



**OFFICE OF THE REGISTRAR**

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Memo To: Academic Council  
From: UMR Campus Curriculum Committee Meetings  
RE: November 28, 2006 & January 2, 2007 Meetings

**The UMR Campus Curricula Committee recommends to the Academic Council that the curriculum changes and degree proposals on the following DC forms be approved.**

**Approved DC forms:**

DC 0212, SM&IS, Business Administration, approved effective Spring 2007. A proposal to change all of Business Administrations Emphasis Areas to Areas of Concentration which will not be tracked on the CAPS Report.

**The UMR Campus Curricula Committee recommends to the Academic Council that the course changes on the following CC forms be approved.**

**Approved CC forms:**

CC 7112, Chemistry 222, Organic Chemistry I Lab. Course deletion approved effective Spring 2007.

CC 7121, Chemistry 321, Intermediate Organic Chemistry I. The following change is approved effective Spring 2007.

Prerequisites – Present: Chem 223 and 243  
Proposed: Chem 223

CC 7122, Chemistry 323, Intermediate Organic Chemistry II. The following change is approved effective Spring 2007.

Prerequisites – Present: Chem 223 and 243  
Proposed: Chem 223

CC 7123, Engineering 201, Special Topics. New course approved effective Spring 2007  
Catalog Description: This course is designed to give the department an opportunity to test a new course. Variable title.

Credit Hours: 0-6 hours lecture  
Prerequisites: None

CC 7124, Computer Engineering 409, Topics in VLSI Systems. New course approved effective Spring 2007.

Catalog Description: This course deals with issues related to VLSI systems, rather than low-level issues at the transistor or layout level. Topics include VLSI testing, design for test, noise and defect modeling, formal verification, yield analysis, timing analysis and systems-on-a-chip.



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Credit Hours: 3 hour lecture  
Prerequisites: Comp Engr 311

CC 7125, Chemistry 441, Physical Chemistry of Surfaces. The following change is approved effective Spring 2007.

Catalog Description – Present: Absorption at liquid interfaces and properties of surface films. Physical and chemical absorption on solid surfaces. Catalysis.

Proposed: Adsorption at liquid interfaces and properties of surface films. Physical and chemical adsorption on solid surfaces. Catalysis.

CC 7126, Civil Engineering 375, Low-Rise Building Analysis and Design. The following changes are approved effective Spring 2007.

Catalog Description – Proposed: Characterization of various design loads, load combinations, general methodology of structural designs against lateral loads, code-oriented design procedures, distribution of lateral loads in structural systems, application of the International Building Code in design of loadbearing wall systems, building frame system and moment-resisting frame systems.

Co-listing: ArchE 375

CC 7127, Engineering Management 261, Introduction to Project Management. New course approved effective Spring 2007.

Catalog Description – Proposed: This course covers the fundamentals of project management including project definition, project selection, project planning, estimating, scheduling, resource allocation and project control.

Credit Hours: 3 hour lecture  
Prerequisites: None

CC 7136, Geological Engineering 75, Geological Engineering in Popular Media. New course approved effective Spring 2007.

Catalog Description: Examination of the issues and topics related to geological engineering as presented in movies, television programs, and other communications media.

Credit Hours: Lecture: 1 Lab: 2 Total: 3  
Prerequisites: None

CC 7137, Geological Engineering 336, Geophysical Field Methods. New course approved effective Spring 2007.

Catalog Description: Imaging of selected subsurface and engineering features by various geophysical methods. Special emphasis on ground penetrating radar and magnetic methods; and the acquisition reduction of associated data. One field trip at student expense required.

Credit Hours: Lecture: 2 Lab:1 Total: 3  
Prerequisites: Geoph 285



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Co-listing: Geophysics 336

CC 7138, Geological Engineering 382, Environmental and Engineering Geophysics. New course approved effective Spring 2007.

Catalog Description: An introduction to the theory and application of the gravity, magnetic, resistivity, self-potential, induced polarization and electromagnetic methods as applied to the solution of engineering and environmental problems.

