Memo To: Faculty Senate
From: Missouri S&T Campus Curriculum Committee Meeting
RE: October 7, 2008 meeting

The UMR Campus Curricula Committee recommends to the Faculty Senate that the course changes on the following CC forms be approved.

Approved CC forms:
Catalog Description: This course covers the statistical foundation of actuarial models and their application. Topics include survival and severity models, Kaplan-Meier and Nelson-Aalen estimators, aggregate and credibility models for insurance losses, discrete time Markov chains, ruin theory, and simulation.
Credit Hours: 3 hour lecture
Prerequisites: Stat 343

Catalog Description: The basic statistical theory of actuarial models for life uncertainties such as time of death. Multiple life and multiple decrement models, statistical models for life and contingent insurance; last survivor, disability, withdrawal, retirement and reserving models for life insurance.
Credit Hours: 3 hour lecture
Prerequisites: Stat 343

CC 7473, IDE 214, System Modeling/Prototyping. The following changes are effective Fall 2009.
Course Title – Proposed System Modeling
Catalog Description – Proposed: This course examines the modeling and simulation of dynamic systems. The use of bond graphs to represent the essential structure of system models leads to state space equations for performance analysis and design variable selection.
Prerequisites – Present: IDE 105, Math 229, IDE 150
Proposed: IDE 105, Math 204; IDE 150 or ME 160

CC 7474, IDE 215, Jr. Design Project. The following change is approved effective Spring 2009.
Course Title – Proposed: System Prototyping
CC 7475, Math 461, Introduction to Abstract Harmonic Analysis I. The following changes are approved effective Spring 2009.
Course Title – Proposed: Harmonic Analysis I
Catalog Description – Proposed: Fourier series, norm and pointwise convergence of Fourier series, the conjugate and maximal functions, analytic functions in the unit disk and Hardy spaces, interpolation of linear operators and the Hausdorff-Young-Riesz Theorem, Sidon sets.
Prerequisites – Present: Math 305 and Math 385
Proposed: Math 315 and Math 351

CC 7476, Mining Engineering 313, Stage Pyrotechnics and Special Effects. New course approved effective Fall 2009.
Catalog Description: Use of energetic materials in close proximity to audiences. Provide participants with training preparing for Missouri Pyrotechnics Display Operators License. Covers: close proximity indoor and outdoor pyrotechnics and special effects. Working with stage crews and talent, safety and permitting.
Credit Hours: 1 hour lecture, 2 hour lab, Total: 3
Prerequisites: Chem 1. US Citizen or permanent resident (to fulfill the requirements of the SAFE EXPLOSIVE ACT 2003). Resident enrollment at MS&T (e.g. not distance or internet)

CC 7477, Math 462, Introduction to Abstract Harmonic Analysis II. The following changes are approved effective Spring 2009.
Course Title – Proposed: Harmonic Analysis II
Catalog Description – Proposed: Fourier integrals, almost-periodic functions on the real line, Banach algebras, Wiener’s Tauberian Theorem and the prime number theorem, the Paley-Wiener Theorems, band-limited functions and Shannon’s Theorem, the continuous wavelet transform, discrete wavelet transforms and frames, orthonormal bases of wavelets and multi-resolution analysis.

CC 7478, IST 286, Web and New Media Development and Design. The following change is approved effective Spring 2009.
Course Title – Proposed: Web and Digital Media Development

CC 7479, ERP 246, Introduction to Enterprise Resource Planning. The following change is approved effective Spring 2009.
Prerequisites – Present: IST 141
Proposed: IST 51
Course Description: This course follows the development of gothic/horror literature in
the United States for its earliest expression in Phillip Freneau’s 18th century works
through Brockden Brown’s late 18c. Gothic novels, to Hawthorne, Melville, and
Poe’s dark fiction, and finally to modern and contemporary works by Faulkner,
O’Connor, Stephen King and others.
Credit Hours: 3 hour lecture
Prerequisites: English 20 and a previous literature course

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 2097, Computer Engineering 301, Electrical Engineering 301, Systems Engineering
301, Evolvable Hardware, approved effective Spring 2009.
Course Description: This course deals with adaptive evolvable systems operating in a
changing environment. Components/building blocks approach for the design of
evolvable systems and the mathematical theory of evolvable machines and the idea
of virtual reconfigurable circuits for the design of more adaptive, competitive and
innovative engineering products will be taught.
Credit Hours: 3 hour lecture
Prerequisites: CpE 367 or EE 367

EC 2098, Electrical Engineering 301, Computational Intelligence Methods in Electric
Power (CIMEP), approved effective Spring 2009.
Course Description: Review of Computational Intelligence (CI) Methods; CI methods for
identification/modeling, control and optimization in electric power networks; load
forecasting; wind energy prediction; Harmonic Estimation & Scheduling of power
system maintenance.
Credit Hours: 3 hour lecture
Prerequisites: EE 207 or EE 307; EE 301 (Real Time Power System Simulation); EE 367
EC 2099, Electrical Engineering 401, Bioelectrodes and Biosensors, approved effective Spring 2009.

