>
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<td>THR4ELP</td>
<td>Theatre Elective-Performance</td>
<td>0-5</td>
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<td>THR4ELT</td>
<td>Theatre Elective-Theatre Studi</td>
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<tr>
<td>TSOC1500</td>
<td>Education In A Diverse Society</td>
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<td></td>
<td>Introduction to the socio-cultural foundations of schooling in the United States, including purposes of schooling in a multicultural society and the resulting nature of teacher work.</td>
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</tbody>
</table>
TSOC2000  Diversity In Contemporary Society  Credit Hours:  3
This course analyzes the roles of people in a culturally diverse society through an exploration of issues of race, class, gender, ethnicity and disability.

TSOC2500  Historical-Philosophical Perspectives On Education  Credit Hours:  2
This course uses history and philosophy as lenses through which to inspect and reflect on the developing role of public schooling in the US from colonial times to the present.

TSOC3000  Schooling And Democratic Society  Credit Hours:  3
The evolving role of education in the US, including the historical and contemporary relationship of schooling to other educational institutions, groups of people and the process of social change.

TSOC3010  Educating The Reflective Practitioner  Credit Hours:  3
Emphasizes being and teaching others to be "reflective practitioners" in vocational and avocational endeavors. Coping with changing client circumstances, effective thinking, higher levels of learning and self-renewal are also studied.

TSOC3100  Inquiry And Creative Action  Credit Hours:  3
Different approaches to problem solving are examined and students use some to complete real-life projects they have designed. Creativity, logical analysis, personal effectiveness and polarity management will be studied.

TSOC3500  Soc-Cul and Hist Infl-Mid Grds  Credit Hours:  3

TSOC3540  Education And The Construction Of Societies  Credit Hours:  3
Examines life long conceptual learning tools from several humanity disciplines that help define and frame action on real life problems of a diverse, global nature.
TSOC4000     Socio-Cultural And Historical Influences On U.S. Education           Credit Hours:  3
The evolving role of education in the US, including the historical and contemporary relationship of schooling to other educational institutions, groups of people and the process of social change.

TSOC4100     Group Processes In Education                     Credit Hours:  3
Investigation of theory, research and individual interactions which undergird effective actions in groups. Group processes and individual-group relationships are emphasized in education, voluntary and business group settings.

TSOC4130     Children And The Law                         Credit Hours:  2
Examines major issues and laws involved in public education and health services, especially the role of advocate for students that the school nurse and other professionals play.

TSOC4150     Education And Community Relations            Credit Hours:  3
Provides a framework, the analysis skills and the action implementation behaviors for understanding community schools and agencies. Develops skills in project management within the context of understanding and valuing diversity.

TSOC4190     Workshop In Educational Theory & Social Foundations Credit Hours:  1-5
Practical applications of topics of interest and concern for preservice teachers and other education personnel.

TSOC4940     Field Experience In Pacs                   Credit Hours:  1-10
Students will establish and complete an internship focusing on specified objectives, actions and time schedules under both on and off-campus supervision. Progress reports and a summary evaluation are required.

TSOC4990     Independent Study In Educational Theory          Credit Hours:  1-4
Directed study of a current topic in educational theory and social foundations. The student meets with the instructor at arranged intervals without formal classes.
TSOC5100  Group Processes In Education  Credit Hours: 3
Examines intrapersonal and interpersonal principles of high performing teams, meaningful relationships, and being an effective leader and member of groups. Real-life projects will be designed, implemented and evaluated.

TSOC5110  Modern Educational Controversies  Credit Hours: 3
Examines controversial contemporary educational issues, the forces that perpetuate them and the socio-cultural contexts in which they exist. Teachers’ work and ethical tenets shaping practice are also examined.

TSOC5190  Summer Institute On Diversity In Education  Credit Hours: 3
School personnel collaborate with persons from higher education, the community, and scholars who have created model multicultural/urban education programs to learn new ways of teaching and learning among diverse populations.

TSOC5200  Sociological Foundations Of Education  Credit Hours: 3
Critical examination of the socio-cultural foundations of schooling in the United States, including purposes of schooling in a multicultural society and the resulting nature of teacher work.