Credit Hours: Lecture: 2 Lab: 1 Total: 3

Prerequisites: Math 22

Co-listing: Geophysics 382

CC 7140, Geological Engineering 51, Physical and Environmental Geology. Course deletion approved effective Spring 2007.

CC 7145, Art 64, Sculpture. New course approved effective Fall 2007.

Catalog Description: Solving problems in shallow and BAS relief and small clay sculpture, study of contemporary and classical proportion, faux bronze and plaster casting.

Credit Hours: 3 hour lab

Prerequisites: None

CC 7146, Mining Engineering 307, Principles of Explosives Engineering. The following change is approved effective Spring 2007.

Prerequisites – Present: Ge Eng 50; accompanied or preceded by either Cv Eng 215 or Geo 220

Proposed: Ge Eng 50; accompanied or preceded by either Cv Eng 215 or Geo 220 or Geo 125

CC 7147, Architectural Engineering 375, Low-Rise Building Analysis and Design. New course approved effective Spring 2007.

Catalog Description: Characterization of various design loads, load combinations, general methodology of structural designs against lateral loads, code-oriented design procedures, distribution of lateral loads in structural systems, application of the International Building Code in design of loadbearing wall systems, building frame system and moment-resisting frame systems.

Credit Hours: 3 hour lecture

Prerequisites: Preceded and/or accompanied by CE-ArchE 221 or CE-ArchE 223

Co-listing: Civ Eng 375

CC 7150, Business 311, Business Negotiations. New course approved effective Fall 2007.

Catalog Description: The purpose of this course is to understand the practices and processes of negotiation so that you can negotiate successfully in a variety of

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settings. The course is designed to be relevant to the broad spectrum of negotiation problems faced by managers, consultants, etc. Because almost everyone negotiates all the time, this course is relevant to almost any student.

Credit Hours: 3 hour lecture

Prerequisites: Upperclassmen or graduate status

**For the information of the Academic Council, 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 1866, Chemistry 401, Polymer Synthesis, approved effective Spring 2007.

Course Description: The organic synthetic methods of monomer and polymer synthesis will be explored. Mechanistic and structural components will be discussed. Modern methods for polymer synthesis as well as current industrial methods will be discussed. Linear, branched, graft, dendritic, nano-technology and macromers will be topics of discussion.

Credit Hours: 3 hour lecture

Prerequisites: Graduate Status; Chem 381 or equivalent and Chem 321 or equivalent

EC 1867, Biological Sciences 101, Introduction to Environmental Science, approved effective Fall 2007.

Course 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

EC 1869, Civil Engineering 301, Construction Planning and Scheduling Strategies, approved effective Spring 2007.

Course Description: This course introduces schedule control techniques and the use of software tools such as Primavera, as applied to construction projects. Specific content areas include development of baseline schedules, progress monitoring and updating, recovery schedules, resource application and leveling.

Credit Hours: 3 hour lecture

Prerequisites: Senior or Graduate Standing

EC 1870, Electrical Engineering 301, Introduction to Scientific Measurement & Instrumentation, approved effective Spring 2007.

Course Description: Introduction to the fundamental principles and theories of scientific measurement. Establishment of a systematic approach in analysis, design, calibration and characterization of sensors and measurement instruments. Survey of



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the latest sensor technologies for measuring various physical and chemical quantities.

Credit Hours: 3 hour lecture

Prerequisites: EE 253 & Stat 217

EC 1871, Math 301, The Evolution of Mathematical Concepts, approved effective Spring 2007.

Course Description: The evolutionary development of selected mathematical concepts from the earliest times to the present will be studied with emphasis on Greek mathematics, Calculus in the 17<sup>th</sup> century and algebra, analysis, and geometry in the 19<sup>th</sup> and 20<sup>th</sup> centuries.

Credit Hours: 3 hour lecture

Prerequisites: Math 22 and a 300 level mathematics or statistics course

EC 1872, Civil Engineering 301, Fundamentals of Traffic Flow Theory, approved effective Spring 2007.

Course Description: This course will cover fundamentals of traffic flow, traffic flow characteristics, statistical distributions of traffic flow parameters, traffic stream models, car following models, continuum follow models, shock wave analysis, queuing analysis, traffic flow models for intersections, network flow models and control, traffic simulation.

