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Curriculum Committee Report - January 15, 2009

Graduate Council

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**GRADUATE COUNCIL CURRICULUM COMMITTEE
THURSDAY, JANUARY 15, 2009, 2:00 P.M. – 5:00 P.M.
220 UNIVERSITY CENTER**

Present: David Dupper (Chair), Mary Albrecht, Vincent Anfara, Richard Bennett, Stan Bowie, Clara Lee Brown, Don Bruce, Catherine Cox, Don Cox, Michael Essington, Daniel Feller, Thomas George, Carolyn Hodges, Jan Lee, Sibyl Marshall, Sally McMillan, Cheryl Norris, Masood Parang, Fred Pierce, Brenda Rayman, Kay Reed, Jan Rosinski, Susan Smith, John Wachowicz.

The meeting was called to order by David Dupper, Chair, at 2:00 p.m. The committee recommended that the following curricular changes be approved by the Graduate Council.

The meeting adjourned at 4:50 p.m.

COLLEGE OF AGRICULTURAL SCIENCES AND NATURAL RESOURCES

All changes effective Fall 2009

I. COURSE CHANGES

DEPARTMENT OF AGRICULTURAL ECONOMICS

(047) (AGEC) Agricultural Economics

ADD NEW COURSE FOR GRADUATE CREDIT

445 Economics of Biomass for Renewable Energy (3) Overview of the economics of renewable energy and the potential role for biomass. Assessment of the economic, environmental, and policy forces that are shaping the bioenergy industry. Exploration of methods for evaluating the economic feasibility of bioenergy feedstock production, logistics, and conversion.

(DE) Prerequisite(s): Economics 201.

DROP

503 Managerial Economics for Agribusiness (3)

DEPARTMENT OF BIOSYSTEMS ENGINEERING AND SOIL SCIENCE

(196) (BSE) Biosystems Engineering

REVISE TITLE, DESCRIPTION AND DROP CROSS-LISTING OF PRIMARY COURSE

416 Environmental Hydrology (3) Introduction to hydrology and associated environmental implications including: the hydrologic cycle, evapotranspiration, runoff, erosion, unit hydrograph operations, routing, open channel flow, groundwater, infiltration, and urban stormwater.

REVISE DESCRIPTION

530 Research Problems in Biosystems Engineering (1-3) Theoretical and experimental studies relating to current problems in biosystems engineering.

REVISE TO ADD REGISTRATION RESTRICTION AND REMOVE COMMENT OF PRIMARY CROSS-LISTED COURSE

555 GIS and GPS Applications to Biosystems (3) *(Same as Biosystems Engineering Technology 555.)*

Registration Restriction(s): Minimum student level – graduate.

REVISE (DE) PREREQUISITES OF SECONDARY CROSS-LISTED COURSE

525 Soil Erosion and Sediment Yield (3) *(See Environmental Engineering 525.)*

(345) (ESS) Environmental and Soil Sciences

ADD

554 Environmental Soil Biology (3) Biology and biochemistry of the soil environment as they apply to environmental and agricultural processes. Topics include the soil habitat, microbial ecology and diversity, biogeochemical cycling of nutrients, biodegradation, and research methodology to investigate soil microorganisms.

Credit Restriction: Students cannot receive credit for both 454 and 554.

Recommended Background: Introductory soils.

REVISE DESCRIPTION

462 Environmental Climatology (3) Study of global energy budget, past climates, climate variability, climate distribution, and climate change. Emphasis on global warming and its potential impacts on weather, ecosystems and societies. Students are required to use quantitative, computer, and problem solving skills to analyze and report climate data for environmental planning.

DEPARTMENT ENTOMOLOGY AND PLANT PATHOLOGY

(341) (EPP) Entomology and Plant Pathology

ADD

518 Evolution in Action (3) Overview of the historical underpinnings and current implementation of evolutionary theory in molecular epidemiology and population genetics. The emphasis will be on pathogenic microbial organisms. The course will include lectures, assigned reading and discussion, and laboratory demonstrations.

561 Insect Physiology (2) Molecular, cellular, and tissue mechanisms involved in relevant physiological processes in insects, and the evolutionary diversity of these processes among insect taxa. Students will be able to identify and understand emerging areas of research in insect physiology and molecular biology.

Recommended Background: Biochemistry, molecular biology, basic cell biology.

DROP (DE) PREREQUISITES

505 Mycology (3)

REVISE CREDIT RESTRICTION, DROP (DE) PREREQUISITE AND COMMENT, ADD REGISTRATION RESTRICTION

512 Soilborne Plant Pathogens (3)

Credit Restriction: Students cannot receive credit for both 512 and 612.

Registration Restriction(s): Not open to PhD students.

REVISE CREDIT RESTRICTION AND DROP (DE) PREREQUISITE

612 Soilborne Plant Pathogens (3)

Credit Restriction(s): Students cannot receive credit for both 512 and 612.

REVISE HOURS; DROP (DE) PREREQUISITES AND CONTACT HOUR DISTRIBUTION

514 Bacterial Plant Diseases (3)

DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

(390) (FDST) Food Science and Technology

DROP

490 Food Laws and Regulations (3)

DROP FOR GRADUATE CREDIT

419 Food Chemistry Lab (1)

REVISE HOURS

410 Food Chemistry (4)

420 Food Microbiology (3)

429 Food Microbiology Lab (2)

DEPARTMENT OF PLANT SCIENCES

(791) (PLSC) Plant Sciences

ADD

511 Seed Biology and Physiology (1) Discussion and readings related to the seed as a biological system: its formation, development, dormancy, germination and viability.

(DE) Prerequisite(s): 348 or equivalent.

DROP

458 Turf Weed Management Lab (1)

459 Agronomy Weed Management Lab (1)

REVISE HOURS AND ADD CONTACT HOUR DISTRIBUTION

457 Weed Management (3)

Contact Hour Distribution: 2 hours and 1 lab.

REVISE REPEATABILITY

504 Seminar (1)

Repeatability: May be repeated. Maximum 6 hours.

II. PROGRAM CHANGES

DEPARTMENT OF AGRICULTURAL ECONOMICS

REVISE REQUIREMENTS, NATURAL RESOURCES MAJOR – PHD – NATURAL RESOURCE ECONOMICS CONCENTRATION

On page 39 of the 2008-2009 *Graduate Catalog*, under the Requirements Heading, after the 2nd paragraph, remove current text and replace with:

Demonstrate competence in:

- Microeconomic Theory by qualifying examination. Students must take this examination in the summer prior to their second year of study. Prior to taking the examination students must complete Economics 511 and Economics 512 for graduate credit or petition the Agricultural Economics faculty for exemption from these courses.
- Macroeconomic Theory by the completion of a three or more hour graduate-level course in Macroeconomics with a grade of B or better.
- Quantitative Methods by completion of Economics 581 with a grade of B or better and completion of Economics 582 and Economics 583 with an average grade of B or better, or by qualifying examination.
- Natural Resource Economics by comprehensive examination. Preparation for this comprehensive examination will require completion of Agricultural Economics 570, or equivalent, and Agricultural Economics 670.
- Environmental Economics or another field related to natural resources, economics or agricultural economics by completing two or more courses approved by the student's doctoral committee in the field of specialization with grades of B or better.
- All coursework by oral comprehensive examination. The examination is scheduled by the student and administered by the student's doctoral committee when the student has completed all or nearly all of the coursework.

Written qualifying and comprehensive examinations will be given in June and August. Students must take the oral comprehensive examination during the first semester after passing all written qualifying and comprehensive examinations. Students are expected to take the required courses that prepare them for the written examinations and must take these examinations on their first offering after completing the recommended coursework. Students failing any qualifying or comprehensive examination must retake the examination the next time it is offered or they will receive a failing grade. Failing a qualifying or comprehensive examination for the second time will ordinarily result in dismissal from the program. A qualifying or comprehensive examination may be taken a third time with approval of the Agricultural Economics faculty. Students must file a petition with the Graduate Coordinator who will submit the petition to the faculty. Generally, extenuating circumstances are needed to warrant approval to take an examination a third time. Failing a qualifying or comprehensive examination for a third time will result in dismissal from the doctoral program.

Following formation of the student's doctoral committee, submit a written dissertation proposal in the natural resource economics field to all members of the committee. The student's major professor will then arrange an oral defense of the proposal. The proposal should be submitted and defended no later than one semester after the student takes the Microeconomic Theory qualifying examination.

Complete a doctoral dissertation in the natural resource economics field and pass an oral examination on the dissertation. The dissertation, in the form approved by the major professor, must be distributed to the committee at least two weeks before the examination. The examination must be scheduled through the Graduate School at least one week prior to the examination and must be conducted in university-approved facilities. The examination is announced publicly and is open to all faculty members. The defense of dissertation will be administered by all members of the doctoral committee after completion of the dissertation and all course requirements. This examination must be passed at least two weeks before the date of submission and acceptance of the dissertation by the Graduate School. The major professor must submit the results of the defense by the dissertation deadline.

■ ADD DUAL MS–MBA PROGRAM – AGRICULTURAL ECONOMICS MAJOR – AGRIBUSINESS CONCENTRATION

On page 39 of the 2008-2009 *Graduate Catalog*, insert the following program and requirements:

DUAL MS–MBA PROGRAM – AGRICULTURAL ECONOMICS

The College of Business Administration and the College of Agricultural Sciences and Natural Resources offer a dual program leading to the conferral of both the Master of Business Administration and the Master of Science with a concentration in agribusiness in the agricultural economics major. The dual program can be accomplished with approximately 20 fewer hours of coursework than would be required to earn both degrees separately.

The establishment of the dual program addresses the critical need for agribusiness personnel trained in business fundamentals, with the analytical, technical, management, and economic decision-making skills to operate within the modern economic environment. The objective of the dual degree program is to prepare graduates to take leading management roles within agribusiness firms in a rapidly changing agricultural sector in an increasingly competitive global market. The program is directed toward management of agribusiness firms within the agricultural consulting, bioenergy, food-processing, input-supply, marketing, and transportation industries, among others.

Admission

Applications are accepted for fall semester only. Applicants for the dual MS-MBA program must make separate applications to and be accepted by Graduate and International Admissions for the Master of Business Administration and the Master of Science with a major in agricultural economics. Students should indicate on both applications the intent to pursue the dual MS-MBA program. Students accepted for both the MBA and MS degree programs will be assigned to an advisor from the MBA program and

another from the agricultural economics MS program. These advisors will be responsible for course approval and supervision of the students' progress through the dual program.

After the MBA application deadline of February 1, applications by United States citizens and permanent residents will still be considered as space allows. Additional information is required and different application dates are established by Graduate and International Admissions for international students.

Requirements

The dual MS-MBA curriculum consists of 60 hours of coursework, 30 hours for the Master of Business Administration and 30 hours for the Master of Science. A minimum of 30 hours must be from the College of Business Administration. Of the 30 hours required for the Master of Science, a minimum of 21 hours must be at the 500 level, excluding 500 and 502, a minimum of 21 hours must be from the Department of Agricultural Economics, and nine hours of electives may be from the College of Business Administration, the Department of Agricultural Economics, and/or other courses approved by the student's Master's Committee. A written comprehensive exam on the material covered in agricultural economics courses is required during the spring semester of the second year. An oral exam is also required for students who receive a marginal pass on the written exam.

The dual degree candidate must satisfy the curriculum and graduation requirements of the agricultural economics major and the College of Business Administration. Students withdrawing from the dual degree program before completing both degrees will not receive credit toward graduation in either degree program for courses taken in the other degree program, except as such courses qualify for credit without regard to the dual degree program. The MS and the MBA degrees will be awarded upon successful completion of the requirements of the dual program.

Dual MS-MBA Program

August-First Year	Hours Credit
Business Administration 511 (MBA Core I)	3
Fall-First Year	
Business Administration 501 (MBA Career Development)	1
Business Administration 512 (MBA Core II)	15
Spring-First Year	
Business Administration 513 (MBA Core III)	9
Business Administration 591 (International Travel)	2
Elective(s) ¹ in MBA Concentration ² and/or other graduate-level course(s) approved by the student's MS Committee ³	0-6
Summer	
Agricultural Economics 595 (Professional Internship) ⁴	3
Fall-Second Year	
Agricultural Economics 505 (Microeconomic Analysis)	3
Agricultural Economics 512 (Advanced Agribusiness Finance) ⁵	3
Agricultural Economics 524 (Econometric Methods in Ag Econ)	3
Elective(s) ¹ in Agricultural Economics, MBA Concentration ² , or other graduate-level course approved by the student's MS Committee	0-6
Spring-Second Year⁵	
Agricultural Economics 525 (Agribusiness Operations Research Methods)	3
Agricultural Economics 542 (Advanced Agribusiness Production Decisions) ⁵	3
Agricultural Economics 550 (Advanced Agribusiness Marketing) ⁵	3
Elective ¹ in Agricultural Economics, MBA Concentration ² , or other graduate-level course approved by the student's MS Committee	0-3
	Total 60

¹ Electives must sum to nine or more hours.

² MBA concentration courses in finance, logistics, marketing or operations management.

³ If no electives are taken Spring-First Year, Agricultural Economics 595 may begin after spring break following completion of Business Administration 513 and Business Administration 591.

⁴ Registration for Agricultural Economics 595 can occur during Summer or Fall-Second Year. The internship report and oral presentation must be completed before the end of the semester of registration.

⁵ A student completing the series of two MBA concentration courses in finance, operations management or marketing can substitute another agricultural economics course for Agricultural Economics 512, 542 or 550, respectively.

