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# SECTION SIX

## Course Descriptions

## Course Prefixes

ACC	Accounting
ADM	Apparel Design and Merchandising
AGR	Agriculture
ARH	Art History
ART	Art
BIO	Biology
CAH	Arts and Sciences Interdisciplinary
CCT	Corporate Communication and Technology
CDF	Child and Family Studies
CDS	Communication Disorders and Sciences
CHE	Chemistry
CIS	Computer Information Systems
CMS	Communication Studies
CNM	Arts and Sciences Interdisciplinary
COM	Communication
COR	Correctional and Juvenile Justice Studies
COU	Counseling
CRJ	Criminal Justice
CSC	Computer Science
CTE	Career and Technical Education
DES	Design
EAD	Educational Administration
ECO	Economics
EDC	Educational Core
EDF	Educational Foundations
EGC	Graduate Certification
EHE	Higher Education
EHS	Environmental Health Science
ELE	Elementary Education
EME	Elementary and Middle Grade
EMG	Middle Grade Education
EMS	Elementary, Middle Grade, and Secondary Education
ENG	English
ENW	English Creative Writing
EPY	Educational Psychology
ESE	Secondary Education
FCS	Family and Consumer Sciences
FIN	Finance
FRM	Family Resource Management
GBU	General Business
GEO	Geography
GLY	Geology
HEA	Health Education
HIS	History
HLS	Homeland Security
INS	Insurance
INT	Industrial Technology
LAS	Paralegal
LIB	Library Science
MAR	Marine Sciences
MAT	Mathematics
MGT	Management
MKT	Marketing
MUS	Music
NFA	Nutrition, Foods, and Food Administration
NSC	Nursing
OHO	Ornamental Horticulture
OTS	Occupational Therapy
PHE	Physical Education
PHI	Philosophy
PHY	Physics
POL	Political Science
PSY	Psychology
PUB	Public Relations
QMB	Quantitative Methods
REC	Recreation and Park Administration
RST	Real Estate
SED	Special Education
SPA	Spanish
SSE	Safety, Security & Emergency Management
STA	Statistics
TEC	Technology, General
THE	Theatre Arts
TRS	Traffic Safety

## Course Numbering

Courses are numbered according to the following plan:

700-899 are for graduate students only

## Course Descriptions

The semester hours which may be earned by successful completion of a course are indicated in parentheses immediately following the course title, e.g., (3).

I, II, and A used in the description of a course indicate the course will be offered the fall semester, spring semester, and by announcement, respectively. A course is offered during the indicated semester or by announcement on the assumption there will be adequate enrollment. If a course does not obtain adequate enrollment, it is subject to cancellation. The University reserves the right to cancel any course if the enrollment is not sufficient, to divide a course if the enrollment is too large for efficient instruction, and to change instructors when necessary.

The description of the course format for courses which include a laboratory experience is found at the end of the course description. A course which consists of three hours of classroom lecture and two hours of laboratory per week is described as "3 Lec/2 Lab."

**ACC—Accounting****Dr. Oliver Feltus, Interim Chair**

**ACC 701 International Accounting and Combinations. (3) II.** Prerequisite: ACC 302 with a grade of “C-.” Corporate combinations including consolidating balance sheets and income statements, and special problems with consolidations. International topics: standards, foreign exchange transactions, and translation of financial statements of foreign subsidiaries.

**ACC 721 Fund Accounting. (3) I.** Prerequisite: ACC 302 with a minimum grade of “C-.” Advanced study in accounting and fiscal procedures for institutions and for federal, state, county, and municipal governments.

**ACC 723 Taxation of Corporations. (3) A.** Prerequisite: ACC 322 with a minimum grade of “C-.” Federal income tax report preparation with emphasis on partnership and corporate returns; estate and trusts; gift and estate taxes; special problems in preparation of tax returns.

**ACC 725 Forensic Accounting. (3) A.** Prerequisites: ACC 301 and 322 each with a grade of “C-” or better. A study of investigative accounting procedures and techniques used in litigation support. Topics to be covered include financial reporting fraud, employee fraud, income reconstruction methods, testifying as an expert witness, evidence management, cyber crime, and business evaluations.

**ACC 727 Managerial Cost Accounting. (3) A.** Prerequisite: ACC 327 with a minimum grade of “C-.” Advanced problems in costs, budgets, distribution costs, measurements of departmental efficiency, and analysis of cost information for managerial decisions.

**ACC 750 Accounting for Non-Profit Organizations. (3) II.** General theory of budget implementation and reporting as well as internal control of other significant areas for not-for-profit organizations.

**ACC 820 Survey of Accounting. (3) I.** Designed for students who have completed a non-business degree and now wish to acquire a background in accounting and/or business.

**ACC 850 Managerial Accounting. (3) II.** Prerequisite: ACC 201 and ACC 202; or ACC 820 or equivalent each with a minimum grade of “B-.” Focus on managerial accounting concepts, including costing, budgeting, forecasting, planning and control. Emphasis on preparing and using financial statements as well as various managerial reports for decision-making.

**ACC 855 Advanced Auditing. (3) A.** Prerequisite: ACC 441 with a minimum grade of “C-.” Rules of professional conduct; auditing standards and case studies if AICPA; auditing rules and regulations of SEC; analysis of problem areas in reporting.

**ACC 857 Research in Taxes. (3) A.** Prerequisite: ACC 322 with a minimum grade of “C-” and instructor approval. An intensive analysis of the Internal Revenue Code. Research and discussion of tax problems involving business and tax planning.

**ACC 858 Accounting Theory. (3) A.** Prerequisite: strong accounting background. History and theory of accounting as discussed in accounting literature, periodicals, research bulletins, and publications of professional organizations.

**ACC 860 Seminar in Accounting. (3) A.** Prerequisite: strong accounting background. This course involves directed readings and intensive investigations into controversial an specific areas of accounting. Oral and written reports are required.

**ACC 890 Special Problems in Accounting. (1-6) A.** May be retaken under different subtopics to a cumulative maximum of six hours. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**ADM—Apparel Design and Merchandising****Dr. Diane Leggett, Chair**

**ADM 750 ADM Topics: \_\_\_\_\_. (1-3) A.** A workshop course designed to offer specialized expertise in numerous areas related to textiles, clothing and fashion. May be retaken to a maximum of six hours provided workshop topics vary.

**ADM 810 Socio-Psychological Factors of Apparel. (3) A.** Social, cultural, and psychological factors which influence personal satisfaction in selection and use of apparel.

**ADM 819 Special Problems in ADM. (1-3) A.** Prerequisites: 3.0 GPA and instructor approval. The student selects a problem and works under the supervision of the instructor. May be retaken to a maximum of six hours providing topics vary. Students having received credit for the course at the 500 level may take this course to a maximum of six hours, including the undergraduate credits. Those who have not received credit for this course at the undergraduate (500) level may retake it to a maximum of six hours credit. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**AGR—Agriculture****Dr. Bruce Pratt, Chair**

**AGR 701 Special Problems in Agriculture. (3) A.** A course for graduate students involving independent study and research related to problems of a theoretical and/or practical nature. May be retaken once to a maximum of six hours. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**AGR 770 Advanced Technical Agriculture: \_\_\_\_\_. (3) A.** Advanced study of agriculture with emphasis on updating, understanding and developing competency in recent technology. May be retaken to a maximum of nine hours provided the topic varies.

**AGR 777 Workshop in the Conservation of Natural Resources. (3) A.** For teachers returning for graduate work. Instruction is given in the areas of soil, water, fish and wildlife, forest conservation, and methods of teaching related units at the elementary and junior high level.

**AGR 807 Advanced Technical Study in Agriculture Problems. (1-3) A.** Prerequisite: advisor/department chair approval. Independent work, workshop, special topics, research problems, or seminars. May be retaken to a maximum of six hours. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**ARH—Art History****Mr. Herb Goodman, Chair**

**ARH 794 Italian Renaissance Art. (3) A.** Prerequisite: ARH 391 or departmental approval. In-depth study of selected aspects of the painting, sculpture, and architecture of Italy between 1400 and 1600. The graduate student will be expected to prepare a scholarly paper.

**ARH 795 Baroque and Rococo Art. (3) A.** Prerequisite: ART 391 or instructor approval. An in-depth study of selected aspects of art and architecture of church and state in Europe during the Age of Absolutism, from the late sixteenth century. The graduate student will be expected to prepare a scholarly paper.

**ART—Art****Mr. Herb Goodman, Chair**

**ART 760 Workshop in Art and Design: \_\_\_\_\_. (3) A.** Intensive study in a specific phase of the visual arts. Current processes, materials, and theoretical foundations will be considered. May be retaken with different topics to a maximum of nine hours.

**ART 762 Seminar in Art Criticism. (3) I, II.** Prerequisite: ART 390, 391. Study of various topics and problems which relate to the student's understanding and critical awareness of the visual arts.

**ART 800\* Drawing. (3) A.****ART 810\* Painting. (3) A.****ART 820\* Sculpture. (3) A.****ART 830\* Printmaking. (3) A.****ART 840\* Jewelry and Metals. (3) A.****ART 863 Problems in Art and Design. (1-3) A.**

Prerequisite: Approval of proposal by department. Continuation of study begun in regular departmental courses. May be retaken to a maximum of nine hours.

**ART 870\* Ceramics. (3) A.****ART 880\* Photography. (3) A.**

\*Courses in the series ART 800 through 840, and ART 870 and 880 share the prerequisite of “six hours of work in the specialization named or consent of the instructor.” Students may register for no more than nine hours of any specialization offered.

**BIO—Biological Sciences****Dr. Robert Frederick, Chair**

**BIO 710 Biostatistics. (3) I.** Prerequisite: MAT 107 or approval. Statistical analysis of biological data. Students participate in the taking and processing of data by the use of well-established statistical techniques. 2 Lec/2 Lab-Disc.

**BIO 711 Experimental Approaches in Molecular Biology. (3) I.** Laboratory experience-based course in molecular biology techniques. Subject will be introduced in a lecture setting and practical laboratory training. Techniques will include PCR-based methodologies, immunological approaches, and basic protein and nucleic acid manipulations. 1 Lec/4 Lab.

**BIO 714 Evolution. (3) I.** Prerequisite: BIO 315 or instructor approval. Processes of organic evolution with emphasis on the theory of natural selection.

**BIO 721 Forest Ecology. (4) A.** Prerequisites: BIO 131 and BIO 316 or BIO 335 or departmental approval. Ecological concepts and principles relevant to Eastern. Required weekend labs and fall break field trip. 2 Lec/4 Lab.

**BIO 722 Grasses and Grasslands. (3) I.** Prerequisite: instructor approval. Development and composition of grasslands; phylogeny, classification, and identification of grasses. Emphasis on North American grasses and grasslands, with field trips to native and managed grasslands. 1 Lec/4 Lab.

**BIO 725 Aquatic and Wetland Plants. (3) A.** Prerequisite: BIO 131. Collection, systematics, distribution, ecology, and reproduction of aquatic and wetland vascular plants. 1 Lec/4 Lab.

**BIO 727 Immunology. (3) A.** Prerequisites: BIO 320, CHE 361 or instructor approval. Characteristics of immune reactions at the molecular level and *in vivo*. Nature and interactions of antigens and antibodies, and allergic phenomena. 2 Lec/3 Lab.

**BIO 728 Virology. (3) A.** Fundamentals of classification, structure, and pathogenesis of viruses. Host-virus interactions and their applications to medicine and industry. Related areas of immunology, cell culture procedures and applications will be introduced. 2 Lec/3 Lab.

**BIO 729 Microbiology in Everyday Life. (3) A.** Prerequisite: BIO 100, 102, 121 or departmental approval. Microbes in medicine, agriculture, and industry; emphasis on teaching microbiology in the classroom. Course open to Biology-Teaching or Education majors.

**BIO 730 Microbial Physiology and Genetics. (3) A.** Prerequisites: BIO 315, 320, CHE 361 or instructor approval. A study of microbial genetics, metabolism, nutrition, and the effect of chemical and physical environments upon microorganisms in their habitats, with emphasis upon microbes of economic and industrial importance.

**BIO 731 Principles of Molecular Biology.** (4) A. Prerequisites: BIO 315, CHE 361 and 366 or instructor approval. An in-depth study of the structure, function, and biochemistry of nucleic acids and proteins. Laboratory experiences will involve the manipulation of DNA and protein molecules for the purpose of isolation, purification, and structure modification. 2 Lec/4 Lab.

**BIO 732 Conservation Biology.** (3) I. Prerequisite: BIO 316 or instructor approval. Examination of principles and practices of conserving global biological diversity. Causes, consequences and rates of extinction. Application of philosophical, biological, sociological, and legal principles to the conservation of genes, species and ecosystems.

**BIO 733 Bioinformatics: Principles and Applications.** (3) II. Prerequisite: BIO 315. An exposure to the theory and practice of bioinformatics as they relate to laboratory (Cell and Molecular Biology, Biochemistry) and field (Evolutionary and Population Biology) research applications in the life sciences. Discussion and utilization of the prevalent approaches and methodologies currently used in Bioinformatics.

**BIO 735 Pathogenic Microbiology.** (4) A. Formerly BIO 835. Prerequisite: BIO 320 or instructor approval. Studies in the field of advanced clinical microbiology with emphasis on morphology, cultivation, biochemistry, and serological identification of bacterial diseases; aspects of pathogenesis, epidemiology, and control measures of bacterial and mycotic diseases. 2 Lec/4 Lab.

**BIO 736 Dendrology.** (3) I. Prerequisite: BIO 131 or instructor approval. Woody plant taxonomy with emphasis on field identification of trees and shrubs in summer and winter conditions; habitats and distributions; economic importance; forest regions of North America. 1 Lec/4 Lab.

**BIO 742 Freshwater Invertebrates.** (3) A. Prerequisite: BIO 141 or instructor approval. Collection, systematics, distribution, behavior, ecology, and life histories of freshwater invertebrates. 2 Lec/3 Lab.

**BIO 746 Histology.** (4) II. Microscopic anatomy of normal vertebrate cells, tissues, and organs. 2 Lec/4 Lab.

**BIO 747 Comparative Vertebrate Embryology.** (4) II. Gametogenesis, fertilization, morphogenesis, and organogenesis of the frog, bird, and mammal. Particular emphasis is placed on mammalian development. 2 Lec/4 Lab.

**BIO 750 Animal Behavior.** (4) A. Advanced study of behavior with emphasis on inherited behavioral patterns in relation to the evolution and ecology of animals. 3 Lec/2 Lab.

**BIO 753 Mammalogy.** (3) A. Classification, natural history, field methods, and distribution of mammals. BIO 316 or 342 recommended prior to enrollment. 1 Lec/4 Lab.

**BIO 754 Ornithology.** (3) A. Avian biology with emphasis on field identification of local avifauna, anatomy, physiology, ecology, evolution, migration, economic importance, distribution, and behavioral patterns. Early morning field trips required. 2 Lec/4 Lab.

**BIO 755 Behavioral Ecology.** (3) A. Prerequisite: BIO 316 or instructor approval. How behavior is influenced by natural selection in relation to ecological conditions. Emphasis on quantitative and experimental methods on an integrating theoretical ideas with field and laboratory experience.

**BIO 756 Herpetology.** (3) A. Prerequisite: BIO 141 or instructor approval. Natural history of the amphibians and reptiles including taxonomy, general ecology, behavior, distribution, breeding, and foot habits. 2 Lec/3 Lab.

**BIO 757 Ichthyology.** (3) A. Prerequisite: BIO 141. A phylogenetic examination of morphological, ecological, and behavioral diversifications of fishes in the world, with special attention to the Appalachian fauna. Laboratory devoted to anatomy, identification, and reproductive strategies. 2 Lec/4 Lab.

**BIO 758 Freshwater Ecology.** (3) A. Prerequisite: BIO 316 or instructor approval. Ecology of lakes, streams with reference to physical, chemical, and biological factors. To include a variety of methods and instruments. 2 Lec/3 Lab-Disc.

**BIO 761 Fish Biology and Management.** (3) A. Methods for assessment and analysis of fish populations and aquatic habitats, including age and growth, fecundity, food habits, and yield. Emphasis on economic and ecological importance of management decisions. Optional weekend field trips. 2 Lec/4 Lab.

**BIO 784 Upland Wildlife Management.** (4) A. Ecological principles and management strategies to preserve and enhance forest and grassland wildlife and their habitats.

**BIO 785 Wildlife Resource Policy and Administration.** (3) A. Discussion of state, regional, national, and international policies and agencies which impact management of wildlife resources; with emphasis in North America. BIO 381 recommended prior to enrollment.

**BIO 786 Wetland Wildlife Management.** (4) II. Ecology and management of migratory and resident wetland wildlife populations and their habitats, with a focus on waterfowl. BIO 316 and 381 recommended prior to enrollment. 2 Lec/4 Lab.

**BIO 787 Urban Wildlife Management.** (3) A. The strategies employed to manage urban wildlife and prevent/control animal damage in North America will be discussed.

**BIO 798 Special Problems.** (1-3) I, II. Prerequisite: students must have the independent study proposal form approved by the faculty supervisor and department chair prior to enrollment. Independent research in the biological sciences, under the guidance of a faculty member, which allows students to design a research problem and make experimental observations and conclusions. May be retaken to a maximum of four hours.

**BIO 799 Topics in Biological Sciences.** (1-6) A. Prerequisite: instructor approval. Special topics in the biological sciences of current interest to faculty and students will be presented through lecture, discussion, and report. May be retaken to a maximum of six hours.

**BIO 801 Scientific Literature and Writing in Biology.** (2) I. Directed readings in biology designed to acquaint the student with the major sources of literature, the delimitation of problems, note taking, the making of bibliographies, and the writing of scientific articles.

**BIO 802 Selected Topic in Biological Sciences.** (1-4) A. Advanced study of modern biological principles and the solution of interacting problems. The course content will be designed to meet the needs of students in specialized areas of biology. May be retaken to a maximum of eight hours.

**BIO 803 Big Game Ecology.** (3) A. Prerequisites: BIO 316, BIO 381 or instructor approval. Biology and ecology of the major big game species found in North America with emphasis on current management practices and problems.

**BIO 806 Aquatic Entomology.** (3) A. Prerequisite: BIO 341 or 355 or instructor approval. To develop an understanding of, and an appreciation for, aquatic insects. Techniques on collecting as well as the biology, ecology, and systematics of each of the aquatic insect orders will be considered. 2 Lec/3 Lab.

**BIO 816 Biogeography.** (3) A. Physical and biotic factors influencing the evolution, diversity and distribution of Earth's biota; ecogeographic principles, patterns and theories related to the diversity and distributions of organisms.

**BIO 831 Molecular Regulation.** (3) A. Discussion and experimental manipulation of transcriptional/translational regulation in eukaryotes/prokaryotes with reliance on the current literature as reference. Coverage of regulatory mechanisms and experimental approaches. 2 Lec/2 Lab.

**BIO 839 Applied Learning in Biology.** (3-6) A. Prerequisite: departmental approval. Work under faculty and field supervisors in a cooperative job experience related to student's academic studies. Credit varies with hours of employment; three to six hours per semester or summer. May be retaken at the discretion of the department or college involved. A minimum of eighty hours of work is required for each academic credit. Credit does not apply toward the M.S. degree requirements.

**BIO 839 A-F Cooperative Study: Biology.** (3-6) A. Prerequisite: departmental approval. Work under faculty and field supervisors in a cooperative job experience related to student's academic studies. Credit varies with hours of employment; three to six hours per semester or summer. May be retaken at the discretion of the department or college involved. A minimum of eighty hours of work is required for each academic credit. Credit does not apply toward the M.S. degree requirements.

**BIO 845 Vertebrate Physiological Ecology.** (3) A. Comparative study of physiological mechanisms of vertebrates in response to changing environmental conditions. Topics emphasized include temperature adaptation, color change, orientation, and biological rhythms. 2 Lec/3 Lab.

**BIO 846 Population Ecology.** (3) A. Theoretical and applied study of size and organization of animal and plant populations and the physical and biological factors affecting spatial and temporal patterns.

**BIO 848 Aquatic Ecosystems.** (3) A. Prerequisite: BIO 558 or 758 or instructor approval. Modern methods for analysis of biological integrity of aquatic ecosystems. To include fieldwork involving various methods, and the calculation and discussion of currently used metrics. 2 Lec/3 Lab.

**BIO 849 Field Methods in Ecology.** (3) A. Field sampling techniques and methods of observation applicable to describing terrestrial plant and animal communities. Field data utilized to develop an environmental impact statement. 6 Lab/Disc.

**BIO 850 Dynamics of Ecosystems.** (2) A. Energy flow, nutrient cycling, and interrelationships among organisms and environments in terrestrial ecosystems; consultation with faculty committee. Required of graduate students in non-thesis option; cannot be used in thesis option.

**BIO 880 Current Review of Biology.** (3) A. Prerequisite: BIO 801 or departmental approval. Summary and critical evaluation of current research in a particular area of biology, written in consultation with faculty advisor. Required of graduate students in non-thesis program. Cannot be used to meet requirements in the thesis program.

**BIO 881 Independent Study.** (1-3) I, II. Prerequisite: approval of independent study proposal form by faculty supervisor and department chair prior to enrollment. Advanced research in the biological sciences under the guidance of a faculty member, which allows students to design a research problem and make experimental observations and conclusions. May be retaken to a maximum of four semester hours. Credit will not be given to students enrolled in the M.S. Biology thesis program.

**BIO 890 Graduate Seminar.** (1) A. Prerequisite: BIO 801. Presentation and discussion of selected topics and research in the biological sciences. Required of all graduate students and may be retaken to a maximum of two hours.

**BIO 891 Thesis Research.** (1-6) A. The accomplishment of an independent research project, in consultation with a faculty advisor, for the preparation of a thesis as part of the requirements for the M.S. degree in Biology. May be retaken to a maximum of six hours.

**BIO 891C Continuation of Thesis Research.** (1-9) A. Prerequisite: departmental approval. The continuation of an independent research project, in consultation with a faculty advisor, for the preparation of a thesis as part of the requirements for the M.S. degree in Biology. May be retaken as necessary to complete research thesis. A student must have registered for six hours of BIO 891 before registering for BIO 891C. May not be used to satisfy degree program requirements.

**CAH—Arts and Sciences Interdisciplinary**  
**Dr. John Wade, Interim Dean**

**CAH 715 Topics in Humanities \_\_\_\_\_.** (1-3) A. An experimental course designed to investigate relevant topics in Arts and Humanities.

**CAH 900 Independent Work. (106) A.** Independent research and/or field work.

**CCT—Corporate Communication and Technology**  
**Dr. Lana Carnes, Interim Chair**

**CCT 720 Corporate Training. (3) A.** This course applies theories of learning and instructional development to office systems, employee education, and skills training. Topics include instructional design; strategy; technology; and the implementation, evaluation, and management of training in organizational environment.

**CCT 750 Integrated Corporate Communication. (3) A.** Prerequisite: senior or graduate standing. Examines effective integrated communication skills to achieve organizational objectives. Emphasizes analysis, application of communication process, and strategies for managerial decision-making. Examines change process, corporate culture, and negotiation issues. Provides corporate training component.

**CCT 760 Office Management. (3) I, II.** Function and organization of offices; office layout and equipment; personnel; work simplification and control; technology in the office; planning, organizing, and controlling office services; systems and job analysis.

**CCT 770 Web Design for Offices. (3) A.** Prerequisite: CCT 250 or CIS 212 or CSC 104. Advanced development of business document design techniques with an emphasis on web design and multi-media resources. Geared for education, small offices or businesses, personal use, and not-for-profit organizations.

**CCT 780 Office Technology Seminar. (3) A.** Prerequisites: CIS 250 or CSC 104 or CIS 212, and CCT 300 or CCT 201, ninety hours completed. This capstone course requires synthesis and applications of concepts related to current office systems topics.

**CCT 850 Strategic Business Communication. (3) A.** Effective and appropriate communication through various channels with an awareness of multi-cultural issues. Emphasis on oral and written presentations using cutting-edge technology and business research methodology.

**CCT 880 Independent Study in Corporate Communication and Technology. (1-4) A.** May be retaken under different subtopics to a cumulative maximum of six hours. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**CDF—Child and Family Studies**  
**Dr. Diane Leggett, Chair**

**CDF 701 Advanced Prenatal and Infant Development. (3) I, II, A.** Growth and development from conception to three years. In-depth study of theories and issues related to development during the first three years and before birth. Impact on family, education, and community will be explored.

**CDF 738 Research Analysis in Child and Family Studies. (3) I.** Prerequisites: CDF 235 or 241 and 244 and six hours in CDF, or departmental approval. Students will acquire the skills required to read and evaluate professional research literature in child and family studies by examining current studies. Students will also compare and contrast the treatment of current issues in their field in both popular and professional writing.

**CDF 741 Infant-Toddler Development and Group Care. (3) A.** Growth and development from conception to three years. Emphasis on family intervention, appropriate policies and practices for group care, assessment, disabilities, multicultural and gender issues, and caregiver professional growth.

**CDF 744 Early Childhood Development and Program Planning. (3) A.** Theory pertinent to early childhood development and learning including constructiveness, socially mediated intelligence, multiple intelligence and creativity. Emphasis on emergent curriculum and teaching strategies reflecting social collaboration such as webbing, project work, and multimedia documentation.

**CDF 747 Organization and Administration of Early Childhood Programs. (3) II.** Prerequisites: CDF 327 or 247, 343 or 248, and 344, or departmental approval. Review of the theories influencing the definition of goals, philosophies and rationales for establishment of early childhood programs (0-5), study of procedures for organizing early childhood programs, and discussion of the management processes for administering quality early childhood programs.

**CDF 750 Child and Family Studies Topics: \_\_\_\_\_.** (1-3) A. Workshops on selected topics in child and family studies. May be retaken to a maximum of six hours provided topics vary. Students having received credit for the course at the 500 level may take this course to a maximum of six hours, including the undergraduate credits. Those who have not received credit for this course at the undergraduate (500) level may retake it to a maximum of six hours credit.

**CDF 849 Special Problems in Child Development. (1-3) A.** Prerequisite: CDF 548 or 748 or instructor approval. The student chooses a problem and works under the supervision of the instructor. May be taken to a maximum of six hours provided topics vary. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**CDS—Communication Disorders and Sciences**  
**Dr. Justin Cooper, Chair**

**CDS 720 Augmentative and Alternative Communication Systems. (3) I.** An overview of various approaches to aided non-oral systems of communication. Various devices and symbol systems will be discussed.

**CDS 741 School Services in Communication Disorders. (3) II.** Prerequisites: admission to professional education, overall 2.8 GPA, and admission to the CDS program. Organization and management of speech-language therapy services in the schools. Lec/Lab

**CDS 771 Neural Bases of Communication. (3) I.** Prerequisite: admission to the CDS program or instructor approval. A study of neuroanatomic and neurophysiological bases of communication including developmental issues and neurologic deficits resulting in communication disorders.

**CDS 772 Speech and Hearing Science. (3) II.** Prerequisite: admission to the CDS program or instructor approval. Study of the physics of sound, acoustic characteristics and processes, perceptual correlates, production of speech, and psychophysical processes of communication. Software applications and instrumentation are also covered.

**CDS 861 Communication Disorders in Atypical Populations. (3) A.** Prerequisite: admission to communication disorders and sciences program or by departmental permission. An overview of associated speech, language, or hearing problems commonly identified in atypical or special populations that may be encountered by the speech-language pathologist.

**CDS 863 Motor Speech Disorders. (3) II.** Prerequisites: admission to communication disorders and sciences program or by departmental permission. Study of the neurophysiology, assessment, and treatment of various motor speech disorders, including dysarthria and apraxia.

**CDS 867 Advanced Language Disorders. (3) A.** Prerequisites: admission to communication disorders and sciences program or by departmental permission. Advanced study of formal and informal assessment and treatment approaches in child language without consideration of etiology. Emphasis on collaboration within the classroom, language and narrative sampling analysis techniques and use of language within the natural context.

**CDS 870 Professional Issues in Communication Disorders. (3) A.** Prerequisite: admission to communication disorders and sciences program or by departmental permission. Scope of practice, professional Code of Ethics, trends in service delivery, pertinent legislation, legal concerns, and other issues which impact the field of communication disorders will be examined.

**CDS 873 Advanced Articulation and Phonology Disorders. (3) I.** Prerequisites: admission to communication disorders and sciences program or by departmental permission. Study of the research and principles associated with symptomatology, etiology, diagnosis, and treatment of articulation and phonological disorders. Issues related to accent enhancement and modification, including assessment and intervention are explored.

**CDS 874 Graduate Practicum: Speech-Language Pathology. (3) A.** Prerequisite: admission to communication disorders and sciences program or by departmental permission. Supervised clinical practice in speech-language pathology. Must be retaken for a total of nine hours for the MA degree.

**CDS 875 Adult Neurogenic Language Disorders. (3) II.** Prerequisites: admission to the communication disorders and sciences program or by departmental permission. The study of the neurophysiological bases of aphasia classification systems, evaluation procedures, and treatment strategies.

**CDS 876 Advanced Voice Disorders. (3) I.** Prerequisites: admission to communication disorders and sciences program or by departmental permission. Study of the research and bases of laryngeal phonation deviation, including etiology, diagnosis, and treatment of functional and organic voice disorders; assessment and use of clinical techniques with a variety of voice disorders.

**CDS 877 Advanced Fluency Disorders. (3) II.** Prerequisites: admission to communication disorders and sciences program or by departmental permission. Critical study of research literature on etiology, theory, assessment and intervention strategies for preschool, school age, and adult fluency disorders.

