

Memo To: Faculty Senate

From: Missouri S&T Campus Curriculum Committee Meeting

RE: November 4, 2008 meeting

**The Missouri S&T Campus Curricula Committee recommends to the Faculty Senate that the curriculum changes and degree proposals on the following DC forms be approved.**

**Approved DC forms:**

DC 0302, Architectural Engineering, BS in Architectural Engineering, approved effective Fall 2009. A proposal to modify the current curriculum for the BS in Architectural Engineering by replacing Eng Mgt 207 with Eng Mgt 137.

**The Missouri S&T Campus Curricula Committee recommends to the Faculty Senate that the course changes on the following CC forms be approved.**

**Approved CC forms:**

CC 7480, Geophysics 320, Computational Geophysics. New course approved effective Spring 2009.

Catalog Description: Scientific programming in a UNIX/Linux environment, with emphasis on solving geophysical problems such as linear and nonlinear inversion, spectral analysis, seismicity, seismic wave attenuation, shear-wave splitting, and seismic tomography.

Credit Hours: 1 hour lecture, 2 hour lab, Total: 3

Prerequisites: Geophysics 270

CC 7481, Biological Sciences 151, Introduction to Environmental Sciences. New course approved effective Fall 2009.

Catalog Description: An introduction to environmental science, with an emphasis on biological aspects of current environmental problems. Topics range from chemical toxicity to global climate change. Environmental challenges facing local species and ecosystems will be emphasized.

Credit Hours: 3 hour lecture

Prerequisites: None

CC 7482, Biological Sciences 150, Biotechnology in Film. New course approved effective Spring 2009.

Catalog Description: Popular films that use biology-based plots influence society by disseminating facts and providing misinformation. Popular movies serve as the basis for discussing the biotechnology behind popular movie plots and examining the relationship between public perceptions and biotechnology.

Credit Hours: 3 hour lecture

Prerequisites: None

CC 7483, Nuclear Engineering, 327, Radiological Engineering. New course approved effective Spring 2009.

Catalog Description: Radiation exposure pathways analysis; modeling of radionuclides transport through atmosphere, surface and ground water. Human health impact. Transportation of nuclear waste. Nuclear Waste characterization. Regulatory structure and requirements. Scenario case studies and computer simulation of transport.

Credit Hours: 3 hour lecture

Prerequisites: NE 205

CC 7484, Engineering Management 418, Psychology 418, Leadership for Engineering. New course approved effective Fall 2009.

Catalog Description: Provides engineers with a background in leadership concepts and principles; enables students to develop practical skills in leading and managing through multiple personal assessments. Topics include leadership styles, managing commitments, conflict resolution, change management, emotional intelligence, team dynamics and business ethics.

Credit Hours: 3 hours lecture

Prerequisites: Emgt 313 or Psych 374

CC 7485, Mining Engineering 407, Theory of High Explosives. The following change is approved effective Spring 2009.

Catalog Description – Proposed: Study of the application of chemical thermodynamics and the hydrodynamic theory to determine the properties of high explosives; application of detonation theory to steady-state detonations in real explosives; application of the above to the blasting action of explosives.

CC 7486, IDE 20, Engineering Design with Computer Applications. The following changes have been approved effective Fall 2009.

Course Title – Proposed: Introduction to Engineering Design

Catalog Description – Proposed: Introduction to a systematic approach to engineering design (problem clarification, concept generation, concept selection, prototyping methods, engineering ethics) and fundamental design communication techniques. Computer aided design tools are introduced to assist in design analysis.

Credit Hours – Present: 1 hour lecture, 2 hour lab, Total: 3

Proposed: 2 hour lecture, 1 hour lab, Total: 3

Note: The title change to this course will be made in all curriculums that require this course.

CC 7487, Physics 494, Co-op Registration. The following changes are approved effective Spring 2009.

Catalog Description – Proposed: Doctoral candidates participating in a cooperative program with another UM campus must enroll for one hour of credit for their first semester in the program and zero hours of credit for successive registration periods until degree is completed. Failure to do so may invalidate candidacy. Billing is automatic as is registration upon payment.

Credit Hours – Present: Total: 1

Proposed: Total: 0-1

CC 7488, Civil Engineering 412, Numerical Methods in Geotechnical Engineering. The following changes are approved effective Spring 2009.

Course Title – Proposed: Computer Modeling in Geotechnical Engineering

Catalog Description – Proposed: Survey of computer methods of analyzing and modeling complex geotechnical engineering problems. Computer applications, data analysis, and result interpretations. Topics include constitutive modeling, foundation engineering, seepage, unsaturated flow problem, slope stability analysis, consolidation, excavation, tunneling, and dynamic soil-structure interaction.

Prerequisites – Present: Graduate standing

Proposed: CE 215 and graduate standing

CC 7489, Civil Engineering 342, Architectural Engineering 342, Construction Planning and Scheduling Strategies. New course approved effective Spring 2009.

Catalog Description: The goal of this course is to assist participants in gaining an understanding of schedule control techniques and the application of tools such as Primavera Software. Content areas to be addressed include: development of baseline schedules, progress monitoring and updating, recovery schedules, resource application and leveling.