DEPARTMENT OF BIOSYSTEMS ENGINEERING AND SOIL SCIENCES

REVISE REQUIREMENTS, PLANTS, SOILS, AND INSECTS MAJOR – PHD – ENVIRONMENTAL AND SOIL SCIENCES CONCENTRATION

On page 43 of the 2008-2009 *Graduate Catalog*, right column, second paragraph, revise 5th sentence to:

At least 9 hours of the student's course work must be from outside the environmental and soil sciences concentration and a minimum of 6 hours of courses numbered 601 or higher, excluding 603, must be taken at University of Tennessee, Knoxville.

DEPARTMENT ENTOMOLOGY AND PLANT PATHOLOGY

REVISE REQUIREMENTS, PLANTS, SOILS, AND INSECTS MAJOR – PHD

On page 45 of the 2008-2009 *Graduate Catalog*, left column, second paragraph, revise 5th sentence to:

At least 9 hours of the student's course work must be from outside the student's chosen concentration in the plants, soils, and insects umbrella doctoral program and ...

DEPARTMENT OF PLANT SCIENCES

REVISE REQUIREMENTS, PLANTS, SOILS, AND INSECTS MAJOR – PHD

On page 49 of the 2008-2009 *Graduate Catalog*, left column, second paragraph, revise 5th sentence to:

At least 9 hours of the student's course work must be from outside the chosen concentration in the plants, soils, and insects umbrella doctoral program and a minimum ...

COLLEGE OF ARTS AND SCIENCES

All changes effective Fall 2009

I. COURSE CHANGES

DEPARTMENT OF ANTHROPOLOGY

(122) (ANTH) Anthropology

ADD NEW COURSE FOR GRADUATE CREDIT

419 Anthropology of Human Rights (3) Overview of the development and global spread of modern human rights concepts and instruments, with intensive focus on problems of universal rights, cultural relativism, and the anthropological study of specific human rights issues such as terror, torture, and violence against women.

(DE) Prerequisite(s): 130.

ADD

523 Anthropology of Genocide (3) Seminar in the comparative analysis of the context and causes of genocides, with attention to problems of prevention, intervention, post-genocide dynamics, and the search for international justice. Methods and challenges of post-genocide research in cultural anthropology, archaeology, and forensics.

Registration Permission: Consent of instructor.

531 Ethnographic Research Methods (3) Conceptual and practical exploration of methods and techniques cultural anthropologists use in fieldwork. Research design, ethical considerations, field safety, and qualitative data collection and analysis methods are addressed.

Registration Permission: Consent of instructor.

612 Anthropology of Disasters (3) Advanced seminar examining how anthropological approaches and research can play a vital role in disaster prevention, preparedness, and response using communities in crisis as our foci of discussion. Will examine the topic of disasters from both an analytical and case studies approach.

Registration Permission: Consent of instructor.

613 Anthropology of Policy and Law (3) Advanced seminar in the theoretical and ethnographic study of policy and law as instruments of social control and transformation in contemporary and cross-cultural contexts.

Registration Permission: Consent of instructor.

DROP

412 Folklore in Anthropology (3)

431 Ethnographic Research (3)

517 Forms of Social Inequality (3)

Equivalency Table

Current Course (122) Anthropology	Equivalent Course (122) Anthropology (Fall 2009)
431	531

SCHOOL OF ART

(134) (AMED) Art Media Arts

ADD NEW COURSES FOR GRADUATE CREDIT

401 Experiments in Sequencing (4) Advanced study and development of art or design works based on the concepts and techniques of sequencing.

Repeatability: May be repeated. Maximum 16 hours.

Recommended Background: Any 4D Arts course or Art Design/Graphic 405 or permission of instructor.

402 Experiments in Space (4) Advanced study and development of art or design works based on the concepts and techniques of spatiality.

Repeatability: May be repeated. Maximum 16 hours.

Recommended Background: Any 4D Arts course or Art Design/Graphic 405 or permission of instructor.

403 Experiments in Systems (4) Advanced study and development of art or design works based on systemic concepts and techniques.

Repeatability: May be repeated. Maximum 16 hours.

Recommended Background: Any 4D Arts course or Art Design/Graphic 405 or permission of instructor.

432 Performance as Art (4) Advanced study and development of concepts and techniques for the creation of performance as an art form.

Repeatability: May be repeated. Maximum 16 hours.

(DE) Prerequisite(s): 232.

434 Sound Art (4) Advanced study and development of concepts and techniques for the creation of sound art with a focus on multidisciplinary forms.

Repeatability: May be repeated. Maximum 16 hours.

(DE) Prerequisite(s): 234.

DEPARTMENT OF AUDIOLOGY AND SPEECH PATHOLOGY

(160) (AUSP) Audiology and Speech Pathology

Graduate program moved to the UT Health Science Center in Memphis.

DROP ALL GRADUATE COURSES FOR ACADEMIC DISCIPLINE 160

431 Stuttering (3)

433 Observation of Clinical Practice (1)

434 Clinical Practice in Speech-Language Pathology II (1-4)

435 Introduction to Speech Sound Disorders (3)

440 Voice Disorders (3)

455 Problems in Speech Pathology (1-3)

461 Introduction to Language Pathology in Children (3)

473 Introduction to Audiologic Assessment (3)

475 Appraisal of Speech and Language Disorders (3)

494 Introduction to Aural Habilitation/Rehabilitation of the Hearing Impaired (3)

500 Thesis (1-15)

502 Registration for Use of Facilities (1-15)

506 Neural Bases of Speech and Language (3)

507 Anatomy and Physiology of Hearing (3)

510 Clinical Education Seminar in Audiology (1)

511 Introduction to Research in Speech and Hearing (3)

512 Clinical Practice in Audiology (1-4)

515 Practicum in Aural Rehabilitation (1-4)

516 Language Sample Analysis (3)

518 Adult Neurogenic Communication Disorders I (3)

519 Adult Neurogenic Communication Disorders II (3)

522 Seminar in Speech Sound Disorders (3)

523 Seminar in Voice Disorders (3)

525 Counseling and Communication Disorders (3)

526 Dysphagia (3)

527 Language, Culture, and Communication Disorders (3)

531 Seminar on Stuttering (3)

533 Advanced Clinical Practice in Speech-Language Pathology (1-4)

534 Advanced Clinical Practice in Speech-Language Pathology (1-4)

535 Advanced Clinical Practice in Speech-Language Pathology: Off-Campus Sites (1-4)

538 Advanced Clinical Practice in Speech-Language Pathology: Public Schools (1-4)

539 Motor Speech Disorders (3)

540 Structural Speech Disorders (3)

541 Pediatric Oromotor Disorders (3)
542 Hearing Disorders (3)
543 Amplification Technology (3)
544 Amplification for Adults with Hearing Impairment (3)
545 Sound Measurement Techniques and Hearing Conservation (2)
546 Audiologic Assessment (3)
547 Special Problems in Audiology (1-3)
552 Seminar in Speech Pathology (2-3)
555 Special Problems in Speech-Language Pathology (1-3)
556 Independent Study in Speech-Language Pathology (1-3)
558 Phonological Disorders (3)
561 Child Language Disorders (3)
563 Language Disorders: Birth to Three (3)
573 Pediatric Audiology for Education Professionals (3)
574 Pediatric Audiology for Audiology Majors (3)
576 Physiologic Assessment of the Auditory System I (4)
577 Vestibular Disorders (3)
581 Assessment of Central Auditory Processing (3)
582 Speech and Language Services in School (3)
583 Physiologic Assessment of the Auditory System II (3)
584 Amplification for Children with Hearing-Impairment (3)
585 Cochlear Implants (3)
586 Standards and Practice Issues in Audiology (3)
591 Foreign Study (1-15)
592 Off-Campus Study (1-15)
593 Independent Study (1-15)
594 Aural Habilitation/Rehabilitation of the Hearing-Impaired (3)
595 The Verbotonal System: Auditory/Speech Perception (3)
600 Doctoral Research and Dissertation (3-15)
601 Experimental Phonetics (3)
602 Psychoacoustics (3)
604 Molecular Genetics and Pharmacology of Hearing (3)
605 Speech Perception and Hearing Impairment (3)
611 Experimental Design in Speech and Hearing (3)
613 Externship in Audiology (1-9)
626 Advanced Seminar in Neurologically-based Communication Disorders (3)
650 Advanced Seminar in Audiology (3-6)
655 Practicum in College Teaching (1-3)
656 Directed Research (1-4)
657 Directed Study in Speech Pathology (1-3)
658 Directed Study in Audiology (1-3)
659 Directed Study in Speech Science (1-3)
660 Directed Study in Hearing Science (1-3)
661 Advanced Seminar: Language Disorders in Children (3)
662 Advanced Seminar in Audiologic Assessment (3)
663 Advanced Seminar in Aural Habilitation/Rehabilitation (3)
664 Advanced Seminar in Amplification (3)

DEPARTMENT OF CHEMISTRY

(235) (CHEM) Chemistry

ADD

513 Mass Spectrometry and Surface Characterization (3) Principles, development, and practice of modern mass spectrometric and surface characterization tools, including discussion of ion chemistry. Emphasis is on instrumentation.

Recommended Background: Undergraduate course work in instrumental analysis and physical chemistry.

REVISE DESCRIPTION AND RECOMMENDED BACKGROUND

510 Analytical Spectrometry (3) Physical principles and instrumentation of modern spectrochemical analyses including statistical data interpretation.

Recommended Background: Undergraduate course work in instrumental analysis and physical chemistry.

511 Analytical Separations (3) Physical principles and instrumentation of the modern methods of separation of mixtures into simpler fractions or pure compounds.

Recommended Background: Undergraduate course work in instrumental analysis and physical chemistry.

REVISE RECOMMENDED BACKGROUND

512 Electroanalytical Chemistry (3)

Recommended Background: Undergraduate course work in instrumental analysis and physical chemistry.

DEPARTMENT OF EARTH AND PLANETARY SCIENCES

(424) (GEOL) Geology

ADD FOR GRADUATE CREDIT

425 Data Analysis for Geoscientists (3) Overview of sampling schemes, data analysis, and statistical methods as applicable to Earth sciences.

Recommended Background: Introductory geology and introductory calculus, or consent of instructor.

ADD NEW COURSES FOR GRADUATE CREDIT

451 Planetary Geomorphology (3) Survey of planetary processes and geomorphology. Important planetary processes, including impact cratering, volcanogenic, fluvial, Aeolian, glacial/periglacial, coastal, and tectonic processes will be evaluated in terms of their physical effect on planetary surfaces and their resultant geomorphic expression. Course will include instruction and utilization of GIS.

Recommended Background: Introductory geology or consent of instructor.

456 Global Climate Change (3) Examines natural and anthropogenic changes in global climate systems. Topics include: biogeochemical cycles of greenhouse gases and the water cycle, including water resources and pollutants and changes in the biosphere (extinctions) as both cause and effects of physical global changes. Historical (baseline) dynamics are compared to current changes in order to predict human impacts and suggest technical and policy solutions.

Recommended Background: Introductory geology or consent of instructor.

459 Introduction to Oceanography (3) Principles of oceanography, including physical, chemical, geological, and biological processes and patterns. Emphasis on the physical, chemical, and geologic structure of the oceans and their role in oceanic circulation, global climate change, and the biogeochemical evolution of the oceans through geologic time.

Recommended Background: Introductory geology or consent of instructor.

REVISE TITLE

650 Seminar in Geomorphology (3)

Earth and Planetary Sciences Equivalency Table

Current Course (278) Ecology and Evolutionary Biology	Equivalent Course (424) Geology (Fall 2009)
EEB 446	Geology 459

DEPARTMENT OF ECOLOGY AND EVOLUTIONARY BIOLOGY

(278) (EEB) Ecology and Evolutionary Biology

ADD NEW COURSES FOR GRADUATE CREDIT

404 Ecosystem Ecology (3) Integrated study of biotic and abiotic components of ecosystems and their interactions with emphasis on southeastern ecosystems and current topics such as global change and species invasions.

(DE) Prerequisite(s): Biology 250.

405 Ecosystem Ecology Laboratory (2) Introduction to observational and experimental research in ecosystem ecology including field measurement of components of the carbon and nitrogen cycle, field and green house experiments, and laboratory manipulations. Requires periodic field trips to research sites and at least one overnight field trip.

(DE) Corequisite(s): 404.

415 Field Ecology (4) Study of the field methods to examine fundamental concepts in ecology, including development of skills in hypothesis development, experimental design, field observation, plant, animal and microbial sampling techniques, data reduction and statistical analysis, and written and oral presentations.

Contact Hour Distribution: Lectures and field trips.

(DE) Prerequisite(s): Biology 250.

ADD

507 Seminar in Ecology and Evolutionary Biology (2) Research presentations by EEB graduate students.

Grading Restriction: Satisfactory/No Credit grading only.

Repeatability: May be repeated. Maximum 4 hours.

Registration Permission: Non-EEB students require consent of instructor.

DROP

446 Introduction to Oceanography (4)

465 Evolutionary and Functional Vertebrate Morphology (4)

508 Introduction to Faculty Research (1)

512 Foundations: Readings in Conservation Biology (2)

515 Foundations: Readings in Environmental Toxicology (1-2)

REVISE TITLE, HOURS, DESCRIPTION AND DROP REPEATABILITY

509 Core: Ecology (4) Readings, lectures, and discussion about key concepts in ecology.

511 Core: Evolution (4) Readings, lectures, and discussion about key concepts in evolution.

DEPARTMENT OF GEOGRAPHY

(415) (GEOG) Geography

REVISE TO ADD REPEATABILITY

510 Geographic Software Design (3)

Repeatability: May be repeated. Maximum 6 hours.