**CDS 878 Diagnosis of Communication Disorders. (3) I.** Prerequisite: admission to communication disorders and sciences program or by departmental permission. Diagnosis of language and speech disorders with emphasis on the use of dynamic assessment and comprehensive test batteries to describe the communication skills of children and adults. Profile analysis will be utilized to determine relative strength and weakness.

**CDS 879 Dysphagia. (3) II.** Prerequisite: admission to communication disorders and sciences program or by departmental permission. An introduction to dysphagia, including the anatomy, physiology, and development of normal swallowing, and evaluation, etiologies, and treatment of dysphagia.

**CDS 880 Research Methodology in Communication Disorders.** (3) I. Prerequisites: admission to communication disorders and sciences program; SED 341 or 590, CDS 365 and 373; or by departmental permission. Corequisite: CDS 878. Critical examination of research methodology in communication disorders and sciences. Students acquire the fundamental motivation, knowledge, and skills for conducting clinical and basic science research and for reading and critically evaluating research literature.

**CDS 885 Cognitive Rehabilitation.** (3) A. Prerequisites: admission to communication disorders and sciences program and CDS 571 or 771 or by departmental permission. Study of the neurophysiological, cognitive, neuropsychological, and social/emotional issues associated with traumatic brain injury in children and adults, including principles of linguistic/cognitive assessment and intervention.

**CDS 898 Externship in Communication Disorders.** (6) I. Prerequisites: CDS 874 (nine credit hours) and completion of graduate core course work in communication disorders and sciences. Supervised 12-week, full-time clinical practice with a variety of communication disorders in selected externship sites.

**CDS 899 Research Project/Thesis Option.** (3) II. Prerequisite: CDS 880 or instructor approval. Completion of a research project related to a special population that may lead to a thesis and/or to a professional presentation and publishable paper. May be retaken to a maximum of 9 credit hours. Credit not awarded for both SED 899 and CDS 899.

**CHE—Chemistry**  
**Dr. Alan Schick, Chair**

**CHE 701 Chemtopics: \_\_\_\_\_.** (1-3) A. Prerequisite: instructor approval. Topics to be chosen from a current and/or specialized area of chemistry such as environmental chemistry or industrial chemistry, and will vary according to students' needs. May be retaken to a maximum of six hours.

**CHE 715 Analysis and Characterization.** (4) II. Prerequisites: CHE 362, 367, 471 and 550, or instructor approval. Synthesis, separation and characterization of inorganic and organic compounds and mixtures. Included will be spectroscopic techniques, preparation of derivatives and methods appropriate for handling of air sensitive compounds and those of low thermal stability. 2 Lec/6 Lab.

**CHE 725 Instrumental Methods.** (4) A. Prerequisites: CHE 325, 362, 367. Methods of spectroscopic analysis; electrochemical methods; chromatographic methods. Emphasis placed on broad, functional approach to instrumental techniques. 2 Lec/6 Lab.

**CHE 730 Biochemistry of Macromolecules.** (3) A. Prerequisites: CHE 362 and 367. Prerequisite or Corequisite: CHE 470 or 471; or departmental approval. Structure, analysis, and organization of proteins, nucleic acids, and lipids; physical and organic mechanisms of enzyme action; chemistry of membrane action and the immune system.

**CHE 731 Metabolic Chemistry.** (3) A. Prerequisites: CHE 362 and 367. Prerequisite or Corequisite: CHE 470 or 471; or departmental approval. Chemistry, catabolism, and biosynthesis of carbohydrates, lipids, amino acids, and nucleotides; analysis of nucleic acids, and structure, function, and control of cellular genetic apparatus.

**CHE 732 Biochemistry Laboratory.** (1) I. Prerequisite or Corequisite: CHE 730 or 731; or departmental approval. Experimental techniques characteristics of biochemical research. Purification and characterization of proteins and nucleic acids; use of computers in modeling biochemistry data. 3 Lab.

**CHE 750 Inorganic Chemistry.** (3) I. Prerequisite: CHE 362. Modern concepts of atomic nuclei, atomic structure, and classification of elements. Complex ions and coordination compounds. Theories of bonding.

**CHE 760 Mechanistic Chemistry.** (3) A. Prerequisites: CHE 362 and 367, and CHE 470 or 471. Survey of new reactions and comprehensive study of reaction mechanisms.

**CHE 772 Advanced Physical Chemistry.** (3) A. Prerequisite: CHE 472 (MAT 353 recommended) or departmental approval. Intermediate and advanced topics in thermodynamics, kinetics, structure and bonding.

**CHE 785 Principles of High Polymers.** (3) A. Prerequisites: CHE 362 and 367. Preparation and characterization of high polymers; monomers, condensation and addition polymerization; radical, anionic, and cationic initiation. Emphasis on microstructure of the polymer chain and its effect on macromolecular physical properties. 2 Lec/3 Lab.

**Selected Topics in Chemistry.** (1-3) A. Prerequisite: departmental approval. Topics chosen from advanced areas of interest and vary according to needs. May be retaken for credit when new topics offered.

**CHE 802 Selected Topics in Analytical Chemistry.** (1-3) A.

**CHE 803 Selected Topics in Biochemistry.** (1-3) A.

**CHE 805 Selected Topics in Inorganic Chemistry.** (1-3) A.

**CHE 806 Selected Topics in Organic Chemistry.** (1-3) A.

**CHE 807 Selected Topics in Physical Chemistry.** (1-3) A.

**CHE 822 Advanced Analytical Chemistry.** (3) A. Prerequisite: CHE 525/725 or departmental approval. Modern practices in chemical analysis. Sampling, sample preparation, spectroscopic and chromatographic methods.

**CHE 839 Applied Learning in Chemistry.** (3-6) A. Prerequisite: departmental approval. Work under faculty and field supervisors in cooperative placement. Three to six hours per semester or summer. May be retaken at discretion of department or college. Eighty hours work for each credit. Maximum of two credit hours may apply to M.S. degree in Chemistry.

**CHE 839 A-F Cooperative Study: Chemistry.** (3-6) A. Prerequisite: departmental approval. Work under faculty and field supervisors in cooperative placement. Three to six hours per semester or summer. May be retaken at discretion of department or college. Eighty hours work for each credit. Maximum of two credit hours may apply to M.S. degree in Chemistry.

**CHE 845 Chemical Laboratory and Demonstration Techniques.** (1-4) A. Prerequisite: six semesters of undergraduate work in chemistry or departmental approval. Techniques of constructing and demonstrating apparatus to illustrate principles of chemistry. Primarily for high school and community college science teachers. 3-12 Lab.

**CHE 850 Advanced Inorganic Chemistry.** (3) A. Prerequisite: CHE 550/750. Molecular symmetry in inorganic chemistry, mechanisms of inorganic reactions, and catalysis by coordination and organometallic complexes.

**CHE 880 Graduate Seminar.** (1) II. Presentation of significant developments in chemistry to members of the chemistry faculty and department majors. May be retaken to a maximum of two hours.

**CHE 890 Graduate Literature and Project Planning.** (1) A. Extensive survey of literature related to a specific research program and planning of that program through consultation with a selected research advisor.

**CHE 892 Graduate Project.** (3) A. Research of chemical literature and preparation of a detailed written report on a current topic in chemistry. The topic of the paper shall be pre-approved by the student's committee.

**CHE 895 Graduate Research.** (1-6) A. Laboratory research in one of the major areas of chemistry for application to a thesis. May be retaken to a maximum of six hours.

**CHE 895C Continuation of Graduate Research.** (1-9) A. Prerequisite: departmental approval. The continuation of research in one of the major areas of chemistry. May be retaken as necessary to complete research. A student must have registered (or be currently registered) for six hours of CHE 895 before registering for CHE 895C. May not be used to satisfy degree program requirements.

**CIS—Computer Information Systems**  
**Dr. Oliver Feltus, Interim Chair**

**CIS 826 Information Systems Applications.** (3) A. Computer literacy, management information systems, and computer applications in business using word processing, spreadsheets, presentation, and database software tools. Tools are demonstrated using problems in accounting, finance, marketing, management, and production.

**CIS 850 Management of Information Systems.** (3) II. Prerequisite: CIS 300 or CIS 826 or equivalent with a minimum grade of "B-." Examines existing and emerging information technology within and among organizations. The focal points are infrastructure technologies, the role IT plays in business processes, and the manager's role in developing, acquiring and managing information resources.

**CIS 860 Contemporary Topics in Information Technology.** (3) A. Prerequisite: CIS 850. Topics include some of the following: office automation, telecommunications, decision support systems, knowledge-based systems, executive information systems and executive support systems. May be retaken to a maximum of six hours if topics are different.

**CIS 861 Trends in E-Commerce.** (3) A. Introduces students to the theory and practice of doing business over the Internet and World Wide Web. Covers the technologies of electronic commerce software, security, payment systems, business strategies, electronic data exchange, supply chain management, virtual communities, and web portals. Other topics to discuss are: international, legal, ethics and tax issues.

**CIS 870 Strategic Information Systems.** (3) A. Prerequisite: CIS 850. Strategic information systems (SIS) and technology methods, applications, issues and trends to gain competitive advantage; multinational, social, legal and governmental implications of SIS. Case and project orientation.

**CIS 890 Independent Study in Computer Information Systems.** (1-4) A. Prerequisite: advisor/departmental approval. May be retaken under different subtopics to a cumulative maximum of six hours. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**CMS—Communication Studies**  
**Dr. Maureen Everett, Chair**

**CMS 805 Independent Studies in Communication Studies.** (1-3) A. Individual research and reading on a specific speech communication subject. Regular consultation and final paper required. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**CNM—Arts and Sciences Interdisciplinary**  
**Dr. John Wade, Interim Dean**

**CNM 799 Ecology for Teachers.** (3) A. Prerequisite: BIO 102 or CHE 100 or GLY 102 or PHY 102 or departmental approval. Introduces pre-service teachers to ecology and the environment through an interdisciplinary approach beginning with the physical environment, progressing to whole ecosystems, and onto analyses of environmental issues. Classroom teaching strategies will be modeled.

**CNM 800 Environmental Science Issues. (3)**  
A. State, national and global environmental issues will be investigated and evaluated with consideration of actions needed to address the issues.

**COM—Mass Communications**  
**Dr. Maureen Everett, Chair**

**COM 750 Readings in Mass Communications. (3) A.** Prerequisites: departmental approval and ninety or more hours. Critical reading of selected books and magazines relating directly or indirectly to mass communications. Features reviews and seminar discussions of readings chosen to reflect student's individual interests.

**COR—Correctional/Juvenile Justice Studies**  
**Dr. Kevin Minor, Chair**

**COR 806 Advanced Workshop. (1-3) A.**  
Prerequisite: departmental approval. Students gain exposure to advanced level professional development activities related to adult corrections and/or juvenile justice. This course may be retaken to a maximum of three hours on different topics.

**COR 808 Analysis of Correctional and Juvenile Justice Data. (3) A.** Prerequisites: undergraduate research methods and undergraduate statistics or departmental approval. This course examines techniques for analyzing data in corrections and juvenile justice. Emphasis is placed on analysis and interpretation of data using univariate, bivariate, and multivariate techniques.

**COR 810 Understanding Crime, Delinquency, and Correctional Programs. (3)**  
A. This course presents and critiques explanations of crime and delinquency from a multi-disciplinary perspective and examines their use in adult and juvenile correctional programs.

**COR 818 Research in Corrections and Juvenile Justice. (3) A.** This course will examine strategies and issues relevant to the collection and analysis of corrections and juvenile justice data. Special attention will be devoted to survey methods and program development and evaluation.

**COR 820 Juvenile Justice. (3) A.** This course presents a critical analysis of juvenile justice operations with particular emphasis placed on history and the role and effectiveness of police, court, and correctional responses to juvenile offenders.

**COR 823 Topical Seminar in Corrections/Juvenile Justice. (1-3) A.** This is a variable topic seminar meant to provide in-depth, critical analyses of contemporary issues in adult corrections or juvenile justice. The course may be retaken to a maximum of six hours on different topics.

**COR 830 Corrections and Society. (3)**  
A. This course analyzes the theoretical foundation of corrections in the context of society and applies that analysis to correctional policy and practice.

**COR 835 Administration of Corrections and Juvenile Justice. (3) A.** An examination of theoretical bases and contemporary approaches to correctional administration; focus on organization, personnel management and policy formulation, and study of the social and political settings of correctional administration.

**COR 839 Applied Learning in Corrections and Juvenile Justice. (1-3) A.** Prerequisites: departmental approval and graduate GPA of at least 3.0. Students work in an agency in corrections, juvenile justice, or related area. Accompanying classroom and coursework components are designed to promote integration of work and academic experiences. A minimum of 80 hours work is required for each hour of academic credit.

**COR 839 A-F Cooperative Study: Corrections and Juvenile Justice. (1-3) A.**  
Prerequisites: departmental approval and graduate GPA of at least 3.0. Students work in an agency in corrections, juvenile justice, or related area. Accompanying classroom and coursework components are designed to promote integration of work and academic experiences. A minimum of 80 hours work is required for each hour of academic credit.

**COR 840 Adult Corrections. (3) A.**  
This course analyzes community and institutional corrections. Emphasis is placed on the roles and functions of agencies and how operations are shaped by security, rehabilitation, as well as management and staff issues. The future of corrections is examined based on current and projected trends.

**COR 850 Offender Rehabilitation Strategies. (3) A.** This course provides critical analyses of research and theories guiding effective rehabilitation programs in corrections and juvenile justice. It examines how various factors contribute to criminal behavior and how assessment procedures can improve programs.

**COR 856 Law and Ethics in Corrections and Juvenile Justice. (3) A.** This course provides advanced analyses of statutory and case law governing adult corrections and juvenile justice in a constitutional, ethical, and moral framework. It explores historical, philosophical, and socio-legal underpinnings of this subject.

**COR 897 Independent Study. (1-6)**  
A. Students engage in self-directed learning at the university or in a field setting under graduate faculty supervision. Students must have completed a minimum of 6 hours of COR coursework and have clear admission status to be eligible to register for this course. Additionally, students must have the independent study proposal form approved by faculty supervisor and the graduate director before enrolling.

**COR 898 Thesis. (1-6) A.** Students develop a thesis under faculty direction. While various combinations of hours per semester are possible, students selecting a thesis option must complete six hours total. Students must confer with the thesis advisor before enrolling.

**COU—Counseling**  
**Dr. Connie Callahan, Interim Chair**

**COU 802 Counseling Psychology. (3) A.**  
Examination of counseling methods and concepts with emphasis on current systems of counseling.

**COU 803 Principles and Practices of Mental Health Counseling. (3) I, II.** Prerequisites: COU 813, 840, or departmental approval. Assumptions, roles, programs, and dynamics of mental health counseling are addressed; emphasis is placed on the development and management of mental health services and programs including needs assessments, practices of community intervention, and evaluation.

**COU 804 Counseling Diverse Population. (3) I, II.** Prerequisites: COU 813, 840, 846. An examination of the application of counseling methods and concepts to non-majority groups. The lifestyle, values, customs and attitudes of non-majority population will be explored.

**COU 807 Counseling: \_\_\_\_\_. (1-3) A.**  
Prerequisite: advisor/departmental chair approval. Workshops, special topics, or seminars. May be retaken under different subtitles.

**COU 813 Professional Orientation and Ethics in Counseling. (3) I, II.** Prerequisite: admission to the program. An introduction and orientation to the counseling profession. This course will explore the professional roles, organization, training, and credentialing standards of the profession. It will also survey the ethical, legal and professional issues facing counselors.

**COU 814 Organization and Administrative Guidance Services. (3) I.** Prerequisites: COU 813, 840, 846. Consideration of theory, organization, and personnel practices involved in organizing and administering guidance and counseling programs in the schools.

**COU 820 Group Counseling. (3) I, II.**  
Prerequisites: COU 813, 840, 846. Theory and experiences to develop skill in and understanding of group dynamics and effective group behavior.

**COU 822 Lifestyle and Career Counseling. (3) I, II.** Prerequisites: COU 813, 840, 846, EPY 816. Occupational information in educational and vocational planning; theories of vocational choice; sociology of occupations, and interpretation and utilization of current data pertaining to career fields.

**COU 825 Developmental Guidance K-12. (3) A, II.** Prerequisites: COU 813, 840, 846. Student will learn how to design and implement a systematic K-12 developmental guidance program based on collaboration, consultation, and prevention as well as develop creative and play therapy approaches to working with children and adolescents.

**COU 826 Assessment in Counseling. (3) I.** Prerequisites: EPY 816, 839, and COU 855. Consideration of the major theories of assessment. Training in the administration, scoring, and interpretation of selected tests of intelligence and other counseling assessment tools.

**COU 827 Individual Assessment of Intelligence. (3) I.** Prerequisite: COU 826. Supervised practice in the administration, scoring, and interpretation of the Wechsler Intelligence Scale for Children, Wechsler Adult Intelligence Scale, and the Wechsler Preschool and Primary Scale of Intelligence.

**COU 840 Counseling Theory and Practice. (3) I, II.** Prerequisite/Corequisite: COU 813. Major theories of counseling. Attention is given to personality structure and individual behavior from which these are derived.

**COU 844 Student Personnel Services in Higher Education. (3) I.** Prerequisite/Corequisite: COU 813. Study of student personnel services; emphasis upon relationship of these services to the total college program, research, and organization.

**COU 845 Internship in Student Personnel Services. (3) II.** Prerequisite: EPC 844. Supervised experience for student personnel trainees. Opportunity provided to share responsibilities for all phases of student personnel services. May be retaken to a maximum of six hours.

**COU 846 Process and Basic Techniques of Counseling. (3) I, II.** Prerequisites/Corequisites: COU 813, 840. Includes a consideration of different schools of thought in current counseling practice; how the counselor works; and effective procedures for counseling.

**COU 847 Crisis and Abuse Counseling. (3) A.** Prerequisites: COU 813, 840, 846. This is an advanced counseling techniques class focusing on the process and skills in crisis and abuse counseling, as well as legal, ethical, and advocacy issues.

**COU 848 Child and Adolescent Counseling. (3) A.** Prerequisites: COU 813, 840, 846. This is an advanced counseling techniques class focusing on specific skills and processes for children and adolescents.

**COU 849 Addiction to Disorders Counseling. (3) A.** Addictive disorders and behaviors ranging from chemical dependency, compulsive gambling, sex addiction to workaholism with a focus on biopsychosocial model, 12-Step and peer therapy, assessments, and interventions for adolescent and adult populations.

**COU 850 Family Counseling. (3) A.**  
Prerequisites: COU 813, 840, 846. The history, terms, ethics, principles, and major models of family counseling concepts, techniques and procedures will also be examined, with primary focus on the systems approach.

**COU 851 Counseling GLBT Clients. (3)**  
A. Critical examination of gay, lesbian, bisexual, and transgender identity, politics, culture. Focus on counseling competencies for GLBT clients.

**COU 852 The Counseling Process in Grief and Loss. (3) A.** This is an advanced skills course which will teach the theoretical and skill-based grief and loss intervention and treatment models for working with clients. Students will explore professional issues in the field, including diversity issues related to grief and loss.

**COU 853 The Counseling Process in Clinical Sexuality. (3) A.** This is an advanced skills course that will teach theoretical and skill-based clinical sexuality intervention and treatment models to work with clients. Students will explore professional issues in the field, including diversity issues related to clinical sexuality.

**COU 855 Diagnosis and Treatment in Counseling. (3) A.** Prerequisites: COU 813, 840, 846. This course addresses diagnoses and treatment planning in counseling as well as prevention of mental and emotional disorders and dysfunctional behavior. Credit will not be awarded to students who have credit for PSY 841.

**COU 856 Practicum in Intellectual Assessment. (3) A, II.** Prerequisites: COU 826, 827. Advanced laboratory practice in giving tests and interpreting results. Attention given to intelligence tests, measurements of special aptitudes, inventories for self-appraisal, and measure of personality.

**COU 860 Student Development Theory in Higher Education. (3) I, II.** This is a theoretical/development course in the introduction to the student affairs profession.

**COU 861 Overview and Legal Issues in Higher Education. (3) I, II.** Overview of the legal and ethical issues in the student affairs profession.

**COU 862 Policy and Finance in Higher Education. (3) I, II.** Analysis of governance, policy-making, and financial issues in the student affairs profession.

**COU 880 Counseling Practicum: Elementary, Secondary, or Mental Health. (3) I, II.** Prerequisite: clinical coordinator approval. This course provides students the opportunity to practice skills developed in their program. Students will be supervised by an experienced counselor in a setting appropriate for their program. May be taken under different setting titles up to 9 hours.

**COU 881 Internship in Counseling: Elementary, Secondary, or Mental Health. (3) A, I, II.** Practice in a counseling setting which allows for the transition from student to professional. School counselors will complete a 600 hour internship, and mental health counselors will complete a 900 hour internship. May be taken for up to 9 credit hours in order to generate the needed 600 or 900 clock hours.

**COU 891 \_\_\_\_\_. (3) A.** Critical examination of current issues and development trends in counseling research. May be retaken for a maximum of 9 hours provided topic is different each time.

#### CRJ—Criminal Justice Dr. Carole Garrison, Chair

**CRJ 800 Advanced Criminal Justice Studies. (3) A.** An orientation to our field of study as well as an examination of the criminal justice and crime control apparatus. Includes a review of the assumptions, theories, research, and normative orientations that underlie and drive criminal justice thinking and practice.

**CRJ 801 History of Criminal Justice. (3) A.** An examination of the historical development of the criminal justice system.

**CRJ 808 Analysis of Criminal Justice Data. (3) A.** An examination of statistics and analysis in criminal justice research. Addresses epistemological presuppositions, statistical assumptions, results, and use of results for decision making.

**CRJ 810 Advanced Police Administration. (3) A.** An examination of the functions of the police in the criminal justice system; concepts and principles of police organizational structure; concepts and principles of administration and management with an emphasis on the environment, change, conflict, strategy and evolution.

**CRJ 813 Analysis of Police Operations. (3) A.** An analysis of the strategies and programs utilized in modern police work. Previous research studies and contemporary methods for assessing the effectiveness of police practices are examined.

**CRJ 814 Policing and Society. (3) A.** Theoretical, historical and comparative perspectives on policing. Critical analysis of the function of police in modern society.

**CRJ 815 Policing Global Insecurity. (3) A.** Examines "global security threats" (e.g. terrorism, transnational crime, ethnic cleansing) and the State and private sector's role in their construction and control. Late-modern social, political, and cultural movements are used to make theoretical sense of these phenomena.

**CRJ 840 Punishment and Society. (3) I.** Beginning with the enlightenment and classical philosophers, students will examine historical and current trends in punishment and social control theory and practice. Addresses social control and punishment in late-modernity.

**CRJ 842 Human Rights & Justice. (3) A.** Studies human rights movements, international law, and issues such as war on terrorism. Applies a paradigm of global human-rights justice to identify problem exemplars, exemplary problems solutions, and failing as well as failed paradigms.

**CRJ 843 Advanced Issues in Criminal Law. (3) A.** Advanced study of criminal law and procedure with emphasis upon judicial supervision of law enforcement and review of convictions.

**CRJ 844 Innocence Project Externship. (3) A.** Corequisite and/or Prerequisite: CRJ 843 and departmental approval. The externship is designed to teach students the fundamental components of effective criminal investigation. Students will have the opportunity to apply investigation skills and knowledge offered in the classroom to cases which may contain previously overlooked exculpatory evidence.

**CRJ 846 Legal Issues in Criminal Justice Administration. (3) A.** Legal research methodology; examination of employment problems including labor-management relations and discrimination; administrative agencies; civil liability, including vicarious liability and related issues.

**CRJ 870 Theories of Crime and Criminal Justice. (3) A.** Examines the major theoretical perspectives in modern criminology and criminal justice, including classical statements and contemporary developments. Provides an exploration of theoretical arguments, underlying assumptions, philosophy of science commitments, and the socio-historical context in which the theories were developed.

**CRJ 871 Crime, Victims, and Criminals. (3) A.** Examines the relationship between social inequality, crime, criminals and victims. Addresses the use of power in the construction of crime and the creation of law, as well as differential treatment by gender, race, ethnicity and class.

**CRJ 872 The Community Context of Crime. (3) A.** Examines crime and synthesizes the body of theory and research examining community level effects on crime/crime control.

**CRJ 873 Social Construction of Crime and Crime Control. (3) A.** Examines the social construction of crime including consideration of the process by which crime problems are generated.

**CRJ 874 Crime, Criminal Justice and Popular Culture. (3) A.** Examines the interrelatedness of consumption, production, crime and popular culture. Examination of the social and symbolic construction of crime will be included through analysis of film, literature, music, and academic literature.

**CRJ 875 Crime and Public Policy. (3) A.** Provides an overview of factors shaping crime policy. The concept of crime, the use of law to promote social control policies, policy responses related to crime control and the efficacy of those policies will be examined. Addresses conceptualizations of the modern state and the use of state power.

**CRJ 876 Organizational Crime. (3) A.** This course explores empirical research, theories, and concepts related to crime committed within organizational contexts. Particular attention is paid to forms of syndicated crime, corporate crime, governmental corruption, and state crime.

**CRJ 877 Postmodernism and Justice. (3) A.** An introduction to the ideas of postmodernism as applied to criminal justice. In contrast to the scientific model of inquiry most often used in criminal justice, the use of postmodernism brings to the field of criminal justice new models characterized by relationships, the importance of symbols, and assumptions that underlie our understanding of the concept of justice.

**CRJ 878 Ideology and Criminal Justice. (3) A.** An assessment of the interrelatedness of crime and ideology. Includes an examination of the ideological construction of crime and crime control.

**CRJ 879 Vice and Criminal Justice. (3) A.** A historical, analytic overview of America's response to vice. Particular topics will be chosen from the major vices in American society: prostitution, gambling, drugs and alcohol, as they relate to this country's relationship between morality and the criminal law.

**CRJ 888 Research Methods in Criminal Justice. (3) A.** Prerequisites: undergraduate research methods and undergraduate statistics. Study of the philosophical foundations, design, and processes of criminal justice and criminological research: critical critique of current research issues in criminal justice.

**CRJ 889 Qualitative Research Methods. (3) A.** A survey of qualitative research strategies and their epistemological presuppositions.

**CRJ 890 Topical Seminar in Criminal Justice. (1-3) A.** May be retaken to a maximum of nine hours on different topics.

**CRJ 897 Independent Study in Criminal Justice. (1-6) A.** Individual investigations in criminal justice. Under the supervision of a faculty advisor. Student must have the independent study proposal form approved by faculty supervisor and the criminal justice graduate program coordinator in the College of Justice and Safety prior to enrollment. May be retaken up to a maximum of nine hours.

**CRJ 898 Thesis I. (3) A.** This course orients students toward the production of a proposal suitable for a thesis.

**CRJ 899 Thesis II. (3) A.** Entails an oral presentation and defense of thesis.

#### CSC—Computer Science Dr. Ka Wing-Wong, Acting Chair

**CSC 707 Seminar in Computer Science: \_\_\_\_\_. (1-3) A.** Prerequisite: departmental approval. Topics vary with offering. May be retaken with advisor approval, provided the topics are different. Credit towards degree requirements will depend on the course content.

**CSC 710 Web Design and Programming in Education. (3) A.** Introduction to design and implementation of World Wide Web applications for teachers. Development of interactive on-line class notes and testing materials.

**CSC 720 Multimedia System Design. (3) A.** Prerequisite: admission to the master's degree program in computer science or to the master's degree program in math (computer science option) or departmental approval. Integration of multimedia technologies, design of scenes, computer algorithms, multimedia solutions, and multimedia databases.

**CSC 730 Concepts of Programming Systems.** (3) A. Prerequisite: three hours of a programming language or equivalent. The top-down design of algorithms, structured programming, control structures, subprograms, files and lists. Programs will be written in a high level language.

**CSC 735 Discrete Structures.** (3) A. Prerequisite: MAT 107 or departmental approval. Corequisite: CSC 730. Logic, sets, functions, Boolean algebra, probability and their applications, number theory, recursion, math induction, proofs with application of these topics to computer science. Credit does not apply toward the M.S. degree in Mathematical Sciences.

**CSC 738 Computer Crime and Forensics.** (3) A. Study of computer crime and forensics. Computer criminal evidence collection, analysis, and handling; computer forensics tools; data acquisition; digital evidence control; Windows and Linux systems investigation; email investigation; network forensics; computer forensic reporting.

**CSC 740 Integrated DB Applications.** (3) A. Prerequisite: CSC 730 or departmental approval. Techniques and tools for creating an integrated database application. Topics include architecture of a client/server database; creation of named program units stored in the database and in the workstation file system, developer utilities, and domain integrity.

**CSC 744 Database Admin and Security.** (3) A. Prerequisite: CSC 730 or departmental approval. This course covers database management system concepts, database system architecture, installation and setup, data management, performance monitoring and tuning, backup and recovery, database security models and management, database auditing.

**CSC 745 Theory of Database Systems.** (3) A. Prerequisite: CSC 730 or departmental approval. Models and principles of information systems. Database languages. The logical and physical design as well as the implementation and use of database systems.

**CSC 746 Artificial Intelligence.** (3) A. Prerequisite: CSC 730 or departmental approval. The use of programming languages to model concepts selected from artificial intelligence. The application of heuristics to problem solving. Perception and pattern recognition.

**CSC 750 Graphics Programming.** (3) A. Prerequisite: CSC 730 or departmental approval. 3-D geometry, model transformation, matrices, computer algorithms and protocols, texture mapping, camera control, and collision detection.

