



**OFFICE OF THE REGISTRAR**

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Memo To: Academic Council  
From: UMR Campus Curriculum Committee Meetings  
RE: April 24, 2007 Meeting

**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 0229, College of Arts & Sciences, Technical Communication. A proposal to modify the current curriculum for the BS in Technical Communication by replacing the current specific 36 hours of Interdisciplinary requirements, approved effective Fall 2007.

DC 0230, College of Arts & Sciences, Elementary Education, approved effective Fall 2008. A proposal to create a BS degree in Elementary Education.

DC 0236, College of Arts & Sciences, Pre-Law Minor, approved effective FS2008. A proposal to create a new minor under the History and Political Science department called Pre-Law.

DC 0237, College of Arts & Sciences, Chemistry, approved effective FS2008. A proposal to modify the current curriculum for the BS in Chemistry by changing the number of credit hours for Chem 221 and Chem 223 and elective hours to keep total degree hours the same.

DC 0238, College of Arts & Sciences, Chemistry Biochemistry Emphasis Area, approved effective FS2008. A proposal to modify the current curriculum for the BS in Chemistry Biochemistry Emphasis Area by changing the number of credit hours for Chem 221 and Chem 223 and elective hours to keep total degree hours the same.

DC 0239, College of Arts & Sciences, Chemistry Pre-medicine Emphasis Area, approved effective FS2008. A proposal to modify the current curriculum for the BS in Chemistry Pre-medicine Emphasis Area by changing the number of credit hours for Chem 221 and Chem 223 and elective hours to keep total degree hours the same.

DC 0240, College of Arts & Sciences, Chemistry Polymer & Coatings Science Emphasis Area, approved effective FS2008. A proposal to modify the current curriculum for the BS in Chemistry Polymer & Coatings Science Emphasis Area by changing the number of credit hours for Chem 221 and Chem 223 and elective hours to keep total degree hours the same.



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DC 0238, College of Arts & Sciences, Chemistry Biochemistry Emphasis Area, approved effective FS2008. A proposal to modify the current curriculum for the BS in Chemistry Biochemistry Emphasis Area by changing the number of credit hours for Chem 221 and Chem 223 and elective hours to keep total degree hours the same.

DC 0239, College of Arts & Sciences, Chemistry Pre-medicine Emphasis Area, approved effective FS2008. A proposal to modify the current curriculum for the BS in Chemistry Pre-medicine Emphasis Area by changing the number of credit hours for Chem 221 and Chem 223 and elective hours to keep total degree hours the same.

DC 0240, College of Arts & Sciences, Chemistry Polymer & Coatings Science Emphasis Area, approved effective FS2008. A proposal to modify the current curriculum for the BS in Chemistry Polymer & Coatings Science Emphasis Area by changing the number of credit hours for Chem 221 and Chem 223 and elective hours to keep total degree hours the same.

DC 0250, SoMEER, Geology and Geophysics, approved effective Fall 2007. A proposal to modify the current curriculum for the BS in Geology and Geophysics.

**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 7199, IDE 203, Technology in Elementary Education. New course approved effective Spring 2008.

Catalog Description: This course teaches elementary education majors about technology and engineering concepts suitable for the elementary classroom. Topics covered include technology in daily life, research in technology, measurements, and using technology to solve problems. The course will emphasize problem solving based on multiple parameters (safety, cost, etc.).

Credit Hours: 2 hour lecture

Prerequisites: Math 2 or 4



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CC 7204, Chemistry 221, Organic Chemistry I. The following changes area approved effective FS2008.

Catalog Description – Proposed: This course consists of four parts: 1) Structure, bonding, and nomenclature; 2) hydrocarbons (alkanes, alkenes, and alkynes), conjugated systems, ultraviolet and visible spectroscopy, stereochemistry, resonance, and molecular orbital theory; 3) substitution and elimination reactions, and 4) identification of organic compounds via infrared and NMR spectroscopy.

Credit Hours – Present: 3 hour lecture

Proposed: 4 hour lecture

Prerequisites – Present: Chem 3 or 8

Proposed: Chem 1, 2, 3; or Chem 5

CC 7205, Chemistry 225, Bioorganic Chemistry I. Course deletion approved effective FS2008.