DEPARTMENT OF MICROBIOLOGY

(684) (MICR) Microbiology

REVISE TO ADD REPEATABILITY

680 Foundations in Microbiology (3)

Repeatability: May be repeated. Maximum 12 hours.

REVISE GRADING (FROM S/NC TO LETTER GRADE)

601 Journal Club in Microbial Physiology (1)

602 Journal Club in Microbial Pathogenesis (1)

603 Journal Club in Immunology (1)

604 Journal Club in Virology (1)

605 Journal Club in Microbial Genetics (1)

606 Journal Club in Microbial Ecology (1)

609 Journal Club in Microbial Genomics (1)

DEPARTMENT OF MODERN FOREIGN LANGUAGES AND LITERATURES

(433) (GERM) German

ADD (DE) PREREQUISITE(S)

415 German Special Topics (3)

(DE) Prerequisite(s): 202 or 223.

REVISE TO DELETE (DE) PREREQUISITES AND ADD (DE) COREQUISITE

416 Metropolis Revisited (3)

(DE) Corequisite(s): 102 or 123.

SCHOOL OF MUSIC

(717) (MUTC) Music Technology

ADD

593 Independent Study (1-3)

Repeatability: May be repeated. Maximum 12 hours.

Registration Permission: Consent of instructor.

(714) (MUTH) Music Theory

ADD

521 Analytical Techniques of Recent Music (3) Materials and analysis of music in the diverse styles of recent music. Topics may include set and scale theories, serialism, timbral analysis, contour space, rhythmic developments, and algorithmic composition.

(DE) Prerequisite(s): 400 or passing grade on music theory diagnostic exam.

531 Music Theory Pedagogy: Aural Skills (3) Review of materials and methods used in teaching aural skills (music dictation and sight singing). Includes review of textbooks and technology used in the classroom.

(DE) Prerequisite(s): 400 or passing grade on music theory diagnostic exam.

590 Music Theory Practicum (1) Supervised experience in the theory classroom including tutoring, test construction and grading, materials preparation. Weekly meetings with faculty.

Grading Restriction: Satisfactory/No Credit grading only.

Repeatability: May be repeated. Maximum 4 hours.

(DE) Prerequisite(s): 400 or passing grade on music theory diagnostic exam.

Comments: Consent of instructor.

595 Music Theory Projects (2) Preparation and execution of final teaching project for Certificate in Music Theory Pedagogy.

Repeatability: May be repeated. Maximum 6 hours.

Comments: Consent of instructor.

Registration Restriction: Admission to certificate program in music theory pedagogy.

ADD AND REQUEST VARIABLE TITLE

551 Special Topics in Music Theory (3) Intensive study in a particular area of music theory, analysis, or pedagogy.

Repeatability: May be repeated. Maximum 9 hours.

(DE) Prerequisite(s): 400 or passing grade on music theory diagnostic exam.

Registration Permission: Consent of instructor.

REVISE TITLE AND DESCRIPTION, DELETE REGISTRATION PERMISSION, ADD (DE) PREREQUISITE(S)

530 Music Theory Pedagogy: Written Skills (3) Review of materials and methods used in teaching the written music theory sequence. Includes review of textbooks and technology used in the classroom.

(DE) Prerequisite(s): 400 or passing grade on music theory diagnostic exam.

DEPARTMENT OF PHYSICS

(773) (PHYS) Physics

REVISE (DE) PREREQUISITE(S)

411 Introduction to Quantum Mechanics (3)

(DE) Prerequisite(s): 250 or equivalent and Mathematics 435.

412 Introduction to Quantum Mechanics (3)

(DE) Prerequisite(s): 250 or equivalent and Mathematics 435.

461 Modern Physics Laboratory (3)

(DE) Prerequisite(s): 250 or 411.

DEPARTMENT OF POLITICAL SCIENCE

(801) (POLS) Political Science

DROP

545 Planning Research Methods (3)

587 Legal Aspects of Planning (3)

589 Urban Design Issues in Planning (3)

DROP SECONDARY CROSS-LISTED COURSE

555 Planning and Transportation (3) (See Civil Engineering 558.)

DEPARTMENT OF SOCIOLOGY

(915) (SOCL) Sociology

REVISE TO DELETE RECOMMENDED BACKGROUND

451 Criminal Justice (3)

II: PROGRAM CHANGES

DEPARTMENT OF AUDIOLOGY AND SPEECH PATHOLOGY

■ DROP THE FOLLOWING MAJORS, DEGREES, AND CONCENTRATIONS

Audiology – MA

Audiology – AUD

Aural habilitation concentration

Speech Pathology – MA

Aural habilitation concentration

Speech and Hearing Science – PHD

Audiology concentration

Hearing Science concentration

Speech and language pathology concentration

Speech-language science concentration

On page 60-62 of the 2008-2009 *Graduate Catalog*, delete the Department of Audiology and Speech Pathology.

Rationale: The graduate degree programs are being transferred from UTK to the University of Tennessee, Health Sciences Center (College of Allied Health Sciences).

University of Tennessee



THE UNIVERSITY of TENNESSEE
KNOXVILLE, CHATTANOOGA, MARTIN, TULLAHOMA, MEMPHIS

OFFICE OF THE PRESIDENT

October 29, 2008

RECEIVED
OCT 31 2008

Dr. Richard Rhoda
Executive Director
Tennessee Higher Education Commission
404 James Robertson Parkway #1900
Nashville, TN 38219

BY: _____

Dear Rich:

Attached is a Memorandum of Understanding regarding the transfer of the graduate degree programs in Audiology and Speech Pathology from UT, Knoxville to the UT Health Science Center.

The plan for the transfer has been approved by the departmental faculty, the campus administration at UTK and UTHSC, and the UT Board of Trustees.

I am herewith submitting the plan for review and approval by the Tennessee Higher Education Commission. Thank you in advance for your consideration of this plan.

Sincerely,

John D. Petersen
President

Attachment

C: Jan Simek
Pat Wall
Bonnie Yegidis
✓ Sylvia Davis
Katie High

DEPARTMENT OF BIOCHEMISTRY AND CELLULAR AND MOLECULAR BIOLOGY

ADD PARTICIPATION IN THE INTERCOLLEGIATE/INTERDISCIPLINARY GRADUATE MINOR IN COMPUTATIONAL SCIENCE

On page 63 of the 2008-2009 *Graduate Catalog*, insert the following:

Intercollegiate/Interdisciplinary Graduate Minor in Computational Science

The Department of Biochemistry and Cellular and Molecular Biology participates in the intercollegiate/interdisciplinary graduate minor in computational science (IGMCS) program. Any student pursuing a masters or PhD with a major in biochemistry and cellular and molecular biology can receive a minor in computational science by completing the appropriate IGMCS requirements. For additional information, see the description of the IGMCS listed under Department of Electrical Engineering and Computer Science or visit the IGMCS website at <http://igmcs.utk.edu/>. The Department of Biochemistry and Cellular and Molecular Biology also contributes courses to the IGMCS program curriculum.

DEPARTMENT OF CHEMISTRY

REVISE REQUIREMENTS – CHEMISTRY MAJOR – MS

On page 63, of the 2008-2009 *Graduate Catalog*, 4th bullet, revise to:

- Sufficient graduate course work in chemistry (at the 400 level or above) and/or a related field to make an overall total of 30 hours, including one of the following sequences: three of 510-511-512-513, three of 530-531-532-533, 550-551-552, 570-572-573 or 590-594-595. At least 14 hours of this graduate course work must be at the 500 level or above.

REVISE REQUIREMENTS – CHEMISTRY MAJOR – PHD

On page 64 of the 2008-2009 *Graduate Catalog*, 4th bullet, revise to:

- 18 additional hours in courses at the 500 level or above including at least one course above 601 and one of the following sequences: 530-531-532-533, 550-551-552-553, 570-571-572-573, three of 510-511-512-513, or 590-594-595.

DEPARTMENT OF EARTH AND PLANETARY SCIENCES

ADD PARTICIPATION IN THE INTERCOLLEGIATE/INTERDISCIPLINARY GRADUATE MINOR IN COMPUTATIONAL SCIENCE

On page 65 of the 2008-2009 *Graduate Catalog*, insert the following:

Intercollegiate/Interdisciplinary Graduate Minor in Computational Science

The Department of Earth and Planetary Sciences participates in the intercollegiate/interdisciplinary graduate minor in computational science (IGMCS) program. Any student pursuing a master's or PhD with a major in geology can receive a minor in computational science by completing the appropriate IGMCS requirements. For additional information, see the description of the IGMCS listed under the Department of Electrical Engineering and Computer Science or visit the IGMCS website at <http://igmcs.utk.edu/>. The Department of Earth and Planetary Sciences also contributes courses to the IGMCS program curriculum.

DEPARTMENT OF ECOLOGY AND EVOLUTIONARY BIOLOGY

REVISE REQUIREMENTS – ECOLOGY AND EVOLUTIONARY BIOLOGY MAJOR – MS

On page 65 of the 2008-2009 *Graduate Catalog*, delete the 1st bullet ("Take a prescriptive diagnostic examination . . .").

REVISE REQUIREMENTS – ECOLOGY AND EVOLUTIONARY BIOLOGY MAJOR – PHD

On page 66 of the 2008-2009 *Graduate Catalog*, delete the 1st bullet ("Take a prescriptive diagnostic examination . . .").

ADD PARTICIPATION IN THE INTERCOLLEGIATE/INTERDISCIPLINARY GRADUATE MINOR IN COMPUTATIONAL SCIENCE

On page 66 of the 2008-2009 *Graduate Catalog*, insert the following:

Intercollegiate/Interdisciplinary Graduate Minor in Computational Science

The Department of Ecology and Evolutionary Biology participates in the intercollegiate/interdisciplinary graduate minor in computational science (IGMCS) program. Any student pursuing a master's or PhD with a major in ecology and evolutionary biology can receive a minor in computational science by completing the appropriate IGMCS requirements. For additional information, see the description of the IGMCS listed under Department of Electrical Engineering and Computer Science or visit the IGMCS website at <http://igmcs.utk.edu/>. The Department of Ecology and Evolutionary Biology also contributes courses to the IGMCS program curriculum.

INTERDISCIPLINARY PROGRAMS

MEDIEVAL STUDIES

REVISE REQUIREMENTS – GRADUATE CERTIFICATE IN MEDIEVAL STUDIES

On page 71 of the 2008-2009 *Graduate Catalog*, 2nd bullet, revise to add the following to the listing of courses:

Classics 435, 571, 572; English 403; History 529, 530, 629, 630, 631; Italian 403; Medieval Studies 510

DEPARTMENT OF MATHEMATICS

REVISE REQUIREMENTS – MATHEMATICS MAJOR – PHD (STANDARD PROGRAM)

On page 74 of the 2008-2009 *Graduate Catalog*, under the Standard Program Heading, revise the 2nd and 3rd paragraphs to:

In addition to the two year-long sequences chosen for the written examinations, a student must take six other one-semester 500-600 level courses. At least five of these courses must be chosen from the following list grouped by examination area – algebra (551-552, 555-556), analysis (545-546, 545-547), computational and applied mathematics (571-572, 574, 576, 577, 578), differential equations (513-514, 515-516, 531-532, 535-536, 537-538, 581-582, 585), stochastics (521-522, 523-524, 525-526), and topology-geometry (561-562, 567-568). The sixth course may be either a 500-level course listed above or a 600-level mathematics course not used to satisfy bullet #5. These six courses must contain a year-long sequence in an area different from the two written examinations and at least two areas different from the two written examinations.

A grade of B or better is required in each of the six courses.

REVISE REQUIREMENTS – MATHEMATICS MAJOR – PHD (MATHEMATICAL ECOLOGY/EVOLUTION CONCENTRATION)

On page 74 of the 2008-2009 *Graduate Catalog*, revise the 2nd and 3rd paragraphs to:

In addition to the two year-long sequences chosen for the written examinations, a student must take six other one-semester 500-600-level courses. At least five of these courses must be chosen from the following list grouped by examination area – analysis (545-546, 545-547), computational and applied mathematics (571-572, 574, 576, 577, 578), differential equations (513-514, 515-516, 531-532, 535-536, 537-538, 585), stochastics (521-522, 523-524, 525-526, 527), and mathematical ecology/evolution (583, Ecology and Evolutionary Biology 509, 511). The sixth course may be either a 500-level course listed above or a 600-level mathematics course not used to satisfy bullet #5.

These six courses must contain a year-long sequence in an area different from the two written examinations and at least two areas different from the two written examinations. A grade of B or better is required in each of the six courses.

REVISE TEXT FOR THE INTERCOLLEGIATE/INTERDISCIPLINARY GRADUATE MINOR IN COMPUTATIONAL SCIENCE

On page 74 of the 2008-2009 *Graduate Catalog*, revise to:

Intercollegiate/Interdisciplinary Graduate Minor in Computational Science

The Department of Mathematics participates in the intercollegiate/interdisciplinary graduate minor in computational science (IGMCS) program. Any student pursuing a master's or PhD with a major in mathematics can receive a minor in computational science by completing the appropriate IGMCS requirements. For additional information, see the description of the IGMCS listed under Department of Electrical Engineering and Computer Science or visit the IGMCS website at <http://igmcs.utk.edu/>. The Department of Mathematics also contributes courses to the IGMCS program curriculum.