**CSC 812 Microcomputer Architecture and Software.** (3) A. Prerequisite: CSC 730 or departmental approval. Topics suitable for a microcomputer laboratory systems manager including IBM PC architecture and assembly language, local area networks, MS DOS, copyright law, viruses.

**CSC 815 Computer Administration and Security.** (3) A. Prerequisite: admission to the master's degree program in computer science, the master's degree program in math (computer science option) or departmental approval. Operating system concepts, installation and setup. System administration, managing system services, program security, viruses and worms, encryption, information security, security policies, legal and ethical issues.

**CSC 825 Network Applications and Security.** (3) A. Prerequisites: CSC 730 and CSC 815. Local Area Networks, TCP/IP, Internet Protocols, Client/Server applications. Dynamic web pages, Internet security, firewalls, virtual private networks, network attacks, Web and E-commerce security, wireless networking and security.

**CSC 831 Data Structures and Algorithms I.** (3) A. Prerequisites: CSC 730 or departmental approval. Analysis of algorithms, data structures, files, searching, and sorting.

**CSC 833 Data Structures and Algorithms II.** (3) A. Prerequisite: CSC 831. Pattern matching, graph theory algorithms, computational complexity, and cryptography.

**CSC 834 Software Engineering and Project Management I.** (3) A. Prerequisite: admission to the master's degree program in computer science, the master's degree program in math (computer science option) or departmental approval. Planning, organizing, monitoring, and controlling the implementation of a software project.

**CSC 835 Software Engineering and Project Management II.** (3) A. Prerequisite: CSC 834. A survey of current issues in software engineering, software testing, metrics, quality assurance, software reuse, and re-engineering.

**CSC 839 Applied Learning in Computer Science.** (1-3) A. Prerequisite: departmental approval. May be retaken with approval to a maximum of three credits. Employment with faculty and field supervision in an area related to the student's academic interests. A minimum of eighty hours of employment is required for each academic credit. Credit does not apply toward the M.S. degree requirements.

**CSC 839 A-F Cooperative Study: Computer Science.** (1-3) A. Prerequisite: departmental approval. May be retaken with approval to a maximum of three credits. Employment with faculty and field supervision in an area related to the student's academic interests. A minimum of eighty hours of employment is required for each academic credit. Credit does not apply toward the M.S. degree requirements.

**CSC 842 Parallel Algorithms.** (3) A. Prerequisite: CSC 831. The design and analysis of parallel algorithms. Application to merging, sorting, combinatorics and numerical algorithms.

**CSC 860 System Programming and Administration.** (3) A. Prerequisite: CSC 730. Operating system concepts, concurrent programming, scheduling, security, recovery, methods and languages for operating system management. Layering protocols for computer networks, inter-process communications, TCP/IP Internet protocols, Web programming, and Web server management. Credit does not apply toward the M.S. degree in Mathematical Sciences.

**CSC 880 Seminar in: \_\_\_\_\_.** (1-3) A. Prerequisite: departmental approval. Advanced topics in computer science. May be retaken to a maximum of six hours provided the topics are different.

**CSC 890 Independent Study in: \_\_\_\_\_.** (1-3) A. Prerequisite: departmental approval. Independent study on a problem chosen by the student and instructor. Student must have the independent study form and course syllabus approved by faculty supervisor and department chair prior to enrollment. May be retaken to a maximum of nine hours, provided that the topics are different.

**CSC 895 Applied Computing Project in: \_\_\_\_\_.** (3-6) A. Prerequisite: departmental approval. An individually developed project related to the solution of a typical problem in an applied computing environment. The result is to be presented in open forum. Credit does not apply towards the M.S. degree in Mathematical Sciences.

#### CTE—Career and Technical Education Dr. L. Tim Ross, Interim Chair

**CTE 800 Occupational Training Materials.** (3) A. Instructional materials designed for the adult learner to include: the preparation and application of individualized learning packets; the identification and application of instructional computer software; the development and application of video instructional programs; organization and application of instructional sequences.

**CTE 801 Occupational Training Methods.** (3) A. An examination and development of training methods in occupational programs. Content will include an analysis of learning student and occupational needs, objectives, syllabi and lesson preparation and an overview of teaching methods.

**CTE 802 Occupational Training Practicum.** (6) A. A course designed to allow the trainer the opportunity to provide instruction to trainees in a real life setting.

**CTE 861 Supervision in Technical Education.** (3) A. Principles, objectives, methods, techniques, and practices of supervision; selection and organization of instructional materials; planning and equipping facilities; and professional and in-service education as they relate to supervision of technical, vocational, and general industrial education programs.

**CTE 862 Philosophy of the Career and Technical Education.** (3) II. Background, purpose, history, and philosophies of career and technical education; relationship to general education; effects of legislation for career and technical education.

**CTE 863 Organization and Administration of Career and Technical Education.** (3) A. Organization of career and technical education on the local, state, and national level; federal legislation in technical education; federal state relationships; types of technical education programs and schools.

**CTE 864 Technical Education Facility Planning.** (3) A. Principles and practices underlying the planning and designing of laboratories for technical education. Students are required to design a multi-laboratory facility which complies with existing safety and health laws.

**CTE 865 Evaluation in Technical Education.** (3) A. Strategies and methods for evaluation in technical education; identification and analysis of context, input, process, and outcomes; preparations, use and analysis of measuring instruments.

**CTE 888 Occupational Information.** (3) A. Occupational information associated with careers to include: types of work performed, qualifications and preparation required, the type of organizations where employment is available, work conditions, annual earnings, and employment outlook.

#### DES—Design Mr. Herb Goodman, Chair

**DES 717 Interior Design Study Tour II.** (1-3) A. Prerequisite: departmental approval. Tour of interior design resources, wholesale, and retail showrooms. Study in museums, libraries, and interior design centers when possible. Special study projects. May be retaken to a maximum of six hours providing topics vary. Students having received credit for the course at the 500 level may take this course to a maximum of six hours, including the undergraduate credits. Those who have not received credit for this course at the undergraduate (500) level may retake it to a maximum of six hours.

**DES 725 The Decorative Arts.** (3) A. Furniture and accessories of the 18th, 19th, and 20th centuries with emphasis upon the influence of major designers and their interpreters, their stylistic characteristics and technical habitations.

**DES 821 Analytical Furniture Design.** (3) A. Prerequisite: TEC 331 or departmental approval. Analysis of furniture design in terms of integration of function and style with structure; coordination of furniture style with interior architectural expression. Design and research of components will result in scaled models and a complete set of working drawings.

#### EAD—Educational Administration Dr. Connie Callahan, Interim Chair

**EAD 801 Introduction to School Leadership and Administration.** (3) I, II. The study of modern administrative theories, practices, and techniques in school leadership and administrative responsibilities. Emphasis will be upon facilitating leadership to create an organizational climate supportive of excellence in teaching and learning.

**EAD 802 School Buildings and Grounds.** (3) I. Emphasis on the cooperative planning of school buildings which fit the school program as identified by educational specifications. Equipping, furnishing, and maintaining buildings are studied.

**EAD 804 The Middle School Principal. (3) I, II.** A study of the organization and management of the middle school, and the nature and needs of middle school children.

**EAD 806 The Elementary School Principal. (3) I, II.** Prerequisite: EAD 801. Organization and management of the elementary school. Study of the various duties, demands, and responsibilities of the elementary school principal in providing professional and educational leadership.

**EAD 807 Educational Administration and Supervision. (1-3) A.** Prerequisite: advisor/departmental approval. Workshops, special topics, or seminars. May be retaken under different subtitles.

**EAD 808 Administration of Pupil Personnel Services. (3) II.** Prerequisite: departmental approval. Administrative problems relating to child accounting. Major areas emphasized will be attendance reports and records, school census, and social and economic factors influencing school attendance.

**EAD 809 The Secondary School Principal. (3) I, II.** Prerequisite: EAD 801. Organization and management of the secondary school principal in providing professional and educational leadership. Study of various duties, demands, and responsibilities of the secondary school.

**EAD 810 The Educational Leadership Practicum. (3) I, II.** Analysis of the educational leader in practice. Sixty hours of field experiences inclusive of primary through grade 12, supported with knowledge and skill development symposiums, lectures, and assessments.

**EAD 821 Practicum in Administration and Supervision. (3) I, II.** Prerequisite: professional certificate in administration and supervision. Field experiences with emphasis on organization and administration of schools. Seminars/workshops will be attended to analyze problems and experiences of the field activities.

**EAD 824 Technology and Leadership Practices for Program Improvement. (3) I, II.** The study of assessment, improvement, and application of computer technology and effective leadership practices in education. The focus of the course will be upon the use of technology and knowledge of "best" practices for educational improvements.

**EAD 827 Finance and Support Services in Schools. (3) I, II.** Study of financing and support services within individual schools in Kentucky and the United States. Special emphasis will be placed upon site-based decision-making concepts as they relate to finance and support services.

**EAD 828 School Law and Ethics in School Leadership. (3) I, II.** Legal principles and interpretations of constitutional and statutory laws. Judicial decisions and school policies based on those are emphasized. Special attention is given to the site-based decision making process at the school level.

**EAD 831 Leadership for School Program Collaboration. (3) A, I, II.** The study of the issues and opportunities that surround educational leaders, professional staff, support staff, students, and communities, as they relate to collaborative efforts regarding quality and equity in development of world class schools.

**EAD 834 Leadership for Human Resources Development. (3) I, II.** Human resources development practices including functions of school supervision. Course emphasizes the development of knowledge and skills needed to provide essential and effective personnel leadership and management services in an educational organization.

**EAD 839 The School Superintendency. (3) A.** The role of the school district superintendent is explored and analyzed with reference to job responsibilities and organizational structure. Knowledge, skills, and dispositions necessary to serve successfully in the position are also examined.

**EAD 846 Leadership for School Community Relations. (3) I, II.** Study of issues and responsibilities relating to the establishment and administration of a school community relations program at the school district and school building levels. Credit will not be awarded to students who have credit for EAD 846S.

**EAD 846S School Community Relations: Service Learning. (3) A.** Field-based course designed to engage students in developing and implementing a community relations program contributing to a service learning activity in an actual school setting. Service learning option for EAD 846. Credit will not be awarded to students who have credit for EAD 846.

**EAD 849 School Systems Administration. (3) A.** Examination of school system operations including financial management, the administration of auxiliary services, human resources management, the management of federal and state programs, facilities planning and management, and the management of curriculum and instructional support.

**EAD 859 Strategic Planning in Education. (3) A.** An examination of planning processes used by leaders to direct and focus educational change and improvement. Includes strategic planning approaches designed to address the goals of an organization.

**EAD 869 Decision-Making and Action Research in Education. (3) I, II.** Study of action research and decision-making as they apply to problems encountered in the school principalship and supervision.

**EAD 879 The Superintendency Practicum. (3) A.** Analysis of the school district superintendent's role in practice with emphasis on changes in society and schools. Students will participate in a variety of experiences that involve interacting with practicing school administrators, especially superintendents.

**EAD 888 Advanced Seminar in Administration and Supervision. (3) I, II.** A study of the skills and techniques necessary for developing sound personnel policy and practice, and for developing an effective school/community relations program.

**EAD 897 Independent Study. (1-3) A.** Designed for advanced graduate students who desire to investigate special problems relating to educational administration and/or supervision. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**EAD 898 Project Development. (3) A.** Prerequisites: admission to Ed.S. program and EPY 869 or equivalent. Research and investigation in the area of specialization. Examination of appropriate design models. Development of acceptable project proposal.

**EAD 899 Specialist Project. (3) A.** Prerequisites: EPY 895 and EAD 898. Guided completion of a scholarly project appropriate to the student's field of specialization.

#### ECO—Economics Dr. Fred Ruppel, Acting Chair

**ECO 760 Special Problems in Economics. (1-4) A.** Prerequisite: advisor/departmental approval. Independent work, special workshop, special topics, or seminar. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**ECO 790 Regional Economics. (3) A.** Prerequisite: three hours economics. Analysis of patterns of regional growth and development. Use of economic models for regional forecasting and policy evaluation; the problems of marginal areas in developed economies.

**ECO 807 Economics \_\_\_\_\_. (1-3) A.** Prerequisite: advisor/departmental approval. Independent work, workshops, special topics, or seminars. May be retaken under different subtitles to a cumulative maximum of nine hours.

**ECO 810 Economics for Teachers. (3) A.** A course designed to enhance teachers' understanding of economics. Study of microeconomic and macroeconomic principles; application to policy issues; introduction to economic literacy of students in schools.

**ECO 848 Statistical Methods in Business and Economics. (3) A.** Prerequisite: ECO 220 or equivalent or consent of instructor. Application of statistical analysis in business and economics; probability, sampling distributions, estimation and hypothesis testing, regression, analysis of variance, chi-square analysis, and time series. Credit will not be awarded to students who have credit for QMB 850.

**ECO 850 Managerial Economics. (3) II.** Prerequisites: ECO 230 and 231 or ECO 822. Economic concepts directly relevant to decision making, including demand, forecasting, cost analysis, production theory, and pricing under competitive and imperfect market conditions.

**ECO 854 Advanced Statistical Applications. (3) A.** Prerequisite: ECO 848 or equivalent. Develops business and economic applications emphasizing the general linear model. Includes statistical inference, regression models, non-parametrics, and analysis of variance. Emphasis upon description and prediction of business and economic phenomena. Credit will not be awarded to students who have credit for EPY 843 or QMB 300 or STA 500 or STA 700 or ECO 320 or PSY 301 or STA 320.

**ECO 855 Contemporary Economic Issues: \_\_\_\_\_. (1-6) A.** Prerequisite: ECO 850 or equivalent. Application of economic analysis to such issues as international trade, health care, education, environmental policy, monetary and fiscal policy, and income distribution. May be retaken to a maximum of six hours if topics are different.

**ECO 860 Independent Study in Economics. (1-6) A.** Students must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment. May be retaken under different subtopics to a cumulative maximum of six hours.

#### EDC—Educational Core Dr. Michael Martin, Chair

**EDC 810 K-12 Ed/Tech: Critical Issues. (3) Online.** Introduction to research about integration of technology into K-12 school systems. Students will also investigate current and future technology advancements in hardware, software, networking, support, and training. Basic issues relating to legal and ethical issues relative to technology will also be introduced.

**EDC 811 K-12 Ed/Tech: Multimedia Design. (3) Online.** Corequisite: EDC 810. Introduction to multimedia-authoring approaches and research in electronic formats. Students will create web-based instructional courseware. All students will produce and publish a classroom, school, or other education related website.

**EDC 812 K-12 Ed/Tech: Online Learning. (3) Online.** Corequisite: EDC 810. Understand and apply principles and best practices in online learning as a medium for adding online activities in the K-12 classrooms. Students will evaluate open source software and develop an online course or unit of study using a selected open source system.

**EDC 813 K-12 Ed/Tech: Capstone. (3) Online.** Prerequisites: EDC 810, 811, and 812. Students will synthesize and integrate theories and practices learned from the three previous courses in the program and apply them toward the development of a culminating educational technology project appropriate to the K-12 environment.

**EDF—Educational Foundations****Dr. Michael A. Martin, Chair**

**EDF 807 Educational Studies:** \_\_\_\_\_.  
(1-3) A. Prerequisite: advisor/departmental chair approval. Independent work, workshop, special topics, or seminars. May be retaken under different subtitles.

**EDF 832 History of Education in the United States.** (3) A. Rise and development of public education in the United States. Sociological, psychological, and scientific movements in education; education reorganization; brief study of the development of public education in Kentucky.

**EDF 835 Critical Thinking in the Educational Process.** (3) A. A study of the process of critical thinking in education. Exploration of techniques and materials for teaching the art of reasoning, defining problems, and analyzing and evaluating information.

**EDF 836 Philosophy of Education.** (3) A. Meaning and scope of philosophy in education; contrasting philosophies and conceptions of education; evaluation and interpretation of present-day issues and problems in education.

**EDF 837 Comparative Education.** (3) A. Study of the development of educational thought and practice in selected nations of Europe, Asia, Africa, and South America. Emphasis will be placed on intellectual, historical, and sociological factors.

**EDF 850 Educational Sociology.** (3) A. Investigation of the social forces and institutions influencing education. A study of cultural change, social control, social stratification, ethnic patterns, and religion and their effects on the school.

**EDF 855 Foundations of Multicultural Education.** (3) A. Examination of the education implications of cultural pluralism in America and selected societies of the world.

**EDL—Educational Leadership****Dr. Robert Biggin, Acting Chair**

**EDL 800 Field Experience for Specialists in Education.** (3) A. Minimum of sixty hours of field experiences relevant to the student's planned program of study, supported by skill development through synopsis, tutorials, lectures, and assessments. May be retaken to a maximum of six hours.

**EDL 810 Introduction to Quantitative Research Methods.** (3) A. Introduction to the use of quantitative research methods in education. Topics include measures of central tendency, measures of variability, correlation, regression, testing statistical hypotheses, and research design.

**EDL 811 Introduction to Qualitative Research Methods.** (3) A. Introduction to qualitative data collection and analysis in educational research. Review of origins, theory, and design of method; issues of validity, reliability, and human subject ethics.

**EDL 820 Cultural and Contextual Foundations of Leadership.** (3) A. Investigation of cultural and social influences on the development of leadership in educational settings. Emphasis is placed on the application of sociocultural concepts to leadership issues and problems in educational settings.

**EDL 821 Moral and Ethical Dimensions of Leadership.** (3) A. Examination of the moral dimensions of the process and content of leadership from theoretical and practical perspectives. Emphasis is on the application of ethical thinking and concepts to leadership issues and problems in educational settings.

**EDL 822 Social and Political Dimensions of Leadership.** (3) A. Examination of social and political dimensions of the process and content of leadership from theoretical and practical perspectives. Emphasis is on the application of relevant theoretical constructs to leadership issues and problems in educational settings.

**EDL 823 Assessment for Educational Leaders.** (3) A. Study and application of appropriate and effective uses of different types of assessment data in a variety of educational settings to guide leadership practice.

**EDL 899 Thesis for Specialists in Education.** (3) A. Prerequisite: departmental approval. Completion and defense of a research thesis in educational leadership, policy studies, or a related field. May be retaken to a maximum of six hours.

**EDL 900 Ed.D. Field Experience.** (3) A. Prerequisite: departmental approval. Minimum of eighty hours of field experiences relevant to the student's planned program of study, supported by skill development through symposia, tutorials, lectures, and assessments. May be retaken to a maximum of six hours.

**EDL 910 Seminar in Advanced Research Methodology and Design.** (3) A. Prerequisites: EDL 810 and 811. In-depth study of research methodology and design (qualitative, quantitative, or mixed methods) as related to a specific research project or set of research questions. May be retaken to a maximum of six hours.

**EDL 930 Seminar on Rural Schools and Communities.** (3) A. Consideration of the relationship between schools and rural communities, including issues related to democratic localism, state and national education agendas, and economic development in rural areas.

**EDL 931 Leadership in Rural Settings.** (3) A. Analysis of general and specific skills required for leadership in rural schools. Comparisons are made with leadership demands in urban and suburban settings. Examines formal and informal interactions and individual and collaborative leadership needs.

**EDL 999 Dissertation.** (3) A. Prerequisite: departmental approval. Completion and defense of a research dissertation in educational leadership, policy studies, or a related field. May be retaken to a maximum of twelve hours.

**EGC—Graduate Certification****Dr. Michael A. Martin, Chair**

**EGC 820 Professional Studies I: Teachers, School, and Society.** (3) A. Prerequisite: criteria for admission to the MAT program. Corequisite: EGC 830. An introduction to roles and responsibilities of teachers in standards-based schools, school organization, and relationship of school and society. 20 field/clinical hours.

**EGC 826 Graduate Practicum in Elementary Education.** (8) I. Prerequisites: EGC 820, 830, MAT Core I-IV, admission to student teaching. Corequisite: EGC 827. Elementary Master's of Arts in Teaching Practicum. Observation, participation, and responsibility for classroom teaching including related professional activities.

**EGC 827 Elementary Master of Arts in Teaching Seminar.** (1) I. Prerequisites: admission to graduate practicum, EGC 820 and 830. Corequisite: EGC 826. Seminar with emphasis on questions and problems encountered in teaching including classroom management, state and national curriculum trends, and legal issues. Minimum sixteen clinical hours.

**EGC 829 Master of Arts in Teaching Capstone Seminar.** (3) I. Prerequisites: EGC 820 and 830, MAT Core I-III. Mediated presentation of action research project completed in Core III, completion and assessment of graduate portfolio, plan for continued professional growth based on experienced teacher standards.

**EGC 830 Professional Studies II: Learner, Teachers, and Action Research.** (3) A. Prerequisite: criteria for admission to MAT program. Corequisite: EGC 820. Focus on theories and principles of human development and action research. 20 field/clinical hours.

**EGC 835 Content Methods and Curriculum for Middle Grades.** (3) I. Prerequisites: admission to MAT in Middle Grade Education and Teacher Education; completion of EGC 820, 830. Examination of curriculum, responsibilities of teachers, appropriate methods and instructional materials for middle grades.

**EGC 836 Middle Grades Practicum in Middle Grade Education.** (4 or 8) II. Prerequisites: admission to student teaching. Corequisite: EGC 837. Observation, participation, responsible classroom teaching including related professional activities. MAT candidates teaching under temporary provisional certification take this course for 4 hours in spring semester and 4 hours in fall semester. Other MAT candidates take this course for 8 hours during student teaching semester.

**EGC 837 Middle Grades Master of Arts in Teaching Seminar.** (1) II. Prerequisite: admission to student teaching. Corequisite: EGC 836. Emphasis on questions and problems encountered in middle grades teaching including classroom management, state and national curriculum trends, and implementation and evaluation of instruction.

**EGC 839 Capstone Seminar in Middle Grade Education.** (3) A. Prerequisites: EGC 836 and 837. Mediated presentation of action research project completed in Core III, completion and assessment of graduate portfolio, plan for continued professional growth based on Experienced Teacher Standards.

**EGC 845 Teaching in the Secondary/P-12 School.** (3) A. Prerequisite: admission to candidacy in the MAT program. Current methods for standards based teaching and assessment of schools. Ninety-six field/clinical hours required.

**EGC 846 Graduate Practicum in the Secondary/P-12 School.** (4 or 8) A. Prerequisites: admission to student teaching. Corequisite: EGC 847. Observation, participation, responsible classroom teaching including related professional activities. MAT candidates teaching under temporary provisional certification take this course for 4 hours in spring semester and 4 hours in fall semester. Other MAT candidates take this course for 8 hours during student teaching semester.

**EGC 847 Secondary/P-12 M.A.T. Seminar** (1) A. Prerequisite: admission to graduate practicum. Corequisite: EGC 846. Emphasis on questions and problems encountered in secondary/P-12 teaching including classroom management, state and national trends, and legal issues. Minimum sixteen field/clinical hours.

**EGC 889 Master of Arts in Teaching Capstone Seminar.** (3) A. Prerequisites: EGC 846 and 847. Multi-media presentation of action research project completed in Core III, completion and assessment of graduate portfolio, plan for continued professional growth based on Experienced Teacher Standards.

**EHE—Higher Education****Dr. Michael A. Martin, Chair**

**EHE 807 Problems in Higher Education.** (1-3) A. Prerequisite: advisor/departmental chair approval. Independent work, special workshops, selected topics, or seminar. May be retaken under different subtitles to a maximum of six hours.

**EHS—Environmental Health Science****Dr. Donald Calitri, Acting Chair**

**EHS 800 Environmental Health Research Process.** (3) A. Cross listed with PHE 800. Provides the student with an in-depth exploration of the public health/environmental health paradigm using instruction and hands on experience in the application of quantitative and qualitative analysis in the public and environmental health arena. Credit will not be awarded to students who have credit for PHE 800.

**EHS 825 Environmental Health Planning.** (3) A. The study of the planning tools required for the administration and implementation of environmental health programs.

**EHS 839 Applied Learning in Environmental Health. (1-6) A.** Cross listed with EHS 863. Supervised and directed field experience at official agencies at any level of government (local, state or national) or with a private industry. The EHS field practice course administrator must approve all field-training sites before selection or assignment. Credit will not be awarded to students who have credit for EHS 863.

**EHS 840 Industrial Hygiene Principles. (3) A.** A study of the impact of the work place on worker's health and the control of causative factors of disease.

**EHS 841 Essentials of Industrial Hygiene. (3) A.** Identify primary sources of potential chemical, physical and biological agents, identify techniques for assessing the risk of worker exposures and understand health impacts of occupational exposures to workers. (KYU and WEB course)

**EHS 845 Environmental Health Standards/Compliance. (3) A.** The study of international and national environmental health standards, rules and regulations, application interpretations, and the statutes upon which they are based.

**EHS 850 Introduction to Environmental Health Science. (3) A.** Study of the effects of the environment on personal and public health related to water and waste water treatment, air pollution, food hygiene, disease vectors, waste disposal, radiation, noise, institutions, etc. as they link to chronic and communicable diseases.

**EHS 855 Emergency Sanitation/Shelter/Environments. (3) A.** This course will provide students with environmental health principles required to protect the environmental health of a community in times of emergency/disaster.

**EHS 860 Air Quality and Health. (3) A.** A study of health impacts of air pollution from both outdoor and indoor sources. The course will also provide information about methods of reduction, control, and elimination of air pollution.

**EHS 863 Field Experience in Environmental Health. (1-6) A.** Cross listed with EHS 839. Supervised and directed field experience at official agencies at any level of government (state, local or national) or with private industry. The course administrator must approve all field-training sites before selection or assignment. Credit will not be awarded to students who have credit for EHS 839.

**EHS 865 Environmental Toxicology. (3) A.** Toxicology, the principles, concepts and thinking that are its foundation. The mechanisms by which the substances enter the cells of the body, the physiological processes, the target organs, classes of toxic substances, and potential exposures.

**EHS 870 Assessing and Managing Health Risks. (3) A.** A study of risk assessment, injury control, and environmental epidemiology. Techniques for assessment and management of risk and paradigms for decision making to protect community public health and the work environment.

**EHS 877 Public Health Group Dynamics. (3) A.** Provides the student with the principles of value-based decision-making in empowering stakeholders of the health care system. This course deals with group planning processes, negotiation and mediation.

**EHS 880 Food/Waterborne Disease Control. (3) A.** The management of safety and disease hazards inherent in administering community programs of food hygiene, water supply, and wastewater treatment.

**EHS 890 Independent Study in Health Science. (1-3) A.** Prerequisite: advisor/course instructor/departmental approval prior to enrollment. Student-initiated directed study. Regular consultation with faculty supervisor and final project research paper required. May not be retaken under different subtopics. Approval of special project study proposal by faculty advisor.

**EHS 899 Thesis in Health Science. (1-6) A.** Prerequisite: advisor/course instructor/departmental approval prior to enrollment. Student-initiated directed study on thesis research and writing. Regular consultation with faculty supervisor and final project research paper required.

**EHS 899C Thesis in Health Science Continuation. (1-6) A.** Prerequisite: advisor/course instructor/departmental approval prior to enrollment. Student-initiated directed study on thesis research and writing. Regular consultation with faculty supervisor and final project research paper required.

#### ELE—Elementary Education Dr. Michael A. Martin, Chair

**ELE 707 Problems in Elementary Education. (1-3) A.** Prerequisite: advisor/departmental chair approval. Independent work, special workshops, special topics, or seminar.

**ELE 719 Teaching in the Kindergarten. (3) A.** Focuses upon leaders and literature of kindergarten education including historical movements, organizations, curricula, equipment, and procedures used with normal, developmentally different, and multicultural children.

**ELE 741 Survey of Elementary Curriculum Programs. (3) I, II.** For physical education, art, or music majors seeking 12<sup>th</sup> grade certification. Explores elementary curriculum, the role of special teachers, problems of individual learners, functions of the entire school-community. Not open to elementary education majors.

**ELE 807 Elementary Education: \_\_\_\_\_. (1-3) A.** Prerequisite: advisor/departmental chair approval. Independent work, workshops, special topics, or seminars. May be retaken under different subtitles.

**ELE 810 Elementary School Curriculum. (3) I, II.** Study in depth of principles, materials, and procedures in current curriculum development and revision in the elementary school.

**ELE 871 Literacy Programs: P-5 (3) A.** Intensive study of methods and materials appropriate for developing emergent, primary, and transitional literacy in grades P-5.

**ELE 897 Independent Study. (1-3) I, II.** Primarily for advanced graduate students who desire to investigate special problems relating to elementary education. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

#### EME—Early Elementary/Middle Grade Dr. Michael A. Martin, Chair

**EME 710 Art in the Curriculum. (3) A.** Elements of the discipline, creativity, aesthetics, theory, philosophy and instructional facilities will be explored. Individual explorations of research and media.

**EME 751 Linguistics in the Curriculum. (3) A.** Prerequisite: EME 445, 873 or ELE 871. Investigations of elements in the science of linguistics and their application to communication skills of students.

**EME 786 Teaching of Health in P-8. (3) A.** Prerequisites: admission to teacher education and major in school health. Developmentally appropriate curriculum, materials, and methods for the health P-8 program. Minimum of twenty field/clinical hours.

**EME 796 Physical Education for Children and Youth. (3) A.** Comprehensive review of techniques used in teaching physical education in the early elementary and middle grades. Emphasis placed on health, evaluation, fitness testing, rhythmic activities, game activities, tumbling and self-testing.

**EME 843 Teaching Mathematics to Low Achievers. (3) A.** In-depth analysis of characteristics of low achievers, teaching resources, teaching strategies, and appropriate mathematics curriculum content.

**EME 863 Social Science in the Curriculum. (3) A.** Emphasis on social science disciplines in the curriculum. New developments in social studies curricula are explored.