CC 7206, Chemistry 223, Organic Chemistry II. The following changes are approved effective FS2008.

Catalog Descriptions – Proposed: This course consists of three parts. The first part will cover aromaticity and reactions of aromatic compounds, the second part will cover carbonyl compounds, amines and their reactions, and the third part will cover bioorganic compounds that include carbohydrates, aminoacids, peptides, proteins, lipids, nucleosides, nucleotides, and nucleic acids.

Credit Hours – Present: 3 hour lecture

Proposed: 4 hour lecture

CC 7207, Chemistry 227, Bioorganic Chemistry II. Course deletion approved effective FS2008.

CC 7208, Math 437, Finance 437, Financial Mathematics II. New course approved effective FS2007.

Catalog Description: Continuation of Math 337. Topics include martingales and measures, stopping times, discrete and continuous time finance, Brownian motion, Itô calculus, stochastic differential equations, Black-Scholes-Merton formula, numerical procedures.

Credit Hours: 3 hour lecture

Prerequisites: Math 337 or Econ 337

CC 7209, History 228, History of the American Pacific. New course approved effective FS2007.

Catalog Description: This course examines United States expansion into the Pacific as an extension of 19<sup>th</sup> century Manifest Destiny. Emphasizing American Pacific possessions, the course includes a historical, political, geographical, and cultural look at the islands from 1800 to the present.



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Credit Hours: 3 hour lecture

Prerequisites: Hist 175 or Hist 176 or Hist 112

CC 7224, Metallurgical Engineering 367, Introduction to Particulate Materials. The following changes are approved effective FS2007.

Catalog Description – Proposed: Powder metallurgy and ceramic components, filters, catalysts, nanomaterials, vitamins and more depend strongly on particulate, or powder, characteristics and processing. Aspects of powder fabrication, characterization, safety, handling, component fabrication, secondary processing, and applications will be covered.

CC 7225, Geology 113, Mineralogy and Crystallography. The following change is approved effective FS2007.

Credit Hours – Present: 4 hour lecture, 1 hour lab, Total: 5

Proposed: 3 hour lecture, 1 hour lab, Total: 4

CC 7226, Geology 130, Igneous and Metamorphic Petrology. The following changes are approved effective FS2007.

Catalog Description – Proposed: A comprehensive study of megascopic and microscopic characteristics of igneous and metamorphic rocks. Fundamental theories for their origin are presented. The class includes a trip to examine these rock types in the field.

Credit Hours – Present: 4 hour lecture, 1 hour lab, Total: 5

Proposed: 3 hour lecture, 1 hour lab, Total: 4

CC 7227, Electrical Engineering 348, Computer Engineering 348, Systems Engineering 348, Wireless Networks. New course approved effective Summer 2007.

Catalog Description: Introduction to wireless communications & networking. Topics include transmission fundamentals, wireless channel, coding techniques & error control, satellite & cellular networks, cordless systems, mobile IP & management, multiple access techniques & wireless protocols, wireless LAN, IEEE 802.11, & adhoc & sensor networks.

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

Prerequisites: Hardware competency, EE 243 or CpE 213 & graduate standing

CC 7228, IDE 224, SDELC Design. New course approved effective FS2007.

Catalog Description: Students will participate in a significant design activity as part of one of the experiential learning 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 (or greater) standing and membership in an experiential learning design team



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CC 7229, IDE 233, SDELC Leadership. New course approved effective FS2007.

Catalog Description: Students will participate in open lecture on team based management and leadership as it pertains to ongoing 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: .5 hour lecture, .5 hour lab, Total: 1

Prerequisites: Sophomore (or greater) standing and leadership role in an experiential learning design team or nomination by an experiential learning team advisor.

CC 7230, Civil Engineering 317, Pavement Design. The following changes are approved effective SP2009.

Course Title – Proposed: Asphalt Pavement Design

Catalog Description – Proposed: Structural design of flexible pavements including loading characteristics, properties of pavement components, stress distribution, and the effects of climatic variables on design criteria.

Prerequisites – Present: Preceded or accompanied by Civ Eng 216

Proposed: Civ Eng 216

CC 7234, Technical Communication 493, Oral Examination. New course approved effective FS 2007.

