

Memo To: Academic Council
From: Missouri S&T Campus Curriculum Committee Meetings
RE: March 4, April 1 & 7, 2008 Meetings

The UMR 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 0278, Business and Information Technology, minor in marketing, approved effective Fall 2008.

A proposal to modify the current minor in marketing by decreasing the required hours to 15 and removing psychology 50 and changing Bus 240 to Mktg. 311.

DC 0279, Business and Management System, approved effective Fall 2008.

A proposal to modify the current curriculum for the BS in Business and Management Systems.

DC 0280, Information Science and Technology, approved effective Fall 2008.

A proposal to modify the current curriculum for the BS in Information Science and Technology.

DC 0281, Business and Information Technology, approved effective Fall 2008. A proposal to create a new minor in Finance.

DC 0282, Nuclear Engineering, approved effective Fall 2008. A proposal to modify the current curriculum for the BS in Nuclear Engineering.

DC 0283, Mechanical Engineering, approved effective Fall 2008. A proposal to modify the current curriculum for the BS in Mechanical Engineering and the Manufacturing Processes emphasis area by replacing Eng. Mgt. 209 with Eng. Mgt 124 and 137.

DC 0284, Engineering Management, approved effective Fall 2008. A proposal to modify the current curriculum for the BS in Engineering Management.

DC 0285, Engineering Management, Industrial Engineering Emphasis, approved effective Fall 2008. A proposal to modify the current curriculum for the Industrial Engineering Emphasis area.

DC 0286, Engineering Management, Management of Technology Emphasis, approved effective Fall 2008. A proposal to modify the current curriculum for the Management of Technology Emphasis area.

DC 0287, Engineering Management, General Emphasis, approved effective Fall 2008. A proposal to modify the current curriculum for the General Emphasis area.

DC 0288, Engineering Management, Minor in Engineering Management, Fall 2008. A proposal to modify the current curriculum for the minor in Engineering Management.

DC 0289, Metallurgical Engineering, approved effective Fall 2008. A proposal to modify the current curriculum for the BS in Metallurgical Engineering by dropping EMgt 209 and replacing with EMgt 124 and 137.

DC 0290, Ceramic Engineering, approved effective Fall 2008. A proposal to modify the current curriculum for the BS in Ceramic Engineering by dropping Emgt 209 and replacing with EMgt 124 and 137.

DC 0291, Economics, approved effective Fall 2008. A proposal to modify the current curriculum for the BS in Economics by changing the free electives to 13 hours.

DC 0292, Geological Engineering, approved effective Fall 2008. A proposal to modify the current curriculum for the BS in Geological Engineering by removing the Computer Programming Elective and making GE 315 mandatory.

DC 0293, Computer Science, approved effective Fall 2008. A proposal to modify the current curriculum for the BS in Computer Science by dropping Math 22.

DC 0294, Computer Science, approved effective Fall 2008. A proposal to modify the current curriculum for the BS in Computer Science by requiring CS 230.

DC 0295, Computer Science, approved effective Fall 2008. A proposal to modify the current curriculum for the BS in Computer Science by changing footnote 11 to “Any three hours in humanities or social science”.

DC 0296, Computer Science, approved effective Fall 2008. A proposal to modify the current curriculum for the BS in Computer Science by increasing the number of CS elective courses to fifteen.

DC 0297, Computer Science, approved effective Fall 2008. A proposal to modify the current curriculum for the BS in Computer Science by adding a footnote to allow alternates for Cmp Sc 1.

DC 0298, Computer Science, approved effective Fall 2008, A proposal to modify the current curriculum for the BS in Computer Science by including a list of courses not to be counted toward the free electives.

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

Approved CC forms:

CC 7330, Business 240, Basic Marketing. The following changes are approved effective Fall 2008.

Discipline and Course Number – Proposed Marketing 311

Course Title – Proposed: Marketing

CC 7331, Business 260, Business Operations. The following change is approved effective Fall 2008.

Course Number – Proposed: Business 360

Prerequisites – Present: Math 12, Stats 211, and Bus 120

CC 7332, Business 280, Strategic Management. The following changes are approved effective Fall 2008.

Course Number – Proposed: 380

Catalog Description – Proposed: Study of the formulation and implementation of corporative, business and functional strategies designed to achieve organizational objectives. Case studies and research reports may be used extensively.

Prerequisites – Present: Bus 240 & Bus 250

Proposed: Mktg 311 & Fin 250; Senior standing

CC 7336, ERP 345, Business Intelligence. New course approved effective Fall 2008.

Catalog Description: Application of “Intelligent” techniques from CS and OR to business decision making. Overview of the theory, but with a focus on the application to business problem solving. Use of SAP as a tool to access and present data, search for patterns, and identify exceptions, as well as forecase, optimize, and schedule resources.

Credit Hours: 3 hour lecture

Prerequisites: ERP 346 or Bus 426 and database experience

CC 7337, Business Administration 421, Core Teambuilding. The following changes are approved effective Fall 2008.

Course Title – Proposed: Teambuilding and Leadership

Catalog Description – Proposed: As the first course in the MBA program, this class will teach students how to work well in teams and help teams become effective.

Leadership, management, networking, presentation, and workplace social skills will be covered.

Credit Hours – Present: 1 hour lecture

Proposed: 3 hour lecture

CC 7338, Business Administration 422, Core Business Opportunity Analysis. The following changes have been approved effective Fall 2008.

Course Title – Proposed: Business Opportunity Analysis

Credit Hours – Present: 4 hour lecture

Proposed: 3 hour lecture

Prerequisites – Present: Business 421

Proposed: Preceded or accompanied by Business 421

CC 7339, Business Administration 423, Core Decision Making. The following changes are approved effective Fall 2008.