**EME 865 Investigations in Reading. (1-3) A.** Prerequisite: instructor approval. Individual research and study of investigative and theoretical literature dealing with the teaching of reading.

**EME 866 Investigations in Mathematics. (1-3) A.** Critical study of investigative and theoretical literature dealing with the teaching of mathematics.

**EME 870 Trends in Science Education. (3) A.** Exploration of modern trends, practices, and foundation programs drawn from appropriate disciplines which relate to the teaching of science.

**EME 872 Mathematics in the Curriculum. (3) A.** Exploration of trends, concepts, and issues involved in modern mathematics programs. Research findings are examined and multi-sensory materials are presented.

**EME 873 Research Based Reading Instruction. (1-3) A.** Advanced study of methods, materials, and organizational procedures appropriate for teaching developmental reading.

**EME 874 Language Arts in the Curriculum. (3) A.** Examination of current trends and curriculum problems related to teaching of language arts. Emphasis on listening, oral and written expression, spelling and handwriting.

**EME 876 Investigations in Science Education. (3) A.** Prerequisite: instructor approval. Individual research and study of investigative and theoretical literature dealing with the teaching of science.

**EME 877 Practicum for Reading Specialists. (3) A.** Prerequisites: EMS 868 and 875. Supervised experience for reading specialists in diagnosing and instructing students with reading difficulties.

#### EMG—Middle Grade Education Dr. Michael A. Martin, Chair

**EMG 707 Problems in Middle Grade Education: \_\_\_\_\_. (1-3) A.** Prerequisite: approval of advisor. Independent work, workshops, special topics, or seminar. May be taken for a maximum of six hours under different subtitles.

**EMG 768 Curriculum and Instructional Strategies for Industrial Education in the Middle Grades. (3) A.** Prerequisite: certification in Industrial Education. Study of curriculum content, instructional materials and strategies appropriate for Industrial Education instruction in the middle grades.

**EMG 806 Reading Instruction in the Middle School. (3) A.** Prerequisite: a course in foundations or reading/language arts instruction. Comprehensive study of materials and strategies for teaching reading in the middle grades with special emphasis on reading in the content areas.

**EMG 807 Middle Grade Education: \_\_\_\_\_. (1-3) A.** Independent study, special workshops, topics, or seminars. May be retaken for a maximum of six hours under different subtitles.

**EMG 810 Curriculum in the Middle School. (3) A.** A study of the physical, social, emotional, and intellectual needs unique to the middle grade student and their implications for courses of study, the learning environment, and teacher characteristics.

**EMG 867 Middle Grade Curriculum and Instructional Strategies in Family and Consumer Sciences. (3) A.** Curriculum content, instructional materials, and strategies appropriate for middle grade instruction in family and consumer sciences.

**EMG 897 Independent Study. (1-3) A.** Offered for advanced graduate students who desire to investigate special problems related to middle grade education.

EMS—Early Elementary/Middle Grade/Secondary  
Dr. Michael A. Martin, Chair

**EMS 775 Methods and Materials for Teaching English as a Second Language. (3) A.** The study of effective methods of Teaching English as a Second Language (TESL). Thirty hours of field experiences are required.

**EMS 800 Instructional Design and Technology. (3) A.** An in-depth study of designing and planning technology enhanced learning activities and materials in P-12 classrooms.

**EMS 811 Humanistic Teaching — Strategies and Behaviors. (3) A.** Rationale for and practice with techniques for effective teaching using humanistic and behavioral approaches. Emphasis is placed upon meeting the individual professional needs of participants.

**EMS 818 Effective Instructional Models and Practices. (3) A.** A course designed to help students examine, evaluate, and apply recent research findings related to effective instruction and schools.

**EMS 830 Multicultural Populations and School Curriculum. (3) A.** Exploration of ethnic and family backgrounds, class structure, patterns of living, language characteristics, and teacher-pupil attitudes as they relate to the school experience.

**EMS 842 Discipline and Classroom Management. (3) A.** Knowledge and skills necessary for establishing and maintaining positive relationships in the classroom; disciplinary concerns of teachers. Theoretical and tested knowledge in personal behavior and communication skills systems examined for practical and effective application.

**EMS 850 Curriculum for Leaders in Education. (3) A.** A course focusing on definition, planning, implementation, and assessment of P-12 curricula. Designed for students pursuing programs in Instructional Leadership.

**EMS 855 Gifted and Talented Youth. (3) A.** Survey of the unique characteristics of gifted and talented youth, methods of identification, and educational needs.

**EMS 856 Curriculum in the Gifted and Talented Education. (3) A.** Models for gifted and talented curriculum development, gifted and talented curriculum projects and teaching strategies, state and national curricular guidelines for gifted and talented instruction, program delivery options, and technological support are major topics.

**EMS 857 Model Programs for Gifted and Talented Education. (3) A.** Prerequisites: EMS 855, 856, 857. Examination of school and district wide programs for gifted and talented students including program delivery options, staff development, and development of critical and creative thinking skills.

**EMS 858 Practicum for Gifted and Talented Education. (3) A.** Prerequisites: EMS 855, 856, 857. Supervised teaching experience with gifted/ talented students. Provides students opportunities to apply knowledge and skills in classroom settings. Students will participate in program planning, implementation, and evaluation.

**EMS 861 Environmental Education Essentials. (3) A.** Exploration of the philosophy, historical development, resource identification and curriculum development of environmental education.

**EMS 863 Techniques of Teaching Environmental Education. (3) A.** Appropriate methods and materials for effective environmental education in a variety of settings.

**EMS 868 Instructional Techniques and Materials for Students with Reading Difficulties. (3) A.** Prerequisite: ELE 871, EME 873, EMG 806, or ESE 774. Methods, materials and techniques appropriate for correction of reading problems.

**EMS 870 Introduction to Literacy Consulting. (3) A.** An introduction to the roles, skills, responsibilities and dispositions needed for successful literacy consulting in grades 4-12.

**EMS 871 Practicum in Literacy Consulting. (3) A.** Prerequisite: EMS 870. Supervised experiences for literacy consultants working in schools to provide instructional support and professional development in the language arts to teachers across the curriculum.

**EMS 875 Diagnostic Assessment of Students with Reading Difficulties. (3) A.** Prerequisite: ELE 871, EME 873, EMG 806, or ESE 774. Theory and implementation of diagnostic procedures for the appraisal of reading difficulties. Emphasis on assessing types and degree of reading disabilities and identifying casual and contributing factors.

**EMS 880 Organization and Supervision of Student Teaching. (3) A.** Prerequisite: teaching experience. For school and college personnel concerned with improving student teaching experiences.

**EMS 889 Literacy Consulting Capstone Seminar. (3) A.** Prerequisites: EMS 870 and 871. Multimedia presentation of an action research project related to literacy consulting. Reflections on individual professional development related to IRA/NCTE Literacy Coaching standards.

ENG—English  
Dr. James Keller, Chair

**ENG 700 Topics in Professional Writing: \_\_\_\_\_. (3) A.** Study and practice in selected areas of professional writing. May be retaken with different topics to a maximum of six hours. If subtopic is "Writing for the Popular Media," no credit given to students who have credit for JOU 480.

**ENG 702 Advanced Creative Writing. (3) A.** Open to students who desire to have their manuscripts criticized: fiction, drama, poetry, biography, or the informal essay accepted; guest lectures by and discussion with writers in residence.

**ENG 703 Creative Writing Workshop. (1) A.** Prerequisite: departmental approval. One-week course of lectures and discussions by faculty and visiting lecturers. Each student must submit a short story, a one-act play, four poems, or equivalent. May be retaken for a maximum of three hours. Students having received credit for this course at the 500 level may take this course for a maximum of six hours, including the undergraduate credit.

**ENG 704 Creative Writing Mentorship. (2) SUMMER ONLY.** Prerequisite/Corequisite: ENG 703. Corresponding with instructor on-line and in conference, students will further develop advanced projects begun in ENG 703.

**ENG 710 Introduction to Linguistic Theory. (3) A.** An introduction to current linguistic theory and practice.

**ENG 715 English as a Second Language. (3) A.** Study of theories advanced to explain the learning of English as a second language.

**ENG 720 History of the English Language. (3) A.** Study of the history of the English language in terms of social, historical, and linguistic forces from which it developed into modern English.

**ENG 730 Topics in Genre: \_\_\_\_\_. (3) A.** Study of a designated literary genre, such as the rise of the novel, epic poetry, classical drama, or a popular literature genre. May be retaken with different topics to a maximum of six hours.

**ENG 750 Topics in Literature: \_\_\_\_\_. (3) A.** An intensive study of a particular aspect of literature such as a theme, a movement, or contemporary directions/experiments. May be retaken with a different topic to a maximum of six hours.

**ENG 800 Seminar on Composition. (3) I.** An introduction to current information and ideas on composition, with practical application, problem solving, and research especially relevant to college composition. Required of and limited to teaching assistants in English.

**ENG 803 Approaches to Creative Writing. (3) A.** Study in depth of the various approaches to pedagogy of creative writing (e.g., Atelier, Great Works, Workshop) culminating in a major project demonstrating both mastery and synthesis of the approaches covered.

**ENG 804 Seminar in Creative Writing: \_\_\_\_\_. (3) A.** Prerequisite: ENG 700, 702, or 703. Writing and study in depth of a particular genre (e.g., fiction, poetry, drama) resulting in a coordinated project. May be retaken with different topics to a maximum of six hours.

**ENG 805 Writing Project. (3-6) A.** Prerequisite: prior approval of department chair. Study of professional literature on the development of writing ability; practice in and analysis of the writing process and response to writing; individualized research. Maximum of three credit hours may apply toward an M.A. degree in English.

**ENG 806 Topics in Modern Rhetoric: \_\_\_\_\_. (3) A.** Prerequisite: ENG 510/710 or equivalent. Study in depth of selected major authors, theories, research and/or pedagogical approaches in twentieth-century rhetoric. May be retaken with a different topic to a maximum of six hours.

**ENG 807 Advanced Study of Language: Knowledge and Use. (3) A.** Prerequisite: ENG 510/710 or equivalent. An advanced course in language knowledge (competence) and use (performance) from the perspective of language theory, focusing on aspects of language acquisition and literacy development.

**ENG 808 Studies in Modern Composition Theory. (3) A.** An advanced course in modern theories of composition, suitable for students of writing and for students interested in teaching writing; includes theory, practice, and evaluation.

**ENG 809 Seminar in Scholarship and Writing. (3) A.** Study of the range of scholarly tools and methods for research and writing, including print and electronic sources. Special emphasis on practical application to a specific research project.

**ENG 810 Seminar in Linguistics. (3) A.** Prerequisite: ENG 510/710 or equivalent. Study of language from various linguistic perspectives.

**ENG 812 Seminar in Research Methods in Rhetoric and Composition Studies. (3) A.** Study of methods and bibliographical resources, including electronic media, for scholarly research and writing in rhetoric and composition studies. Emphasis on practical application to a specific research project.

**ENG 825 Old English Language and Literature. (3) A.** Study of the structure of Old English (phonology, morphology, syntax) and of selected literary works in the original. Emphasis on language or literature based on individual students' interests.

**ENG 827 History of Rhetoric. (3) A.** Study of classical rhetoric through the nineteenth-century as it applied to written discourse. Emphasis upon methods of invention, arrangement, and style to demonstrate their continuing utility.

**ENG 830 Seminar in Literature. (3) A.** An intensive study of an author(s) or a particular aspect of literature such as theme, a movement, or contemporary directions/experiments. May be retaken with different topics to a maximum of six hours.

**ENG 833 Modern Literary Criticism. (3) A.** Study of selected major critical approaches (such as New Criticism, Marxist Criticism, Psychoanalytic Criticism, Deconstruction, New Historicism, Feminist Criticism, Reader-Response Criticism) and their backgrounds.

**ENG 839 Applied Learning in English. (1-6) A.** Prerequisite: English department approval. Work under faculty and field supervisors in cooperative placement related to English graduate studies. One to six hours credit per semester or summer. Minimum of eighty hours work required for each academic credit. Maximum of three hours credit may apply toward an M.A. degree in English.

**ENG 839 A-F Cooperative Study: English.** (1-6) A. Prerequisite: English department approval. Work under faculty and field supervisors in cooperative placement related to English graduate studies. One to six hours credit per semester or summer. Minimum of eighty hours work required for each academic credit. Maximum of three hours credit may apply toward an M.A. degree in English.

**ENG 850 Seminar in Early American Literature.** (3) A. Study in depth of several major authors, or of a significant literary movement, in American literature through Cooper. May be retaken with different topics to a maximum of six hours, only upon advisor recommendation.

**ENG 853 Seminar in Nineteenth-Century American Literature.** (3) A. Study in depth of several major authors, or of a significant literary movement, in American literature of the 19th century. May be retaken with different topics to a maximum of six hours, only upon advisor recommendation.

**ENG 854 Seminar in Twentieth-Century American Literature.** (3) A. Study in depth of several major authors, or of a significant literary movement, in modern American literature. May be retaken with different topics to a maximum of six hours, only upon advisor recommendation.

**ENG 860 Topics in Reading & Teaching Lit.** (3) A. Study of various topics in reading and teaching literature to middle and high school students. Designed for middle and high school language arts/English teachers. (Counts towards credit hours for MAT, M.Ed, and Extension Certificate). May be retaken with different topics to a maximum of six hours, only upon advisor recommendation.

**ENG 861 Reading and Teaching Poetry.** (3) A. The course introduces middle and high school language arts/English teachers to the teaching of poetry (reading and writing); it demonstrates how teachers may share their approaches to poetry with middle and high school students so that their students may more skillfully read and interpret poetry. (Counts towards credit hours for MAT, M.Ed, and Extension Certificate).

**ENG 862 Reading and Teaching Fiction.** (3) A. The course introduces middle and high school language arts/English teachers to the teaching of fiction (reading and writing); it demonstrates how teachers may share their approaches to fiction (novels and short stories) with middle and high school students so that their students may more skillfully read and interpret works of fiction. (Counts towards credit hours for MAT, M.Ed, and Extension Certificate).

**ENG 863 Writing and Teaching Writing.** (3) II. Prerequisite: ENG 301 or equivalent. Writing experiences with varied purposes in different genres; approaches for teaching writing in K-12 schools. Writing is analyzed for evidence of instructional "next steps." Does not fulfill requirements for MA in English. Credit will not be awarded to students who have credit for ENG 805.

**ENG 870 Seminar in Medieval Literature.** (3) A. Study in depth of several major authors, or of a significant literary movement, in English literature of the Middle Ages.

**ENG 873 Seminar in Renaissance Literature.** (3) A. Study in depth of Shakespeare or of several major authors, or of a significant literary movement, in English literature from 1485 to 1660.

**ENG 876 Seminar in Restoration and Eighteenth-Century Literature.** (3) A. Study in depth of several major authors, or of a significant literary movement, in British literature from 1600 to 1800.

**ENG 878 Seminar in Nineteenth-Century British Literature.** (3) A. Study in depth of several major authors, or of a significant literary movement, in British literature of the Romantic and Victorian periods.

**ENG 880 Seminar in Twentieth-Century British Literature.** (3) A. A study in depth of several major authors, or of a significant literary movement, in modern British literature. May be retaken with different topics to a maximum of six hours, only upon advisor recommendation.

**ENG 890 Special Studies.** (1-3) A. Independent research and writing designed to fulfill individual needs and interests of advanced students. Student must have the graduate special studies proposal approved by faculty supervisor, graduate program coordinator, and department chair.

**ENG 898 Thesis I.** (3) A.

**ENG 899 Thesis II.** (3) A.

**ENW—English Creative Writing**  
**Dr. James Keller, Chair**

**ENW 800 On-Campus Writing Residency:** \_\_\_\_\_. (3) A. Corequisites: ENW 810, 820.

Intensive seven to ten-day course, taken to fulfill requirements for an M.F.A. in Creative Writing. May be repeated for credit up to 12 hours, as long as course content varies.

**ENW 810 Topics in Creative Writing:** \_\_\_\_\_. (3) A. OFFERED ON-LINE ONLY. Selected topic on creative writing. May be repeated with different topics to a maximum of 12 hours.

**ENW 820 Low-Residency Mentoring:** \_\_\_\_\_. (6) A. During the low-residency mentoring, students will work with their mentors via mail, email, teleconferencing, Blackboard, telephone, and in any other way the mentor deems fruitful. Similar to an independent study, students will work on their own (reading, writing, revising), sending in work to their mentor (amount to be determined by the mentor) every three weeks. May be repeated for credit up to 24 hours, as long as course content varies.

**EPY—Educational Psychology**  
**Dr. Connie Callahan, Interim Chair**

**EPY 816 Tests and Measurements.** (3) I, II. Study of concepts, principles, and methods involved in the use of current tests and inventories. Emphasis on measurement theory underlying construction, use, and interpretation of data from standardized tests.

**EPY 839 Human Development and Learning.** (3) I, II. The study of various theories of human behavior, development, and learning. Emphasis is placed on current research and theories with special emphasis on different ethnic, cultural and social backgrounds and physical and mental exceptionality of children and youth.

**EPY 842 Statistical Methods I.** (3) A. Introduction to the techniques appropriate for the treatment of educational and psychological data. Use and interpretation of descriptive statistical methods. Credit will not be awarded to students who have credit for ECO 824 or ECO 220 or HEA 450 or PLS 400 or COR 400 or QMB 200 or PSY 291 or STA 208 or STA 209 or STA 210 or STA 270.

**EPY 843 Statistical Methods II.** (3) A. Prerequisite: instructor approval. Use and interpretation of multi-sample inferential statistics. Analysis of variance, co-variance, factorial designs, multiple regression, and nonparametric techniques. Credit will not be awarded to students who have credit for ECO 221 or ECO 854 or PSY 301 or QMB 300 or STA 271 or STA 500 or STA 700.

**EPY 852 Advanced Educational Psychology.** (3) A. Basic problems of biological and environmental factors are reviewed, and the principles of motivation and learning are emphasized.

**EPY 854 Mental Health and Personal Adjustment.** (3) A. Study of the personal and social factors related to the development of individual mental health and mental illness.

**EPY 869 Research in Education.** (3) I, II. Fundamental principles of educational research. Required of all candidates for the Master of Arts in Education degree who do not prepare a thesis. Should be taken early in the graduate program.

**EPY 895 Advanced Research Methodology.** (3) A. Prerequisite: EPY 869 or equivalent. Theories and models of research design in the study of behavior and the educative process; statistical analysis of data. Research proposals may be developed.

**ESE—Secondary Education**  
**Dr. Michael A. Martin, Chair**

**ESE 707 Problems in Secondary Education.** (1-3) A. Prerequisite: advisor/departmental chair approval. Independent work, special workshops, special topics, or seminars.

**ESE 740 Teaching Art in the Secondary P-12 Schools.** (3) I. Prerequisite: admission to the MAT program. Developmentally appropriate materials and methods for teaching art in the secondary schools. Minimum of 96 field/clinical hours.

**ESE 743 Teaching of Language Arts in the Secondary School.** (3) I. Prerequisites: admission to the MAT program with a major in English, French, German, Spanish or speech and drama. Developmentally appropriate materials and methods for teaching language arts in the secondary school. Minimum of 90 field/clinical hours.

**ESE 749 Teaching Social Studies in the Secondary School.** (3) I. Prerequisites: admission to the MAT program, a "B" or higher in EGC 820 and EGC 830, and a major in the social sciences. Developmentally appropriate materials and methods for teaching social sciences in the secondary school. Minimum of 90 field/clinical hours.

**ESE 750 Teaching Mathematics in the Secondary School.** (3) I. Prerequisite: admission to the MAT program. Developmentally appropriate materials and methods for teaching mathematics and computer science in secondary schools. Minimum of 96 field/clinical hours.

**ESE 752 Teaching of Career and Technical Education in Middle and Secondary Schools.** (3) I. Prerequisite: admission to the MAT program. Developmentally appropriate materials and methods for teaching career and technical education in the middle and secondary schools. Minimum of 96 field/clinical hours.

**ESE 753 Family and Consumer Sciences Education Curriculum.** (4) I. Prerequisite: admission to the MAT program. Developmentally appropriate materials and methods for teaching family and consumer sciences education curriculum in the secondary schools. Minimum of 96 field/clinical hours.

**ESE 761 Teaching Science in Secondary School.** (3) I. Prerequisite: Admission into the secondary MAT program. Designed to introduce prospective teachers to the modern materials and methods of teaching biological and physical science at the secondary level. Minimum of 96 field/clinical hours.

**ESE 766 Teaching of Physical Education in Secondary Schools.** (3) I. Prerequisites: admission to the MAT program with a major in physical education. Developmentally appropriate materials and methods for teaching physical education in the secondary schools. Minimum of 90 field/clinical hours.

**ESE 773 Teaching Business and Marketing in Middle and Secondary Schools.** (3) I. Prerequisite: admission to the MAT program. Developmentally appropriate materials and methods for teaching business and marketing education. Minimum of 96 field/clinical hours.

**ESE 774 Teaching Reading in the Secondary School.** (3) A. Prerequisites: education core and admission to teacher education. Emphasis on developmental and content area reading skills, appraisal of reading abilities, appropriate materials, assessment, and organization of secondary reading program.

**ESE 779 Music Education: Principles and Practices.** (3) I. Prerequisites: admission to the MAT program or a music certification program and MUS 750. Developmentally appropriate materials and methods for teaching music education in secondary schools. Minimum of 96 field/clinical hours.

**ESE 787 Teaching of Health Education in Secondary Schools.** (3) **I.** Prerequisites: admission to the MAT program with a major in health education. Developmentally appropriate materials and methods for teaching health education in secondary schools. Minimum of 96 field/clinical hours.

**ESE 807 Secondary Education:** \_\_\_\_\_. (1-3) **A.** Prerequisite: advisor/departmental chair approval. Independent work, workshops, special topics, or seminars. May be retaken under different subtitles.

**ESE 849 Trends and Materials in Social Studies.** (3) **A.** Designed to broaden the horizons of secondary social studies teachers. Attention focused on new curriculum materials, simulation, videotaped microteaching. Participants will be actively involved, and consultants will assist in areas of particular interest.

**ESE 850 Trends and Materials in the Teaching of Mathematics.** (3) **A.** Examination of curricular trends, modern programs, appropriate strategies, and innovative materials in secondary mathematics.

**ESE 860 Curriculum Development in Family and Consumer Sciences.** (3) **A.** Prerequisite: instructor approval. Educational trends and their implications; principles of curriculum construction applied to family and consumer sciences in middle and secondary school.

**ESE 861 Supervision of Family and Consumer Sciences.** (3) **A.** Principles and techniques of effective supervision in family and consumer sciences with emphasis on supervision of student teaching.

**ESE 863 Secondary School Curriculum.** (3) **II.** Aims of the public secondary schools; plans for evaluating curriculum procedures; qualities of good teaching; procedures of evaluating and improving classroom teaching; methods of making the school a more effective agency.

**ESE 864 Special Problems in Family and Consumer Science Education.** (1-3) **A.** Prerequisite: instructor approval. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment. May be retaken to a maximum of six hours.

**ESE 867 Assessment in Family and Consumer Sciences Education.** (3) **A.** Theories and techniques of program and student assessment; construction and interpretation of instruments to measure student progress and program improvement.

**ESE 871 Special Problems in Industrial Arts Education.** (1-6) **A.** Problems of particular value to the teacher in the field, both of a practical and of a research nature, will be pursued by the student and developed through conferences and activities directed by the staff. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**ESE 872 Curriculum Practices and Trends in Industrial Education.** (3) **I.** Current concepts and trends in industrial education; principles underlying curriculum construction and development; long range planning for improvement of program.

**ESE 874 Supervision and Administration in Music.** (3) **A.** Functions, techniques, and problems of supervision and administration in music education; development of effective programs in city and county school systems; inservice education and workshop techniques; professional and community relationships.

**ESE 876 Current Trends in Elementary Music.** (2) **A.** Current thought and practices in elementary music; knowledge of learners and learning processes, structure of music, methods of developing skills. Non-music majors must have equivalent of MUS 360 and instructor approval.

**ESE 877 Practicum in Remedial Reading.** (3) **A.** Supervised experiences for secondary reading teachers in diagnosis and correction of reading problems.

**ESE 878 Principles of Music Education.** (3) **I.** Basic educational principles and their implications for music education with reference to all types of school situations.

**ESE 879 Foundations of Music Education.** (3) **II.** Historical, philosophical, and psychological foundations of music education and their relationship to curriculum development.

**ESE 880 Problems in Music Education.** (1-3) **I, II.** Problems in the various areas of music education. Emphasis on curriculum improvement through experience to current research and literature in the field. If taken as an independent study, student must have the independent study form approved by faculty advisor and department chair prior to enrollment. May be retaken to a maximum of three hours.

**ESE 881 Workshop in Music Education.** (1-4) **Summer only.** Philosophy, objectives, literature, materials, and techniques pertinent to a particular area of music instruction. Topics to be announced. May be retaken to a maximum of four hours credit.

**ESE 882 Curriculum Development in Music Education.** (3) **A.** The theory and process of curriculum development in music education; consideration of the instructional process; the importance of sequence, continuity, and articulation; strategies for change.

#### **FCS—Family and Consumer Sciences** **Dr. Diane Leggett, Chair**

**FCS 750 Family and Consumer Science Topics:** \_\_\_\_\_. (1-6) **A.** Workshops on selected topics in home economics. May be retaken to a maximum of six hours provided topics vary. Students having received credit for the course at the 500 level may take this course to a maximum of six credit hours, including the undergraduate credits. Those who have not received credit for this course at the undergraduate (500) level may retake it to a maximum of six hours credit.

#### **FIN—Finance** **Dr. Oliver Feltus, Chair**

**FIN 824 Survey of Finance.** (3) **A.** Prerequisites: ACC 201 and ACC 202 or ACC 820 each with a minimum grade of "B-," ECO 230 and ECO 231 each with a minimum grade of "C-." Introduction to theories of managerial financial decision making; time value of money; risk-reward tradeoff; stockholder wealth maximization; capital structure; working capital management; and financial institution markets arrangements.

**FIN 850 Strategic Financial Management.** (3) **II.** Prerequisites: FIN 300 or FIN 824 or equivalent each with a minimum grade of "B-" and QMB 850. Case-oriented, in-depth exploration of capital budgeting, dividend analysis, capital structure, cash and liquidity management, financial forecasting and planning, current assets and liabilities management, and institutional structures for finance. Focus on deconstructing financial statements.

**FIN 851 Seminar in Investments.** (3) **I.** Readings on traditional and current issues emphasizing valuation, selection, and portfolio management of securities.

**FIN 854 Financial Markets and Institutions.** (3) **A.** Prerequisites: FIN 824 with a minimum grade of "B-" and QMB 850. A topical survey of the relevant financial markets and institutions literature, including the impact of regulation and deregulation.

**FIN 855 Topics in Finance:** \_\_\_\_\_. (1-6) **A.** Prerequisites: FIN 824 with a minimum grade of "B-" and QMB 850. Study of contemporary topics from areas such as international finance, financial institutions and regulations, and investment analysis. May be retaken to a maximum of six hour provided topics are different.

**FIN 890 Independent Study in Finance.** (1-4) **A.** Prerequisite: advisor/departmental approval. May be retaken under different subtopics to a cumulative maximum of six hours. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

#### **FRM—Family Resource Management** **Dr. Diane Leggett, Chair**

**FRM 856 Special Problems in Family Economics and Management.** (1-3) **A.** Prerequisite: instructor approval. The student chooses a problem and works under the supervision of the instructor. May be retaken to a maximum of six hours provided topics vary. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

#### **GBU—General Business** **Dr. Lana Carnes, Chair**

**GBU 850 Legal, Ethical, and Social Environment of Business.** (3) **A.** Examines what the responsible business-person must know about the Common Law, the regulatory environment, standards of ethical conduct, and the social responsibilities of the modern enterprise.

**GBU 851 Business Strategy.** (3) **I, II.** Prerequisites: ACC 850, CCT 850, CIS 850, FIN 850, MGT 850, MKT 850, and QMB 850. A capstone perspective integrating design of all functional areas and implementation of business strategic plan.

**GBU 855 Special Topics in Business.** (3) **A.** Prerequisite: departmental approval. Study of various special topics in the various functional areas of business: accounting, administrative communications, computer information systems, finance, management, marketing, or international business. May be retaken to a maximum of six hours provided topics are different.

**GBU 891 Thesis Research.** (3) **A.** An independent research project, guided by a Thesis Advisor and approved by Thesis Committee of three MBA faculty (Thesis Advisor included), in partial fulfillment of the MBA degree. Three hours per semester, up to a maximum of six hours, may be taken. The grade for this course will be IP until either the thesis is completed and approved, or the MBA comprehensive examination is passed at which time the grade will become "S."

#### **GEO—Geography** **Dr. John White, Chair**

**GEO 701 Advanced Geography:** \_\_\_\_\_. (3) **A.** Prerequisite: departmental approval. In-depth study of physical, cultural, economic, or geographic technique (GIS) themes. May be retaken to a maximum of six hours provided subject matter differs each time.

**GEO 725 Seminar in Planning:** \_\_\_\_\_. (3) **A.** In-depth study of urban or regional planning topics, such as growth management and land use. May be retaken to a maximum of six hours provided subject matter differs each time.

**GEO 753 Advanced GIS.** (3) **A.** Prerequisite: GEO 353 or equivalent or departmental approval. Advanced concepts, operations, and applications of raster and vector GIS. Spatial analysis using scanning, imagery, GPS, global data sets, and derived data for natural and social applications. Use of standards, metadata, open GIS, and other advances.