DEPARTMENT OF MICROBIOLOGY

ADD PARTICIPATION IN THE INTERCOLLEGIATE GRADUATE STATISTICS MINOR

On page 75 of the 2008-2009 *Graduate Catalog*, add the following:

INTERCOLLEGIATE GRADUATE STATISTICS MINOR

The Department of Microbiology participates in an intercollegiate graduate program designed to give graduate students an opportunity to earn a minor in statistics simultaneously with a master's or doctoral degree in another department. A minor in statistics consists of 9 hours of statistics courses. See Department of Statistics, Operations and Management Science for full program description.

SCHOOL OF MUSIC

◆ DROP CONCENTRATION

Accompanying concentration

◆ ADD CONCENTRATION

Collaborative piano concentration

REVISE MUSIC MAJOR – MMUS – TEXT CONCERNING NAME CHANGE OF CONCENTRATION

On page 78 of the 2008-2009 *Graduate Catalog*, under the Requirements Heading, 2nd paragraph, 2nd sentence, remove the word “accompanying” and replace with the new concentration “collaborative piano.”

● ADD CERTIFICATE – MUSIC THEORY PEDAGOGY

On page 78 of the 2008-2009 *Graduate Catalog*, add the Music Theory Pedagogy Certificate as follows:

GRADUATE CERTIFICATE IN MUSIC THEORY PEDAGOGY

Students who are already in a Masters of Music program may also earn a certificate in music theory pedagogy. This program will provide students with the coursework and practical experience needed to teach high school or undergraduate music theory courses.

Admission

To be admitted to this program, students must meet the Graduate Admission requirements for a certificate program, interview with the theory faculty, and have passed the Graduate Theory Diagnostic test or course Music Theory 400.

Program of Study

The certificate program consists of 15 hours of course work: 3 hours of analysis (Theory 520 or 521), 3 hours of technology (Music Technology 540 or 550), 4 hours of pedagogy (Theory 530 or 531, 590), 3 hours of theory or technology electives (Theory 551, 530, 531, 593, Tech 560, 593), and 2 hours of the final teaching project (Theory 595).

DEPARTMENT OF POLITICAL SCIENCE

■ DROP THE FOLLOWING MAJOR, DEGREE AND CONCENTRATIONS

Planning – Master of Science in Planning (MSP)

Environmental planning concentration

Land use planning concentration

Political science concentration

Public administration concentration

Real estate development/economic development concentration

Transportation planning concentration

Urban design concentration

REVISE INTRODUCTORY PARAGRAPH TO REMOVE LISTING OF MSP DEGREE

On page 81 of the 2008-2009 *Graduate Catalog*, 2nd column, revise first sentence to remove the MSP listing.

REVISE TO REMOVE PLANNING TEXT AND REQUIREMENTS

On page 83 of the 2008-2009 *Graduate Catalog*, remove the entire listing of the Planning major and degree.

DEPARTMENT OF PSYCHOLOGY

REVISE REQUIREMENTS – PSYCHOLOGY MAJOR – PHD – EXPERIMENTAL PSYCHOLOGY CONCENTRATION

On page 86 of the 2008-2009 *Graduate Catalog*, delete the current requirements text and replace with the following:

Requirements

Twelve hours of quantitative coursework, including:

- 6 hours of Psychology 521-522, Statistics 531-532, Statistics 537-538, or equivalent.
- 3 hours of Research Methods 505 or equivalent.
- 3 additional hours of statistics coursework (as enumerated in current experimental handbook).

Nine hours comprised of one course from each of the 3 core area offerings:

1. Biological
 - 527 Behavioral Neuroscience.
 - 545 Advanced Animal Behavior.
 - 546 Evolutionary Psychology.
 - 547 Conceptual Foundations of Evolution and Behavior
2. Developmental
 - 512 Lifespan Development.
 - 524 Brain and Behavioral Development.
3. Social
 - 550 Social Psychology.
 - 530 Psychology of Attitudes.

Six additional hours from any of the core course offerings, but that may also include:

- 565 History and Systems (or 420 for graduate credit).
- 543 Cognitive Science.

And, completion of the following:

- 6 hours of Research Practicum (509).
- Two semesters of Psychology 515.
- Psychology 528 Teaching Practicum.
- Two 600-level graduate seminars.
- 6-hours of graduate level courses outside the Psychology Department.
- A Pre-dissertation research project involving the collection of original data or the original analysis of existing data reported in publishable form and accepted by the student's advisory committee.
- A Comprehensive examination determined and evaluated by the student's doctoral committee. The examination is comprised of an integrative review or theoretical paper and an oral exam or additional questions.
- 24 hours of dissertation research (600).
- An original piece of research in the form of a doctoral dissertation, proposed, conducted, and defended.

DEPARTMENT OF SOCIOLOGY

REVISE INTRODUCTORY PARAGRAPH – SOCIOLOGY MAJOR

On page 86 of the 2008-2009 *Graduate Catalog*, 3rd paragraph, revise to:

Both the master's and the doctoral programs allow for the construction of individualized programs of study. Detailed information may be obtained from the Sociology Department's Graduate Student Handbook. New students are admitted in fall semester only. Applications requesting consideration for funding must be received by the Office of Graduate and International Admissions and the Department of Sociology by February 15.

REVISE REQUIREMENTS – SOCIOLOGY MAJOR – MA

On page 87 of the 2008-2009 *Graduate Catalog*, delete current requirements section and replace with the following:

Requirements

Course work

The Master of Arts degree with a major in sociology requires a minimum of 30 credit hours beyond the bachelor's degree. At least 21 total hours must be completed in 500- and 600-level courses. MA students may take 9 hours in 400-level courses in departments with graduate programs. Twelve (12) hours may be taken outside the department, with the advisor's consent. Students must complete all requirements within 6 calendar years of enrollment. All MA students must complete the following requirements (4 courses for 12 credit hours): Sociology 506; 521; 531; and one foundations course – choose one from Sociology 504, 505, 507, or 560. Students entering the MA program who have not completed at least one undergraduate course in statistics or its equivalent must take Statistics 531 prior to enrolling in Sociology 531. Students may additionally elect to complete requirements for the statistics minor. A minor in statistics consists of 9 hours of statistics courses. See Department of Statistics, Operations and Management Science for requirements.

Thesis Option

MA students choosing the thesis option are required to complete 12 hours of course work in sociology in addition to the required 12 hours described above and 6 hours of Sociology 500 (thesis). When a decision is reached about the thesis topic, the student should consult with the faculty member whose interests most closely match the student's and with whom the student can establish a strong working relationship and request that the faculty member chair the thesis committee.

Non-Thesis Option

MA students choosing the non-thesis option are required to complete the required 12 hours described above and 18 additional hours of course work. Plans for the completion of the non-thesis MA must be filed in writing with the Director of Graduate Studies.

Application for admission to candidacy for the master's degree should be made as soon as possible after the student has completed required prerequisite courses and 9 hours of graduate course work with a 3.0 average or higher in all graduate work. The student acquires and completes the Admission to Candidacy Application, obtains signatures from the non-thesis committee members and the department head, and submits the completed form to the Graduate School no later than the last day of classes preceding the semester in which she/he plans to graduate.

In place of the thesis project, the non-thesis MA candidate must complete: a paper of about twenty pages on a topic in the interest area; a three-hour written examination in the standard format that covers theory, methods, and the student's interest area; and defend his/her work in an oral defense. Committee members evaluate the paper, the written exam, and the oral defense as Pass/Fail. Students may have two attempts to pass the written examination. Students must obtain the appropriate forms prior to the defense and submit to the committee chair. After the non-thesis defense, the committee chair submits a signed Pass/Fail form to the Graduate School, documenting the student's performance in the oral examination. Deadlines for the oral defense are regularly posted in the Department and through the Graduate School. Copies of the paper and the written examination are placed in the student's permanent file by the committee chair. The committee chair reports the results to the faculty.

REVISE REQUIREMENTS – SOCIOLOGY MAJOR – PHD

On page 87 of the 2008-2009 *Graduate Catalog*, delete current requirements section and replace with the following:

Requirements

Course work

A minimum of 48 credit hours beyond the master's degree is required for the PhD degree: 24 hours in course work (8 courses) that includes advanced courses in sociological theory and in research methods; and 24 hours in doctoral research. At least 12 hours (4 courses) must be completed at the 600 level. Six hours are permitted outside the Sociology Department. Doctoral students should complete Qualifying Examinations in sociological theory and research methods at the end of their first year of study, if possible. At the completion of course work and prior to dissertation work, students must complete one Specialty Examination in their interest areas. Students who did not complete Sociology 506, 521, and 531 must complete them without the hours counting toward the minimum number of hours required for the PhD. All PhD students must take three core courses (9 hours): Sociology 622; 631; one from Sociology 534, 633, 636. Students pursuing a dissertation in an area requiring statistical competence beyond forms of regression are strongly encouraged to take appropriate advanced methods and/or statistics courses from other departments.

Qualifying Examinations in Theory and Research Methods

Qualifying Examinations in methods are offered each May, and in theory each August. The methods examinations will take place on the first Thursday after finals week; the theory examination on the first Thursday of August. Students failing an examination must retake the exam in methods on the first Thursday of the following August, in theory on the first Thursday after finals week of the following December. All students completing their first year of doctoral studies are required to take the methods examination in May, and the theory examination in August (If extraordinary circumstances prevent a student from taking the exams, she/he must petition for an extension, addressed to the Director of Graduate Studies.) All incomplete grades in methods and theory courses must be eliminated by the date of examination. A 3-hour S/N readings course is available for each exam (Sociology 629 for sociological theory and Sociology 639 for research methodology). The hours count toward the 18 hours/year requirement for funded students but do *not* count toward the 24 hours of course work required for the degree. The courses are intended to allow adequate time for exam preparation. Copies of earlier theory and methods exams are available from the graduate secretary to aid in preparation for the exams.

Specialty Examination

After passing the qualifying examinations in theory and research methods and completing all required course work, a student asks a faculty member to serve as chair of the specialty examination committee. Three members make up the specialty examination committee. Together, they devise a plan for the completion of the Specialty Examination and file the plan with the Director of Graduate Studies. Students select the format of the examination from two options. Detailed information on these options may be obtained from the Sociology Department's Graduate Student Handbook.

The Dissertation

Students may not enroll in Sociology 600 (Doctoral Research and Dissertation) until they pass all qualifying and specialty examinations. Once a student enrolls in Sociology 600, she/he must maintain continuous enrollment (Fall, Spring and Summer terms) until graduation. The dissertation process involves: admission to doctoral candidacy, selecting a dissertation committee, holding a dissertation proposal hearing, completing the dissertation project, and the oral defense of the dissertation.

COLLEGE OF BUSINESS ADMINISTRATION

All changes effective Fall 2009

I. COURSE CHANGES

(205) (BUAD) Business Administration

ADD

610 Teaching Preparation Seminar (2) Provides initial teacher education training to College of Business Administration PhD students to better enable them to prepare and manage a new course, manage a classroom, facilitate student learning, evaluate students and themselves, and know how to handle challenging issues related to teaching. Possessing the knowledge will enhance instructor confidence and the ability to provide a successful learning environment.

DEPARTMENT OF ECONOMICS

(283) (ECON) Economics

DROP

651 Monetary Theory (3)

652 Topics in Monetary Theory (3)

REVISE TO REQUEST APPROVAL VARIABLE TITLE

690 Workshop (3)

REVISE COURSE DESCRIPTION

621 International Economics (3) Comparative advantage, trade migration, commodity composition of trade, protectionist devices, protectionist arguments, trade liberalization, U.S. trade policy.

DEPARTMENT OF MARKETING AND LOGISTICS

(626) (LOG) Logistics

REVISE (DE) PREREQUISITE(S)

546 Logistics and Supply Chain Strategy (3)

(DE) Prerequisite(s): 520 and Business Administration 511, 512, 513, and 514.

547 Global Logistics and Supply Chain Management (3)

(DE) Prerequisite(s): 520 and Business Administration 511, 512, 513, and 514.

II: PROGRAM CHANGES

■ ADD DUAL MS-MBA PROGRAM – AGRICULTURAL ECONOMICS

On page 93 of the 2008-2009 *Graduate Catalog*, insert the following program and requirements:

DUAL MS-MBA PROGRAM – AGRICULTURAL ECONOMICS

The College of Business Administration and the College of Agricultural Sciences and Natural Resources offer a dual program leading to the conferral of both the Master of Business Administration and the Master of Science with a concentration in agribusiness in the agricultural economics major. The dual program can be accomplished with approximately 20 fewer hours of coursework than would be required to earn both degrees separately.

The establishment of the dual program addresses the critical need for agribusiness personnel trained in business fundamentals, with the analytical, technical, management, and economic decision-making skills to operate within the modern economic environment. The objective of the dual degree program is to prepare graduates to take leading management roles within agribusiness firms in a rapidly changing agricultural sector in an increasingly competitive global market. The program is directed toward management of agribusiness firms within the agricultural consulting, bioenergy, food-processing, input-supply, marketing, and transportation industries, among others.

Admission

Applications are accepted for fall semester only. Applicants for the dual MS-MBA program must make separate applications to and be accepted by Graduate and International Admissions for the Master of Business Administration and the Master of Science with a major in agricultural economics. Students should indicate on both applications the intent to pursue the dual MS-MBA program. Students accepted for both the MBA and MS degree programs will be assigned to an advisor from the MBA program and another from the agricultural economics MS program. These advisors will be responsible for course approval and supervision of the students' progress through the dual program.