Catalog Description: After completion of all other program requirements, oral examinations for on-campus M.S./Ph.D. students may be processed during intersession. Off-campus M.S. students must be enrolled in oral examination and must have paid an oral examination fee at the time of the defense/comprehensive examination (oral/written). All other students must enroll for credit commensurate with uses made of facilities and/or faculties. In no case shall this be for less than three (3) semester hours for resident students.

Credit Hours: (IND 0.0)

Prerequisites: None

CC 7235, Geophysics 270, Introduction to Geophysics. New course approved effective FS2007.

Catalog Description: An introduction to a broad area of solid earth geophysics and exploration geophysics. Topics include plate tectonics, earthquake study, structure and dynamics of the Earth's deep interior, gravity, magnetism, heat flow, and geophysical exploration for natural resources.

Credit Hours: 3 hour lecture

Prerequisites: Math 8 & Geology 51

**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.**



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**Approved EC forms:**

EC 1923, Statistics 301, Physics 301, Science Education & Quantitative Literacy for Middle School, approved effective Summer 2007.

Course Description: An integrated science-mathematics course for middle school teachers. Course covers selected science/mathematics topics/skills specified in Missouri standards for grades 6-8. Inquiry-based methods of teaching these topics in an integrated manner will be emphasized.

Credit Hours: 3 hour lecture

Prerequisites: Stat 305 or Stat 306 or Stat 307 or Physic 302 or Physic 303

Co-listing: Physics 301

EC 1935, Russian 201, Russian Phonetics and Intonation, approved effective Sp2008.

Course Description: Class will systematize students' knowledge of Russian phonetics and improve their pronunciation; develop basic transcription skills and facilitate comprehension of Russian speech at moderate and fast tempos. Special attention will be given to the interaction of Russian intonation and syntax.

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

Prerequisites: Russian 002

EC 1942, Mechanical Engineering 401, Viscoelasticity and Mechanics of Biological Tissues, approved effective Fall 2007.

Course Description: Biomechanics of single cells and tissues, characterization methods, and biomedical applications: a. Thermo-visco-elasticity of polymer chains/networks/membranes, b. Mechanics of a model cell, c. Cell-cell and cell-substrate adhesion, d. Multi-scaling of cell filaments/membranes/whole cell/ multi-cell aggregate/tissues, e. Tissue engineering and biomedical applications.

Credit Hours: 3 hour lecture

Prerequisites: IDE 110, ME 219, Math 204

EC 1943, Computer Science 301, Software Requirements Engineering, approved effective FS2007.

Course Description: Software Requirements Engineering (SRE) covers all the activities involved in discovering, analyzing, specifying and managing software requirements for a software system from multiple perspectives. In this course students will study how to elicit, analyze, specify, validate, and manage software requirements using advanced software requirements modeling methods, processes and tools.

Credit Hours: 3 hour lecture

Prerequisites: CS 206

EC 1947, Geophysics 201, Introduction to Geophysics. This course was approved as a new course on a CC form, see CC #7235.



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EC 1949, Nuclear Engineering 301, Applied Mathematics in Nuclear Engineering II, approved effective FS2007.

Course Description: Application of ordinary and partial differential equations in the solution of nuclear engineering problems, particularly with the neutron kinetics equations. Bessel's equation and special functions, eigenvalue problems, Green's function, integral methods and transformations.

Credit Hours: 3 hour lecture

Prerequisites: NE 303

EC 1950, Mechanical Engineering 301, Chemical Engineering 301, Ceramic Engineering 301, Biological Sciences 301, Mechanics of Biological Tissues, approved effective Fall 2007.

Course Description: This course will introduce the students to biomechanics of single cells and tissues, characterization methods, and biomedical applications. Topics include 1) Mechanics of a model cell, 2) Time and temperature dependent mechanical behavior of polymer chains and networks, 3) Multi-scaling of cell filaments, membranes, the whole cell, multi-cell aggregate and tissues, and 4) Biomedical applications.

Credit Hours: 3 hour lecture

Prerequisites: IDE 110, IDE 120, ME 219, Math 204

EC 1955, Art 101, Achieving a Life of Art, approved effective Fall 2007.

Course Description: Residential College course. An introduction to the profession and practice of art in its various forms.

Credit Hours: .5 hour lecture

Prerequisites: None

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J. Keith Nisbett, Chair  
UMR Campus Curricula Committee