**GEO 756 Advanced Geographic Imagery.** (3) **A.** Prerequisite: GEO 355 or departmental approval. Characteristics, interpretation, integration, and applications of advanced geographic imagery, including remote sensing and GIS digital data. Attention on satellite and multispectral imagery, including image processing. Hands-on emphasis.

**GEO 797 Special Studies in Geography.** (1-3) **A.** Prerequisite: departmental approval. Directed work in geography. Students must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment. Credit will not be awarded to students who have credit for PLA 797 or PLA 597.

**GLY—Geology****Dr. John White, Chair****GLY 700 Earth Science Problems for**

**Teachers: \_\_\_\_\_.** (1-3) I, II. Prerequisite: departmental approval. Designed to fit the needs of individual students majoring in education (general science) who need special instruction in the earth sciences. Student must have the independent study proposal form approved by the faculty supervisor and department chair prior to enrollment. May be retaken to a maximum of nine hours provided topic is different each time.

**GLY 703 Earth Materials.** (3) I.

Prerequisite: any general education geology course or departmental approval. Survey of natural materials: minerals, rocks, soils and natural resources presented in the compositional structure of the Earth. Emphasis on the interaction between these materials and human activity, and on analytical techniques. 2 Lec/2 Lab.

**GLY 704 Earth Processes.** (3) II.

Prerequisite: any general education geology course or departmental approval. Survey of natural processes: weathering and erosion; transportation, deposition and consolidation of sediment; deformation and uplift of the Earth's crust. Emphasis on the interaction between these processes and human activity, and on analytical techniques. 2 Lec/2 Lab.

**GLY 712 Geology of Soils.** (3) A.

Prerequisite: any general education geology course or departmental approval. Composition, classification, and evolution of soil; role of climate, living organisms, physiography, and underlying geology in soil formation. Emphasis on clay mineralogy, analytical techniques, soil mapping, paleosols in the rock record, human interaction with soils, and the economic importance of soils. 2 Lec/2 Lab.

**GLY 715 Hydrogeology.** (3) I.

Prerequisites: any general education geology course or departmental approval. Origin, occurrence, movement, utilization, and conservation of groundwater. Qualitative and quantitative presentation of geological, physical, and geochemical aspects of groundwater hydrology. 2 Lec/2 Lab.

**GLY 740 Biochemical Treatment Processes.**

(3) A. Prerequisite: departmental approval. Survey of remediation processes for polluted waters and soils; emphasis on understanding the science of and application for various treatment processes.

**GLY 750 Evolution of the Earth.** (3) A.

Prerequisites: GLY 703 and 704 or departmental approval. Capstone course: overview of geological principles from the perspective of earth's history, physical and biological. Emphasis on critical thinking and expressive writing.

**GLY 780 Selected Topics: \_\_\_\_\_.** (1-3)

A. Prerequisite: departmental approval. Designed to explore specific aspects of geology. May be retaken to a maximum of six hours provided topic is different each time.

**GLY 800 Selected Topics for Teachers:**

\_\_\_\_\_. (1-3) A. Prerequisite: departmental approval. Designed to offer a range of geological topics for teacher education. May be retaken to a maximum of nine hours provided topic is different each time.

**GLY 802 Scientific Communication**

**in Geosciences.** (2) I. Corequisite: GLY 803. Introduction to design of research, preparation of papers for scientific publication, and the preparation and presentation of displays and papers at scientific meetings.

**GLY 803 Graduate Seminar.** (1) I, II.

Weekly departmental seminar directed toward current research in geoscience. Presenters include faculty, invited professionals, and graduate students. Active participation as a presenter and an informed respondent required. Intended as a compliment to GLY 802, but may be retaken to a maximum of four hours.

**GLY 804 Research Methods in Geosciences.**

(3) I. Practical methodology of research in the geosciences, a site-based project that uses geoscientific techniques and instrumentation to answer research questions. Includes, but is not limited to, petrography; orientation to available laboratory facilities, geospatial analysis, and field investigations. 2 Lec/2 Lab.

**GLY 805 Advanced Structural Geology.** (3)

A. Prerequisite: GLY 410 or departmental approval. Emphasis on plate tectonics, regional structure, and the mechanics of stress and strain.

**GLY 821 Sedimentology: \_\_\_\_\_.**

(3) A. Prerequisite: GLY 415 or departmental approval. Emphasis on either siliciclastic or carbonate sedimentology. Study of physical, chemical, and biological processes leading to interpretation of depositional and diagenetic environments. May be retaken to a maximum of six hours if topic is different.

**GLY 822 Igneous and Metamorphic**

**Petrology.** (3) A. Prerequisite: GLY 409 or GLY 703 and 804. Mineralogy, chemistry, texture, structure, and tectonic environment of the principle suites of igneous and metamorphic rocks. Emphasis on petrogenetic models within an overall context of global tectonics. 2 Lec/2 Lab.

**GLY 823 Sedimentary Petrology.** (3)

A. Prerequisite: GLY 409 or GLY 703 and GLY 804. Study of composition, texture, and diagenesis of sedimentary rocks. Emphasis on microscopic examination. 2 Lec/2 Lab.

**GLY 836 Seminar: Granular**

**Hydrogeology.** (3) A. Prerequisite: GLY 535 or 735 or departmental approval. Divergent groundwater flow in ideally homogeneous, isotropic, porous and permeable media, both vadose and phreatic; examples illustrating departures from the ideal. Seminar features exposition of theoretical concepts and their practical application, current journal articles, case studies, and student/instructor/guest presentations.

**GLY 837 Seminar: Karst Hydrogeology.**

(3) A. Prerequisite: GLY 535 or 735 or departmental approval. Convergent groundwater flow in soluble rocks exhibiting heterogeneous, anisotropic, conduit dominated permeability, both vadose and phreatic. Seminar features lecture presentations relevant to comprehending and analyzing these complex aquifers; demonstration of tracer investigations and electronic monitoring, case studies, field trip, and student presentations.

**GLY 838 Seminar: Contaminant**

**Hydrogeology.** (3) A. Prerequisite: GLY 535 or 735 or departmental approval. Point and non-point source contamination of granular and karst aquifers; vadose and phreatic zone transport of various kinds of pollutants; groundwater monitoring, aquifer restoration and environmental remediation. Seminar features exposition of theoretical concepts and their practical application, current journal articles, case studies, and student/instructor/guest presentations.

**GLY 860 Aqueous Geochemistry.** (3) II.

Prerequisite: CHE 112 or departmental approval. Reactions between natural waters, atmospheric gases and earth materials in surface and near surface environments. Emphasis is placed on consequences of chemical weathering, composition of surface and near surface water, geochemical cycles, and natural and anthropogenic geochemical events. 2 Lec/2 Lab.

**GLY 880 Seminar: \_\_\_\_\_.** (1-3) A.

Prerequisite: instructor approval. Designed to meet specialized needs for instruction. May be retaken to a maximum of nine hours provided topic is different each time.

**GLY 890 Geological Literature Review.**

(3) A. Prerequisite: GLY 802. Critical analysis of research in a specific field of geology or environmental science, written in consultation with faculty committee. Required of graduate students in non-thesis option; credit will not be given for both GLY 899 and GLY 890.

**GLY 898 Special Problems in Geology.**

(1-6) I, II. Prerequisite: departmental approval. Topic determined by student and instructor. Students must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment. May be retaken to a maximum of six hours provided topic is different each time.

**GLY 899 Thesis.** (3-6) I, II. Prerequisites:

admission to candidacy and departmental approval. Research leading to thesis as directed by chair of thesis committee. May be retaken to a maximum of six hours.

**GLY 899C Thesis Continuation.** (3-9) I, II.

Prerequisite: departmental approval. Continuation of research leading to thesis as directed by chair of thesis committee. Student must have already registered for six hours of GLY 899. May be retaken as necessary. May not be used to satisfy degree program requirements.

**HEA—Health Education****Dr. Michael Ballard, Chair****HEA 790 Health Education: \_\_\_\_\_.**

(1-3) A. Study of pertinent problems in health and health education. Includes topics such as: health care delivery, child abuse, teenage pregnancy, community health organizations, elementary school health curriculum, drug education, school and health services, health deviations among students, sexually transmitted diseases, etc. May be retaken once with advisor approval provided subtitle is different.

**HEA 791 Women's Health.** (3) A. Analysis

of the major health problems of contemporary women with special emphasis on health promotion, disease prevention, and consumer health concerns.

**HEA 792 Human Sexuality.** (3) A. Study

of the biological, social, and psychological aspects of human sexuality. Directed primarily toward those individuals in situations, which require them to assist others in understanding the broad impact of one's sexuality. Emphasis is placed upon student development of logical and reasoned justifications for their own value system.

**HEA 793 Death and Grief.** (3) A. A study

of attitudes, behaviors, and issues concerning death and grief. Topics include responses to death and grief throughout the life cycle; process of grief and bereavement; theology and death; legal aspects of dying; care of the dying; suicide; post-mortem care; death education.

**HEA 795 Alcohol Abuse and Dependency.**

(3) A. Study of the impact of alcohol related attitudes and behaviors on individuals and society. Includes study of influences on choices about alcohol, behavior change strategies, prevention, intervention, and treatment.

**HEA 799 Violence Prevention in Schools**

**and Communities.** (3) A. Exploration of the issues surrounding school and community violence and current strategies for intervention.

**HEA 800 Advanced Health Science.** (3)

A. Provides students an opportunity to broaden their knowledge of the latest scientific facts and sources of information related to selected health concerns including disease, nutrition, fitness, drug use, family living, and emotional health.

**HEA 804 Drug Abuse and Dependency.** (3)

I, II. Study of the nature and progression of chemical abuse and dependency and effects on the individual, family, and society. Includes study of strategies for prevention, intervention, and treatment.

**HEA 807 Health: \_\_\_\_\_.** (1-3) A.

Prerequisite: advisor/departmental approval. Independent work, special topics, or seminars. May be retaken under different subtitles. Topics include first aid and safety for teachers, lifestyle and mental health, and health education for elementary teachers.

**HEA 810 Human Behavior Change.** (3)

A. This course examines selected theories and models of health behavior relevant to health promotion in individuals and communities. Students will analyze biological, psychological, sociological, and environmental influences on behavior, and evaluate strategies for health promotion.

**HEA 816 Public Health Organization and Administration.** (3) A. In-depth exploration of the myriad of forces impacting public health organization and administration at local, state, and national level; the relationship between legislative action, effectiveness of public health efforts, and future of public health.

**HEA 820 Global Health.** (3) II. Overview of the relationship between epidemiological, economic, political, sociological and cultural factors that impact global health. Special emphasis is on methods of prevention/intervention utilized in coping with health problems on an international level.

**HEA 824 Planning and Evaluation of Health Programs.** (3) II. The focus of this course is on the process of assessing a community and on strategies for planning, implementing, and evaluating health promotion programs in a variety of settings.

**HEA 830 Biostatistics.** (3) A. This course is an introduction to basic concepts of statistics as applied to public health. Major topics to be covered include descriptive statistics, theoretical distributions, probability, estimation, hypothesis testing, correlation, analysis of variance, and regression.

**HEA 840 Research Methods in Community Health.** (3) II. Emphasis will be on identifying a community health research problem, constructing hypotheses, selecting a research design and statistical analyses, and interpreting findings of the study.

**HEA 855 Principles of Epidemiology.** (3) A. A study of the distribution and determinants of disease and injury. Research methodologies for human research and disease surveillance techniques will be emphasized.

**HEA 875 Seminar in Contemporary Health Problems.** (3) A. Opportunity for in-depth study of current health problems and issues utilizing guest speakers as the primary source of information.

**HEA 880 Special Projects in Health.** (1-3) A. Individual research into a special health problem. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**HEA 895 Public Health Capstone Seminar.** (3) II. Integration and application of competencies acquired through the MPH program to problems likely to be encountered in public health practice. Current challenges, money, politics, and public health ethics, as they impact the profession, are addressed.

**HEA 897 Thesis.** (3-6) A.

**HEA 898 Health Care Delivery.** (3) A. This course will provide a general survey of the various health professions, role of comprehensive health planning concepts, and the role of the health professional in the health care delivery system.

**HEA 899 Practicum in Community Health.** (3) A. Student will be placed in a supervised work environment in community health.

#### HIS—History

**Dr. David Coleman, Chair**

**HIS 716 Kentucky History.** (3) A.

Prerequisite: three hours of HIS or departmental approval. Social, economic and political survey; Kentucky's role in national developments.

**HIS 800 Historiography and Criticism.**

(3) A. A seminar in the history and theory of historical writing and fundamental techniques of the historian.

**HIS 838 Practicum in Public History.**

(3) A. Prerequisite: departmental approval. Supervised practice in public history settings. Selective participation varies with the student's program and participation. May be retaken at the discretion of the department. Three credit hours will require approximately 150 hours of employment plus completion of an independent research project over the course of a semester. Maximum of three credit hours may be applied to the M.A. program in history.

**HIS 849 Reading and Research:** \_\_\_\_\_.

(3) A. Independent study in a specific field. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**HIS 860 Readings in American History:**

\_\_\_\_\_. (3) A. Seminar on selected developments in American history. May be retaken to a maximum of nine hours, provided the subject matter differs each time.

**HIS 861 Readings in European History:**

\_\_\_\_\_. (3) A. Seminar on selected developments in European history. May be retaken to a maximum of nine hours, provided the subject matter differs each time.

**HIS 862 Readings in Asian/African**

**History:** \_\_\_\_\_. (3) A. Seminar on selected developments in Asian or African history. May be retaken to a maximum of nine hours, provided subject matter differs each time.

**HIS 863 Readings in Latin America**

**History:** \_\_\_\_\_. (3) A. Seminar on selected developments in Latin American history. May be retaken to a maximum of nine hours, provided subject matter differs each time.

**HIS 864 Comparative History:** \_\_\_\_\_.

(3) A. Seminar on issues in comparative history. May be retaken to a maximum of nine hours, provided the subject matter differs each time.

**HIS 865 Conceptualizing History:** \_\_\_\_\_.

(3) A. Analysis of recent trends in the teaching and conceptualizing of world history, western civilization, and/or U.S. History. May be retaken to a maximum of nine hours, provided the subject matter differs each time.

**HIS 899 Thesis.** (3-6) A. May be retaken to a maximum of twelve hours.

**HIS 899C Thesis Continuation.** (3-9) I, II.

Prerequisite: departmental approval. Continuation of research leading to thesis as directed by the chair of the thesis committee. Student must already have registered for six hours of HIS 899. May not be used to satisfy degree program requirement.

#### HLS—Homeland Security

**Dr. Larry Collins, Chair**

**HLS 800 Homeland Security Policy**

**Analysis.** (3) A. Critical analysis of homeland security including structure and administration of the Department of Homeland Security and related legislation, acts, and presidential directives. Overview of DHS prevention, protection, response and recovery roles.

**HLS 810 Critical Infrastructure Protection.**

(3) A. Evolution of various critical infrastructures and the quantitative approaches commonly used to evaluate them. Infrastructure protection measures including allocation of limited funding to minimize overall risk.

**HLS 820 Intelligence for Homeland**

**Security.** (3) A. Key questions and issues facing the U.S. intelligence community and its role in homeland security and homeland defense. Critical analysis of intelligence disciplines and operations at the federal, state, and local levels.

**HLS 830 Hazards & Threats to Homeland**

**Security.** (3) A. Description and analysis of significant hazards and threats to national security, and community safety, such as disasters, catastrophes, accidents, epidemics, technological failures, and terrorism.

#### INS—Insurance

**Dr. Oliver Feltus, Interim Chair**

**INS 878 Business Risk Management.** (3)

A. Analysis and treatment of the non-speculative risks faced by modern business insurance firms, including legal liability and property risks, retention and self-insurance, captive insurers, loss prevention, risk avoidance and transfer, and insurability of business risks.

#### INT—Industrial Technology

**Dr. L. Tim Ross, Interim Chair**

**INT 706 Total Quality Control.** (3) A.

Prerequisite: INT 202. A study of total quality control as it relates to the integration of all functions and processes within an organization in order to achieve continuous improvement of the quality of goods and services.

**INT 730 Design of Experiments.** (3) A.

Prerequisite: INT 336. Principles and practices of efficient experiment design for industry. Topics include the philosophy of experiment design, comparison of various designs, hypothesis testing, and the analysis of data.

**INT 801 Industrial Value Analysis.** (3)

A. Prerequisite: ECO 230. An introduction to topics necessary for making effective manufacturing economic decisions. Quantitative methods and computer applications will be used to formulate decisions relating to manufacturing operations.

**INT 802 Productivity Assessment and**

**Analysis.** (6) A. Prerequisite: departmental approval. A study of industrial productivity; its assessment, measurement, analysis and improvements with emphasis upon human productivity, and machine, material, and process productivity.

**INT 804 Project Management.** (3) A.

Prerequisite: departmental approval. Elements of managing projects including the use of modern project management software.

**INT 805 Industrial Operations Research.**

(3) A. Prerequisite: departmental approval. Concepts and applications of analytical models in industrial decision-making. Includes general concepts of models and simulation, mathematical programming, game theory, and sequential network logic in determining optional industrial strategies.

**INT 820 Industrial Technology Proposal.**

(3) A. Prerequisite: departmental approval. An individually developed proposal related to a project typically encountered by a manager in a technical environment. The project proposal is to be approved by the student's graduate advisor.

**INT 821 Industrial Technology Project.**

(3) A. Prerequisite: INT 820 or departmental approval. An individually developed project related to the solution of a typical problem encountered by a manager in a technical environment. The problem is to be approved by the student's graduate advisor and the results presented in open forum.

**INT 822 Industrial Internship.** (3-6)

A. Prerequisite: departmental approval. Planned and supervised experience in industry in which the student will have the opportunity to observe and participate in manufacturing management activities. The experience must be for at least one semester and the plan of activities should be approved by the student's graduate committee.

#### LAS—Paralegal

**Dr. Sara Zeigler, Chair**

**LAS 735 Municipal Law.** (3) A.

Prerequisite: LAS 220 or director's approval. Practical legal problems confronting municipal officials including: government and public official liability, ordinances, tax levies, bonding, zoning, soliciting, licensing, open meetings, personnel, cut-back management, elections, and other issues.

#### LIB—Library Science

**Dr. Michael A. Martin, Chair**

**LIB 701 Literature and Related Materials**

**for Transescents.** (3) A. A course designed to help teachers and librarians extend their knowledge of authors, literature, and related materials for students 10-14 years of age. Relating of literature to the interests and needs of transescents and literary criticism are emphasized.

**LIB 769 Instructional Media and Technology. (3) I, II.** A course designed to instruct students in the philosophy and techniques of the effective utilization of instructional media and technology.

**LIB 800 Organization and Administration of the School Media Center. (3) A.** A course designed to instruct students in the philosophy, objectives, and administration of the media center in elementary and secondary schools.

**LIB 802 Literature and Related Materials for Young Adults. (3) A.** A course designed for teachers and school media librarians preparing to work with young adults. Literature and related materials appropriate for supplementing school curricula and encouraging recreational reading among students 15 years and older will be explored.

**LIB 805 Advanced Children's Literature. (3) A.** Prerequisite: LIB 301 or comparable course. Characteristics of good reading for children; types and evaluation of literature; use of materials for curricular and leisure needs; correlation of book and non-book materials. For librarians and teachers.

**LIB 807 Library Science: \_\_\_\_\_.** (1-3) A. Prerequisite: advisor/departmental chair approval. Independent work, workshops, special topics, or seminars. May be retaken under different subtitles.

**LIB 821 Reference and Bibliographic Services. (3) A.** Prerequisite: LIB 800. A course designed to prepare school media librarians to acquire and use information resources needed to support the school curriculum.

**LIB 831 Classification of Cataloging. (3) A.** Study of the fundamental principles and methods of classifying and cataloging book and non-book materials.

**LIB 863 Computer Use and Media Preparation in Library Media Programs. (3) A.** Prerequisite: LIB 569/769. This course emphasizes the application of computer tools to library procedures and information access and the design, production, and organization of instructional media.

**LIB 870 K-12 School Media Librarian Practicum. (2-4) A.** Prerequisite: eighteen hours LIB certification requirements. Experience at two levels (elementary, middle grade, secondary) providing the administrative, instructional, and consultative services required of school media librarians. (One week full-time per credit hours.)

**MAR—Marine Sciences**  
Dr. Melinda Wilder, Director

**MAR 703 Marine Invertebrate Zoology. (3) A.** Prerequisite: sixteen hours of biology. Corequisite: MAR 703L. Morphology, distribution, and ecology of the phyla Protozoa through Prochordates.

**MAR 703L Marine Invertebrate Zoology Laboratory. (3) A.** Corequisite: MAR 703.

**MAR 704 Parasites of Marine Animals. (3) A.** Prerequisite: consent of instructor. Corequisite: MAR 704L. Emphasis on morphology, taxonomy, life histories, and host-parasite relationships.

**MAR 704L Parasites of Marine Animals Laboratory. (3) A.** Corequisite: MAR 704.

**MAR 705 Marine Ecology. (3) A.** Prerequisite: sixteen hours of biology. Corequisite: MAR 705L. The relationship of marine organisms to their environment.

**MAR 705L Marine Ecology Laboratory. (2) A.** Corequisite: MAR 705.

**MAR 706 Fauna and Faunistic Ecology of Tidal Marshes, Seagrasses, and Sand Beaches. (2) A.** Prerequisite: instructor approval. Corequisite: MAR 706L. Taxonomy, distribution, trophic relationships, reproductive strategies and adaptation of tidal marsh animals.

**MAR 706L Fauna and Faunistic Ecology of Tidal Marshes, Seagrasses, and Sand Beaches Laboratory. (3) A.** Corequisite: MAR 706.

**MAR 707 Marine Aquaculture. (3) A.** Corequisite: MAR 707L. Problems and procedures relating to the culture of commercially important crustaceans, fish and mollusks.

**MAR 707L Marine Aquaculture Laboratory. (3) A.** Corequisite: MAR 707.

**MAR 708 Marine Ichthyology. (3) A.** Prerequisite: sixteen hours of biology. Corequisite: MAR 708L. Marine fishes including evolutionary relationships, morphology, physiology, and zoogeography.

**MAR 708L Marine Ichthyology Laboratory. (3) A.** Corequisite: MAR 708.

**MAR 709 Marine Microbiology. (3) A.** Prerequisite: general microbiology. Corequisite: MAR 709L. An introduction to the role of microorganisms in overall ecology of the oceans and estuaries.

**MAR 709L Marine Microbiology Laboratory. (2) A.** Corequisite: MAR 709.

**MAR 710 Marine Fisheries Management. (2) A.** Prerequisite: instructor approval. Corequisite: MAR 710L. An overview of practical marine fishery management problems.

**MAR 710L Marine Fisheries Management Laboratory. (2) A.** Corequisite: MAR 710.

**MAR 720 Marine Phycology. (2) A.** Prerequisite: ten hours of biology including botany. Corequisite: MAR 720L. A survey, based upon local examples, of the principal groups of marine algae.

**MAR 720L Marine Phycology Laboratory. (2) A.** Corequisite: MAR 720.

**MAR 721 Coastal Vegetation. (3) A.** Prerequisite: ten hours of biology, including general botany. Corequisite: MAR 721L. A study of general and specific aspects of coastal vegetation, with emphasis on local examples.

**MAR 721L Coastal Vegetation Laboratory. (2) A.** Corequisite: MAR 721.

**MAR 722 Salt Marsh Plant Ecology. (2) A.** Corequisite: MAR 722L. The botanical aspects of local marshes; includes plant identification, composition, and structure.

**MAR 722L Salt Marsh Plant Ecology Laboratory. (2) A.** Corequisite: MAR 722.

**MAR 730 Comparative Histology of Marine Organisms. (3) A.** Prerequisite: instructor approval. Corequisite: MAR 730L. Histology of marine organisms, including tissue processing techniques.

**MAR 730L Comparative Histology of Marine Organisms Laboratory. (3) A.** Corequisite: MAR 730.

**MAR 741 Marine Chemistry. (3) A.** Prerequisite: instructor approval. Corequisite: MAR 741L. Sea water chemistry and cycles and their impact on the marine environment.

**MAR 741L Marine Chemistry Laboratory. (1) A.** Corequisite: MAR 741.

**MAR 743 Environmental Estuarine Chemistry. (3) A.** Prerequisites: sixteen semester hours of chemistry; three to six hours of general biology and geology or consent of the instructor. Corequisite: MAR 743L. The study of sources, reactions, transport, effects and fate of chemicals occurring in aquatic environments.

**MAR 743L Environmental Estuarine Chemistry Laboratory. (1) A.** Corequisite: MAR 743.

**MAR 757 Marine Science for Teachers. (3) A.** Prerequisite: instructor approval. Emphasis will be placed on measurements and analysis of the marine habitat and ecological relationships.

**MAR 758 Marine Science for Elementary Teachers. (3) A.** Prerequisite: instructor approval. Corequisite: MAR 758L. Designed to acquaint teachers with marine science concepts.

**MAR 758L Marine Science for Elementary Teachers Laboratory. (0) A.** Corequisite: MAR 758.

**MAR 759 Coastal Ecology for Teachers. (3) A.** Prerequisite: instructor approval. Corequisite: MAR 759L. Designed to provide teachers with a background in basic coastal ecology.

**MAR 759L Coastal Ecology for Teachers Laboratory. (1) A.** Prerequisite: instructor approval. Corequisite: MAR 759.

**MAR 782 Coastal Marine Geology. (2) A.** Prerequisite: six hours in geology. Inshore and nearshore geological processes, sedimentation patterns, and landforms.

**MAR 782L Coastal Marine Geology Laboratory. (1) A.** Corequisite: MAR 782.

**MAR 790 Special Problems in Marine Science. (1-6) A.** Prerequisite: instructor approval. Independent research.

**MAR 791 Special Topics in Marine Science. (1-6) A.** Prerequisite: instructor approval. Directed study in area for which no formal courses are offered.

**MAR 805 Early Life History of Marine Fishes. (2) A.** Prerequisites: ichthyology, fisheries, biology, and ecology. Corequisite: MAR 805L. Reproductive strategies and early developmental processes of marine fishes. Role of early stages of fishes in fisheries oceanography, marine ecology, and systematics; methods of sampling, identifying and rearing fish eggs and larvae.

**MAR 805L Early Life History of Marine Fishes Laboratory. (2) A.** Corequisite: MAR 805.

**MAT—Mathematics**  
Dr. Dirk Schlingmann, Chair

**MAT 701 Applications of Mathematics for P-9 Teachers. (3) A.** Topics in the application of mathematical models appropriate for teachers of grades P-9. Credit does not apply toward M.S. nor M.A. in Education - Secondary Education option in mathematics, degree requirements.

**MAT 702 Geometry with Technology for P-9 Teachers. (3) A.** Topics in geometry appropriate for teachers of grades P-9. Credit does not apply toward M.S. nor M.A. in Education - Secondary Education, academic specialization option in mathematics, degree requirements.

**MAT 705 Foundations of Mathematics. (3) A.** The nature of mathematical thought; logical systems, axiomatic concepts and methods; consideration of the work of Hilbert, Peano, Whitehead, Russell, and others. It is strongly recommended that students have completed an abstract algebra course.

**MAT 706 Number Theory. (3) A.** Fundamental properties of integers, linear Diophantine equations, linear and quadratic congruences, famous problems of number theory. It is strongly recommended that students have completed a course requiring proof-writing skills.

**MAT 707 Seminar in Mathematics: \_\_\_\_\_.** (1-3) A. Topics vary with offering. May be retaken with advisor approval, provided the topics are different. Credit towards degree requirements will depend on the course content.

**MAT 720 Mathematical Statistics I. (3) I.** Cross listed as STA 720. Descriptive statistics, discrete and continuous probability distributions for one and two variables, functions of random variables, sampling distributions, expectations and generating functions. Credit will not be awarded to students who have credit for STA 720.

**MAT 725 Vector Analysis with Applications. (3) A.** Algebra and geometry of vectors; vector functions of a single variable; line, surface, and volume integrals; divergence Theorem, Stokes' Theorem, Green's Theorem; generalized orthogonal coordinates; Fourier Series; solutions to boundary value problems. It is strongly recommended that students have completed twelve hours of calculus.

**MAT 735 Modern College Geometry II. (3) A.** The major influence of the axioms of parallelism on geometry, development from axioms and models, Euclidean geometry, absolute geometry, hyperbolic geometry, consistency of postulates. It is strongly recommended that students have completed a geometry course.

**MAT 740 Introductory Applied Mathematics.** (3) A. Techniques and applications of: vector analysis, matrix theory, linear and autonomous systems of differential equations, special functions, operational methods, Sturm-Liouville theory, Fourier series. It is strongly recommended that students have completed a course in differential equations.

**MAT 750 Applications of Complex Analysis.** (3) A. Continuity, differentiation, integration, series, residues, and applications to the evaluation of real integrals. Applications of conformal mappings to boundary value problems in heat, electrostatic potential, and fluid flow. Emphasis throughout on computational techniques and applications. Credit will not be awarded to students who have credit for MAT 850. It is strongly recommended that students have completed twelve hours of calculus or eight hours of calculus plus a differential equations course.

**MAT 755 Graph Theory.** (3) A. Introduction to the theory and applications of graph theory. Topics will include trees, planarity, connectivity, flows, matching and coloring. It is strongly recommended that students have completed a course in abstract algebra or discrete structures.

**MAT 760 Point Set Topology.** (3) A. An introduction to topology with emphasis on Euclidean and other metric spaces. Mappings, connectivity, compactness, formation of new spaces, relationship to analysis. It is strongly recommended that students have completed a course requiring proof-writing skills.