Credit Hours: 3 hour lecture

Prerequisites: Stat 213, CE 211, CE 353 (or concurrently enrolled)

EC 1873, Civil Engineering 401, Advanced Traffic Flow Theory, approved effective Spring 2007.

Course Description: This course will cover advanced theories of traffic flow, traffic flow characteristics, statistical distributions of traffic flow parameters, traffic stream models, car following models, continuum follow models, shock wave analysis, queuing analysis, traffic flow models for intersections, network flow models and control, traffic simulation

Credit Hours: 3 hour lecture

Prerequisites: CE 353 (or currently enrolled), knowledge of statistics, graduate standing or consent of instructor

EC 1874, Environmental Engineering 301, Civil Engineering 301, Architectural Engineering 301, Sustainability: Population, Energy, Water, and Materials, approved effective Fall 2007.

Course Description: The course will examine the concepts regarding the continued advancement of humankind while maintaining our ecological niche on earth. Key topics include: population growth, poverty, and impacts of development; energy consumption, sources, storage, conservation and policy; water quality and quantity; materials and building; and policy implications.



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Credit Hours: 3 hour lecture  
Prerequisites: None  
Co-listing: Civ Eng 301, Arch Eng 301

EC 1875, Engineering Management 201, Economic Analysis of Engineering Projects, approved effective Spring 2007.

Course Description: This course covers engineering project analysis from an engineering economics perspective. Topics will include: interest, equivalent worth, comparing alternatives, rate of return methods, depreciation and taxes, inflation and price changes, and benefit-cost analysis.

Credit Hours: 2 hour lecture  
Prerequisites: None

EC 1876, Engineering Management 301, Psychology 301, Leadership for Engineers, approved effective Fall 2007.

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

Credit Hours: 3 hour lecture  
Prerequisites: Emgt 313 or Psych 374  
Co-listing: Psychology 301

EC 1877, Computer Engineering 301, Embedded Processor System Design, approved effective Spring 2007.

Course Description: Development of hardware and software for embedded systems. Course emphasizes aspects of embedded systems like real-time operating systems, advanced programming, communication schemes, hardware peripherals and sensors, control methodologies, printed-circuit board design, interrupts, microcontrollers, and hardware-software co-design. Course typically requires 1 or more team design projects.

Credit Hours: 3 hour lecture  
Prerequisites: Cp Eng 213

EC 1878, Computer Engineering 301, Electrical Engineering 301, System Engineering 301, Wireless Networks, approved effective Spring 2007.

Course Description: Overview of wireless communications and networking, transmission fundamentals and wireless access protocols, wireless LAN, IEEE 802.11, and introduction to wireless adhoc and sensor networks.

Credit Hours: Lecture: 2 Lab: 1 Total: 3  
Prerequisites: EE 243 or Cp Eng 213; and hardware competency



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EC 1879, IDE 401, Decision Analysis, approved effective Fall 2007.

Course Description: This course teaches decision-making methods under uncertainty.

Course topics include influence diagrams, decision trees, probability theory, subjective probability, risk attitudes, utility axioms, and multiattribute utility models. This course will serve as the foundation toward design decision-making.

Credit Hours: 3 hour lecture

Prerequisites: None

EC 1880, Nuclear Engineering 301, Radiological Engineering, approved effective Spring 2007.

Course 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: Nu Eng 205

EC 1881, Business 301, Mathematics and Statistics Essentials, approved effective Fall 2007.

Course Description: This course is an introduction to the essentials of mathematics and statistics for running a business. This course is designed for students planning to enter the MBA program who need coverage in this area and for non-business students who want some business background. Credit in this course can not be applied to any major or minor in business, information sciences and technology, or economics.

Credit Hours: 1.5 hour lecture

Prerequisites: Bachelor Degree or Senior Standing

EC 1882, Business 301, Management and Business Law Essentials, approved effective Fall 2007.

Course Description: This course is an introduction to the essentials of management and business law for running a business this course is designed for students planning to enter the MBA program who need coverage in this area and for non-business students who want some business background. Credit in this course can not be applied to any major or minor in business, information sciences and technology, or economics.