TSOC5210  Multicultural Non-Sexist Education  Credit Hours: 3
Examines how race, class, gender, ethnicity and disability intersect with power, culture, knowledge and ideology in American schools to influence the lives of students and teachers in a multicultural society.

TSOC5230  Intergroup And Intercultural Education  Credit Hours: 3
In-depth history of America's racial and ethnic minorities and the role of schooling in assisting their adaptation to and assimilation into American society.

TSOC5300  Philosophy And Education  Credit Hours: 3
Exploring the nature of philosophic inquiry in education and examining competing traditions in the West, particularly in the United States. A distinction between education and schooling will be drawn.
Course Descriptions 2009-2010

TSOC5400 History Of Schooling & Teaching In The U.s.  Credit Hours: 3
Evolving role of schooling and teaching in the US, using history to reflect on the relationship of schooling to other social institutions, groups of people and the process of social change.

TSOC5950 Workshop In Educational Theory And Social Foundations  Credit Hours: 3
Each workshop is developed around a topic of interest and concern to inservice teachers and other educational personnel. Practical application of workshop topics will be emphasized.

TSOC6000 Women, Culture And Pedagogy  Credit Hours: 3
This course surveys works of prominent feminist scholars in order to address the impact of dominant ideology upon the lives of women and girls in American schools.

TSOC6120 Comparative Education  Credit Hours: 3
The purposes, structure and practice of non-formal and formal education are explored using a wide range of concepts and paradigms of comparative educational analysis throughout the globe.
Prerequisites: TSOC 5400 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7400 FOR LEVEL GR WITH MIN. GRADE OF D-

TSOC6140 History Of Socio-Political Issues In School-state Relations  Credit Hours: 3
An examination of the historical, legal, sociological interaction between state and schooling in US, emphasizing both religious/non-religious issues. These concerns are compared and analyzed with respect to other countries.
Prerequisites: TSOC 5200 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 5400 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7200 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7400 FOR LEVEL GR WITH MIN. GRADE OF D-

TSOC6190 Seminar In Educational Theory/Social Foundations  Credit Hours: 3
The collaborative study of a specific topic in educational theory and social foundations by a group of advanced students under the direction of one or more professors.

TSOC6220 Problems And Issues In Multicultural Education  Credit Hours: 3
Application of theoretical assumptions presented in TSOC 5210/7210 to US schools and classrooms, with particular attention given to program and curriculum issues, teachers and teaching policies, practices and procedures.
Prerequisites: TSOC 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7210 FOR LEVEL GR WITH MIN. GRADE OF D-
Course Descriptions 2009-2010

TSOC6240  Sociological Analyses Of Urban Education  Credit Hours:  3
Development and dynamics of schooling in urban centers across the United States, including historical and critical analyses of current problems, issues and reform initiatives.

Prerequisites: TSOC 5200 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7200 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7210 FOR LEVEL GR WITH MIN. GRADE OF D-

TSOC6310  Major Educational Theorists  Credit Hours:  3
An examination of selected educational philosophers who have addressed themselves to the problem of the ends and means of education from Classical Hellenic Times to the present.

TSOC6320  Education And The Democratic Ethic  Credit Hours:  3
Examination of the interdependence among education, democracy and ethics in the context of civic life. Applications made to the practice of schooling as cultural production in a democratic society.

Prerequisites: TSOC 5200 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 5300 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 5400 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7200 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7300 FOR LEVEL GR WITH MIN. GRADE OF D-

TSOC6330  THE ETHICS OF WAR AND PEACE AND EDUCATION  Credit Hours:  3
The purpose of this seminar is to explore the ethics of war and peace and its implications for the moral and civic education of democratic citizens.

TSOC6340  Human Rights Education  Credit Hours:  3
The purpose of this seminar is to explore the nature of human rights and human rights education. The origin, definition, content, scope, foundation, and correlative duties of human rights, as well as, the theory of human rights education will be explored.

TSOC6350  Environmental Ethics and Education  Credit Hours:  3
The purpose of this seminar is to explore the nature of environmental ethics and its implications for educational theory, in particular moral and civic education.

TSOC6500  Anthropology And Education  Credit Hours:  3
Examination of cross-cultural, comparative and other studies directed toward understanding processes of cultural transmission and transformation, and implications of anthropological research for contemporary issues in education.