**MAT 803 Number and Geometric Concepts for P-5 Teachers.** (3) A. Prerequisite: admission to the MAT program or departmental approval. Numeric and geometric concepts; problem solving with numbers, geometry, and data; reasoning; and connections. Credit does not apply toward the M.S. degree offered within this department. Credit will not be awarded to students who have credit for MAT 202.

**MAT 806 Advanced Number Theory.** (3) A. Basic concepts from analytic and algebraic number theory including the Prime Number Theorem, Dirichlet's Theorem, the Riemann Hypothesis, algebraic integers, ideals and factorization in algebraic number fields. Additional topics as time permits. It is strongly recommended that students have completed courses in number theory, abstract algebra, and real analysis or differential equations.

**MAT 809 Modern Algebra.** (3) A. Study of groups, rings, integral domains and fields, including the fundamental isomorphism theorems. It is strongly recommended that students have completed an abstract algebra course.

**MAT 810 Modern Algebra II.** (3) A. Prerequisite: MAT 809. A continuation of MAT 809 including the study of modules, vector spaces, field theory and Galois theory.

**MAT 815 Real Analysis.** (3) A. Further study of the concepts introduced in MAT 315. The convergence theorems, Lebesgue measure and measurable functions, the Lebesgue integral, Fourier series, allied topics. It is strongly recommended that students have completed a real analysis course.

**MAT 839 Applied Learning in Mathematics.** (1-3) A. Prerequisite: departmental approval. May be retaken with approval to a maximum of three credits. Employment with faculty and field supervision in an area related to the student's academic interests. A minimum of eighty hours of employment is required for each academic credit. Credit does not apply towards the M.S. degree requirements.

**MAT 839 A-F Cooperative Study: Mathematics.** (1-3) A. Prerequisite: departmental approval. May be retaken with approval to a maximum of three credits. Employment with faculty and field supervision in an area related to the student's academic interests. A minimum of eighty hours of employment is required for each academic credit. Credit does not apply towards the M.S. degree requirements.

**MAT 850 Complex Analysis.** (3) A. The topology of the extended complex plane. The theory of analytic and meromorphic functions including integration, Taylor and Laurent series, Cauchy Integral and Residue Theorems, Argument Principles, Rouché's Theorem, Maximum Modulus Theorems, conformal mappings. It is strongly recommended that students have completed a real analysis course.

**MAT 856 Advanced Applied Mathematics.** (3) A. Prerequisite: MAT 740 or equivalent. Continuation of MAT 740. Topics may include: partial differential equations, conformal mapping, potential theory, optimization, calculus of variations, integral equations.

**MAT 870 Seminar in Secondary Mathematics:** \_\_\_\_\_. (1-3) A. May be retaken to a maximum of nine hours, provided the topics are different. Credit does not apply toward the M.S. degree requirements.

**MAT 871 Numerical Analysis.** (3) A. Computer arithmetic. Analysis of errors and stability of well-posed problems. LaGrange, Hermite and spline interpolation. Newton-Cotes, Romberg, and Gaussian quadrature. Consistency, convergence, and stability of numerical integration methods for ordinary initial value problems. Finite difference and shooting methods for two-point boundary value problems. It is strongly recommended that students have completed a real analysis course and have experience with a programming language.

**MAT 872 Advanced Numerical Analysis.** (3) A. Prerequisite: MAT 871 or equivalent. Continuation of MAT 871 with greater depth. Least squares and minimax approximation, direct and iterative solutions of linear systems, zeros, extrema by iteration, eigenvalue problems.

**MAT 880 Seminar in:** \_\_\_\_\_. (1-3) A. Advanced topics in Mathematics. May be retaken to a maximum of six hours, provided the topics are different. Credit towards degree requirements will depend on the course content.

**MAT 890 Independent Study in:** \_\_\_\_\_. (1-3) A. Prerequisites: An 800-level course and departmental approval. Independent study on a problem chosen by the student and instructor. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment. May be retaken to a maximum of nine hours, provided the topics are different.

**MAT 899 Thesis in:** \_\_\_\_\_. (1-6) A.

**MGT—Management**  
**Dr. Lana Carnes, Interim Chair**

**MGT 821 Survey of Management.** (3) II. The functions of planning, organizing, leading and controlling the organization. Includes an introduction to concepts of organization behavior and organization theory as applied to the domestic/international business environments.

**MGT 850 Leading and Managing Organizations.** (3) I. Prerequisite: MGT 300 or MGT 821 or equivalent with a minimum grade of "B-." Advanced study of the issues and personal skills required to effectively lead and manage individuals, teams, and the organization. Topics include acquiring, energizing, and utilizing human capital in a global, competitive environment.

**MGT 854 Advanced Management Concepts.** (3) A. Prerequisite: MGT 821 or equivalent. Examines the evolution of management concepts and philosophies. An analysis of the contributions of various philosophies toward the synthesis of an eclectic philosophy of management.

**MGT 856 Advanced Integrated Resource Management.** (3) A. Prerequisite: ECO 848 or equivalent. Operations and production decision making utilizing quantitative techniques; emphasis on problem formulation and modeling, resource allocation, linear programming, inventory control, queuing theory, and simulation. Credit will not be awarded to students who have credit for INT 805.

**MGT 860 Seminar in Human Resource Management.** (3) A. Prerequisites: MGT 821 or equivalent and MGT 320. Advanced study of contemporary topics related to the effective management of human resources. May be retaken under different subtopics to a cumulative maximum of six hours.

**MGT 865 Seminar in Global Management.** (3) A. Prerequisite: MGT 850. Advanced study of the management of global or multinational organizations, with emphasis on areas of problems and managerial control techniques.

**MGT 890 Independent Study in Management.** (1-4) A. Prerequisite: advisor/departmental approval. May be retaken under different subtopics to a cumulative maximum of six hours. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**MKT—Marketing**  
**Dr. Lana Carnes, Interim Chair**

**MKT 825 Survey of Marketing.** (3) II. Survey of marketing concepts. Major marketing institutions, the marketing mix, and environmental forces are examined. International and societal approaches weighted significantly. Case studies and outside reading reports are used to extend and demonstrate concepts.

**MKT 850 Marketing Management.** (3) I. Prerequisite: MKT 300 or MKT 825 or equivalent with a minimum grade of "B-" and QMB 850. Focus on evaluation of marketing plans including current business and social trends. Oriented toward: developing an understanding of marketing problem definition and analysis; market segmentation and targeting; marketing mix strategy; primary and secondary data sources.

**MKT 851 E-Commerce Marketing Strategies.** (3) A. Prerequisite: MKT 850 or equivalent. Study of marketing strategies as created for and implemented on the Internet's World Wide Web and other computer mediated environments. Evaluation of contribution of marketing to development of e-commerce and evolution of offline marketing systems.

**MKT 852 Marketing Research and Analysis.** (3) A. Prerequisite: MKT 825. The role of research in marketing decision-making: the research process, with emphasis on collection, analysis, interpretation, and management of data as applied to solving marketing problems. Students are required to do a research project.

**MKT 854 Global Marketing Strategies.** (3) A. Prerequisite: MKT 850. Examination of marketing management within the international environment, with particular emphasis on the analysis of cases which illustrate international and global marketing decision-making.

**MKT 880 Contemporary Issues in Marketing.** (3) A. Prerequisites: MKT 850 and advisor/departmental approval. May be retaken under different subtopics to a cumulative maximum of six hours. Selected topics in contemporary marketing issues.

**MKT 890 Independent Study in Marketing.** (1-4) A. Prerequisite: advisor/departmental approval. May be retaken under different subtopics to a cumulative maximum of six hours. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**MPH—Master of Public Health**  
**Dr. Michael Ballard, Chair**

**MPH 895 Public Health Capstone. (1) II.** Cross listed with HEA 895. This capstone course will allow students the opportunity to integrate and apply competencies acquired through the MPH program to problems likely to be encountered in public health practice. The course is designed to partially meet the culminating experience requirement for students in the program. Credit will not be awarded to students who have credit for HEA 895.

**MUS—Music**  
**Mr. Robert James, Chair**

**MUS 712 Piano V. (1-4) I, II.** May not be taken for credit by piano majors.

**MUS 713 Techniques of Accompanying. (1) I, II.** Practical training in the tradition, interpretation, and execution of accompaniments. May be retaken to a maximum of two hours.

**MUS 720 Diction for Singers. (1) A.** For voice, education, and choral conducting students. Enunciation and projection; accurate pronunciation in German and French. Phonetics and the International Phonetic Alphabet.

**MUS 722 Voice V. (1-4) I, II.** May not be taken for credit by voice majors.

**MUS 742 Organ V. (1-4) I, II.** May not be taken for credit by organ majors.

**MUS 750 Teaching Techniques. (1 or 2) A.** Analysis of current teaching methods and materials with the intention of developing sound teaching procedures. May include observation and performance. Topics in woodwinds, brass, percussion, strings, voice, piano, and organ. May be retaken to a maximum of two hours.

**MUS 751 Performance Literature. (1 or 2) A.** Literature for various performing media relative to performance practices and problems. Topics in woodwinds, brass, percussion, strings, voice, piano and organ. May be retaken to a maximum of two hours.

**MUS 754 Band Literature. (2) A.** Designed to acquaint the student with European origins of the modern band; history of band music; and literature for the contemporary band.

**MUS 755 Symphonic Music Literature. (3) II.** Prerequisite: MUS 371 and 372. Evolution of the symphony from its beginning to the 20th century with emphasis on score reading and listening.

**MUS 756 Choral Music Literature. (3) I.** Prerequisite: MUS 371 and 372. Survey of choral music literature from the 15th century to the present.

**MUS 764 Advanced Instrumental Conducting. (2) A.** Prerequisite: MUS 367 or equivalent. Development of skills in score reading, preparation, interpretation, and conducting of representative orchestra or band works.

**MUS 765 Advanced Choral Conducting. (2 or 3) A.** Prerequisite: MUS 368 or equivalent. Development of skills in score reading, preparation, interpretation, and conducting of representative choral works.

**MUS 786 Workshop in Instrumental Music. (1-4) A.** Topics in band or orchestra procedures. May be retaken to a maximum of four hours.

**MUS 788 Pedagogy of Theory. (2) A.** Comparative study of theory systems with emphasis on presentation and illustrative exercises dealing with related theoretical problems.

**MUS 789 Workshop in Choral Music. (1-4) A.** Techniques, literature, and materials pertinent to a particular area or areas of preparation and performance of choral music. Topics to be announced. May be retaken to a maximum of four hours.

**MUS 805 Chamber Music. (.5) A.** May be retaken to a maximum of one hour.

**MUS 812 Piano. (1-5) I, II.** Prerequisite: MUS 412. Four years or equivalent, as demonstrated by the student's proficiency in piano. May be retaken.

**MUS 822 Voice. (1-5) I, II.** Prerequisite: MUS 422. Four years or equivalent, as demonstrated by the student's proficiency in voice. May be retaken.

**MUS 824 Madrigal Singers. (1) I, II.** Rehearsal and performance of literature of the Madrigal. Course open by audition only. May be retaken to a maximum of four hours credit.

**MUS 825 Concert Choir. (1) I, II.** Rehearsal and performances of choral literature. May be retaken.

**MUS 826 University Singers. (1) I, II.** May be retaken to a maximum of two hours.

**MUS 827 Opera Workshop. (1) I, II.** Prerequisite: instructor approval. Preparation and presentation of opera scenes and complete works. All phases of performance and technical procedures of staging, costumes, and management.

**MUS 832 String Instruments. (1-5) I, II.** Prerequisite: MUS 432. Four years or equivalent as demonstrated by the student's proficiency on string instruments. Graduate applied instruction in violin, viola, violoncello, string bass, or viola da gamba. May be retaken.

**MUS 835 Orchestra. (1) I, II.** May be retaken to a maximum of two hours.

**MUS 842 Organ. (1-5) I, II.** Prerequisite: MUS 442. Four years or equivalent, as demonstrated by the student's proficiency on organ. May be retaken.

**MUS 845 Brass Instruments. (1-5) I, II.** Prerequisite: MUS 445. Four years or equivalent, as demonstrated by the student's proficiency on brass instruments. Graduate applied instruction in cornet and trumpet, French horn, baritone horn, trombone, or tuba. May be retaken.

**MUS 846 Woodwind Instruments. (1-5) I, II.** Prerequisite: MUS 446. Four years or equivalent, as demonstrated by the student's proficiency on woodwind instruments. Graduate applied instruction in flute, oboe, clarinet, bassoon, or saxophone. May be retaken.

**MUS 847 Percussion. (1-5) I, II.** Prerequisite: MUS 447 or equivalent, as demonstrated by the student's proficiency in percussion. May be retaken.

**MUS 850 Small Ensembles. (.5) I, II.** May be retaken to a maximum of one hour.

**MUS 851 Advanced Woodwind Techniques. (3) A.** Prerequisites: MUS 351 and 352 or instructor approval. Techniques, literature and pedagogical approaches to teaching woodwind instruments in public schools.

**MUS 855 Band. (1) I, II.** May be retaken to a maximum of two hours.

**MUS 872 Seminar in Music History. (1-3) A.** Intensive study of a specific historical era, genre, or composer. Topics studied in this sequence: Medieval, Renaissance, Baroque, Classical, Romantic, Contemporary. Additional topics announced. May be retaken to a maximum of six hours, provided the subject matter differs.

**MUS 878 Foundations of Music. (3) A.** Historical and philosophical foundations of music and music pedagogy. Diverse trends are compared with emphasis on materials and personal development in music for the general music specialist.

**MUS 880 Advanced Choral Interpretation. (2) A.** Application of advanced choral techniques related to performance practice and interpretation through analysis and score reading.

**MUS 883 Seminar in Choral/Instrumental Conducting. (2) A.** Techniques in the preparation, conducting, and performance of choral/instrumental music. Survey of high school and college choral or instrumental literature.

**MUS 884 Advanced Theory Survey. (3) A.** Prerequisite: instructor approval. Intensive work in part-writing and structural analysis.

**MUS 885 Psychology of Music. (3) A.** Reactions to musical stimuli; musical aptitude and achievement; application of psychological theories to musical learning.

**MUS 886 Advanced Counterpoint. (3) A.** Prerequisite: MUS 481 or equivalent, or instructor approval. Continuation of MUS 481; compositions of the late Baroque, including canon, passacaglia, and chorale prelude.

**MUS 887 Analytical Techniques I. (3) A.** Prerequisite: MUS 884 or equivalent. Significant forms, procedures, and compositional devices relevant to the major stylistic periods from the Renaissance to the Contemporary.

**MUS 888 Analytical Techniques II. (3) A.** Prerequisite: MUS 887 or equivalent. A more intense and specialized study of the compositional devices of important composers from Renaissance to Contemporary. Study material is partially determined by student's area of interest.

**MUS 889 Advanced Composition. (2) A.** Prerequisite: MUS 483 or equivalent, or approval of instructor. Continuation of MUS 483. May be retaken to a maximum of four hours.

**MUS 896 Special Project in Theory/Composition, Conducting, or General Music. (3) A.** Prerequisite: MUS 556 or MUS 756 Choral Conducting option only. Requirement for the Master of Music options in theory/composition, choral conducting and instrumental conducting. May be elected by other Master of Music options. May be fulfilled by theory project, composition, analytical paper, or recital.

**MUS 897 Graduate Recital. (2 or 3) A.**

**MUS 898 Research in Music and Music Education. (3) A.** Research techniques appropriate to music and music education; principles of research design; organization of the research report; analysis of representative research.

**MUS 899 Thesis. (3) A.**

**NFA—Nutrition, Foods, and Foodservice Administration**

**Dr. Diane Leggett, Chair**

**NFA 700 Nutrition Concepts and Issues. (3) A.** Fundamental principles of human nutrition and their application in meeting nutritional needs of all ages. Not open to dietetic or foodservice administration majors.

**NFA 705 Maternal and Infant Nutrition. (3) A.** Prerequisite: NFA 201. Nutritional requirements prior to and during pregnancy, lactation, and infancy. Survey the effects of dietary toxicants, deficiency, and excesses of nutrients. Field experience.

**NFA 707 Child and Adolescent Nutrition. (3) A.** Prerequisite: NFA 201. Nutritional needs, problems, dietary habits, and motivations of the toddler through adolescent years. Field experience.

**NFA 709 Nutrition and Aging. (3) A.** Prerequisite: NFA 201. The theories of causing aging; nutritional requirements; dietary intakes and effects of nutrition on the rate of biological aging. Field experience.

**NFA 717 Sports Nutrition. (3) A.** Prerequisite: NFA 201 or NFA 500/700. Relationship of nutrition to optimal sports performance, needs, and nutritional strategies during training, conditions requiring special consideration, controversial and potentially dangerous nutritional practices of athletes.

**NFA 800 Nutrition Topics. (1-3) A.** A study of selected issues confronted in the Community Nutrition Program. May be retaken to a maximum of six hours provided the subject matter differs each time.

**NFA 801 Advanced Nutrient Study. (3) A.** Prerequisite: NFA 401. Critical review of human nutritional requirements and relation of diet to human health and well-being, with in-depth study of nutrient-drug interrelationships, nutrient needs of high-risk groups, the chronically ill, and other high stress groups.

**NFA 802 Advanced Applications of the Nutrition Care Process. (3) A.** Prerequisites: NFA 317 and 403. Advanced application of the Nutrition Care Process incorporating nutritional diagnosis and intervention for issues influencing the health of patients and clients in inpatient, outpatient, and public health settings.

**NFA 804 Nutrition Assessment. (3) A.** Prerequisite: NFA 301 or CHE 330 or instructor approval. Evaluation of biochemical, anthropometrical, and descriptive research methods used to assess nutritional adequacy of vitamins and other nutrients in humans, including accuracy of methods, specificity, ease of use, apparatus required, and applicability to nutrition surveys.

**NFA 810 Problems in Nutrition. (3) A.** Prerequisite: NFA 201 or NFA 500/700. Ways of dealing effectively with nutrition concepts as they apply to everyday living.

**NFA 811 Advanced Community Nutrition. (3) I.** An in-depth study of the history, legislation, and guidelines of community nutrition/health programs, functions of the public health nutritionist as a counselor, consultant, educator, and communicator. Introduction to community assessment and program planning. Field experience.

**NFA 816 Special Problems in Nutrition. (1-3) A.** Prerequisites: NFA 401 and instructor approval. The student chooses a problem and works under the supervision of an instructor. May be retaken to a maximum of six hours provided the topics vary. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**NFA 820 Community Nutrition Administration. (3) II.** Prerequisite: NFA 811. Introduction to health administration, focusing on organizational structure, budget, personnel, legal aspects, public relations, and interorganizational relationships directed toward the public health nutritionist's role as program manager, planner and evaluator. Field experience.

**NFA 825 Obesity and Eating Disorders. (3) A.** An examination of the prevalence, physiology, and health consequences of obesity and eating disorders. Program design and analysis of treatment options will also be examined.

**NFA 830 Dietetic Internship-Medical Nutrition Therapy and Foodservice Management Rotations. (6) A.** Prerequisite: advisor approval. Work under faculty field preceptors to accomplish American Dietetic Association Dietetic Internship Curriculum. Experiences will include a medical nutrition therapy, foodservice management, and specialized clinical rotation.

**NFA 831 Dietetic Internship-Community Nutrition Rotation. (6) A.** Prerequisite: advisor approval. Work under faculty field preceptors to accomplish American Dietetic Association Dietetic Internship Curriculum. Experiences will include a community nutrition rotation in addition to a comprehensive public health assessment and evaluation project.

**NFA 835 Community Nutrition Practicum. (6) I, II.** Prerequisites: NFA 811, 820 or concurrent enrollment or advisor approval. Requires 320 hours observation in selected nutrition programs at local, state, or federal level. Experience under supervision of a registered dietitian. Comprehensive community assessment and analysis of the country/city worked in is also required.

**NFA 841 Volume Foodservice Management. (3) A.** Prerequisite: NFA 445 or departmental approval. An examination of foodservice management, production, and administration with emphasis on volume foodservice. Field experience.

**NFA 850 Nutrition, Foods, and Foodservice Administration Workshop: \_\_\_\_\_. (1-3) A.** Current trends, topics, and issues in nutrition, food, and foodservice administration. May be repeated to a maximum of six hours providing topics vary.

**NSC—Nursing**  
**Dr. Judy Short, Chair**

**NSC 700 Early Childhood Healthcare. (3) A.** Prerequisite: education major or permission of instructor. Focuses on the development of competencies necessary for health management of young children (ages birth to five years) with special

health care needs. Appropriate for non-health care professionals in the community or classroom.

**NSC 800 Advanced Practice. (1-6) A.** Advanced practice clinical experience. Students will retake for the minimum number of hours required for their specialty option.

**NSC 830 Advanced Pharmacology. (3) A.** Prerequisite: admission to MSN program or department approval. Application of pharmacotherapeutic principles to the treatment and management of conditions within the scope of advanced nursing practice and frequently encountered in the rural primary health care setting.

**NSC 832 Advanced Health Assessment. (3) A.** Prerequisite: admission to MSN program or department approval. Emphasis is on the advanced skills necessary for Advanced Practice nursing in assessing the health status of clients from across the life span. Diagnostic reasoning and systems approach will be emphasized.

**NSC 834 Advanced Pathophysiology. (3) A.** Prerequisite: admission to the MSN program or department approval. Application of advanced principles of pathophysiology to the diagnosis and treatment of conditions within the scope of advanced nursing practice and frequently encountered in the rural primary health care setting.

**NSC 836 Advanced Health Promotion for APNs. (3) A.** Prerequisite: admission to the MSN program. Emphasis on advanced skills of planning health promotion programs for client populations. Program planning principles are incorporated within the nursing process to address health concerns of the community.

**NSC 838 Topics for Advanced Practice: \_\_\_\_\_. (1-6) A.** Selected topics will be offered as appropriate for enhancement of advanced practice nursing role. May be retaken under different topics for a maximum of six credit hours.

**NSC 840 Nursing Theory. (3) A.** Prerequisite: admission to the MSN program or department approval. Provides a basic understanding of the process of theory construction and an appreciation of the role that theory plays in providing a scientific basis for nursing.

**NSC 842 Advanced Nursing Practice Issues. (3) A.** Prerequisite: admission to the MSN program or department approval. Analysis of professional issues and strategies, which can facilitate the development of the nursing profession. Consideration of selected variables influencing the development and resolution of issues.

**NSC 844 Nursing Education I. (3) A.** Prerequisite: NSC 840. Analyze and critically evaluate curriculum and education theory utilized in nursing education, with an emphasis on curriculum development and teaching-learning theory.

**NSC 846 Nursing Education II. (3) A.** Prerequisite: NSC 844. Analyze and utilize teaching strategies, evaluation methods, and documentation methods for nursing education in classroom and clinical settings.

**NSC 848 Nursing Education III. (3) A.** Prerequisites: NSC 844 and 846. A synthesis of education theory, curriculum theory, teaching strategies, nursing faculty role development activities, and evaluation methods for nursing education in classroom and clinical settings.

**NSC 850 Rural Health Nursing I. (3) A.** Prerequisite: admission to the MSN program. Corequisite: NSC 800. Concepts, theories, specific challenges related to the delivery of health services in rural communities. In-depth assessment of complex rural systems.

**NSC 852 Rural Health Nursing II. (3) A.** Prerequisite: NSC 850 with a minimum grade of "B." Corequisite: NSC 800. Innovations to address the health needs of vulnerable populations within rural communities. Role preparation for advanced practice nursing, including application of concepts and theories in rural settings.

**NSC 854 Management of Health Care for APNs. (3) A.** Prerequisite: admission to MSN program or department approval. Theoretical basis for the advanced practice nurse's role in management of health care in rural settings. Strategies for the improvement of health care in rural settings will be analyzed.

**NSC 860 Rural Nursing Administration. (3) A.** Prerequisite: NSC 854. A synthesis of leadership, management and public health nursing theory applied to the role of the advanced practice nurse in the administration of rural health systems. Includes problem resolution and analysis of alternative approaches.

**NSC 862 Rural Health Internship. (3) A.** Prerequisites: NSC 850 and 852, each with a minimum grade of "B" and four hours of NSC 800. Internship allows the student to apply advanced knowledge and skills in implementing the role of an advanced practice rural health care nurse. Seminar promotes synthesis of rural health nursing knowledge.

**NSC 870 Rural Health FNP I. (3) A.** Prerequisites: NSC 830, 832, 834, each with a minimum grade of "B" and NSC 840 and HEA 855. Corequisite: NSC 800. Course provides theoretical and diagnostic knowledge necessary to confront problems relevant to the health care of individuals across the life span. Emphasis on health promotion, disease prevention and management of common health problems.

**NSC 872 Rural Health FNP II. (3) A.** Prerequisites: NSC 870 with a minimum grade of "B." Corequisite: NSC 800. Theoretical and diagnostic knowledge necessary to confront problems relevant to the health care of individuals across the life span. Emphasis on health promotion, disease prevention, and management of common health problems. Builds on NSC 870.

**NSC 874 Rural Health FNP III. (3) A.** Prerequisite: NSC 872 with a minimum grade of "B." Corequisite: NSC 800. Theoretical and diagnostic knowledge necessary to confront problems relevant to the health care of individuals across the life span. Emphasis on health promotion, disease prevention and management of common health problems. Builds on NSC 872.

**NSC 876 Rural Health FNP Internship. (6) A.** Prerequisites: NSC 870, 872, 874, each with a minimum grade of "B" and nine hours of NSC 800. Course allows synthesis of theoretical and diagnostic knowledge in a concentrated rural primary care practicum. Emphasis on health promotion, disease prevention and management of common health problems in individuals and families across the life span.

**NSC 880 Rural PMHNP I. (2) A.** Prerequisites: NSC 830, 832, 834, each with a minimum grade of "B," and NSC 840 and HEA 855. Corequisite: NSC 800. Prerequisite/Corequisite: NSC 881 with a minimum grade of "B." Theoretical and diagnostic knowledge necessary to diagnose and treat psychiatric disorders of adults. Competencies in working with individuals are developed.

**NSC 881 Applied Psychopharmacology. (2) A.** Prerequisite: NSC 830, NSC 832, and NSC 834, each with a minimum grade of "B." Applies theoretical and diagnostic knowledge related to prescribing psychopharmacological treatment of psychiatric disorders in adults.

**NSC 882 Rural PMHNP II. (3) A.** Prerequisite: NSC 880 and 881, each with a minimum grade of "B." Corequisite: NSC 800. Theoretical and diagnostic knowledge necessary to diagnose and treat psychiatric disorders of adults. Competencies in working with families are developed.

**NSC 884 Rural PMHNP III. (3) A.** Prerequisite: NSC 882 with a minimum grade of "B." Corequisite: NSC 800. Theoretical and diagnostic knowledge necessary to diagnose and treat psychiatric orders of adults. Group skills, community resources and the context of professional practice are examined.

**NSC 886 Rural PMHNP Internship. (6) A.** Prerequisite: NSC 884 with a minimum grade of "B" and seven hours of NSC 800. Synthesis of theoretical and diagnostic knowledge to promote mental health, maintain mental health, and prevent mental illness. Systematically examines opportunities for improving PMHNP practice.

**NSC 890 Research in Rural Nursing. (3) A.** Prerequisite: NSC 840. Analysis and critical evaluation of nursing and related research with emphasis on designs and methods appropriate for rural health nursing phenomena.

**NSC 892 Research Project. (3) A.** Prerequisite: NSC 890. Completion of a research project in an area of interest related to rural health nursing, which culminates in a written report.

**NSC 895 Independent Study in Nursing. (1-6) A.** May be retaken under different subtopics to a cumulative maximum of six hours. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**OHO—Ornamental Horticulture  
Dr. Bruce Pratt, Chair**

**OHO 807 Advanced Technical Study in Horticulture Problems. (1-3) A.** Prerequisite: advisor/departmental chair approval. Independent work, workshop, special topics, research problems, or seminars. May be retaken to a maximum of six hours. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**OTS—Occupational Therapy  
Dr. Colleen Schneck, Chair**

**OTS 715 Early Childhood Sensorimotor Development. (3) A.** Prerequisite: education major or degree or instructor's approval. Provides an overview of normal sensorimotor development in infants and young children. Includes contrasting normal/abnormal development and application of appropriate developmental tasks. Laboratory experiences will be provided.

**OTS 720 Providing Health Services in Appalachia. (3) A.** Prerequisite: departmental approval. An analysis of development and delivery of health care services in Appalachia. Examination of relevant current and historical factors, which have an impact on the health of the Appalachian people.

**OTS 820 OBP I: Fundamentals. (4) A.** Corequisite: OTS 821. Foundational knowledge in occupation based practice. Assessment and intervention skills necessary to provide occupational therapy services. Course themes are occupational therapy philosophy, theory, context, process, and reasoning. Active learning experience in the community.

**OTS 821 Practice Seminar I. (2) A.** Corequisites: OTS 820 and OTS 822. Integration of occupation-based practice through reflection on curriculum themes, participation in a continuum of community learning experiences, exploration of Level II Fieldwork and development of a professional student portfolio.

**OTS 822 OBP II: Health Care Practice. (4) A.** Corequisite: OTS 821. Lecture and lab to include theories, principles and methods of evaluation, intervention and outcome processes for individuals accessing health systems. Course will focus on engagement in occupation to support participation in life roles across the lifespan.

**OTS 825 Technology and Rehabilitation. (3) A.** Prerequisite: computer literacy or departmental approval. Advanced exploration of occupational therapy knowledge and skill about assistive technology. Emphasis on application and use of assistive technology to enhance occupational performance of individuals with disabilities.