Course Description: Review of the rapidly emerging bioelectronics area. Device structure and operational principles of various bioelectrodes, biosensors, and biofuel cells. The topics include; (1) review of applied electroanalytical methods, (2) review of applied optical methods, (3) review of recent developments in bioelectronic systems, (4) hands-on lab sessions related with these topics.

Credit Hours: 1.5 hour lecture, 1.5 hour lab, Total: 3
Prerequisites: Graduate standing

EC 2100, Electrical Engineering 401, Signal Integrity, High Speed Digital & RF Design Laboratory, approved effective Spring 2009.

Course Description: High-frequency and high-data rate circuits are impacted by layout and component parasitics that can compromise meeting the design specifications. This is a course designed around laboratory experiments and a semester project that emphasizes practical issues in digital and RF circuit layout and design.

Credit Hours: 3 hour lab
Prerequisites: EE 271

EC 2101, Electrical Engineering 401, Advanced Topics in Antenna Analysis & Design, approved effective Spring 2009.

Course Description: Introduction and discussion of advanced antenna design issues including aperture and micro-strip antennas including simulation, design, and testing.

Credit Hours 3 hour lecture
Prerequisites: EE 373 or equivalent


Course Description: This course covers recent advances in security of Internet, Wireless Networks, and Sensor Networks.

Credit Hours: 3 hour lecture
Prerequisites: Cmp Sc 285 or equivalent
EC 2105, Mining Engineering 401, Research Methods, approved effective Fall 2009.
Course Description: This course introduces the foundation, dimensions, and methods for
designing and investigating research problems. The course will focus on
fundamental and applied research constitutions, research design methods, critical
literature review, experimental design methods, dissertation composition and write-up,
originality and contributions, intellectual property.
Credit Hours: 3 hour lecture
Prerequisites: None

EC 2106, Finance 301, Quantitative Finance Methods, approved effective Spring 2009.
Course Description: The focus is development of basic quantitative finance models using
spreadsheet technology. Particular topics include portfolio modeling and
optimization, asset pricing, performance measures, options, Black-Scholes formula,
implied volatility, interest rate models, bonds, and binomial trees.
Credit Hours: 3 hour lecture
Prerequisites: Programming Competency and Introductory Statistics

EC 2108, English 301, American Gothic, effective Spring 2009. This course was
approved on a CC form. See CC 7490.

EC 2109, IDE 401, Alternative Design Methods, approved effective Spring 2009.
Course Description: This course examines design methods outside of the Pahl and Beitz
inspired realm. Alternative design approaches such as axiomatic design, TRIZ,
affordances and quality methods are explored and evaluated on their applicability to
varying types of design problems.
Credit Hours: 3 hour lecture
Prerequisites: Graduate Standing

EC 2110, Technical Communication 301, Help Authoring, approved effective Spring
2009.
Course Description: Students will acquire the technological and rhetorical skills
necessary for creating effective online help systems, including context-sensitive
help for computer applications.
Credit Hours: 3 hour lecture
Prerequisites: Engl 65 or Tech Com 65
Course Description: This course covers recent advances in security of Internet, Wireless Networks, and Sensor Networks. The topics coverage will focus on newly emerging security services, threats, attacks and counter-measures to each of these networks. Students will be expected to pick a relevant topic, and complete a research project.
Credit Hours: 3 hour lecture
Prerequisites: Cmp Sc 385 or equivalent

EC 2114, Computer Science 401, Personal Privacy and Data Security in Distributed Computing, approved effective Fall 2009.
Course Description: This course first covers basic tools, in statistics and cryptography, commonly used to design privacy preserving and secure protocols in distributed environment. The course also introduces recent advances in the field of privacy-preserving data analysis, data sanitization and information retrieval. Students are expected to choose a relevant topic, and to complete a course project.
Credit Hours: 3 hour lecture
Prerequisites: Cmp Sci 355 or equivalent

EC 2115, Computer Science 401, Software Evolution, approved effective Spring 2009.
Course Description: Provide graduate students an overview of software evolution and the associated research field. Topics of interest include empirical methods, program comprehension, reverse engineering, static & dynamic analysis, software maintenance. Course conduct will be in the form of a research seminar.
Credit Hours: 3 hour lecture
Prerequisites: CS 206 or equivalent

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