Prerequisites: TSOC 5200 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7200 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7210 FOR LEVEL GR WITH MIN. GRADE OF D-
TSOC6960  Master's Thesis In Educational Theory And Social Foundations  Credit Hours: 1-3
A formal, independent study culminating in a written discourse that advances our understanding of educational theory or social foundations.

TSOC6980  Master's Project In Educational Theory And Social Foundations  Credit Hours: 1-3
A formal, independent project applying principles of educational theory or social foundations to analyze a particular problem and culminating in a written discourse.

TSOC6990  Independent Study In Educational Theory And Social Foundations  Credit Hours: 1-3
Directed study of a current topic in educational theory and social foundations. The student meets with the instructor at arranged intervals without formal classes.

TSOC7100  Group Processes In Education  Credit Hours: 3
Examines intrapersonal and interpersonal principles of high performing teams, meaningful relationships, and being an effective leader and member of groups. Real-life projects will be designed, implemented and evaluated.

TSOC7110  Modern Educational Controversies  Credit Hours: 3
Examines controversial contemporary educational issues, the forces that perpetuate them and the socio-cultural contexts in which they exist. Teachers' work and ethical tenets shaping practice are also examined.

TSOC7190  Summer Institute On Diversity In Education  Credit Hours: 3
School personnel collaborate with persons from higher education, the community, and scholars who have created model multicultural/urban education programs to learn new ways of teaching and learning among diverse populations.

TSOC7200  Sociological Foundations Of Education  Credit Hours: 3
Critical examination of the socio-cultural foundations of schooling in the United States, including purposes of schooling in a multicultural society and the resulting nature of teacher work.
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<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
<td>TSOC7210</td>
<td>Multicultural Non-Sexist Education</td>
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<td>Examines how race, class, gender, ethnicity,</td>
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<td>and disability intersect with power, culture,</td>
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<td>TSOC7230</td>
<td>Intergroup And Intercultural Education</td>
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<td>TSOC7300</td>
<td>Philosophy And Education</td>
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<td>Exploring the nature of philosophic inquiry</td>
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<td>TSOC7400</td>
<td>History Of Schooling &amp; Teaching In The U.s.</td>
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<td>Evolving role of schooling and teaching in the</td>
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<td>TSOC7950</td>
<td>Workshop In Educational Theory And Social</td>
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<td>Foundations</td>
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<td>application of workshop topics will be</td>
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<td>TSOC8000</td>
<td>Women, Culture, And Pedagogy</td>
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<td>This course surveys works of prominent</td>
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<td>TSOC8120</td>
<td>Comparative Education</td>
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<td>The purposes, structure and practice of</td>
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**Prerequisites:**

- TSOC 5400 FOR LEVEL GR WITH MIN. GRADE OF D-
- TSOC 7400 FOR LEVEL GR WITH MIN. GRADE OF D-
TSOC8140  History Of Socio-Political Issues In School-state Relations  Credit Hours:  3
An examination of the historical, legal, sociological interaction between state and schooling in US, emphasizing both religious/non-religious issues. These concerns are compared and analyzed with respect to other countries.

Prerequisites:TSOC 5200 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 5400 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7200 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7400 FOR LEVEL GR WITH MIN. GRADE OF D-

TSOC8150  CULTURAL PERSPECTIVES IN LEARNING AND DEVELOPMENT  Credit Hours:  3
This course aims to develop a broader understanding of the role of culture in psychological processes and the implications of such psychological understanding for a culturally diverse society.

TSOC8180  Interdisciplinary Seminar In Educational Psychology, Research, And Social Foundations  Credit Hours:  1
The proseminar will enable doctoral students to improve their understanding of the research process. Students will learn to ask research questions, choose alternative methodologies and interpret the validity of conclusions.

TSOC8190  Seminar In Educational Theory/Social Foundations  Credit Hours:  3
The collaborative study of a specific topic in educational theory and social foundations by a group of advanced students under the direction of one or more professors.

TSOC8220  Problems And Issues In Multicultural Education  Credit Hours:  3
2Application of theoretical assumptions presented in TSOC 5210/7210 to US schools and classrooms, with particular attention given to program and curriculum issues, teachers and teaching policies, practices and procedures.