**OTS 830 OBP III: Education Communities. (4) A.** Prerequisites: OTS 820 and OTS 822. Corequisite: OTS 831. Occupation-based assessment and intervention for children and young adults in educational contexts. Course addresses models of practice, service delivery, federal/state legislation and philosophy of administration. Active learning experiences in the community.

**OTS 831 Practice Seminar II. (2) A.** Prerequisite: OTS 821 or Corequisites: OTS 830 and OTS 832. Integration of occupation-based practice through reflection on curriculum themes, participation in community-based learning in educational and social settings, preparation for Level II Fieldwork and ongoing development of a portfolio.

**OTS 832 OBP IV: Community-Based Practice. (4) A.** Corequisite: OTS 831. Theories, principles and methods of evaluation, intervention and outcome processes for individuals and groups assessing social systems through the lifespan. Course will focus on engagement in occupation for community participation.

**OTS 834 Advanced Dimensions OBP V. (3) A.** Prerequisite: permission of department. Advanced conceptualization and synthesis of Occupational Science and existing models of Occupational Therapy for practice. Includes analysis and application of occupation-based practice and evidence within specialty areas.

**OTS 835 Occupational Therapy Intervention in the Workplace. (3) I, II, A.** Prerequisite: OTS 820 or departmental approval. Exploration of the direct and indirect service roles and functions of the occupational therapist in the workplace. Emphasis will be on the work-related behaviors and environmental assessments for health promotion, prevention and work adjustment.

**OTS 836 OBP VI: Optimizing Occupation. (3) A.** Prerequisite: graduate standing in the occupational therapy program; OTS 822, 830, and 832. Specialized evaluation and intervention in occupational therapy practice with emphasis on emerging practice areas. Students will synthesize and apply skills of best practice for optimizing occupations.

**OTS 845 Health Care Practice Fieldwork. (6) II.** Prerequisite: Successful completion of all didactic coursework or department approval. Twelve weeks of fieldwork in health care practice to promote reasoning, professionalism and competence in providing occupation-based intervention. Includes on-line reflective seminar.

**OTS 846 Community Practice Fieldwork. (3-5) A.** Prerequisite: Successful completion of all didactic coursework. Six to ten-week fieldwork in community/education to promote reasoning, professionalism and competence in providing occupation-based intervention. Includes online reflective seminar.

**OTS 847 Emerging Practice Fieldwork. (1-3) A.** Prerequisite: Successful completion of all didactic coursework. Two to six-week fieldwork experience in an emerging or traditional practice setting to develop/refine skills. Includes online reflective seminar.

**OTS 850 Planning and Managing in OT Practice. (3) A.** An OT perspective of management including: organizational theory, strategic planning, leadership, formulating decisions, consultation, political advocacy, health and social policy. Development of practice models including program evaluation based on agency, systems or community needs.

**OTS 851 Strategic Communication in Occupational Therapy. (3) A.** Prerequisite: undergraduate/graduate course in administration or consent of instructor. Study of change theory and factors affecting communication in practice settings.

**OTS 852 OT Services in Mental Health Settings. (3) A.** Prerequisite: OTS 820 or departmental approval. Examination of external forces influencing mental health services and models of occupational therapy service delivery, emphasizing community-based and rural health programs.

**OTS 853 Leadership in Human Services. (3) A.** Focus on the development and application of leadership skills, including transformational and transactional leadership. Students will demonstrate development of their own leadership skills through a major project.

**OTS 855 The Role of OT & the Aging Adult. (3) A.** Prerequisite: OTS 820 or departmental approval. Advanced study of occupational therapy's role in delivering services to the aging adult in emerging/innovative programming. Identification and analysis of factors which promote/hinder quality of life.

**OTS 862 Therapeutic Modalities in OT Practice. (3) A.** Address occupational therapy theoretical principles, neurophysiological and electrophysical changes that occur as a result of the application of selected physical and electrical modalities. Students will develop skill in the application of these modalities.

**OTS 863 Occupation and Sensory Processing. (3) A.** Understanding the impact of sensory processing disorders on occupational natures will enable students to provide appropriate intervention. Occupational adaptation and sensory integrative theories will be applied as conceptual frameworks for occupational therapy intervention.

**OTS 864 OT in Early Childhood Programs. (3) A.** Course is designed to acquaint students with early intervention and preschool environments, and the role of occupational therapy in these environments.

**OTS 865 Occupational Therapy Services in the School System. (3) A.** In-depth study of school-based occupational therapy. Theories, principles, models of practice, and methods of occupational therapy delivery of services for students experiencing dysfunction in educational performance, within the context of state and federal laws.

**OTS 866 OT & Behavior Disorders in Schools. (3) A.** Prerequisite: OTS 820 or departmental approval. Examination and application of occupational therapy theoretical models used in evaluation and intervention for this population and the external systems affecting service delivery.

**OTS 870 Professional Trends and Issues in OT. (3) I, II.** Trends and issues impacting the occupational therapy profession. Advancement of professional roles of consultant, entrepreneur, educator, leader and researcher.

**OTS 871 Professional Seminar II. (3) A.** Students assume leadership in learning communities, complete professional portfolios and participation in professional learning experiences.

**OTS 875 Special Topics: \_\_\_\_\_. (1-3) A.** Prerequisite: undergraduate degree in occupational therapy or departmental approval. May be retaken under different subtopics to a cumulative maximum of six hours. Advanced study of selected topics in occupational therapy practice.

**OTS 880 Research in Occupational Therapy. (3) I, II, A.** Prerequisite: undergraduate or graduate course in statistics (STA 270 or STA 271 or PSY 291 or STA 700). Exploration, critical analysis and application of research and evidence-based practice in occupational therapy. Emphasis on preparation and implementation of a research study.

**OTS 882 Advanced Occupational Science. (3) A.** Exploration of occupational science as a disciplinary knowledge base and of occupation and activity as the central concepts of occupational therapy. Emphasis on preparation for teaching and research related to occupation.

**OTS 883 Change and Complexity in OBP. (3) A.** Comprehensive critique of disciplinary literature describing professional applications of occupation. Deriving insights into occupation-based practice (OBP) through perspectives from history, systems, chaos, changes, and complexity. Action and change research methods for the development of occupation-based practice.

**OTS 885 Occupational Performance Measures.** (3) **A.** Prerequisites: OTS 880 and occupational therapy graduate student status or departmental approval. Analysis of critical evaluation instrumentation. Review of measurement issues and use of instruments in evidence-based practice in occupational therapy. Integration into occupation-based practice.

**OTS 890 Independent Study in OT.** (3) **I, II, A.** Prerequisite: advisor/departmental approval. Student initiated directed study. Regular consultation with faculty supervisor and final paper required. May be retaken under different subtopics to a cumulative maximum of six hours. Approval of independent study proposal by faculty supervisor and department chair must occur prior to enrollment.

**OTS 895 Special Project Proposal in OT.** (3) **I, II, A.** Prerequisite: OTS 880. Development of special project proposal in a specific area of practice in occupational therapy. Student must have proposal form approved by instructor and department chair prior to enrollment.

**OTS 896 Non-Thesis Contribution.** (3) **A.** Completion of a major investigative project in a specific area of practice of occupational therapy. Major paper required. Student must have the project form approved by instructor and department chair prior to enrollment.

**OTS 898 Thesis I.** (3) **I, II, A.** Proposal development leading to thesis as directed by chair of thesis committee.

**OTS 899 Thesis II.** (3) **A.** Research leading to thesis as directed by chair of thesis committee.

**OTS 899-C Thesis/Project Continuation.** (1-3) **I, II, A.** Prerequisite: advisor/departmental approval. Continuation of research leading to thesis/special project as directed by the chair of student's committee. May be retaken as necessary to complete research. May not be used to satisfy degree program requirements.

**PHE—Physical Education**  
**Dr. Jack Rutherford, Chair**

**PHE 730 Sports Information Programs** (3) **I.** Study of the role and function of the sports information director. Includes public relations techniques applied to sports information; press releases, publications programs, office and staff organization, time utilizations, news media, and formats.

**PHE 762 Adapted Physical Activity.** (3) **I, II.** Principles and practices of adapted physical education emphasizing the physical activity needs of people with disabilities. Emphasis will be placed on the importance of physical activity, recent legislation, assessments, individual education plans, and adapting activities.

**PHE 775 Tests and Measurements in Physical Education.** (3) **I, II.** Administration and scoring of tests, evaluation and use of results obtained.

**PHE 790 Special Topics in Physical Education.** (1-4) **A.** Study of various topics in physical education and sport selected to meet special student needs and interests. May be retaken to a maximum of six hours with advisor's approval provided subtitle is different.

**PHE 800 Research Methods in Health/Physical Education/Recreation.** (3) **I.** Cross listed with EHS 800. Application of research methods to health/physical education/recreation with emphasis on consumption of research, methods of research, and tools and instrumentation for research in health/physical education/recreation. Credit will not be awarded to students who have credit for EHS 800.

**PHE 805 Including Dance in the P-12 Curriculum.** (3) **A.** The course teaches the basic dance concepts and skills that are to be covered in the P-12 school curriculum. Teachers of all levels and specialties learn how to include dance in their own curriculum. Folk/social, ethnic and art forms of dance are covered. No previous dance experience is necessary.

**PHE 810 Financial Aspects of Sport.** (3) **A.** Study of the principles, practices, and theories associated with finance planning and management of enterprises engaged in the provision of sport related services and/or products. Topics include budget planning and preparation, preparing and analyzing financial statements, revenue sources, money management, preparation of business plans and feasibility studies.

**PHE 812 Lifetime Fitness and Wellness.** (3) **A.** Philosophical and factual basis for lifetime fitness for professional fitness leaders. Problem-solving and decision-making approaches to establish creative and effective programs.

**PHE 814 Sport Marketing, Promotions, and Fund Raising.** (3) **I, A.** Marketing, promotion, and fund raising within the context of amateur and professional sport. An overview of sport business industry; theory; pricing, distribution, and promotional technique of sport; media relations; endorsement and sponsorships; and licensing.

**PHE 821 Physiological Bases of Physical Fitness.** (3) **I.** Effects of chronic exercise on neuromuscular, cardiovascular, respiratory, and metabolic function.

**PHE 822 Sociology of Sport.** (3) **II.** Meaning of sport in contemporary societies; relationship of selected social factors on development of social groups and attitudes in varying levels of sport; structure and function of sport in simple and complex social institutions.

**PHE 823 Sport and Exercise Psychology.** (3) **I.** Scientific study of people and their behavior in sport and exercise contexts and the practical applications of that knowledge.

**PHE 825 Policy and Governance of Sport.** (3) **I, II.** An in-depth study of major sport governing agencies including organizational structure, constitutions, policies, procedures, and membership requirements of sport agencies at the state, national, and international levels.

**PHE 831 Laboratory Methods in Exercise Physiology.** (3) **II.** Prerequisite: PHE 821 or instructor approval. Study, practice and applications of methods of calorimetry; anthropometry; measurement of muscular strength, muscular endurance and cardiovascular-respiratory endurance; analysis of expired air; and determination of reliability and validity.

**PHE 833 Motor Development.** (3) **A.** Examination of physical activity as a factor in growth and development of children and adolescents. Including biological and behavioral science as the foundation for integrated study of physical growth, motor development, and physical activity.

**PHE 835 Legal Issues in Sport.** (3) **II.** Principles and concepts of sport in contemporary society with primary emphasis on legal issues that relate to amateur sport.

**PHE 839 Applied Learning in Physical Education, Sports Administration Option.** (1-6) **A.** Prerequisites: departmental approval; must have been admitted to the Master of Science/Sports Administration option. Work under faculty and field supervisors in a cooperative placement related to student's academic studies. One to six hours credit per semester or summer. Six hours may count toward master's degree. A minimum of eighty hours work is required for each academic credit.

**PHE 839 A-F Cooperative Study: Physical Education, Sports Administration Option.** (1-6) **A.** Prerequisites: departmental approval; must have been admitted to the Master of Science/Sports Administration option. Work under faculty and field supervisors in a cooperative placement related to student's academic studies. One to six hours credit per semester or summer. Six hours may count toward master's degree. A minimum of eighty hours work is required for each academic credit.

**PHE 848 History and Philosophy of Physical Education and Sport.** (3) **I, A.** A study of organized physical activity of people in significant cultural epochs in history and the underlying philosophy that influenced these activities.

**PHE 851 Facility Design and Maintenance in Physical Education.** (3) **I, A.** Focus on fundamentals of facilities management: planning and design; funding and operating; modifying of facilities associated with physical education, recreation, and sport programs.

**PHE 852 Motor Learning and Performance.** (3) **II.** Behavioral aspects related to the theory of learning and performance of motor skills taught in school and non-school environments; factors affecting learning and performance are also investigated.

**PHE 869 Organization and Administration of Athletics.** (3) **II.** Administrative patterns for high school and college athletics; topics include programs, personnel, facilities, athletic organization consideration.

**PHE 870 Internship in Sports Administration.** (1-6) **A.** Supervised experience in selected aspects of sports in a sports administration setting. May be retaken to a maximum of six hours.

**PHE 871 Internship: Exercise/Wellness.** (1-6) **A.** Supervised experiences of selected aspects of wellness programming.

**PHE 875 Seminar in Physical Education, Exercise, and Sport.** (3) **A.** Research and discussion of critical questions in physical education; topics to be studied will vary according to the concerns of seminar students.

**PHE 885 Independent Study.** (1-3) **A.** Designed for graduate students who have demonstrated the ability to conduct individual research relating to physical education. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment. May be retaken to a maximum of three hours.

**PHE 891 Issues in Physical Education, Exercise, and Sport.** (3) **A.** Identification of critical issues arising from current problems; exploration of points of view and possible solutions.

**PHE 895 Assessment in Physical Education.** (3) **II.** Prerequisite: PHE 775 or instructor approval. Comparative statistics, construction of measurement instruments, and evaluation techniques applied to physical education.

**PHE 897 Thesis.** (3-6) **A.** For students preparing a thesis in partial fulfillment of the requirements for the master's degree programs. May be retaken to a maximum of six hours.

**PHI—Philosophy**  
**Dr. Steven Parchment, Chair**

**PHI 751 Classical and Medieval Theory.** (3) **A.** Cross-listed as POL 751. Examination of Western political thought from Plato to Aquinas. Credit will not be awarded to students who have credit for POL 551 or POL 751.

**PHI 752 Modern Political Theory.** (3) **A.** Cross-listed as POL 752. Examination of Western political thought from the mid-twentieth century. Credit will not be awarded to students who have credit for POL 552 or POL 752.

**PHI 753 Contemporary Political Theory.** (3) **A.** Cross-listed as POL 753. Examination of Western political thought from the mid-twentieth century to the present. Credit will not be awarded to students who have credit for POL 553 or POL 753.

**PHY—Physics****Dr. Mark Biermann, Chair****PHY 706 Physics for High School Teachers.**

(3) A. Prerequisites: one year of college physics and instructor approval. Credit given toward major or minor only in teaching programs. Topics from general and modern physics to prepare teachers to teach high school physics and give classroom demonstrations. 3 Lec/3 Lab.

**PHY 710 Special Problems in Physics:**

\_\_\_\_\_. (1-6) A. Prerequisites: PHY 202 and instructor approval. Special laboratory experiments, development of new equipment, or solution of special mathematical problems related to physics. May be retaken to a maximum of six hours, provided subject matter differs each time. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**PHY 806 Selected Topics in Physics for Secondary Teachers.** (3) A. Prerequisite: secondary certification in physics. Study of topics in physics selected from the following fields: mechanics, thermodynamics, sound, electricity, magnetism, optics, and modern physics. Selection will depend upon the need of the student. 2 Lec/3 Lab.

**PHY 808 Selected Topics in Physical Science for Secondary Teachers.** (1-6) A. Restricted to physical science teachers not certified in physics. Study of problems in science relevant to secondary physical science. May be retaken to a maximum of six hours.

**PHY 809 Workshops in Physics for Teachers.** (1-3) A. Prerequisite: instructor approval. Selected topics not normally presented that may be of interest to groups of certain students will be presented. May be retaken to a maximum of three hours.

**PHY 880 Special Topics in Physics.** (1-3) A. Specially assigned theoretical or experimental work on topics not covered in other courses.

**PHY 881 Selected Topics.** (1-3) A. Prerequisite: instructor approval. Selected topics not normally presented that may be of interest to groups of certain students will be presented. May be retaken to a maximum of three hours.

**POL—Political Science****Dr. Sara Zeigler, Chair****POL 717 Politics and Social Change.** (3)

A. Comparative study of politics in present and past societies to consider the relationship between politics, political change and broader social change. Emphasis on political phenomena especially suited to comparative study.

**POL 721 Contemporary International Relations.** (3) A. Systematic analysis of major contemporary theories and approaches to the study of international politics and foreign policy.

**POL 725 Problems in International Relations.** (3) A. Explores major problems in international relations. Covers various areas of the world with reference to significant factors and problems of the people.

**POL 733 Seminar in State and Local Politics.** (3) A. Prerequisite: POL 101 or instructor approval. A topical analysis of the institutions, policies, and administration of American state and local government. May be retaken to a total of six credit hours, provided subject matter differs each time.

**POL 741 Politics and Education.** (3) A. An examination of the way political decisions and policies are made in the field of education. Special attention is given to educational decision makers and political power at the local level.

**POL 751 Classical and Medieval Political Theory.** (3) A. Cross-listed as PHI 751. Examination of Western political thought from Plato to Aquinas. Credit will not be awarded to students who have credit for PHI 551 or PHI 751.

**POL 752 Modern Political Theory.** (3)

A. Cross-listed as PHI 752. Examination of Western political thought from the Renaissance to the mid-twentieth century. Credit will not be awarded to students who have credit for PHI 552 or PHI 752.

**POL 753 Contemporary Political Theory.**

(3) A. Cross-listed as PHI 753. Examination of Western political thought from mid-twentieth century to the present. Credit will not be awarded to students who have credit for PHI 553 or PHI 753.

**POL 765 Administrative Law.** (3) A.

Nature of the powers vested in administrative agencies; the problems of administration procedure; the methods and extent of judicial control over administrative action.

**POL 800 Research Methods.** (3) A. An introduction and an overview of theories, methods, and analyses which are used in contemporary political science and public administration research.

**POL 801 Administration, Ethics, and Public Policy.** (3) A. An analysis and overview of the interplay of ethical considerations, administration, and policy process in the public sector.

**POL 810 Seminar in Comparative Politics:** \_\_\_\_\_. (3) A. Selected topics in the comparative study of politics. May be retaken to a maximum of six credit hours provided topics vary.

**POL 820 Seminar in International Relations.** (3) A. Study of selected topics in international administration, international organization, international politics and foreign policy.

**POL 835 Seminar in Intergovernmental Relations.** (3) A. An examination of the institutions, concepts, and problems of intergovernmental relations and the American federal system.

**POL 839 Applied Learning in Public Administration and Political Science.** (1-6) A. Prerequisite: departmental approval. Work under faculty and field supervisors in cooperative placement related to student's academic studies. Credit varies with hours of employment. A minimum of eighty hours of work required for each academic credit. May be repeated at the discretion of the department. Credit may be substituted for POL 871 in the M.P.A. program provided the requirements of POL 871 are met completely by the cooperative education assignment. Credit may not otherwise be substituted for any M.A. or M.P.A. requirements.

**POL 839 A-F Cooperative Study: Public Administration and Political Science.** (1-6) A. Prerequisite: departmental approval. Work under faculty and field supervisors in cooperative placement related to student's academic studies. Credit varies with hours of employment. A minimum of eighty hours of work required for each academic credit. May be repeated at the discretion of the department. Credit may be substituted for POL 871 in the M.P.A. program provided the requirements of POL 871 are met completely by the cooperative education assignment. Credit may not otherwise be substituted for any M.A. or M.P.A. requirements.

**POL 843 Seminar in American Political Process.** (3) A. Systematic analysis of executive-legislative relationships in the American national political process.

**POL 845 Community Development.** (3) A. Examines developmental efforts on community level in the United States; relates community development to community organization and examines current efforts, especially those based on the concept of self-help, to generate and implement community development programs.

**POL 846 Non-Profit Organizations.** (3) A. Study of non-profit organizations, including an examination of types, leadership styles, management tools, board organization, budgeting and fund-raising.

**POL 847 Strategic Planning and Grant Writing.** (3) A. The study of strategic planning processes and the techniques of grant writing as they apply to the public and non-profit sector. Focus on federal and foundation grants.

**POL 853 Seminar in Political Theory.** (3)

A. Examination of major contemporary approaches to understanding and evaluating political phenomena. Authors to be examined may include: Hannah Ahrendt, Arnold Brecht, David Easton, Juergen Habermas, Edmund Husserl, Robert Nozick, John Rawls, Leo Strauss and Eric Voegelin.

**POL 863 Seminar in Public Law.** (3) A.

Prerequisite: instructor approval. Study in depth of selected problems in public law.

**POL 871 Field Study in Public**

**Administration.** (3-6) A. Prerequisite: departmental approval. An experientially based research project for M.P.A. students under departmental supervision in a public sector field setting. May be retaken to a maximum of six credit hours.

**POL 872 Practicum in Public**

**Administration.** (3-6) A. Prerequisite: departmental approval. An experientially based project for MPH students under advisor supervision. Students will be placed in a supervised work environment in public health administration.

**POL 875 Public Sector Organizations and Management.** (3) A. Study of organizational theory and management as applied to government agencies and other not-for-profit organizations. Topics covered include theoretical modeling, research on organizational behavior, and managerial strategy and technique.

**POL 876 Public Human Resources Management.** (3) A. Study of strategies and techniques of public human resources management in the public sector and their relationship to pertinent laws, policies, and institutions, in the context of contemporary theories of organizational behavior.

**POL 877 Public Finance Administration.** (3) A. An examination of the effects of economic, administrative, legislative and judicial factors on the fiscal operations of government. Study of the budgetary and financial decision-making process at the federal, state and local levels.

**POL 878 Applied Research in Political Science.** (3) A. Prerequisite: POL 800. The theory process and techniques used to conduct and present applied empirical research in political science.

**POL 879 Policy Analysis and Program Evaluation.** (3) A. Prerequisite: POL 800. An introduction to theories and methods of analysis relating to public policy and public program formulation, implementation, and evaluation. Topics include quantitative and non-quantitative analytical techniques.

**POL 891 Directed Research.** (3-6) A. Research under the direct supervision of one or more departmental members. May be retaken to a total of six hours credit. Students must have the independent study proposal form approved by faculty supervisor and departmental chair prior to enrollment.

**POL 892 Directed Research in Public Health Administration.** (3-6) A. Research under the direct supervision of faculty advisors. Students must have the independent study form approved by the faculty supervisor and department chair. Designed for MPH students concentrating in Public Administration.

**POL 893 Special Topics:** \_\_\_\_\_. (1-3) A. Seminar in a specialized topic of the discipline. Topics will vary. May be retaken to a total of six hours credit, provided subject matter differs each time.

**POL 895 Independent Study.** (1-3) A. Student-initiated directed study. Can include research project or readings in an area of the discipline. May be retaken to a total of six hours credit, provided subject matter differs each time. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**POL 899 Thesis.** (3-6) A. May be retaken to a total of six hours credit.

**PSY—Psychology****Dr. Robert Brubaker, Chair****PSY 777 The Autism Spectrum. (3) A.**

Prerequisite: departmental approval. Assessment, diagnosis, and intervention in autism spectrum disorders across the lifespan. Conduct autism spectrum assessment and design interventions.

**PSY 779 History and Systems of**

**Psychology. (3) A.** A survey of the history of psychology and its various schools of thought and approaches to the study of behavior and mental processes.

**PSY 790 Tests and Measurements. (3)**

**A.** Prerequisite: PSY 200 or departmental approval. Study of measurement principles with application in psychology, business, industry, and government. Interpretation, use, and evaluation of measurement and job analysis methods. Reliability, validity, utility, ethical/legal concerns are examined.

**PSY 797 Advanced Topics in Psychology:**

\_\_\_\_\_. **(3) A.** Prerequisite: PSY 200 or departmental approval. Selected topics for advanced study. Variable topics across semester in terms of student interest and available faculty. May be retaken provided the subject matter differs each time.

**PSY 820 Statistics & Research Design**

**I. (3) A.** Prerequisite: departmental approval. Principles and techniques of scientific observation, control, and analysis specifically oriented to research in psychology. Evaluation of research designs and their implementation in professional settings. Emphasis on univariate statistical analyses. Credit will not be awarded to students who have credit for PSY 820S.

**PSY 820S Statistics & Research Design I: Service Learning. (3) A.** Prerequisite: departmental approval. Principles and techniques of scientific observation, control, and analysis specifically oriented to research in psychology in the context of service learning. Evaluation of research designs and their implementation in professional settings. Emphasis on univariate statistical analyses. Credit will not be awarded to students who have credit for PSY 820.

**PSY 824 Intellectual Assessment. (3)**

**A.** Prerequisite: departmental approval. Techniques, principles and problems in the administration, scoring, interpretation, and reporting of individual tests of intelligence for children and adults.

**PSY 825 Personality Assessment. (3)**

**A.** Prerequisite: departmental approval. Techniques, principles and problems of evaluating personality via interviews, objective and projective testing. Emphasis on integration of results.

**PSY 826 Professional Concerns I. (1) A.**

Prerequisite: departmental approval. Consideration of ethical and related problems of psychologists.

**PSY 827 Topics in Assessment. (1) A.**

Prerequisite: departmental approval. Administering, scoring, and interpreting instruments in the area of vocational interest, adolescent personality, adaptive behavior, and individual academic assessment. Emphasis is on application in school and clinical settings.

**PSY 837 Social Psychology and Cultural Diversity. (3) A.** Prerequisite: departmental approval. Graduate level survey of topics in social psychology including social influence, persuasion, social cognition, self-justification, aggression and prejudice. Emphasis on multi-cultural diversity and tolerance of other groups.

**PSY 840 Cognitive Bases of Behavior. (3)**

**A.** Prerequisite: departmental approval. Broad survey of findings in the areas of learning and conditioning, memory and cognitive processes.

**PSY 841 Psychopathology. (3) A.**

Prerequisite: departmental approval. Etiology and description of various aspects of psychopathology and ineffective behavior. Credit will not be awarded to students who have credit for COU 855.

**PSY 843 Practicum. (1-4) A.** Prerequisite: departmental approval. Supervised practice in applied settings. Selective participation with an assigned agency varies with the student's program with level of preparation in course work, and with previous supervised field experience. Class meetings as arranged. May be retaken to a maximum of eleven credit hours. Graded Satisfactory/Unsatisfactory.

**PSY 844 Industrial Psychology. (3) A.**

Prerequisite: departmental approval. Graduate level introduction to industrial psychology. Topics include legal issues, job analysis and evaluation, compensation, research in organizations, individual differences, recruitment, human factors, and work environments.

**PSY 845 Clinical Issues and the Deaf. (3)**

**A.** Prerequisite: departmental approval. Survey of clinical issues involved in providing mental health services to the deaf and hard-of-hearing. Topics will include the prevalence and nature of psychological problems among the deaf and hard-of-hearing, ethical and professional concerns, the interface between mental health and other services, and psychological assessment and therapy issues and strategies.

**PSY 846 Behavioral Research Methods.**

**(3) A.** Prerequisite: departmental approval. Theory and methods of contemporary practice of behavioral assessment and single subject research design. Supervised practice in clinical applications of assessment methods. Review of relevant learning theory and behavioral principles.

**PSY 847 Topics in Individual Differences.**

**(3) A.** Prerequisite: departmental approval. The development of individual differences in traits and behavior examined from the perspectives of personality and developmental psychology. Selected coverage of both seminal and current theoretical and empirical literatures.

**PSY 848 Introduction to School**

**Psychology. (3) A.** Prerequisite: departmental approval. Theory observation, and supervised practice in the role of school psychologist. Includes systems analysis, the consultation process, and interprofessional relationships. Intervention skills appropriate for dealing with those problems.

**PSY 850 Psychotherapy and Behavior**

**Change I: Basic Techniques. (3) A.** Prerequisite: PSY 841 or departmental approval. A didactic and experiential introduction to the theories and techniques acilitative of personal growth and behavior change.

**PSY 853 Biological Bases of Behavior.**

**(3) A.** Prerequisite: departmental approval. A survey of the principles, research and methodology of psychophysiology, including consideration of the autonomic correlates of emotion and arousal, biofeedback, psychosomatic diseases, and psychophysiological correlates of psychopathology.

**PSY 857 Interventions with Children and**

**Families. (3) A.** Prerequisite: departmental approval. Interventions procedures for a variety of problems of school-age children are reviewed. Emphasis is placed on developing individual and group intervention skills for assisting children and their families.

**PSY 860 Psychotherapy and Behavior**

**Change II: Advanced Techniques and Theories. (3) A.** Prerequisite: PSY 850 or departmental approval. The in-depth study of techniques selected from those presented in PSY 850. Emphasis will be placed on developing proficiency in such skills and techniques.

**PSY 862 Statistics and Research Design**

**II. (3) A.** Prerequisite: PSY 820 or equivalent with department approval. Principles and techniques of scientific observation, control, and analysis, specifically oriented to multivariate research in psychology. Evaluation of research designs and their implementation in professional settings.

**PSY 865 Psychological Consultation. (3)**

**A.** Prerequisite: departmental approval. Exploration of the theoretical and empirical underpinnings of psychological consultation process, and supervised practice in the provision of indirect psychological services.

**PSY 868 Program Evaluation in the Social and Behavioral Sciences. (3) A.** Prerequisite: PSY 820 or 862 or equivalent with departmental approval. Survey and application of program evaluation theory, designs, implementations and problems. Emphasis on preparing students to design and implement program evaluations of social, educational and organizational programs.