Credit Hours: 1.5 hour lecture

Prerequisites: Bachelor Degree or Senior Standing

EC 1883, Business 301, Accounting Essentials, approved effective Fall 2007.

Course Description: This course is an introduction to the essentials of financial and managerial accounting for running a business. This course is designed for students



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planning to enter the MBA program who need this area and for non-business students who want some business background. Credit in this course can not be applied to any major or minor in business, information sciences and technology, or economics.

Credit Hours: 1.5 hour lecture

Prerequisites: Bachelor Degree or Senior Standing

EC 1884, Business 301, Marketing and Strategy Essentials, approved effective Fall 2007.

Course Description: This course is an introduction to the essentials of marketing and strategy for running a business. This course is designed for students planning to enter the MBA program who need coverage in this area and for non-business students who want some business background. Credit in this course can not be applied to any major or minor in business, information sciences and technology, or economics.

Credit Hours: 1.5 hour lecture

Prerequisites: Bachelor Degree or Senior Standing

EC 1885, Business 301, Management Information Systems Essentials, approved effective Fall 2007.

Course Description: This course is an introduction to the essentials of management information systems for running a business. This course is designed for students planning to enter the MBA program who need this area and for non-business students who want some business background. Credit in this course can not be applied to any major or minor in business, information sciences and technology, or economics.

Credit Hours: 1.5 hour lecture

Prerequisites: Bachelor Degree or Senior Standing

EC 1886, Business 301, Operations Management Essentials, approved effective Fall 2007.

Course Description: This course is an introduction to the essentials of operations management for running a business. This course is designed for students planning to enter the MBA program who need coverage of this area and for non-business students who want some business background. Credit in this course can not be applied to any major or minor in business, information sciences and technology, or economics.

Credit Hours: 1.5 hour lecture

Prerequisites: Bachelor Degree or Senior Standing

EC 1887, Economics 301, Micro and Macro Economics Essentials, approved effective Fall 2007.

Course Description: This course is an introduction to the essentials of micro and macro economics for running a business. This course is designed for students planning to enter





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the MBA program who need this area and for non-business students who want some business background.

EC 1888, Finance 301, Finance Essentials, approved effective Fall 2007.

Course Description: This course is an introduction to the essentials of micro and macro economics for running a business. This course is designed for students planning to enter the MBA program who need this area and for non-business students who want some business background. Credit in this course can not be applied to any major or minor in business, information sciences and technology, or economics.

Credit Hours: 1.5 hour lecture

Prerequisites: Bachelor Degree or Senior Standing

EC 1889, Geological Engineering 301, Fractured Rock Behavior, approved effective Spring 2007.

Course Description: Explores current theoretical approaches to analyzing the behavior of rock masses containing joints, cracks, faults, fractures, etc. Topics include stresses, rigid block kinematics, rock mass strength and deformability, and fluid flow. Follow-up to the "Fractured Rock Characterization" course.

Credit Hours: 3 hour lecture

Prerequisites: GE 301 sec 6E

EC 1890, Geophysics 301, Transportation Geophysics, approved effective Spring 2007.

Course Description: Applications of geophysics to analysis of bridge substructure, pavements, roadway subsidence, subsurface characterization and vibration measurements.

Credit Hours: Lecture: 2 Lab: 1 Total: 3

Prerequisites: Instructor Consent

EC 1891, Biological Sciences 401, Advanced Cancer Cell Biology, approved effective Fall 2007.

Course Description: Advanced cell biology course examining cellular processes that go awry during tumorigenesis. We will discuss cell cycle controls, signal transduction pathways, DNA repair, telomerase, apoptosis, cell migration and adhesion that are altered in cancer cells. In addition to lecture, will include a weekly section to examine primary cancer literature.

Credit Hours: 3 hour lecture

Prerequisites: Bio Sci 211

EC 1892, Geology 401, Anatomy of a Continental Rift: Afar, Ethiopia, approved effective Spring 2007.