Prerequisites:TSOC 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7210 FOR LEVEL GR WITH MIN. GRADE OF D-

TSOC8240  Sociological Analyses Of Urban Education  Credit Hours:  3
Development and dynamics of schooling in urban centers across the United States, including historical and critical analyses of current problems, issues and reform initiatives.

Prerequisites:TSOC 5200 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7200 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7210 FOR LEVEL GR WITH MIN. GRADE OF D-

TSOC8310  Major Educational Theorists  Credit Hours:  3
An examination of selected educational philosophers who have addressed themselves to the problem of the ends and means of education from Classical Hellenic Times to the present.
TSOC8320  Education And The Democratic Ethic  Credit Hours: 3
Examination of the interdependence among education, democracy and ethics in the context of civic life. Applications made to the practice of schooling as cultural production in a democratic society.

Prerequisites: TSOC 5200 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 5300 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 5400 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7200 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7300 FOR LEVEL GR WITH MIN. GRADE OF D- OR T

TSOC8330  THE ETHICS OF WAR AND PEACE AND EDUCATION  Credit Hours: 3
The purpose of this seminar is to explore the ethics of war and peace and its implications for the moral and civic education of democratic citizens.

TSOC8340  Human Rights Education  Credit Hours: 3
The purpose of this seminar is to explore the nature of human rights and human rights education. The origin, definition, content, scope, foundation, and correlative duties of human rights, as well as, the theory of human rights education will be explored.

TSOC8350  ENVIRONMENTAL ETHICS AND EDUCATION  Credit Hours: 3
The purpose of this seminar is to explore the nature of environmental ethics and its implications for educational theory, in particular moral and civic education.

TSOC8500  Anthropology And Education  Credit Hours: 3
Examination of cross-cultural, comparative, and other studies directed toward understanding processes of cultural transmission and transformation, and implications of anthropological research for contemporary issues in education.

Prerequisites: TSOC 5200 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 5210 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7200 FOR LEVEL GR WITH MIN. GRADE OF D- OR TSOC 7210 FOR LEVEL GR WITH MIN. GRADE OF D-

TSOC8960  Dissertation Research In Foundations Of Education  Credit Hours: 1-12
A formal, independent study culminating in a written discourse central to the advancement of knowledge in educational theory or social foundations.

TSOC8990  Independent Study In Educational Theory And Social Foundations  Credit Hours: 1-6
Directed study of a current topic in educational theory and social foundations. The student meets with the instructor at arranged intervals without formal classes.
**UC1000 Orientation**  
Credit Hours: 1  
An orientation to college for adults over 25. Provision of information to equip students with the tools for academic success. Open only to students in University College.

**UC1100 Creative Problem Solving**  
Credit Hours: 2

**UC1120 Career And Self-Evaluation**  
Credit Hours: 2  
This course offers an opportunity to explore two important considerations in choosing a career: (1) career opportunities and requirements, (2) individual interests, abilities, skills, needs, values and goals.

**UC1200 Applications of Thinking Critically**  
Credit Hours: 3  
Introduces students to critical thinking and fosters intellectual abilities. The course is designed for first year students who earned below a 2.0 their first or second semester and for transfer or adult students entering college with less than a 2.00 GP.

**UC2010 Portfolio Development**  
Credit Hours: 3  
Course is designed for non-traditional students whose prior learning experiences will be formatted into a portfolio for faculty assessment with the potential of earning college credit.

**UC2980 Special Topics**  
Credit Hours: 1-4  
Special Topics is an opportunity to create and pilot potential courses at a 2000 level.

**UC4940 Internships Field Experiences**  
Credit Hours: 1-8  
This is the capstone course for Individualized Program students. The field experience internship is gone under the guidance of academic advisor. It is done prior to graduation.
UC4980  Special Topics
Credit Hours:  1-4
Topics of interest to University College students offered by various instructors. Open to any University College student.

UROL640  Readings in Immunology
Credit Hours:  0-3
Selected readings in the field of immunology. Emphasis will be placed on the historical development of the field and establishing a working model of the immune system for the student. May be repeated for credit.

UROL641  Research: Xenotransplantation I
Credit Hours:  0-3
The student and instructor will agree on a program of study which will enable the student to achieve his/her objectives. May be repeated for credit.