After the MBA application deadline of February 1, applications by United States citizens and permanent residents will still be considered as space allows. Additional information is required and different application dates are established by Graduate and International Admissions for international students.

Requirements

The dual MS-MBA curriculum consists of 60 hours of course work, 30 hours for the Master of Business Administration and 30 hours for the Master of Science. A minimum of 30 hours must be from the College of Business Administration. Of the 30 hours required for the Master of Science, a minimum of 21 hours must be at the 500 level, a minimum of 21 hours must be from the Department of Agricultural Economics, and nine hours of electives may be from the College of Business Administration, the Department of Agricultural Economics, and/or other courses approved by the student's Master's Committee. A written comprehensive exam on the material covered in Agricultural Economics courses is required during the spring semester of the second year. An oral exam is also required for students who receive a marginal pass on the written exam.

The dual degree candidate must satisfy the curriculum and graduation requirements of the agricultural economics major and the College of Business Administration. Students withdrawing from the dual degree program before completing both degrees will not receive credit toward graduation in either degree program for courses taken in the other degree program, except as such courses qualify for credit without regard to the dual degree program. The MS and the MBA degrees will be awarded upon successful completion of the requirements of the dual program.

Dual MS-MBA Program	Hours	Credit
August–First Year		
Business Administration 511 (MBA Core I)		3
Fall–First Year		
Business Administration 501 (MBA Career Development)		1
Business Administration 512 (MBA Core II)		15
Spring–First Year		
Business Administration 513 (MBA Core III)		9
Business Administration 591 (International Travel)		2
Elective(s) ¹ in MBA Concentration ² and/or other graduate-level course(s) approved by the student's MS Committee ³		0-6
Summer		
Agricultural Economics 595 (Professional Internship) ⁴		3
Fall–Second Year		
Agricultural Economics 505 (Microeconomic Analysis)		3
Agricultural Economics 512 (Advanced Agribusiness Finance) ⁵		3
Agricultural Economics 524 (Econometric Methods in Ag Econ)		3
Elective(s) ¹ in Agricultural Economics, MBA Concentration ² , or other graduate-level course approved by the student's MS Committee ⁵		0-6
Spring–Second Year⁵		
Agricultural Economics 525 (Agribusiness Operations Research Methods)		3
Agricultural Economics 542 (Advanced Agribusiness Production Decisions) ⁵		3
Agricultural Economics 550 (Advanced Agribusiness Marketing) ⁵		3
Elective ¹ in Agricultural Economics, MBA Concentration ² , or other graduate-level course approved by the student's MS Committee		0-3
	Total	60

¹ Electives must sum to nine hours.

² MBA Concentration courses in finance, logistics, marketing or operations management.

³ If no electives are taken Spring–First Year, Agricultural Economics 595 may begin after spring break following completion of Business Administration 513 and Business Administration 591.

⁴ Registration for Agricultural Economics 595 can occur during Summer or Fall–Second Year. The internship report and oral presentation must be completed before the end of the semester of registration.

⁵ A student completing the series of two MBA concentration courses in finance, operations management or marketing can substitute another agricultural economics course for Agricultural Economics 512, 542 or 550, respectively.

DEPARTMENT OF ECONOMICS

REVISE REQUIREMENTS – ECONOMICS MAJOR – MA – NON-THESIS OPTION

On page 97 of the 2008-2009 *Graduate Catalog*, remove current non-thesis option requirements and replace with:

The non-thesis option requires thirty hours of coursework at the 400 level or above. Of these, at least 24 hours (of which at least 18 hours are in economics) must be at the 500 level or above. Of the minimum of 18 hours in economics at the 500 level or above, 12 hours must consist of 511, 512, 513, and 514. Of the 30 hours, a maximum of 9 hours in courses approved by the department

may be taken in fields other than economics. Students electing the non-thesis option are required to pass a qualifying examination in either microeconomic or macroeconomic theory.

REVISE ECONOMICS MAJOR – PHD

On pages 97 and 98 of the 2008-2009 *Graduate Catalog*, revise the following sections and paragraphs as indicated:

Economic Theory

Microeconomic theory and macroeconomic theory by qualifying exams taken not later than the beginning of the fourth semester of study.

Quantitative Methods

Completion of 581 with grade of B or better and completion of 582 and 583 with GPA of 3.0 or better, or by qualifying examination.

Other Requirements (Revise the 2nd paragraph only as follows)

Students are required to demonstrate competence in at least two fields of specialization in economics by completion of a two-course sequence with a GPA of 3.25 or better in each field, grades of B or better in each field course, and by submission of a satisfactory research paper in one of those fields.

DEPARTMENT OF MANAGEMENT

REVISE HUMAN RESOURCE MANAGEMENT MAJOR – MS

On page 99 of the 2008-2009 *Graduate Catalog*, revise showcase to drop Economics 441 and increase Management 595 hours to six.

	Hours Credit
Management 521	3
Human Resource Management 535	3
Human Resource Management 540	3
Human Resource Management 530	3
Human Resource Management 545	3
Human Resource Management 555	3
Management 595	6
Management 545	3
Statistics 531	3
Human Resource Management 503 or 592	3
	Total 33

COLLEGE OF COMMUNICATION AND INFORMATION

All changes effective fall 2009

I. COURSE CHANGES

(560) (INSC) Information Sciences

ADD

559 Grant Development for Information Professionals (3) Develops grant-writing and strategic relationship management skills for information professionals who may benefit from external funding opportunities and proposals. Creates and manages community partnerships to provide innovative information services to various constituencies such as underserved populations, public libraries, special libraries, and others in diverse information-related environments.

SCHOOL OF JOURNALISM AND ELECTRONIC MEDIA

(592) (JREM) Journalism and Electronic Media

ADD NEW COURSE FOR GRADUATE CREDIT

410 Media Ethics (3) Case studies of ethical issues in print, electronic, and online communication. Definitions of "good" and "ethical" communication – including image acquisition and presentation, in a democratic society. Study of the information/entertainment dilemma while investigating decision-making frameworks and standards for mass communication professionals.

REVISE TITLE AND DESCRIPTION

470 Cable, Multichannel, and Interactive Media (3) History, structure, and operations of cable television and other multichannel delivery systems (DBS, etc.). Development of digital interactive media as delivery systems (broadband Internet, cellular, WiFi, etc.) and their operations, potential as new media, and impact on media, audiences, and society. Economic, regulatory policy, programming, and management issues arising from the emergence of multiple delivery systems.

COLLEGE OF EDUCATION, HEALTH, AND HUMAN SCIENCES

All changes effective fall 2009

I. COURSE CHANGES

DEPARTMENT OF CHILD AND FAMILY STUDIES

(245) (CFS) Child and Family Studies

REVISE DESCRIPTION

510 Theory in Human Development (3) Theoretical models of human development; analysis, synthesis, and discussion of historical and contemporary relevance of models; application of theory to research, prevention, intervention, and education; critical reading and evaluation of theory-based research regarding human development.

550 Theory and Research in Family Studies (3) Theoretical models of families; analysis, synthesis, and discussion of historical and contemporary relevance of models; application of theory to research, prevention, intervention, and education; critical reading and evaluation of theory-based research on family.

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY AND COUNSELING

(569) (IT) Instructional Technology

REVISE TITLE, DESCRIPTION, AND ADD (DE) PREREQUISITE

578 Instructional Media Development (3) Application of instructional design techniques to create well-designed and effective media appropriate for educational settings. This course is the second in a two-course instructional design and development sequence.

(DE) Prerequisite(s): 570

DEPARTMENT OF EXERCISE, SPORT AND LEISURE STUDIES

(347) (EXSC) Exercise Science

ADD

515 Qualitative Analysis of Movement in Sport and Exercise (3) Develop a framework for qualitative analysis of human movement in sports and exercise via the use of video to record sports skills and exercise activities. Understand the practical issues related to recording movement appropriately, interpreting and assessing the movement according to biomechanical principles, and reporting effectively.

Recommended Background: An undergraduate biomechanics or applied anatomy course.

REVISE DESCRIPTION AND RECOMMENDED BACKGROUND

531 Biomechanics (3) Fundamental knowledge of 2D and 3D biomechanical principles in kinematics and kinetics, anthropometric models, signal processing and noise reduction, and related topics. Application of concepts to the study of a variety of human movements.

Recommended Background: Undergraduate biomechanics course and Physics 221 or equivalent.

(957) (SPMG) Sport Management

DROP FOR GRADUATE CREDIT

460 Development and Revenue Generation in Sport (3)

REVISE TITLE

554 Current Issues in Sport Management (3)

DEPARTMENT OF NUTRITION

(726) (NUTR) Nutrition

ADD

523 Nutrition Counseling Practicum (1) Review of theoretical framework and communications skills important in the counseling process.

DEPARTMENT OF THEORY AND PRACTICE IN TEACHER EDUCATION

(394) (FLED) Foreign Language/ESL Education

ADD NEW COURSE FOR GRADUATE CREDIT

489 Content-Based ESL Methods (3) Focuses on designing and implementing Content-Based ESL instruction to enhance ELLs' academic achievement. Required for Tennessee (PreK-12) licensure.

DROP

588 Content-Based ESL Methods (3)

Current Course (394) Foreign Language/ESL Education	Equivalent Course Fall 2009 (394) Foreign Language/ESL Education
Foreign Language/ESL Education 588	Foreign Language/ESL Education 489

(932) (SPED) Special Education

REVISE TITLE

430 Applied Behavior Analysis in School Settings (3)

456 Effective Instruction of Students with Learning Disabilities and Other High Incidence Disabilities (3)

506 Internships in Teaching in Special Education (3-15)

620 Internship in Research in Special Education (3-9)

630 Internship in Institutional Leadership in Special Education (3-9)

REVISE TITLE, DESCRIPTION AND ADD COMMENT

590 Application of Technology in Special Education and Vocational Rehabilitation (3) Application of assistive and instructional technology for all categories of exceptionality and across all chronological and functioning age ranges. Adaptive software, hardware for access, and strategies for technology usage, assessment, and instruction.

Comments: Admission to teacher education.

II. PROGRAM CHANGES

DEPARTMENT OF CHILD AND FAMILY STUDIES

REVISE REQUIREMENTS - CHILD AND FAMILY STUDIES MAJOR - PHD

On page 113 of the 2008-2009, *Graduate Catalog*, remove current requirements and replace with:

Requirements	Hours Credit
Master's Core - 510, 511, 550	9
PhD Core - 640	3
¹ CFS Specialization	21
² Statistics	9
³ Research Methods	18
⁴ Cognate	6
Professional Seminar - 572	2
Dissertation	24
	Total 92

¹Minimum of 21 semester hours of child and family studies courses. Can include courses from MS degree.

²Statistics 531 or 537, or Statistics 605; Statistics 532, Statistics 538, or Social Work 606; an advanced statistical methods; can include one course from master's degree.

³570; 633 or 660; 633, 650, 660, or 670; 680 and 681; an advanced specialized research methods course. Can include one course from master's degree.

⁴Can include courses from MS degree

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY AND COUNSELING

◆ ADD CONCENTRATION – COUNSELING MAJOR – MS

Psychosocial Rehabilitation

On page 118 of the 2008-2009 *Graduate Catalog*, revise the heading to add the new concentration.

Master of Science Counseling Major Psychosocial Rehabilitation Concentration Rehabilitation Counseling Concentration

REVISE REQUIREMENTS – COUNSELING MAJOR – MS – REHABILITATION COUNSELING CONCENTRATION

On page 118 of the 2008-2009 *Graduate Catalog*, left column, keep the first 2 paragraphs as they are. Beginning with the 3rd paragraph, remove current text and replace with the following to revise the rehabilitation counseling concentration requirements and to add the requirements for the new psychosocial rehabilitation concentration.

Course Requirements

Rehabilitation Counseling Concentration is a 48-hour program of study. The following course sequence is recommended. All courses are three credit hours, except where indicated.

Fall 1

Counselor Education 551
Rehabilitation Counseling 530, 538, 543, 545

Spring 1

Rehabilitation Counseling 532, 554, 547
Rehabilitation Counseling 537 OR Counselor Education 525

Summer 1

Counselor Education 552 OR Education of the Deaf and Hard of Hearing 509
Rehabilitation Counseling 533, 541
Educational Psychology 582, 550 or other research foundation course selected in consultation with advisor (3 hours)

Fall 2

Rehabilitation Counseling 549 (6 credit hours)

Students in the 48 hour concentration are required to demonstrate satisfactory performance in a written comprehensive examination as a requirement for graduation. Contact Dr. Patrick Dunn for details (865) 974-8013 or by email at pdunn4@utk.edu.

Psychosocial Rehabilitation Concentration is a 60-hour program of study. This concentration is intended for students who have career goals that include working with individuals with disabilities in hospital settings, proprietary rehabilitation, community rehabilitation programs, and other such settings. Students wishing to practice in mental health agencies or similar settings should consider the mental health counseling concentration. Students are required to complete the following courses in addition to those indicated above.

- Counselor Education 525
- Elective (Approved by Academic Advisor)
- Educational Psychology 510 or Psychology 512
- Rehabilitation Counseling 549 (3 additional credit hours). The additional three hours of internship in the psychosocial track must be completed in a rehabilitation setting serving individuals with cognitive, emotional or psychiatric disorders.

Students in the 60 hour concentration are required to demonstrate satisfactory performance in a written comprehensive examination as a requirement for graduation. Contact Dr. Patrick Dunn for details (865) 974-8013 or by email at pdunn4@utk.edu.

Most rehabilitation counseling courses are offered only one semester per year. Students admitted to the program must meet with an advisor each semester to plan their studies.