Course Description: An interdisciplinary examination of the process of lithospheric rupture and birth of a new plate margin as exemplified by the active continental rift in the Afar region of Ethiopia. The course will consist of weekly critical review of



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publications in geophysics, petrology, structure, and remote sensing related to rifting as well as an oral and written presentation on selected research topics.

Credit Hours: Lecture: 2 hour lecture

Prerequisites: Graduate Standing or instructor permission

EC 1892, Biological Sciences 301, Cancer Cell Biology, approved effective Fall 2007.

Course Description: Advanced cell biology course examining cellular processes that go awry during tumorigenesis. We will discuss cell cycle controls, signal transduction pathways, DNA repair, telomerase, apoptosis, cell migration and adhesion that are altered in cancer cells.

Credit Hours: 3 hour lecture

Prerequisites: Bio Sci 211

EC 1893, Biological Sciences 301, Biomedical Problems, approved effective Fall 2007.

Course Description: This course will use a problem-based learning approach to examine biological aspects of various medical conditions. Students will work in groups and individually to answer problems related to diagnostic testing and evaluation of diseases and other medical conditions.

Credit Hours: 3 hour lecture

Prerequisites: Bio Sci 211

EC 1894, Biological Sciences 401, Advanced Comparative Chordate Anatomy, approved effective Spring 2008.

Course Description: An integrated, comparative study of chordate structures and systems, with emphasis on evolution, development and function. Includes examination of gross anatomy and histology of selected forms. Independent research projects and primary literature readings required.

Credit Hours: Lecture: 2 Lab: 2 Total: 4

Prerequisites: Graduate Standing

EC 1896, Business 301, Business Negotiations, effective Fall 2007. There was a CC approved for this course #7150. EC form returned to department.

EC 1897, Business 301, Understanding Business Processes, approved effective Fall 2007.

Course Description: This course prepares students to effectively use, manage and participate in the development of information technology applications in support of common business processes. Topics covered include enterprise systems, e-business and information technology.

Credit Hours: 3 hour lecture

Prerequisites: Bus 120

EC 1902, Aerospace Engineering 401, Mechanical Engineering 401, approved effective Spring 2007.



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Course Description: This course will provide technically intensive descriptions and analysis of conventional, non-conventional, and advanced aerospace propulsion systems and propulsion system performance from the standpoint of fundamental thermodynamics and fluid/gas dynamics.

Credit Hours: 3 hour lecture

Prerequisites: AE 335 or ME 325

This form was not on the Jan. 2 agenda but the committee approved it by e-mail vote so that it can be offered for Spring 2007.

EC 1903, Mechanical Engineering 401, Micro-/Nano-Scale Thermophysics and Energy Transport.

Course Description: Introduces advanced statistical thermodynamics, nonequilibrium thermodynamics, kinetic theory, and quantum theory to analyze thermophysics and energy transport for microscale and nanoscale systems. Covers the fundamental concepts and interactions of photons, electrons and phonons in the forms of waves and particles. Includes applications to ultrafast (femtosecond and picosecond) laser processing.

Credit Hours: 3 hour lecture

Prerequisites: ME 325

This form was not on the Jan. 2 agenda but the committee approved it by e-mail vote so that it can be offered for Spring 2007.

EC 1909, Engineering 201, IDE 201, SDELDC Design, approved effective Spring 2007.

Course Description: Students will participate in a significant design activity as part of one of the SDELDC design team projects. Design activity will be reported and assessed at the end of the semester through a design report and oral presentation.

Credit Hours: 1 hour lab

Prerequisites: Sophomore standing and membership in a SDELDC design team

This form was not on the Jan. 2 agenda but the committee approved it by e-mail vote so that it can be offered for Spring 2007.

EC 1910, Engineering 201, IDE 201, SDELDC Leadership, approved effective Spring 2007.

Course Description: Students will participate in open lecture on team based management and leadership as it pertains to on going project activities. Project activity reports will be generated using real project data and assessed at the end of the semester through a project master plan and oral presentation.

Credit Hours: Lecture: 0.5 Lab: 0.5 Total: 1

This form was not on the Jan. 2 agenda but the committee approved it by e-mail vote so that it can be offered for Spring 2007.



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UMR Campus Curricula Committee