UROL642  Res: Xenotransplantation II
Credit Hours:  0-3
Students will participate in selected ongoing research programs of members of the department faculty. May be repeated for credit.

UROL645  Res: Organ Preservation I
Credit Hours:  0-3
The student and instructor will agree on a program of study which will enable the student to achieve his/her objectives. May be repeated for credit.

UROL646  Res Organ Preservation II
Credit Hours:  0-3
Students will participate in selected ongoing research programs of members of the department faculty. May be repeated for credit.

UROL650  Seminar Urological Science I
Credit Hours:  2
Literature review and critical analysis of subspecialty areas within the field of urology, pediatric urology, and oncology. May be repeated for credit.
### UROL651 Seminar Urological Science II  
**Credit Hours:** 2  
Literature review and critical analysis of subspecialty areas within the field of urology, endourology, neurogenic bladder, renal lithiasis. May be repeated for credit.

### UROL655 Jrnl Review Urologic Science  
**Credit Hours:** 1  
A weekly assessment and critical review of the literature devoted to urological science. Emphasis will be placed on structure and content of the literature with the goal of developing the student's ability to evaluate literature validity. May be repeated.

### UROL656 Readings in Urologic Science  
**Credit Hours:** 2  
Selected readings in the field of urological science. Emphasis will be placed on the historical development of different treatment modalities. May be repeated for credit.

### UROL657 Current Topic Renal Transplant  
**Credit Hours:** 3  
Seminar on the biology and clinical science of renal transplantation. Topics include basic immunology of transplantation, biology of rejection, and clinical techniques of immunosuppression. May be repeated for credit.

### UROL658 Crnt Topic Urol Photomedicine  
**Credit Hours:** 3  
Seminar on the biology and clinical science of renal transplantation. Topics include basic immunology of transplantation, biology of rejection, and clinical techniques of immunosuppression. May be repeated for credit.

### UROL673 Research Urological Science I  
**Credit Hours:** 2  
The student and instructor will agree on a program of study that will enable the student to achieve his/her objectives. May be repeated for credit.

### UROL675 Research Urological Science II  
**Credit Hours:** 2  
Students will participate in selected ongoing research programs of members of the department faculty. May be repeated for credit.
UROL690  Ind St:Urol Transplantation  Credit Hours: 0-4
The student and instructor will agree on a program of study to enable the student to achieve objectives including theoretical and experimental work. May be repeated for credit.

UROL691  Ind St:Urol Surg Oncology  Credit Hours: 0-4
The student and instructor will agree on a program of study to enable the student to achieve his/her objectives including theoretical and experimental work. May be repeated for credit.

UROL692  Ind St:Surg Infertility  Credit Hours: 0-4
Student and instructor will agree on a program of study to enable the student to achieve objectives including theoretical and experimental work. May be repeated for credit.

UROL693  Ind St:Urol Surg Peds Urology  Credit Hours: 0-4
The student and instructor will agree on a program of study that will enable the student to achieve his/her objectives including theoretical and experimental work. May be repeated for credit.

UROL701  Urology  Credit Hours: 6
This clerkship is designed to expose students to a variety of urologic disorders seen in an outpatient setting. Teaching will be conducted primarily in the outpatient clinics, on rounds and in the ambulatory operating rooms by residents and faculty in a

UROL702  Advanced Urology  Credit Hours: 6
This clerkship is designed to expose students to a variety of urologic disorders seen in an inpatient or outpatient setting. Designed for students considering a career in Urology or a surgical discipline. Students will be designated as an Acting Intern