REVISE DISTANCE EDUCATION TEXT – COUNSELING MAJOR – MS – REHABILITATION COUNSELING CONCENTRATION

On page 118 of the 2007-2008 *Graduate Catalog*, right column, remove current text and replace with the following:

Distance Education

The rehabilitation counseling program offers instruction in the 48-hour track through distance delivery. Students interested in pursuing this option should contact the program coordinator (see below).

The distance education program is intended for persons currently employed as vocational rehabilitation counselors or closely related positions who do not currently possess the master's degree. Students without employment experience in vocational rehabilitation or closely related fields must pursue the degree through the traditional residential program, described above, and must have permission of the rehabilitation counseling faculty to participate in courses delivered through distance education.

The course of study for the distance education rehabilitation counseling master's degree is described below:

Fall 1

Counselor Education 551; Rehabilitation Counseling 530

Spring 1

Rehabilitation Counseling 537 or Counselor Education 525; Rehabilitation Counseling 532

Summer 1

Counselor Education 554; Rehabilitation Counseling 533, 545; Educational Psychology 582 or 550 (or equivalent)

Fall 2

Rehabilitation Counseling 538; 543

Spring 2

Rehabilitation Counseling 544; 545; 549 (3 hours)

Summer 2

Counselor Education 552; Rehabilitation Counseling 541, 549 (3 hours)

Students are admitted to the distance education program in cohorts in even years, and each cohort must contain at least nine students. Students are required to come to campus for one week in the first summer of the program for individual and group counseling skills training (Counselor Education 554; Rehabilitation Counseling 545). Practicum and internship supervision will require mailing of audio or videotapes of counseling sessions to the university faculty practicum or internship supervisor. Contact Dr. Patrick Dunn for details (865) 974-8013 or by email at pdunn4@utk.edu.

ADD DEAFNESS REHABILITATION SPECIALIZATION TEXT – COUNSELING MAJOR – MS – REHABILITATION COUNSELING CONCENTRATION

On Page 118 of the 2008-2009 *Graduate Catalog*, right column, add the deafness rehabilitation specialization text as follows:

Deafness Rehabilitation Specialization

The deafness rehabilitation specialization is available to students whose career interests relate to working with individuals who are deaf or hard of hearing. Students pursuing the deafness rehabilitation specialization will pursue the same 48-hour rehabilitation counseling curriculum as students in the general rehabilitation program but are required to complete the following additional requirements prior to receiving the master's degree:

- Completion of the Orientation to Deafness (OTD) program from the University of Tennessee Center on Deafness. This is a five-week residential program conducted during summer sessions. Students who are interested in pursuing the deafness specialization must complete OTD prior to being admitted to the deafness rehabilitation specialization. An equivalent program at another institution may be substituted with approval of the Center on Deafness and Rehabilitation Counseling program faculty. For more information, please contact the Center on Deafness at (865)-974-0607.
- Demonstration of intermediate skill level in American Sign Language (ASL) on the Sign Language Proficiency Interview (SLPI) prior to graduation from the program.
- Practicum and Internship experiences must be completed in a rehabilitation setting working with individuals who are deaf or hard of hearing.
- All course assignments with elective subject matter (i.e., research papers, class presentations, etc.) must be related to issues relevant to persons who are deaf or hard of hearing.

The deafness rehabilitation specialization curriculum may be pursued by either residential or distance education students. The Distance Education cohort is limited to students who are already employed as rehabilitation counselors or in closely related positions (see above), and will begin their studies at the same time as general rehabilitation distance education students (see above).

Program Contact

Patrick L. Dunn, Ph.D., CRC, Program Coordinator, pdunn4@utk.edu.

REVISE SCHOOL COUNSELING MAJOR - EDS

On page 119 of the 2008-2009 *Graduate Catalog*, remove current text and replace with:

The Specialist in Education degree with a major in school counseling degree is for individuals who already have a license in school counseling and wish to upgrade their skills and knowledge, individuals who possess a master's degree in a counseling-related area and wish to obtain licensure in school counseling, or individuals who have a master's degree in a non-related counseling field and wish to obtain courses leading to licensure as a professional school counselor.

The common curriculum for all students seeking a Specialist in Education degree includes the following areas:

- Counselor Education 670 (3)
- Advanced Theory Course Options – Counselor Education 660 (3), or 665 (3), or 680 (3), or 604 (3)*
- Research Course Options – Educational Psychology 555 (3), or 582 (3), or 583 (3)
- Elective Courses by advisement (minimum of 15 hours)**
- The non-thesis program requires a comprehensive examination in which the candidate will demonstrate research skills through examination questions
- This degree is 24 semester hours beyond a 48 semester hour master's degree in school counseling
- A minimum of 6 of the 24 semester hours is required from outside the counselor education program

*Counselor Education 604 is counseling related and the topic changes each semester depending on the specific professional goals of the counseling students. Crisis counseling, child and adolescent counseling, and play therapy are examples of course content previously offered.

**The elective courses will be determined by the EdS student and his/her advisor and committee members. Depending on the specific professional goals of the student, the student will be advised to take counseling-related courses that enhance his/her curriculum. Courses commonly taken as electives include, but are not limited to, Child and Family Studies 540; 552; 567; 515; Social Work 564; Sociology 551.

Prerequisite Requirements

Category I – Students with licensure in school counseling who have completed the 48 hour master's program in school counseling at the University of Tennessee will not be required to take any courses beyond those included in the EdS program in school counseling.

Category II – Students with a master's program in school counseling requiring less than the 48 hours included in the University of Tennessee program will have to take courses in school-counseling areas not reflected in their masters program in school counseling.

Category III – Individuals with a master's degree in a counseling-related area (e.g., mental health counseling) will be required to take the courses in the University of Tennessee's 48-hour School-Counseling Program that were not included in their counseling-related master's program.

Category IV – Individuals with a master's degree in a non-counseling area will likely have taken few courses similar to those required in the school-counseling master's program at the University of Tennessee and, as a result, will need to take the entire University of Tennessee master's degree program in school counseling.

DEPARTMENT OF EXERCISE, SPORT AND LEISURE STUDIES

REVISE SPORT STUDIES MAJOR – MS – SPORT MANAGEMENT CONCENTRATION

On page 124 of the 2008-09 *Graduate Catalog* revise footnote 1 to add course 560.

¹Sport Management 512, 530, 540, 544, 553, 554, 555, 560, 570, 580.

DEPARTMENT OF NUTRITION

■ DROP THE FOLLOWING MAJOR, DEGREE AND CONCENTRATIONS

Safety – MS

Emergency management concentration

Safety Management concentration

On Page 129 of the 2008-2009 *Graduate Catalog*, drop the Master's of Science Safety Major with concentrations in Emergency Management and Safety Management.

DEPARTMENT OF THEORY AND PRACTICE IN TEACHER EDUCATION

REVISE CATALOG TEXT IN THE FRONT OF THE CATALOG FOR THE SPECIALIST IN EDUCATION DEGREE

On page 28 of the 2008-2009 *Graduate Catalog*, left column, first paragraph, revise to indicate current concentrations:

The Specialist in Education (EdS) degree is offered with a major in educational administration, education, school counseling, school psychology, and teacher education.

COLLEGE OF ENGINEERING

All changes effective Fall 2009

I. COURSE CHANGES

DEPARTMENT OF CHEMICAL AND BIOMOLECULAR ENGINEERING

(223) (CBE) Chemical and Biomolecular Engineering

ADD AND CROSS-LIST SECONDARY COURSE

539 Polymer Engineering I (3) Molecular structure; shear thinning fluids and non-Newtonian rheology; rheometry; melt processing operations; molecular orientation; linear viscoelasticity; dynamic mechanical behavior; yield; fracture, mechanical properties of polymeric composites. (See *Materials Science and Engineering 539*.)

DROP SECONDARY CROSS-LISTED COURSE

541 Polymer Rheology (3) (See *Materials Science and Engineering 541*.)

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

(254) (CE) Civil Engineering

DROP SECONDARY CROSS-LISTED COURSE

416 Hydrology (3) (See *Biosystems Engineering 416*.)

DROP CROSS-LISTING OF PRIMARY COURSE

558 Planning and Transportation (3) (Same as *Political Science 555*.)

DROP

559 Intermodal Transportation (3)

REVISE (DE) PREREQUISITE(S)

451 Highway Engineering (3)
(DE) Prerequisite(s): 355.

453 Airport/Railroad Planning and Design (3)
(DE) Prerequisite(s): 355.

472 Steel Design (3)
(DE) Prerequisite(s): 461.

474 Reinforced Concrete Design (3)
(DE) Prerequisite(s): 461.

521 Pavement Design (3)
(DE) Prerequisite(s): 321 and 331.

525 Pavement Materials Characterization (3)
(DE) Prerequisite(s): 321 and 331.

530 Advanced Soil Mechanics and Slope Stability (3)
(DE) Prerequisite(s): 331.

531 Soil Stabilization (3)
(DE) Prerequisite(s): 331.

532 Rock Mechanics and Rock Engineering (3)
(DE) Prerequisite(s): 331.
Comment(s): Consent of instructor.

533 Advanced Laboratory and Insitu Testing of Soil (3)
(DE) Prerequisite(s): 331.

535 Advanced Foundations and Retaining Structures (3)

(DE) Prerequisite(s): 431.

551 Traffic Engineering: Characteristics (3)

(DE) Prerequisite(s): 331.

562 Structural Systems (3)

(DE) Prerequisite(s): 461.

565 Structural Dynamics (3)

(DE) Prerequisite(s): 461.

571 Behavior of Steel Structures (3)

(DE) Prerequisite(s): 461.

573 Prestressed Concrete (3)

(DE) Prerequisite(s): 461.

574 Behavior of Reinforced Concrete Members (3)

(DE) Prerequisite(s): 461.

576 Masonry Design (3)

(DE) Prerequisite(s): 461.

631 Soil Dynamics (3)

(DE) Prerequisite(s): 431.

REVISE TITLE AND (DE) PREREQUISITE(S)

490 Water Resources Applications (3)

(DE) Prerequisite(s): 494.

REVISE TO ADD CREDIT RESTRICTION

539 Geotechnology Seminar (1)

Credit Restriction: May not be used toward degree requirements.

550 Transportation Seminar (1)

Credit Restriction: May not be used toward degree requirements.

(344) (ENVE) Environmental Engineering

ADD

521 Climate Impacts on Water Resources (3) Theoretical and analytical approaches to the impact of climate variability and change on water resources. Oceanic-atmospheric variability and its impact on precipitation, snowpack, soil moisture and streamflow; analysis of spatial / temporal climatic and hydrologic datasets; paleo hydrology; parametric and non-parametric forecasting of streamflow; watershed models incorporating down-scaling of Global Circulation Model (GCM) forecasts of precipitation, temperature and the resulting land use changes.

(DE) Prerequisite(s): Mathematics 241.

561 Climate and Environmental Informatics (3) Introduction to applied time series, spatial statistics, and geographical data sciences for climate and the environmental applications with an emphasis on extreme events, regional analysis, uncertainty characterization and risk management. Case studies and class projects focused on integration of disparate data and analysis techniques to solve problems in climate change impacts.

Recommended Background: Statistics or geographical information systems (GIS).

Comment(s): Consent of instructor.

562 Three Dimensional Climate Modeling (3) Theory and applied algorithms for three-dimensional climate modeling including conservation laws, prognostic and diagnostic relationships and climate model formulations. Emphasis on numerical methods, coordinate systems, spatial and temporal discretizations, parameterization and model validation.

(DE) Prerequisite(s): Mathematics 231 and 241.

Recommended Background: Computer applications.

Comment(s): Consent of instructor.

577 Air Pollution Climatology (3) Linkages between climate change and pollutant emissions, transport, transformation, and deposition. Both the impact of air quality on climate and the impact of climate on air quality will be examined using general circulation and meteorological models. Regional-scale effects of land utilization, incident radiation, climate perturbations and air quality parameters such as ozone, particulate matter, and greenhouse gases will be investigated.

(DE) Prerequisite(s): Mathematics 231 and 241.

REVISE TO ADD CREDIT RESTRICTION

508 Seminar (1)

Credit Restriction: May not be used toward degree requirements.

REVISE (DE) PREREQUISITES

512 Environmental Transport and Kinetics (3)

(DE) Prerequisite(s): Chemistry 130, Civil Engineering 391, Mathematics 231 and 241.

520 River Mechanics (3)

(DE) Prerequisite(s): Civil Engineering 391.

525 Soil Erosion and Sediment Yield (3) (Same as BioSystems Engineering 525.)

(DE) Prerequisite(s): Civil Engineering 494 or Biosystems Engineering 416.

530 Urban Hydrology and Stormwater Engineering (3)

(DE) Prerequisite(s): Civil Engineering 494 or Biosystems Engineering 416.

550 Advanced Applications in Water and Waste Treatment (3)

(DE) Prerequisite(s): Civil Engineering 381.

REVISE (DE) PREREQUISITES AND COMMENTS

522 Floodplain and Urban Flood Management (3)

(DE) Prerequisite(s): Civil Engineering 391.

Comment(s): Consent of instructor.

DEPARTMENT OF INDUSTRIAL AND INFORMATION ENGINEERING

(556) (IE) Industrial Engineering

DROP

455 Human-Computer Interaction (3)

REVISE DESCRIPTION, DROP (DE) PREREQUISITE AND ADD (DE) COREQUISITE

401 Integrated Manufacturing Systems (3) Review of manufacturing processes, including robotics and automation. Introduction to manufacturing system design, facilities planning, facility layout, material handling systems, and material handling design.