Credit Hours: 3 hour lecture

Prerequisite: Cv Eng or Arch Eng 248

**For the information of the Faculty Senate, the following EC forms have been submitted by the University departments for an experimental course that will be offered in the near future.**

**Approved EC forms:**

EC 2116, Physics 301, Transport in Nanostructures: An Introduction, approved effective Spring 2009.

Course Description: The course overviews how wave interference, energy quantization and tunneling phenomena influence the wave (electron and light) transport in modern nanostructured materials and devices such as quantum dots, quantum wells, quantum wires and photonic crystals.

Credit Hours: 3 hour lecture

Prerequisites: Physics 107 or Physics 207

EC 2117, Biological Sciences 301, Cellular Neurobiology, approved effective Spring 2009.

Course Description: The biology of nerve cells, particularly neurons as the substrate for higher brain functions. Topics include the electrical properties of cells, synaptic Transmission, neural development, neural plasticity, and neuropharmacology.

Credit Hours: 3 hour lecture

Prerequisites: Bio Sci 211

EC 2118, Chemistry 401, Mass Spectrometry of Macromolecules, approved effective Spring 2009.

Course Description: The course will provide an overview of mass spectrometric applications in biomacromolecules and synthetic polymers; particular areas of emphasis are proteomics, genomics, pharmaceutical screening, characterization of biochemical complexes and synthetic polymers.

Credit Hours: 3 hour lecture

Prerequisites: Graduate status; Chem 355 or equivalent

EC 2122, Spanish 301, Spanish Translation: Theory and Practice, approved effective Spring 2009.

Course Description: This course is an introduction to the theory, and practice of translation. The course will address the fundamentals of translation practices to provide advance learners of Spanish with hands-on manipulation of grammatical, lexical, and cultural detail.

Credit Hours: 2 hour lecture, 1 hour lab, Total: 3

Prerequisite: Spanish 80

EC 2123, Geological Engineering 401, Applications of Geological Engineering, approved effective Spring 2009.

Course Description: The course will focus on geological engineering considerations during military-site characterizations. Fundamental topics such as rock mechanics, engineering hazards, environmental issues and site planning will be covered from the perspective of the practicing military engineer operating in a rapid deployment mode.

Credit Hours: 2 hour lecture, 1 hour lab, Total 3

Prerequisite: Permission of instructor. The course is intended for military officers registered in the UMR FLW Masters of Science in Geological Engineering Degree Program.

EC 2124, Geological Engineering 201, Geology and Engineering of Ancient and Modern Peru, approved effective Spring 2009.

Course Description: A study of the geological engineering of the Cuzco-Machu Picchu corridor, including the inter-relations of geology, climate, archeology, and history. A technical report and a week-long field trip to Peru during Spring Break are required.

Credit Hours: 1 hour lecture

Prerequisites: None

EC 2125, Geological Engineering 201, IDE 201, Statistics and Mechanics of Geologic Materials, approved effective Spring 2009.

Course Description: Fundamental statics of rigid bodies and mechanics of deformable bodies for entering graduate students, focusing on behavior of rock and soil in engineering situations. Not for students intending to register as professional engineers.

Credit Hours: 3 hour lecture

Prerequisites: None

EC 2126, Geological Engineering 101, Math 101, Mathematical Concepts for Military Engineers, approved effective Spring 2009.

Course Description: Review of fundamental concepts in Algebra, Trigonometry and Calculus for students in Geological Engineering. Designed as a bridging course for Military Reserve officers enrolled in the On-Line Certificate in Military Geological Engineering.

Credit Hours: 2 hour lecture

Prerequisites: None

EC 2127, Mining Engineering 401, Blast Mitigation for Structures, approved effective Spring 2009.

Course Description: Study of the application of energy-absorption, shock impedance mismatch, and hybrid materials to meet the challenge of defense against blast energy; use of current blast mitigation techniques to reinforce new and existing structures against close-in small- to medium- size (up to 200 pounds of TNT equivalent) blasts.

Credit Hours: 3 hour lecture

Prerequisites: Min 307

EC 2128, IDE 301, Systems Engineering 301, Architectural Engineering 301, Renewable Power Systems Design, approved effective Spring 2009.

Course Description: The fundamental equations for modeling renewable power systems capable of producing electric and thermal energy will be covered. Models will be used to design, fabricate and test renewable residential power systems.

Credit Hours: 2 hour lecture, 1 hour lab, Total: 3

Prerequisites: IDE 214 or linear systems (EE 265 or ME 211)

EC 2129, Theatre 201, Entertainment Design, approved effective Spring 2009.

Course Description: Students will learn the fundamentals of design for live theatre, film, theme parks, clubs, concerts, and dance events.

Credit Hours: 1 hour lecture, 2 hour lab, Total: 3

Prerequisites: None



**New Business**

Proposed new process for experimental courses: The EC form will authorize a course to be taught twice anytime during the next 3 years from the effective term. Once approved, departments may include the course on the Schedule of Classes for any semester within the 3 year period by notification to the Registrar. Any changes to the course title, description, or prerequisites will require a new EC form. After the course has been taught twice, a CC form is used to make the course a permanent course. Any form with effective term Spring 2009 or later will fall under this new process.

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J. Keith Nisbett, Chair  
Missouri S&T Campus Curricula Committee