UROL703  Outpatient Pediatric Urology  Credit Hours: 6
This clerkship is designed to expose students to a variety of pediatric urologic problems including voiding disorders, urinary infections, undescended testes and congenital penile abnormalities. This clerkship will be especially beneficial for students c
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>UROL704</td>
<td>Lapro Surgical Robotics</td>
<td>6</td>
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<td></td>
<td>This course will review fundamentals of laparoscopic surgery including indications, complications, physiology, and basic techniques as well as other didactic information that will set the stage for skills training in a specialized laboratory setting. Bas</td>
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<tr>
<td>UROL705</td>
<td>Urology</td>
<td>3</td>
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<tr>
<td>UROL750</td>
<td>Urology Away Elective</td>
<td>6</td>
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<tr>
<td>UROL751</td>
<td>Urology Away Elective</td>
<td>0-6</td>
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<tr>
<td>UROL789</td>
<td>Independent Study in Urology</td>
<td>0-6</td>
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<tr>
<td>VCT566</td>
<td>Prin of Multimedia Products</td>
<td>3</td>
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<tr>
<td>WGST1150</td>
<td>Proseminar In Women's And Gender Studies I</td>
<td>1</td>
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<tr>
<td></td>
<td>Students reflect on the academic and professional and community activist dimensions of Women's and Gender Studies. Students develop a preliminatory plan for the development of their portfolio.</td>
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</tbody>
</table>
WGST2010  Introduction To Gender Studies: Gender, Sex And Difference  Credit Hours:  3
Interdisciplinary introduction to gender studies. Critically examines competing theories of gender and sex identification, construction, and biological determinism. Considers ethical issues regarding differences of gender, sex and sexuality.

WGST2150  Proseminar In Women's & Gender Studies II  Credit Hours:  1
Designed for majors only. Students reflect on the academic and professional and community activist dimensions of Women's and Gender Studies. Special emphasis will be dedicated to the completion of the portfolio for future career, community activism and

Prerequisites: WGST 1150 FOR LEVEL UG WITH MIN. GRADE OF D-

WGST2400  Women's Roles: A Global Perspective  Credit Hours:  3
The course focuses on the current and evolving social, economic and political status of women in the United States and selected non-Western societies.

WGST2610  Women In American Politics  Credit Hours:  3
An examination of the role of women in the American political system with special attention to the socializing experiences, political power bases and legal status.

Prerequisites: PSC 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

WGST2640  Race, Class, And Gender  Credit Hours:  3
Introduction to the study of race, class and gender as factors in American stratification.

WGST2880  Contemporary U.S. Queer Cultures  Credit Hours:  3
An interdisciplinary, multicultural examination of diverse lesbian, gay, bisexual, transgender, and other queer cultural productions, this course examines continuities and conflicts in aesthetics, issues, materials, and motivations for queer culture.

WGST2980  Special Topics In Women's And Gender Studies  Credit Hours:  3
Study of selected topics relevant to Women's and Gender Studies. May be repeated for major or minor credit when topic varies.
WGST3010  Issues In Women's Studies  Credit Hours:  3
Required for the major. An interdisciplinary introduction to basic works of feminist thought, feminist methodologies and current issues in the field world-wide. Writing Intensive (WAC) course.

WGST3020  Visual Construction Of Gender  Credit Hours:  3
Writing intensive (WAC) course. This non-studio course focuses on the ways images reflect and shape our understanding of gender. Students will learn to analyze visual material in order to identify and articulate their cultural significance in relation t

WGST3200  Issues In Lesbian, Transgender, Bisexual And Gay Communities  Credit Hours:  3
This course will provide the student with an understanding of current issues facing LTBG communities including historical, developmental, socio-cultural and political perspectives.

WGST3400  Feminist Approaches To Social Problems  Credit Hours:  3
This course will examine current social problems from a feminist perspective. The course will examine such issues as the feminization of poverty, violence against women, homeless, prostitution, teen pregnancy, HIV/AIDS and addictions.

WGST3550  Feminism And Philosophy  Credit Hours:  3
An examination of feminist perspectives in philosophy, exploring the relevance of gender to central questions in ethics, political theory and epistemology.

WGST3650  Economics Of Gender  Credit Hours:  3
Analysis of labor market outcomes and income distribution characteristics resulting from gender differences; Gender-related economic outcomes; the feminization of poverty, persistent male-female wage differential, expanding proportion of female headed hou

Prerequisites:ECON 1150 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECON 1200 FOR LEVEL UG WITH MIN. GRADE OF D-

WGST3700  Women's Studies Topics In Literature  Credit Hours:  3
Specific topics vary. Check schedule of classes for specific subject.
WGST3750 Women And Literature
Credit Hours: 3
Examines literary works in light of major issues raised by feminist criticism. Specific emphasis varies. Recommended ENGL 2700 or 3790.

WGST3800 Sexual Politics
Credit Hours: 3
This course examines sexual politics through studying canonical literature of Western political theory, feminism and postmodern theory.