(DE) Corequisite(s): 405.

REVISE (DE) PREREQUISITES

402 Production System Planning and Control (3)

(DE) Prerequisite(s): 202 and 300.

REVISE DESCRIPTION

427 Introduction to Lean Systems (3) Introduces an engineering based framework to implement process and system improvements within both the manufacturing and service enterprises. The students will be introduced to the basic concepts of lean systems including facility design and six sigma. The focus of the course will be to enable students to design complex processes and systems based on the physical system and the associated information system. Activities will include case studies, industry based projects, and the preparation of engineering reports.

REVISE TITLE, DESCRIPTION, AND ADD RECOMMENDED BACKGROUND

517 Reliability of Lean Systems (3) Designing reliability into lean systems. Introduction to lean systems. Impacts of lean on reliability of manufacturing and services and processes. The concepts of reliability engineering utilized to define failures of lean systems. Focus of course work is to examine equipment reliability, human reliability, supply chain reliability and forecasting reliability to develop the reliability of lean systems model. Applications of the model will be via implementation in industry.

Recommended Background: Background in lean and reliability.

REVISE DESCRIPTION

527 Lean Production Systems (3) Strategies for planning, development and implementation of Lean. Emphasis on integration of people, technology, processes and information dimensions (including product development, production and extended supply chain) into unified frameworks. Applications will be implemented into industry with work to further develop lean principles.

DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING

(638) (MSE) Materials Science and Engineering

ADD AND CROSS-LIST PRIMARY COURSE

539 Polymer Engineering I (3) Molecular structure; shear thinning fluids and non-Newtonian rheology; rheometry; melt processing operations; molecular orientation; linear viscoelasticity; dynamic mechanical behavior; yield; fracture; mechanical properties of polymeric composites. (*Same as Chemical and Biomolecular Engineering 539.*)

ADD

552 Laboratory Methods in Polymer Engineering (3) Basic experimental techniques and instrumentation associated with characterization, X-ray and light scattering, calorimetry, rheometry, mechanical properties of solid polymers, polymer processing operations.

(DE) Corequisite(s): 540 or equivalent.

567 Magnetism and Magnetic Materials (3) Review of the atomic origin of magnetic moments and how these moments can be affected by their local environment. Properties, basic theory, and applications of para-, dia-, ferro-, ferri- and antiferromagnets. Novel magnetic phenomena and magnetic materials in modern technological applications.

(DE) Prerequisite(s) 350.

612 Computational Plasticity and Micromechanics (3) Computational modeling and simulation methods will be introduced with applications in plasticity, fracture and fatigue, microstructural evolution, and material instability in engineering structural materials. Topics include the classic finite element method based on constitutive modeling, cohesive interface model, discrete dislocation dynamics, atomistic/continuum coupling techniques, and current research areas that are pertinent to the research efforts at UT and ORNL.

639 Polymer Engineering II (3) Advanced topics in polymer rheology and mechanical behavior. Entangled and unentangled polymer dynamics, elastic behavior of melts; branched polymers; twin screw extrusion; blends; continuum modeling; thermoset processing; drawing operations; rubber toughening; thermoplastic elastomers; adhesion; radiation processing.

680 Advanced Transmission Electron Microscopy (3) Advanced electron diffraction methods, that use dynamic diffraction contrast and higher order Laue zones especially in convergent beam electron diffraction. High resolution electron microscopy and its image simulations. Atomic resolution Z-contrast and analytical transmission electron microscopy. This course requires a basic understanding of TEM and crystallography and will concentrate on analysis of data with free software. This class will focus on simulation and quantification of EELS spectra, and simulation and interpretation of atomic resolution imaging and diffraction pattern.

(DE) Prerequisite(s) 405 or 511 or 572, 672 or 673.

Registration Permission: Consent of instructor.

DROP FOR GRADUATE CREDIT

429 Introduction to Ceramic Composites

470 Environmental Degradation of Materials

476 Overview of Intermetallic Compounds and Composites

DROP

531 Advanced Corrosion

546 Mechanical Properties of Solid Polymers

549 Laboratory Methods in Polymer Engineering

550 Laboratory Methods in Polymer Engineering

628 Graduate Seminar in Materials Lifetime Science and Engineering

633 Design of Intermetallic Compounds and Composites

DROP PRIMARY CROSS-LISTED COURSE

541 Polymer Rheology (*Same as Chemical and Biomolecular Engineering 541.*)

DEPARTMENT OF MECHANICAL, AEROSPACE, AND BIOMEDICAL ENGINEERING

(335) (ES) Engineering Science

ADD

567 Optical Engineering II (3) Statistical optics; spontaneous and induced emission: black and gray body radiation; incoherent, partial and totally coherent radiation; mutual coherence function; detectors; radiometry.
(DE) Prerequisite(s): 566.

REVISE HOURS

566 Optical Engineering I (3)

DEPARTMENT OF NUCLEAR ENGINEERING

(716) (NE) Nuclear Engineering

ADD NEW COURSES FOR GRADUATE CREDIT

401 Radiological Engineering Laboratory (3) Radiation detection and counting instrumentation, counting statistics, half-life and decay schemes, alpha and beta spectroscopy, radiation fields and dosimetry, gamma spectrometry.
(DE) Corequisite(s): 470.

402 Nuclear Engineering Lab (3) Cross section measurements, diffusion properties of neutrons, shielding, dynamics and controls, and heat transfer experiments.
(DE) Prerequisite(s): 342 and 401.

433 Principles of Health Physics (3) Radiation quantities, limits and risk assessment, external and internal dosimetry, biological effects of radiation, radiation detection, radiation interactions and decay, applications.

473 Nuclear Reactor Theory II (3) Spectral and spatial effects on cross section data generation: energy group collapsing; spatial homogenization. Light Water Reactor core design: Nodal diffusion methods; lattice physics; temperature effects; isotopic depletion; power distribution calculations; thermal limits and reactivity management.
(DE) Prerequisite(s): 470 or equivalent.

490 Radiation Biology (3) Interactions of ionizing radiation with living cells and its effects on human health.

DROP

403 Nuclear Engineering Laboratory (3)

431 Radiation Protection (3)

612 Selected Topics in Reactor Theory (3)

REVISE TO DROP (DE) PREREQUISITE

421 Introduction to Nuclear Criticality Safety (3)

REVISE DESCRIPTION AND HOURS; DROP (DE) PREREQUISITE(S)

470 Nuclear Reactor Theory I (4) Fundamentals of reactor physics relative to cross sections. Kinematics of elastic scattering. Reactor kinetics, reactor systems, and nuclear data. Analytical and numerical methods applicable to general criticality problems, eigenvalue searches, perturbation theory, and the multigroup diffusion equations, and introduction to Fortran programming.

REVISE TO DROP (DE) PREREQUISITE

552 Radiological Assessment and Dosimetry (3)

REVISE TO ADD REPEATABILITY

597 Special Topics in Nuclear Engineering (3)
Repeatability: May be repeated. Maximum 15 hours.

697 Special Topics in Nuclear Engineering (3)
Repeatability: May be repeated. Maximum 15 hours.

REVISE TO ADD DESCRIPTION, REPEATABILITY, AND REGISTRATION PERMISSION

621 Selected Topics in Radiation Protection (3) Investigation of new developments.
Repeatability: May be repeated. Maximum 15 hours.
Registration Permission: Consent of instructor.

II. PROGRAM CHANGES

REVISE REQUIREMENTS – RELIABILITY AND MAINTAINABILITY ENGINEERING MAJOR – MS

On page 139 of the 2008-2009 *Graduate Catalog*, delete current catalog text and replace with:

MASTER OF SCIENCE

Reliability and Maintainability Engineering Major

A Master of Science degree with a major in reliability and maintainability engineering is offered through an interdepartmental program. Both thesis and non-thesis options are available. See the catalog listings for the appropriate department in the College of Engineering and the Department of Statistics, Operations and Management Science for more information about the courses offered. The program can be completed on campus or through distance delivery.

ADMISSION

Applicants for admission to the MS program with a major in reliability and maintainability engineering are expected to have earned a bachelor's degree from an accredited undergraduate program in engineering or physics. Students from other appropriate disciplines (e.g. chemistry, mathematics, etc.) can be admitted but additional engineering courses may be required. Entering students must have, as a minimum, competency in mathematics through ordinary differential equations. The Reliability and Maintainability Engineering Program Coordinator is the contact for all students interested in the reliability and maintainability engineering major.

REQUIREMENTS

Students, with the concurrence of their graduate committee, may choose between a thesis option and a non-thesis project option. The chosen course work must be approved by the graduate student's major professor and committee. After the completion of the formal program course work and research, the student must pass an oral examination conducted by his/her graduate committee. The committee will include the student's major professor, the Reliability and Maintainability Engineering Program Coordinator (or appointee), and another faculty member at the rank of assistant professor or above.

Thesis Option

Specific requirements of the thesis option are a minimum of 30 semester hours including:

- Twelve hours of reliability and maintainability engineering core courses as listed below.
- Three hours of reliability and maintainability engineering elective courses chosen from the list below.
- Six hours in statistics chosen from the list below.
- Three semester hours in engineering, statistics, business management, or a related field.
- Master's thesis – 6 hours through the department of the major professor.
- A final oral examination covering the thesis and related course work.

Non-Thesis Option

Specific requirements of the non-thesis option are a minimum of 30 semester hours including:

- Twelve hours of reliability and maintainability engineering core courses as listed below.
- Six hours of reliability and maintainability engineering elective courses chosen from the list below.
- Six hours in statistics chosen from the list below.
- Three semester hours in engineering, statistics, business management, or a related field.
- Project in Lieu of Thesis (3 hours). The course will be supervised by the student's master's committee. A written project proposal describing what the student will do in the course must be submitted in advance to the graduate student's committee for approval. A written final report is required. The project course may be taken through the major professor's department: Chemical Engineering 580, Electrical and Computer Engineering 501, Industrial Engineering 501, Mechanical Engineering 590, or Nuclear Engineering 598.
- A final oral examination covering the project and related course work. The final oral examination must be on the University of Tennessee, Knoxville campus.

Note: At least two-thirds of the minimum required hours must be taken in courses numbered at or above the 500 level.

Reliability and Maintainability Engineering Core Courses:

- Statistics 560*
- Industrial Engineering, Mechanical Engineering or Nuclear Engineering 483*
- Industrial Engineering, Materials Science and Engineering, Mechanical Engineering, or Nuclear Engineering 484*
- Chemical Engineering or Nuclear Engineering 585*

Reliability and Maintainability Engineering Electives:

- Biomedical Engineering, Chemical Engineering, Electrical and Computer Engineering, Materials Science and Engineering, or Mechanical Engineering 507
- Chemical Engineering or Industrial Engineering 561
- Electrical and Computer Engineering 503
- Electrical and Computer Engineering 504
- Industrial Engineering 516
- Industrial Engineering 517
- Biomedical Engineering, Engineering Science, or Mechanical Engineering 534*
- Nuclear Engineering 579*

Statistics Electives:

- Statistics 566
- Statistics 567*
- Statistics 571*
- Statistics 572*
- Statistics 573*
- Statistics 574*
- Statistics 575
- Statistics 578
- Statistics 579

*Currently offered through distance.
All courses are 3 hour courses.

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

- ADD FIVE YEAR BS-MS
(CIVIL ENGINEERING BS – CIVIL ENGINEERING OR ENVIRONMENTAL ENGINEERING MS)

On page 142 of the 2008-2009 *Graduate Catalog* add the BS-MS program and requirements:

Five-Year BS-MS Program

Civil Engineering (BS)

Civil Engineering or Environmental Engineering (MS)

The department offers a 5-year BS-MS program with a BS (major in civil engineering) and an MS (major in civil engineering or environmental engineering) for qualified students. The primary component of the program is that qualified students may take up to 6 hours of approved graduate courses for their senior undergraduate electives and have them count toward both their bachelor's and master's degrees. Significant components of the program are:

- Students must have an overall GPA of 3.4 in required course work. Conditional admission to the 5-year program may be granted after completion of 64 hours of required course work, while full admission may be granted after the completion of 96 hours of required course work with a minimum GPA of 3.4.
- Admission must be approved by the department, the College of Engineering, and the Graduate School.
- Students must at least be conditionally admitted to the program prior to taking courses that receive credit for both the BS and MS degrees. All courses taken for graduate credit must be approved by the chair of the department and the Graduate School.
- Students will not be eligible for assistantships until they complete their bachelor's degree.

NOTE: Also requires approval by Graduate Academic Policy Committee, Undergraduate Academic Policy Committee, and Undergraduate Curriculum Committee.

The new policy (effective Fall 2008) states: "Courses taken for graduate credit may not be used for both the baccalaureate and a graduate degree program except in the case of approved dual bachelor's/master's programs."

Each dual BS/MS is different and both APC and Curriculum Committees must approve. The new policy (above) simply allows programs to put forth proposals for a dual BS/MS. It is not a universal approval for the dual BS/MS.

REVISE REQUIREMENTS – CIVIL ENGINEERING MAJOR – MS – NON-THESIS OPTION

On page 142 of the 2008-2009 *Graduate Catalog* revise the non-thesis option from a minimum of 33 hours to a minimum of 30.

REVISE REQUIREMENTS – ENVIRONMENTAL ENGINEERING MAJOR – MS – NON-THESIS OPTION

On page 143 of the 2008-2009 *Graduate Catalog* revise the non-thesis option from a minimum of 33 hours to a minimum of 30.