**PSY 870 Cognition in the Workplace. (3)**

**A.** Prerequisite: departmental approval. Graduate level survey of theories and research in cognition, with a focus on applications to industrial and organizational psychology.

**PSY 871 Group and Family Therapy. (3)**

**A.** Prerequisite: departmental approval. Theory and techniques of group and family therapy. Emphasis will be placed on developing and applying intervention skills.

**PSY 872 Selection and Performance**

**Appraisal. (3) A.** Prerequisite: PSY 790 or departmental approval. Psychological theory, research, and practice pertaining to the selection and appraisal of human resources in the workplace.

**PSY 873 Organizational Psychology. (3)**

**A.** Prerequisite: departmental approval. Examination of research, theory, and applications in organizational psychology. Topics include commitment, involvement, satisfaction, power, conflict, motivation, leadership, quality of work life, group/team processes, and organizational structure.

**PSY 874 Organization Change and**

**Development. (3) A.** Prerequisite: departmental approval. Analysis of psychological theory, research and practice pertaining to organization change and development including the change process, culture, interventions, evaluation, consulting, and legal/ethical concerns.

**PSY 875 Training and Development. (3) A.**

Prerequisite: departmental approval. Graduate level survey of psychological theory, research, and practice utilized in the training and development of human resources in the workplace.

**PSY 880 Work Environments. (3)**

**A.** Prerequisite: departmental approval. Seminar examining the ways in which workers are influenced by the physical environment. Topics will include lighting, noise, temperature, aesthetics, privacy, crowding, territoriality, human factors, and ergonomics.

**PSY 881 Advanced Children's Assessment.**

**(3) A.** Prerequisite: departmental approval. Theory and research regarding psychological and psychoeducational problems of childhood and adolescence in the context of diagnostic criteria, including training in the use of adaptive behavior scales and measures for screening academic achievement.

**PSY 887 Independent Work in Psychology.**

**(1-3) A.** Prerequisite: approval of independent study proposal by faculty supervisor and department chair prior to enrollment. Student is responsible for conceptualization and investigation of research problem and drawing formal conclusions. May be retaken to a maximum of six hours provided a different problem is studied each time.

**PSY 890 Thesis Research. (1-6) A.**

Prerequisite: departmental approval. Experimental investigation of a selected topic, including preparation of a formal report. May be retaken to a maximum of twelve hours. Graded Satisfactory/Unsatisfactory. A minimum of 1200 hours of work is required for the total twelve hours credit awarded.

**PSY 897 Special Topics in Psychology.**

**(3) A.** Selected topics for advanced graduate study. Topics will vary. May be retaken to a total of six hours, provided the subject matter differs each time.

**PSY 898 Internship in School Psychology.**

**(3-6) A.** Prerequisite: advisor approval. Intensive supervised experience in approved educational setting. May be retaken to a maximum of twelve hours. Graded Satisfactory/Unsatisfactory. A minimum of 1200 hours of work is required for the total twelve hours credit awarded.

**PSY 899A Internship in Clinical Psychology.** (6) A. Prerequisite: advisor approval. Intensive supervised experience in approved clinical setting. May be retaken to a maximum of twelve hours. Graded Satisfactory/Unsatisfactory. A minimum of 480 hours of work is required.

**PUB—Public Relations**  
Dr. Maureen Everett, Chair

**PUB 720 Integrated Public Relations Strategies.** (3) A. Examines integrated public relations skills used to achieve organizational objectives. Emphasizes strategic planning including forecasting and communicating future business plans. Includes an in-depth look at relevant communication theories explaining common public relations problems and strategies.

**PUB 730 Sports Information Programs.** (3) A. Study of the role and function of the sports information director. Includes public relations techniques applied to sports information: press releases, publications programs, office and staff organization, time utilizations, news media, and formats.

**QMB—Quantitative Management**  
Dr. Oliver Feltus, Interim Chair

**QMB 850 Statistical Methods for Business.** (3) A. Prerequisite: QMB 200 or equivalent with a minimum grade of "B-" or better. This course focuses on statistical model selection, model building, forecasting, and the interpretation of statistical results for decision making. Emphasizes critical thinking and analysis skills.

**QMB 854 Topics in Quantitative Methods.** (3) A. Prerequisite: QMB 850. Study of quantitative methods in the various functional areas of business: accounting, computer information systems, finance, management, and marketing. May be retaken to a maximum of six hours provided the topics are different.

**REC—Recreation**  
Dr. Charlie Everett, Chair

**REC 711 Therapeutic Recreation Practices and Services.** (3) II. Interventions and utilization of terminology. Apply leadership skills, assistive technology, and programming applications. 2 Lec/2 Lab.

**REC 712 Management of Therapeutic Recreation.** (3) I. Prerequisite: for majors only. Management concepts applied to delivering therapeutic recreation services, and includes: documentation, activity analysis, assessment, liability, legislation and standards of practice.

**REC 716 Outdoor Education.** (3) I. Designed to explore issues in outdoor education, teaching methods, programs and evaluation. The role of interpretation in enhancing visitor experiences and protecting natural resources will be discussed.

**REC 730 Park Management.** (3) II. Park purposes and operations with an emphasis on natural resources and visitor management. Concentration on design, resource conservation and preservation, public relations, park policies.

**REC 790 Special Topics:** \_\_\_\_\_. (1-3) A. Identification and study of specialized techniques in recreation leadership, activities skills, operational methods, and services. May be retaken under different subtitle.

**REC 801 Park, Recreation, and Tourism Research Methods.** (3) II. Emphasis will be on applied research methods in the field of parks, recreation, leisure and tourism. Prepares students to understand and identify appropriate data collection methods, sampling, questionnaire design, data analysis, and interpretation of research literature.

**REC 809 Advanced Study in Recreation.** (1-3) A. Prerequisite: REC 801. Directed study of topics in recreation and leisure. An advanced study project and individual meetings with instructor are required. An advanced study proposal form must be approved prior to enrollment.

**REC 815 Practicum in Recreation.** (1-3) A. Prerequisite: department chair approval. Supervised practical work experience in a clinical or administrative setting.

**REC 825 Philosophy of Recreation and Leisure.** (3) I. Examination of recreation theory and practice from both research and empirical bases. Significance of leisure and recreation for the individual and society. Recreation's future in a changing cultural milieu.

**REC 830 Outdoor Recreation in America.** (3) I. A study and analysis of outdoor recreation policy development and agency management. Includes the development of natural and historical interpretive services.

**REC 840 Administrative Processes and Practices.** (3) II. Principles and concepts of administration, in-depth investigation of budgeting, policy formulation, and legislative provisions.

**REC 850 Recreation & Tourism Marketing.** (3) I, II. The purpose of this course is to provide the student with an in-depth understanding of marketing in the public and commercial recreation sectors, parks, and leisure services.

**REC 870 Rec Therapy Quality Assurance.** (3) I, II. Examine the components of quality assurance and techniques for evaluation related to programs, management, and patient outcomes in therapeutic recreation settings.

**REC 871 Therapeutic Recreation Administration.** (3) I, II. Understand the characteristics of management, administrative management, as related to human services in therapeutic recreation.

**REC 890 Independent Study in REC.** (1-3) I, II, A. Student initiated directed study for the purpose of conducting research and examining issues in park, recreation, and leisure services. Student must have the independent study proposal form approved by the graduate program director and chair prior to enrollment. May be taken to a maximum of three hours.

**REC 897 Thesis.** (6) A. Designed for students preparing a thesis in partial fulfillment of the requirements for the master's degree program.

**RST—Real Estate**  
Dr. Oliver Feltus, Interim Chair

**RST 890 Special Problems in Contemporary Real Estate.** (3) A. Prerequisite: ECO 854. An individual study which would form the basis of a major research paper. May be retaken under different subtopics to a cumulative maximum of six hours. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**SED—Special Education**  
Dr. Justin Cooper, Chair

**SED 700 Practices and Programming in Moderate and Severe Disabilities.** (3) II. Introduction to teaching students with MSD. Educational needs, issues, legal mandates, and family concerns, best practices for inclusive school and community programs. Open to non-majors.

**SED 704 Assistive/Adaptive Technology.** (3) I, A. Classroom use and modification of and assistive/adaptive devices. Integration of assistive technology into assessments, IEPs, lesson plans, educational activities, and daily routines. Lab.

**SED 707 Problems in Special Education:** \_\_\_\_\_. (1-3) A. School related work, special workshops, special seminars. May be retaken with different descriptions. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**SED 710 Assessment, Curriculum, and Methods in Content Areas for the Deaf and Hard of Hearing.** (3) A. Prerequisites: ELE 550 and SED 581 or instructor approval. Design, implementation, and evaluation of HI-IEPs including reading, mathematics, science, social studies, physical education, music, speech language, aural rehabilitation, early childhood, career education, and educational media.

**SED 712 Computer Technology with Exceptional Populations.** (3) I. Prerequisites: completed College of Education computer literacy requirement and introductory course in special education, or instructor approval. Educational applications of computer technology with handicapped individuals, infants through adult. Identification, evaluation, and operation of software, hardware, and adaptive devices in accordance with ethical practices. (Lec/Lab)

**SED 718 Survey of Special Education in Early Childhood.** (3) I, II. Prerequisites: SED 104 or SED 775, SED 260, or instructor approval. Overview of history, philosophy, legislation and services for young children (0-5) at-risk for or with disabilities, including impact and intervention across developmental domains.

**SED 722 Language Disorders of Students with Disabilities.** (3) A. Overview of language development and related speech and language disorders including introduction to intervention methodology.

**SED 735 Teaching Students with Moderate and Severe Disabilities.** (3) A. Functional assessment and systematic instruction for students with MSD. Use of assessment data to develop IEPs and instructional programs, including activity-based and community-based instruction. Methods and materials for implementing best practices across settings.

**SED 745 Program and Personnel Management.** (3) I, A. Prerequisite: teacher certification. Corequisite for undergraduates: SED 375. Scheduling and management of systematic instruction, inclusion, transdisciplinary services, and transition activities. Working with parents, paraprofessionals, and professionals. Collaboration strategies, professional development skills, and records management.

**SED 774 Field Experiences with Exceptional Learners.** (3) A. Prerequisite: departmental approval. A practical experience with exceptional individuals. Emphasis is directed at behavior management, educational assessment, and IEP/IFSP.

**SED 775 Nature and Needs of Exceptional Students.** (3) A. Overview of special education including characteristics, definitions, programming, and supporting research. Open to non-majors.

**SED 776 Introduction to Special Education Assessment.** (3) A. Prerequisite: SED 775 or instructor approval. Principles of tests and measurement. Test administration, scoring, and interpretation applied to exceptional children. Assessment related to interdisciplinary teams.

**SED 777 Dual Sensory Impairments and Communication.** (3) II, A. Prerequisites: SED 260 (or 522/722), 304, and 353/352 (teacher certification for SED 777), or instructor approval. Assessment, planning, and instruction for students with dual sensory impairments and severe cognitive disabilities. Augmentative and alternative communication methods, materials, and devices. Milieu language strategies, symbolic and nonsymbolic communication in natural environments and daily activities.

**SED 778 Behavior Disorders.** (3) A. Prerequisite: SED 775 or instructor approval. Behavior disorders and emotional disturbances as an educational, psychological, and sociological phenomenon. Definitions, characteristics, theoretical foundations, and programmatic approaches.

**SED 779 Learning Disabilities. (3)**

A. Prerequisite: SED 775 or instructor approval. Definition and assessment of learning disabilities. Emphasis on theories related to specific teaching methodologies.

**SED 781 Speech for the Deaf and Hard of**

**Hearing. (3) A.** Prerequisite: SED 260 or instructor approval. Phonological development, acoustic aspects, anatomy of speech mechanisms, phonetic transcription, developing speech readiness, voice quality, articulation, rhythm, phrasing, accent, fluency, effects of hearing loss on speech, speech reading, auditory training.

**SED 790 Applied Behavior Analysis. (3) A.**

Prerequisite: SED 775 or instructor approval. Behavior analysis applied to classroom and instructional management. Data collection, intervention procedures, and evaluation of behavior change.

**SED 793 Teaching Students with Learning and Behavior Disorders. (3) A.**

Prerequisites: SED 775, 776, 778 or 779, or instructor approval. Individual education programs for LBD students, based on assessment information and in accordance with legal mandates and regulations.

**SED 800 Exceptional Learners in the**

**Regular Classroom. (3) A.** Open only to non LBD, MSD, and DHH majors. Characteristics of mainstreamed students, identification procedures, and instructional strategies. Salient features of PL94-142, IEP, roles and responsibilities of regular educators.

**SED 801 Advanced Early Childhood**

**Assessment. (3) A.** Identification and diagnostic procedures of development delay and at-risk conditions in infants, toddlers, and preschoolers. Continuous assessment of children's developmental, instructional, behavioral, and environmental needs; evaluation of effectiveness of services and family involvement.

**SED 802 Advanced Early Childhood**

**Intervention Programming. (3) A.** Advanced curriculum and program development for infants, toddlers, and preschoolers in school centers or home settings, including collaboration with families and professionals, continuous assessment, and program evaluation.

**SED 803 Advanced Special Education**

**Assessment. (3) A.** Prerequisite: provisional certification in special education or departmental permission. Evaluation of educational, perceptual, conceptual, social, and psychological characteristics of exceptional individuals. Interpretation for educational and community interventions for exceptional children. Appropriate practical experiences provided.

**SED 804 Educational Management of**

**Learning and Behavior Disordered Students. (3) A.** Prerequisite: certification in special education or department chair approval. Advanced management and programming for pupils with learning and behavior disorders. Selection, adaptation, development and evaluation of instructional approaches, methods and materials based on current research and best practice. Appropriate field experience required.

**SED 805 Roles of Special Educators. (3)**

A. Prerequisite: certification in special education or department chair approval. Focuses on roles of special educators in alternative settings, utilizing related services, and working with parents. Emphasis on interpersonal relationships and professional development.

**SED 806 Advanced Assessment and Methods for Moderate and Severe Disabilities.**

(3) A. Prerequisite: bachelor's degree and teaching certificate in MSD. Advanced assessment of individual with moderate and severe disabilities, planning and implementing functional curricula, teaching methods across all functional domains and integrating related support services using a transdisciplinary service delivery model. Topics include instructional strategies, adaptations in inclusive settings, transition, alternative portfolio assessment, and best practices.

**SED 807 Special Education: \_\_\_\_\_. (1-3)**

A. Independent work, workshops, special topics, or seminars. May be retaken under different subtitles. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**SED 809 Diagnostic Prescriptive Teaching of the Deaf and Hard of Hearing. (3)**

A. Prerequisites: certification in Special Education or department chair approval and SED 354, SED 804 or instructor approval. Differential diagnosis and educational programming in academic, sociological, and vocational areas with emphasis on case presentation and individual educational plans.

**SED 810 Special Education Statutes,**

**Regulations, and Case Law. (3) A.** A study of the administrative responsibilities of special education leadership with emphasis on the understanding of the field of special education, related federal and state laws, administrative regulations, instructional arrangements, grant writing and budget.

**SED 811 IECE Assessment and**

**Intervention. (4) A.** For MAT IECE students only, encompasses identification and program development/implementation for children ages 0-5. Collaboration with families/professionals and continuous assessment of individual needs and program efficacy is also addressed.

**SED 814 Special Education Consultation**

**and Supervision Techniques. (3) A.** Consulting and supervisory services; recruitment, selection, and utilization of support services, evaluation of personnel in special education and programs; staff development; and mediation techniques.

**SED 816 Practicum in Special Education**

**Administration. (6) A.** Prerequisites: SED 810, 814, and EAD 801 or department chair approval. Supervised experiences in providing consultation services and performing all of the other functions of director of special education including procedures and policies, record keeping, utilization of support services, staff development, and due process.

**SED 818 Special Topics in Severe and**

**Multiple Disabilities. (3) A.** Prerequisite: SED 435 or instructor approval. Advanced study of issues in severe and multiple disabilities. Focus on major theoretical positions regarding etiology of physical/multiple disabilities, visual impairments, developmental implications, and education approaches. Review of research in the field, including best practices, and services.

**SED 830 Survey of Education for the**

**Hearing Impaired. (3) A.** Historical, philosophical, psychological, and social aspects of the hearing impaired. An orientation to problems, issues, and research in the field. Consideration of historic and current objectives, techniques and results, career education and adaptive P.E.

**SED 832 Written Language of the**

**Deaf and Hard of Hearing. (3) A.** Prerequisite: certification in special education or department chair approval. Methods of developing written language from preschool through secondary levels; including traditional and current methods of teaching written English. Evaluation of written language competence of deaf and hard of hearing students.

**SED 851 Teaching Secondary LBD. (3)**

A. Focus on education of students with LBD in secondary settings, including academic instruction and learning strategies, social competence, school-wide management, career education and transition, adolescent sexuality, drug and alcohol use, and juvenile delinquency.

**SED 886 Seminar in Special Education.**

(3) A. Prerequisite: SED 805 or instructor approval. Critical study of research literature on education of exceptional individuals. Directed study based on student's area of emphasis.

**SED 890 Advanced Behavior Strategies**

**and Interventions. (3) A.** Prerequisites: SED 341, SED 590/790, or instructor approval. Study of techniques of applied behavior analysis, functional behavioral assessment, alternative procedures, interventions for severe problem behaviors, and maintaining a safe learning environment for all students.

**SED 897 Practicum in Special Education.**

(3-6) A. Practicum for graduate students who seek certification in an area in special education.

**SPA—Spanish**

**Dr. Ezra Engling, Chair**

**SPA 772 Hispanic Literature: \_\_\_\_\_.**

(3) A. Prerequisites: SPA 301 and three hours from SPA 405, 406, 407. Study of a selected literary topic. May be retaken to a maximum of nine hours is course content is different.

**SPA 880 Special Studies/Independent**

**Study. (1-3) A.** Independent language or literature on a subject of special need or interest to the advanced student. May be retaken to a maximum of six hours. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**SSE—Safety, Security and Emergency Management**

**Dr. Larry Collins, Chair**

**SSE 815 Safety, Security, and Emergency**

**Administration. (3) A.** Prerequisite: departmental approval. Examination of administrative concepts and principles regarding organizing and managing the functional areas of fire, safety, and security. Development of organizational and administrative structure to include policy formulation, goals and objectives, managerial tasks, and impact evaluations within an encompassing safety, security, and emergency framework.

**SSE 820 Strategic Planning for the Fire**

**and Emergency Services. (3) A.** Comprehensive strategic planning including theory and value of strategic planning are examined. Steps to develop a strategic plan are examined and discussed. Students will assimilate a mock strategic plan for their organization that examines organizational development with consideration given to resource management.

**SSE 822 Workers Compensation/Labor**

**Law. (3) A.** Prerequisite: departmental approval. Comprehensive study of workers compensation and regulations; National Labor Relations Act; Title VII; A.D.E.A.; and other relevant laws applicable to the functional areas of safety, security, and emergency services.

**SSE 824 Leadership in the Fire**

**and Emergency Services. (3) A.** Prerequisite: departmental approval. Leadership issues including developing as a leader, leadership styles, decision skills, influencing, persuasion, and storytelling are examined. Characteristics of effective leaders are examined and discussed. Students will evaluate their leadership skills, shortcomings and develop a plan for obtaining needed inventory of leadership skills within themselves and their organizations.

**SSE 825 Public Sector Finance and**

**Budgeting. (3) A.** Prerequisite: departmental approval. This class examines the relationship of fire department budgeting within the scope of overall financial management of municipal governments. Funding sources including taxes, supplements from other governments, and grants are explored. Cost accounting and auditing are explored. Students will demonstrate their understanding of complex financial management issues by preparing arguments for prioritization of fire service issues over other governmental considerations.

**SSE 826 Emergency Prep/Response. (3) A.** Prerequisite: departmental approval. In-depth study of the planning process, program development, training methods, etc., for response to man-made and natural emergencies/disasters for both private and public entities.

**SSE 827 Issues in Security Management. (3) A.** Prerequisite: departmental approval. Survey of salient issues and concerns confronting security managers. Examines the application and contribution of various management concepts and philosophies to assets protection issues such as information security, personnel protection, threat analysis, technological adaptation, and resource allocation.

**SSE 828 Industrial Safety Management. (3) A.** Prerequisite: departmental approval. Investigation and analysis of hazard control principles relating to the management of personnel, facilities, and equipment, including control procedures, work-task analysis, risk identification and countermeasures, safety training, and pertinent safety management techniques.

**SSE 829 Public Emergency Services. (3) A.** Prerequisite: departmental approval. Overview of the theories and techniques of management practices regarding the operation and delivery of public sector emergency services. Agency coordination, budgetary considerations, resource assessment, and liability issues are emphasized.

**SSE 832 Construction Safety. (3) A.** Prerequisite: departmental approval. Introduction/analysis of general construction safety utilizing the key components of 29 CFR 196. Included in this study will be general safety & health provisions of OSH Act and a review of the various subparts of 29 CFR 1926.

**SSE 833 Legislation & Regulatory Comp. (3) A.** Prerequisite: departmental approval. Comprehensive study and analysis of federal/state regulations and legislation such as OSHA, EPA, etc., which mandate compliance with certain safety, health, and environmental conditions and practices relating to work performed in occupational, industrial, and comparable settings.

**SSE 834 Corporate Compliance. (3) A.** Prerequisite: departmental approval. The assessment, analysis and development of safety, emergency management, security and environmental compliance programs. This course will address the regulatory requirements and best business practices for each of the compliance areas.

**SSE 839 Applied Learning: \_\_\_\_\_. (1-6) A.** Prerequisite: departmental approval. Work under faculty and field supervisor in a cooperative placement related to student's academic studies. May be retaken to a maximum of six hours, but only three hours may count toward master's degree. A minimum of 80 hours required for each hour of academic credit.

**SSE 839 A-F Cooperative Study: \_\_\_\_\_. (1-6) A.** Prerequisite: departmental approval. Work under faculty and field supervisor in a cooperative placement related to student's academic studies. May be retaken to a maximum of six hours, but only three hours may count toward master's degree. A minimum of 80 hours required for each hour of academic credit.

**SSE 841 Applied Study in Safety, Security & Emergency Management. (3) A.** Prerequisite: departmental approval. Supervised study in loss prevention setting to provide the student an opportunity to synthesize theory and on-the-job situations. Individual conferences.

**SSE 845 Personal/Environmental Hazards. (3) A.** Prerequisite: departmental approval. Analysis and investigation of hazard and threat control principles relating to personal and environmental risks within the workplace. Investigation techniques, inspection methodologies, management techniques, and prevention programs essential to the manager within the safety, fire, and security functions are emphasized.

**SSE 865 Auditing for Safety, Security, and Emergency Services. (3) A.** Prerequisite: departmental approval. Theory and application of auditing in safety, fire, and security. Comprehensive study of risk/threat exposure and assessment.

**SSE 870 School Prevention and Safety. (3) A.** Examines a range of school and community crime prevention and safety strategies and assesses their effectiveness. In addition, students will be required to develop a school and community prevention and safety plan.

**SSE 871 Risk Management. (3) A.** Examines a range of threat assessment and risk management strategies and laws, codes, and regulations appropriate for educational settings and evaluates their effectiveness.

**SSE 872 School Crisis Response. (3) A.** Examines a range of crisis management and response strategies appropriate for school settings and explores their effectiveness. Credit will not be awarded to students who have credit for COU 872.

**SSE 873 School Safety Evaluation. (3) A.** Explores strategies for developing and evaluating effective school safety interventions.

**SSE 880 Safety, Security, and Emergency Research/Planning. (3) A.** Prerequisites: APS 465 or equivalent statistics course and departmental approval. Models and applications of research design and planning in safety, security, emergency services and assets protection. Identification and evaluation of problems, information and data interpretation, and research/planning methodologies for contemporary approaches to proactive safety, security, and emergency services

**SSE 890 Topical Seminar: \_\_\_\_\_. (1-3) A.** Prerequisite: advisor/departmental approval. Designed to explore specific, contemporary aspects of safety, security, and emergency services. May be retaken to a maximum of six hours provided topic is different each time.

**SSE 897 Independent Study. (3) A.** Prerequisite: departmental approval. Designed for graduate students who have demonstrated the ability to conduct individual research relating to loss prevention and safety. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment. May be retaken to a maximum of six hours.

**SSE 898 Thesis. (3-6) A.** Prerequisite: departmental approval. For students preparing a thesis in partial fulfillment of the requirements for master's degree program. May be retaken to a maximum of six hours.

STA—Statistics  
Dr. Dirk Schlingmann, Chair

**STA 700 Applied Statistical Inference. (3) A.** Designed for students in all areas. A general background in statistical methods including normal distribution, point and interval estimation, hypothesis testing, regression, analysis of variance, and software packages. Credit will not be awarded to students who have credit for ECO 320 or ECO 848 or EPY 843 or PSY 301 or QMB 300 or STA 271 or STA 320. Credit does not apply toward the M.S. degree requirements.

**STA 701 Nonparametric Statistics. (3) A.** Simple, efficient nonparametric methods without normality assumptions. Tests, estimation of proportions, medians, two-sample location/dispersion, one and two-way layout, independence, regression, software analysis packages. It is strongly recommended that students have completed a statistics course.

**STA 703 Statistics with Technology for P-9 Teachers. (3) A.** Topics in statistics appropriate for teachers of grades P-9. Credit does not apply toward M.S. nor M.A. in Education - Secondary Education, academic specialization option in mathematics, degree requirements.

**STA 707 Seminar in Statistics: \_\_\_\_\_. (1-3) A.** Topics vary with offering. May be retaken with advisor approval, provided the topics are different. Credit towards degree requirements will depend on the course content.

**STA 720 Mathematical Statistics I. (3) A.** Cross listed as MAT 720. Descriptive statistics, discrete and continuous probability distributions for one and two variables, functions of random variables, sampling distributions, expectations and generating functions. Credit will not be awarded to students who have credit for MAT 720.

**STA 721 Mathematical Statistics II. (3) A.** Prerequisite: STA 520 or STA 720. A continuation of STA 720. Estimation theory, tests of hypothesis, linear regression, analysis of variance, allied topics. It is strongly recommended that students have completed an undergraduate course in linear algebra.

**STA 775 Statistical Methods Using SAS. (3) A.** Statistical methods focusing on the use of the SAS computer package and interpretation of data. Assumptions of parametric and nonparametric tests. It is strongly recommended that students have completed a statistics course.

**STA 785 Experimental Design. (3) A.** Introduction to analysis of variance and experimental design with emphasis on authentic applications and use of statistical computing packages. Includes completely randomized designs, factorial experiments, multiple comparisons, checking model assumptions, randomized blocks, Latin squares, fixed and random models, and nested-factorial experiments.

**STA 839 Applied Learning in Statistics. (1-3) A.** Prerequisite: departmental approval. May be retaken with approval to a maximum of three credits. Employment with faculty and field supervision in an area related to the student's academic interests. A minimum of eighty hours of employment is required for each academic credit. Credit does not apply toward the M.S. degree requirements.

**STA 839 A-F Cooperative Study: Statistics. (1-3) A.** Prerequisite: departmental approval. May be retaken with approval to a maximum of three credits. Employment with faculty and field supervision in an area related to the student's academic interests. A minimum of eighty hours of employment is required for each academic credit. Credit does not apply toward the M.S. degree requirements.

**STA 880 Seminar in: \_\_\_\_\_. (1-3) A.** Advanced topics in Statistics. May be retaken to a maximum of six hours provided the topics are different. Credit towards degree requirements will depend on the course content.

**STA 890 Independent Study in: \_\_\_\_\_. (1-3) A.** Prerequisite: departmental approval. Independent study on a problem chosen by the student and instructor. Student must have the independent study proposal form and course syllabus approved by faculty supervisor and department chair prior to enrollment. May be retaken to a maximum of nine hours, provided the topics are different.

TEC—Technology  
Dr. L. Tim Ross, Interim Chair

**TEC 801 Special Problems in Technology. (2-6) I, II.** An independent study course for graduate students. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment. May be retaken if the topic of study is different.

**TEC 830 Creative Problem Solving. (3) A.** A review and analysis of basic and applied research in the development of creative behavior with emphasis on its application to teaching/training and industrial problem solving. Students will be expected to complete a term project showing their creative abilities.

**TEC 831 Applied Problem Solving. (3) A.** Prerequisite: TEC 830. Students will strengthen problem solving through the completion of an independent project. Students will propose a process and produce a finished project. Documentation of the process will be used as a foundation for evaluation.

**TEC 833 Workshop in Technology. (1-4) A.** Presentation of technology topics of a timely or specialized nature in a workshop format. May be retaken if the topics are different.

SECTION SIX - COURSE DESCRIPTIONS

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**TEC 867 Research in Technology. (3) A.**

Independent research in technology supervised by the graduate advisor and other staff members. Topic must be approved before registration. May be retaken to a maximum of six hours.

**TEC 898 Thesis I. (3) A.**

**TEC 899 Thesis II. (3) A.**

**THE—Theatre**

**Dr. James Keller, Chair**

**James Moreton, Coordinator**

**THE 805 Independent Studies in Theatre**

**Arts. (1-3) A.** Individual research and reading on a specified theatre arts topic. Regular consultation and final paper required. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

**TRS—Traffic Safety**

**TBA, Coordinator**

**TRS 788 Laboratory Instructional**

**Programs in Drive and Traffic Safety. (3) A.**

Designed to provide the background, knowledge, and competencies to instruct the laboratory phases of the multiple-car driving range and on-street instruction. Provided are experiences related to implementation and administration of such programs.