WGST3980 Topics In Women's Studies
Credit Hours: 3
Specific topics vary. Check schedule of courses for specific subject.

WGST4010 Women's Studies Topics In Film
Credit Hours: 3
Specific topics vary. Check schedule of courses for specific subject and prerequisites.

WGST4130 Family Violence Across The Life Cycle
Credit Hours: 3
This course will examine the issues of family violence, including child abuse and elder abuse. Gender and cultural issues will be explored along with the intergenerational nature of family violence.

WGST4160 Health And Gender
Credit Hours: 3
An examination of gender as a predisposing factor of health status, health behavior, health care delivery, and the structure and posture of health care professionals. Writing intensive (WAC) course.

WGST4170 Mental Health And Gender
Credit Hours: 3
This course will examine the significance of gender in understanding the historical development of mental health concepts. Contemporary feminist critiques of diagnostic categories will be discussed.
WGST4180  Gender And Work                          Credit Hours:  3
Analysis of the contemporary position in the U.S. work force focusing on the expansion of the number of women joining the labor force in recent decades, and the persistence of relatively low pay, status and authority in female-dominated occupations.

WGST4350  Women’s Studies Topics In Communication Credit Hours:  3
Cross-listings of 4000-level courses with the communication department. Specific topics vary. Check schedule of courses for specific subject and prerequisites determined by the department of communication.

WGST4500  Women’s Studies Topics In History            Credit Hours:  3
Crosslistings of 4000 level courses with the history department. Specific topics vary. Check schedule of courses for specific subject and prerequisites.

WGST4510  Women In American History                      Credit Hours:  3
This course presents American history from early settlement to the present by examining the contributions of women, in interaction with men, to the immensely complex fabric of American life.

WGST4540  Witchcraft And Magic In Medieval And Early Modern Europe Credit Hours:  3
Witchcraft, religion and magic in western Europe from the 12th through 17th centuries, focusing on the origins of witchcraft belief, diabolical magic, the witchcraft and its decline.

WGST4610  Feminist Political Theory                     Credit Hours:  3
An analysis and discussion of contemporary feminist theory.

Prerequisites:PSC 2800 FOR LEVEL UG WITH MIN. GRADE OF D-

WGST4700  Women’s Studies Topics In Literature       Credit Hours:  3
Specific topics vary. Check Course Schedules for specific subject.
WGST4770  American Women Writers  Credit Hours:  3
Author/authors vary with each offering. Consult schedule of courses for specific subject. Recommended ENGL 2700, 2800 or 3790.

WGST4870  Feminisms  Credit Hours:  3
This introduction to global feminist thought familiarizes students with feminist terminology and a variety of feminist theoretical frameworks.

WGST4880  Queer Theory WAC  Credit Hours:  3
This course explores the theoretical concepts/texts of Queer Theory and its locations in communities and identities, focusing principally on the theories that have emerged since the late 1990s.
Prerequisites: WGST 3010 FOR LEVEL UG WITH MIN. GRADE OF D- OR WGST 2010 FOR LEVEL UG WITH MIN. GRADE OF D-

WGST4890  Women's Studies Research And Methodologies  Credit Hours:  4
Investigates and applies current trends in Women's Studies as a discipline and the ways in which Women's Studies methodologies inform other disciplines. Requires research project.

WGST4900  Seminar In Women's Studies  Credit Hours:  3
Seminar focused on timely topics in Women's Studies chosen by rotating faculty.

WGST4910  Honors Thesis In Women's And Gender Studies  Credit Hours:  1-3
Supervised research and writing for honors students only.

WGST4940  Internship In Women's Studies  Credit Hours:  1-3
Practical field experience applying Women's Studies theories, arranged in conjunction with the department of women's and gender studies. Students must have pre-approval based on detailed written proposal.
WGST4980  Advanced Topics In Women’s Studies  
Credit Hours:  3
A course on a special topic in Women's Studies. Consult schedule of courses for topic to be studied and semester offered. Recommended WGST 3010.

WGST4990  Independent Study In Women's Studies  
Credit Hours:  1-4
Supervised independent reading and research on selected topics. Before the end of open registration, students must present the supervising instructor a detailed written proposal and get written approval.