DEPARTMENT OF INDUSTRIAL AND INFORMATION ENGINEERING

- ADD FIVE YEAR BS-MS

On page 149 of the 2008-2009 *Graduate Catalog* add the BS-MS Program and requirements:

Five-Year BS-MS Program

INDUSTRIAL ENGINEERING MAJOR

The department offers a 5-year BS-MS non-thesis program with a major in industrial engineering for qualified students. The primary component of the program is a qualified student may take up to 9 hours of approved graduate courses for their senior

undergraduate courses and have them count toward both the bachelor's and master's degrees. Qualifications for admission to the program are:

- The student must have an earned minimum cumulative GPA of at least 3.40 to be considered for admission to the program. Conditional admission may be granted after completing 64 hours of the requirements for the bachelor's degree in industrial engineering as specified by any industrial engineering curriculum (undergraduate catalog) in effect during that student's attendance at the University of Tennessee, Knoxville provided the curricula has been in effect within six years of the date of graduation.
- Conditional admission must be obtained before taking a graduate course that is to be used to satisfy the requirements of both the bachelor's and master's degree.
- Full admission may be granted after completing 96 hours of required course work as previously defined and with a minimum cumulative GPA of 3.40 in the required coursework.
- Conditional and full admission of a student into this program must be approved by the Department of Industrial Engineering, the College of Engineering, and the Graduate School.
- Any course taken for graduate credit prior to satisfying all requirements for the bachelor's degree in industrial engineering must be approved by the department head or designee and the Graduate School.
- A student will not be eligible for a graduate assistantship until the student has satisfied all of the requirements for the bachelor's degree.

NOTE: Also requires approval by Graduate Academic Policy Committee, Undergraduate Academic Policy Committee, and Undergraduate Curriculum Committee.

The new policy (effective Fall 2008) states: "Courses taken for graduate credit may not be used for both the baccalaureate and a graduate degree program except in the case of approved dual bachelor's/master's programs."

Each dual BS/MS is different and both APC and Curriculum Committees must approve. The new policy (above) simply allows programs to put forth proposals for a dual BS/MS. It is not a universal approval for the dual BS/MS.

◆ **DROP THE FOLLOWING CONCENTRATIONS – INDUSTRIAL ENGINEERING MAJOR - PHD**

Human Factors Engineering
Information Engineering
Manufacturing Engineering
Traditional Engineering

REVISE REQUIREMENTS – INDUSTRIAL ENGINEERING MAJOR – MS (THESIS AND NON-THESIS OPTIONS)

On page 149 of the 2008-2009 *Graduate Catalog*, revise introductory paragraph, beginning with the third sentence as follows:

...The thesis option requires 24 hours of course work and 6 hours thesis. The non-thesis option requires 27 hours of course work and a 3-hour design project. Prerequisites are required for all specialties if the previous undergraduate degree is not an engineering discipline. Refer to the department's MS handbook for specific requirements.

Formerly: The thesis option requires 27 hours of coursework and 6 hours thesis. The non-thesis option requires 30 hours of coursework and a 3-hour design project. The engineering management concentration requires an additional 3 hours.

REVISE DUAL MS-MBA – INDUSTRIAL ENGINEERING MAJOR – TO ADD INTRODUCTORY PARAGRAPH

On page 150 of the 2008-2009 *Graduate Catalog*, add an introductory text:

All engineering students enrolled in the dual program must complete course work designed to provide them with an integrated multidisciplinary experience. The MS-MBA curriculum consists of 37 hours of course work in the College of Business Administration and 24 hours of course work in the College of Engineering. The dual-degree candidate must satisfy the curriculum and graduation requirements of the Department of Industrial Engineering, as well as those of the College of Business Administration.

REVISE INTRODUCTORY PARAGRAPH – INDUSTRIAL ENGINEERING MAJOR – PHD

On page 150 of the 2008-2009 *Graduate Catalog*, under "Admission" heading delete current text and replace with:

Admission to the PhD program requires an undergraduate degree and academic background that meets the admission criteria for the master's program in industrial engineering or a master's degree in industrial engineering (or a closely related field), and previous academic performance that clearly demonstrates the capacity to do original research and technical investigative work and the potential for a successful scholarly career. All applicants are required to submit General Graduate Record Examination (GRE) scores.

A student may apply for admission to candidacy after passing the comprehensive examination and a successful defense of the dissertation proposal.

DELETE INTRODUCTORY TEXT AT COURSE LISTING

On page 237 of the 2008-2009 *Graduate Catalog*, immediately below INDUSTRIAL ENGINEERING (556) delete the following text:

Note: Any 400-level course required for the Bachelor of Science in Industrial Engineering at the University of Tennessee, Knoxville, may not be used for graduate credit in the MS program.

DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING

REVISE REQUIREMENTS – MATERIALS SCIENCE AND ENGINEERING AND POLYMER ENGINEERING MAJOR – MS – THESIS OPTION

On page 151 of the 2008-2009 *Graduate Catalog*, revise second sentence of first bullet to:

The materials science and engineering major must include 511, 512, 515, and 516 for the metallurgy concentration; 511, 512, 539, and 540 for the polymers concentration,

On page 151 of the 2008-2009 *Graduate Catalog*, revise third sentence of first bullet item to:

The polymer engineering major must include 539, 540, 543, 552 for the polymer processing and polymer science concentrations; exceptions are given if similar material has been covered in prior coursework.

On page 151 of the 2008-2009 *Graduate Catalog*, revise second bullet to:

- Additional courses up to 15 hours total in related areas.

REVISE REQUIREMENTS – MATERIALS SCIENCE AND ENGINEERING AND POLYMER ENGINEERING MAJOR –PHD

On page 151 of the 2008-2009 *Graduate Catalog*, revise fifth sentence of third bullet item to:

...The materials science and engineering major must include the courses required for the master's program. The polymer engineering major must include the courses required for the master's program plus 639.

ADD PARTICIPATION IN THE INTERCOLLEGIATE/INTERDISCIPLINARY GRADUATE MINOR IN COMPUTATIONAL SCIENCE

On page 152 of the 2008-2009 *Graduate Catalog*, insert the following:

Intercollegiate/Interdisciplinary Graduate Minor in Computational Science

The Department of Materials Science and Engineering participates in the intercollegiate/interdisciplinary graduate minor in computational science (IGMCS) program. Any student pursuing a master's or PhD with a major in materials science and engineering can receive a minor in computational science by completing the appropriate IGMCS requirements. For additional information, see the description of the IGMCS listed under Department of Electrical Engineering and Computer Science or visit the IGMCS website at <http://igmcs.utk.edu/>. The Department of Materials Science and Engineering also contributes courses to the IGMCS program curriculum.

DEPARTMENT OF MECHANICAL, AEROSPACE, AND BIOMEDICAL ENGINEERING

◆ DROP THE FOLLOWING CONCENTRATIONS – AEROSPACE ENGINEERING MAJOR – MS AND PHD

- Aeroacoustics
- Aerodynamics and performance
- Energy conversion and utilization
- Flight and aerospace mechanics
- Gas dynamics
- Heat transfer and fluid mechanics
- Propulsion
- Space engineering
- Structures and stress analysis
- Thermodynamics

◆ DROP THE FOLLOWING CONCENTRATIONS – BIOMEDICAL ENGINEERING MAJOR – MS AND PHD

- Biofluid mechanics
- Bioimaging
- Biomaterials
- Cell and tissue engineering
- Musculoskeletal biomechanics

◆ DROP THE FOLLOWING CONCENTRATIONS – ENGINEERING SCIENCE MAJOR – MS

- Applied artificial intelligence
- Biomedical engineering
- Computational mechanics
- Fluid mechanics
- Mechanics of composite materials
- Optical engineering
- Product development and manufacturing
- Solid Mechanics

◆ DROP THE FOLLOWING CONCENTRATIONS – ENGINEERING SCIENCE MAJOR – PHD

- Applied artificial intelligence
- Biomedical engineering
- Computational mechanics
- Fluid mechanics
- Industrial engineering
- Mechanics of composite materials
- Optical engineering
- Solid mechanics

◆ DROP THE FOLLOWING CONCENTRATIONS – MECHANICAL ENGINEERING MAJOR – MS

- Dynamics, control, and robotics
- Energy conversion and utilization
- Gas dynamics
- Heat transfer and fluid mechanics
- Machine design
- Power generation
- Product development and manufacturing
- Propulsion
- Space engineering
- Stress analysis
- Thermodynamics

◆ DROP THE FOLLOWING CONCENTRATIONS – MECHANICAL ENGINEERING MAJOR – PHD

- Dynamics, control, and robotics
- Energy conversion and utilization
- Gas dynamics
- Heat transfer and fluid mechanics
- Machine design
- Power generation
- Propulsion
- Space engineering
- Stress analysis
- Thermodynamics

◆ DROP THE FOLLOWING CONCENTRATIONS – RELIABILITY AND MAINTAINABILITY ENGINEERING – MS

- Aerospace engineering
- Biomedical engineering
- Mechanical engineering

DEPARTMENT OF NUCLEAR ENGINEERING

REVISE INTRODUCTORY PARAGRAPH – NUCLEAR ENGINEERING MAJOR

On Page 155 of the 2008-09 *Graduate Catalog* revise the two departmental introductory paragraphs to:

The Department of Nuclear Engineering offers programs leading to the Master of Science and Doctor of Philosophy degrees, and one Graduate Certificate. Students may elect a traditional nuclear engineering program focusing on fission energy or a radiological engineering concentration, which prepares students for careers in the radiation safety field (health physics). Both programs are designed for graduates of accredited undergraduate programs in engineering, physics, chemistry, or mathematics.

All entering students must have, as a minimum, competency in mathematics through ordinary differential equations. Admitted applicants will be advised of any prerequisite undergraduate courses that may be required for their graduate studies. In addition, students without a BS in nuclear engineering, or the equivalent, must take 432 (Principles of Health Physics), 470 (Nuclear Reactor Theory I) both of which may be taken for graduate credit. However, students in the radiological engineering concentration will take 551 in place of 432. Students electing the radiological engineering concentration must take 401, 551, 552 and 490 in their course of study. The department head is the contact for all interested students, both those with nuclear engineering degrees and those from other disciplines.

REVISE REQUIREMENTS – NUCLEAR ENGINEERING MAJOR – MS

On page 155 of the 2008-09 *Graduate Catalog* revise the first bullet item to:

- A major consisting of 12 hours of graduate courses in nuclear engineering which must include at least two of the following courses – 511, 521, 551, 571.

COLLEGE OF NURSING

All changes effective Fall 2009

Due to the university-wide moratorium on any new academic programs during this budget crisis, the Doctor of Nursing Practice (DNP) proposal could not go forward, at this time, to the Board of Trustees or subsequently on to THEC. Therefore, the DNP courses and program information should not be included in the 2009/2010 Graduate Catalog. The College of Nursing will bring this forward again when the moratorium is lifted.

See Graduate Council Minutes pages G1195 and G1199.

COLLEGE OF SOCIAL WORK

All changes effective Fall 2009

I. COURSE CHANGES

(905) (SOWK) Social Work

REVISE (DE) PREREQUISITE(S)

531 Working with Maltreated and Traumatized Children and Their Families (2)

(DE) Prerequisite(s): 510, 512, 513, 517, 519, 522, 538.

532 Short-Term Interventions (2)

(DE) Prerequisite(s): 510, 512, 513, 517, 519, 522, 538.

540 General Topics in Social Work (2-3)

(DE) Prerequisite(s): 510, 512, 513, 517, 519, 522, 538.

545 Evidence-based Resource Development Practice Across Systems (3)

(DE) Prerequisite(s): 510, 512, 513, 517, 519, 522, 538.

546 Evidence-based Social and Economic Development Practice Across Systems (3)

(DE) Prerequisite(s): 510, 512, 513, 517, 519, 522, 538.

548 Advanced Policy Practice (2)

(DE) Prerequisite(s): 510, 512, 513, 517, 519, 522, 538.

549 Evaluative Research (3)

(DE) Prerequisite(s): 510, 512, 513, 517, 519, 522, 538.

552 Community Organization (2)

(DE) Prerequisite(s): 510, 512, 513, 517, 519, 522, 538.

555 Psychological Development and Mental Health in Later Life (2)

(DE) Prerequisite(s): 510, 512, 513, 517, 519, 522, 538.

560 Evidence-based Interpersonal Practice with Groups (3)

(DE) Prerequisite(s): 510, 512, 513, 517, 519, 522, 538.

562 Evidence-based Interpersonal Practice with Adult Individuals (3)

(DE) Prerequisite(s): 510, 512, 513, 517, 519, 522, 538.

563 Systematic Planning and Evaluation for Interpersonal Practice (3)

(DE) Prerequisite(s): 510, 512, 513, 517, 519, 522, 538.

564 Evidence-Based Substance Abuse Treatment (2)

(DE) Prerequisite(s): 510, 512, 513, 517, 519, 522, 538.

566 Social and Cultural Aspects of Aging (2)

(DE) Prerequisite(s): 510, 512, 513, 517, 519, 522, 538.

570 Evidence-based Practice with Families (3)

(DE) Prerequisite(s): 510, 512, 513, 517, 519, 522, 538.

571 Evidence-based Practice with Children and Adolescents (3)

(DE) Prerequisite(s): 510, 512, 513, 517, 519, 522, 538.

572 Evidence-based Practice with Older Adults (3)

(DE) Prerequisite(s): 510, 512, 513, 517, 519, 522, 538.