Course Title – Proposed: Decision Making

Catalog Description – Proposed: Students will learn about the types of decisions that are made by organizations to exploit opportunities or neutralize threats in the environment.

Credit Hours – Present: 4 hour lecture

Proposed: 3 hour lecture

Prerequisites – Present: Business 421

Proposed: Preceded or accompanied by Business 421

CC 7340, Business Administration 424, Core Implementation. The following changes are approved effective Fall 2008.

Course Title – Proposed: Implementation

Catalog Description – Proposed: This course discusses the actions that may be carried out in implementing business plans and decisions within a business organization.

Related knowledge in the fields of accounting and finance is introduced.

Credit Hours – Present: 4 hour lecture

Proposed: 3 hour lecture

Prerequisites – Present: Business 421

Proposed: Preceded or accompanied by Business 421

CC 7341, Business Administration 425, Project. The following changes are approved effective Fall 2008.

Course Title – Proposed: Project Management

Catalog Description – Proposed: This course will cover the use of operations, management, and MIS to managing business projects.

Credit Hours – Present: 2 hour lecture

Proposed: 3 hour lecture

Prerequisites – Present: Business 423 and Business 424

Proposed: Preceded or accompanied by Business 421

CC 7342, Business Administration 426, Core Capstone. The following changes are approved effective Fall 2008.

Course Title – Proposed: Integration Using Enterprise Resource Planning

Catalog Description – Proposed: Students will learn to use enterprise resource planning (ERP) to operate a business more effectively. Emphasis will be on the business use of ERP and the integration of the business organization through use of this powerful software.

Prerequisites – Present: Business 424

Proposed: Preceded or accompanied by Business 421

CC 7343, M&IS 10, Introduction to Management & Information Systems I. The following changes are approved effective Fall 2008.

Course Number – Proposed: Business 10

Course Title – Proposed: Introduction to College Success I

Catalog Description – Proposed: Students learn essential skills for success in Business and Information Technology. The course creates a sense of community in the department and prepares the students for the business world.

CC 7344, M&IS 11, Introduction to Management & Information Systems II. The following changes are approved effective Fall 2008.

Course Number – Proposed: Business 11

Course Title – Proposed: Introduction to College Success II

Catalog Description – Proposed: A continuation of Bus 10. Students learn essential skills for success in Business and Information Technology. The course creates a sense of community in the department and prepares the students for the business world.

CC 7345, Computer Science 309, Software Requirements Engineering. New course approved effective Fall 2008.

Catalog 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. Students will study how to elicit, analyze, specify, validate, and manage software requirements using advanced software requirements engineering methods.

Credit Hours: 3 hour lecture

Prerequisites: CS 206

CC 7346, Marketing 390, Undergraduate Research. New course approved effective Fall 2008.

Catalog Description: Designed for the undergraduate student who wishes to engage in research. Not for graduate credit. Not more than six credit hours allowed for graduation credit. Subject and credit to be arranged with the instructor.

Credit Hours: Variable 0-6

Prerequisites: Consent of instructor required

CC 7347, Marketing 490, Research. New course approved effective Fall 2008.

Catalog Description: Investigations of an advanced nature.

Credit Hours: Variable 0-15

Prerequisites – Present: Consent of instructor required

CC 7349, Marketing 450, Advanced New Product Development, effective Fall 2008.

Return form to dept. approved as an EC. See EC 2047.

CC 7350, Business 407, Marketing and Strategy Essentials. The following change is approved effective Fall 2008.

Course number and discipline – Proposed: Marketing 407

CC 7351, Business 341, Marketing Strategy. The following changes are approved effective Fall 2008.

Course number and discipline – Proposed: Marketing 380

Prerequisites – Present: Business 240 or Eng Mgt 251

Proposed: Mktg 310 or Mktg 407 or Eng Mgt 251

CC 7352, Marketing 480, Advanced Marketing Strategy. New course approved effective Fall 2008.

Catalog Description: Identification and analysis of strategic managerial marketing issues. Integration of marketing concepts through theoretical overview and practical

analysis, including extensive use of simulation. Independent work on marketing project.

Credit Hours: 3 hour lecture

Prerequisites: Mktg 310 or Mktg 407 or Eng Mgt 251

CC 7353, Marketing 300, Special Problems in Marketing. New course approved effective Fall 2008.

Catalog Description: Problems or readings on specific subjects or projects in marketing.

Credit Hours: Variable 0-6

Prerequisites: Consent of instructor required

CC 7354, Marketing 400, Special Problems in Marketing. New course approved effective Fall 2008.

Catalog Description: Problems or readings on specific subjects or projects in marketing.

Credit Hours: Variable 0-6

Prerequisites: Consent of instructor required

CC 7355, Marketing 301, Special Topics in Marketing. New course approved effective Fall 2008.

Catalog Description: This is designed to give the department an opportunity to test a new course. Variable title.

Credit Hours: Variable 0-6

CC 7356, Marketing 401, Special Topics in Marketing. New course approved effective Fall 2008.

Catalog Description: This is designed to give the department an opportunity to test a new course. Variable title.

Credit Hours: Variable 0-6

CC 7357, Business 375, International Business. New course approved effective Fall 2008.

Catalog Description: This survey course will deal with business concepts, analytical processes and philosophical bases for international business operations. Emphasis is on environmental dynamics, multinational business organizations, cultural and economic constraints, unique international business practices and international operations, strategy and policy.

Credit Hours: 3 hour lecture

Prerequisites: Mktg 310 or Mktg 407 or Eng Mgt 251

CC 7358, Business 475, Advanced International Business. New course approved effective Fall 2008.

Catalog Description: Business concepts, analytical processes and philosophical bases for international business operations. Emphasis is on environmental dynamics, multinational business organizations, cultural and economic constraints, unique international business practices and international operations, strategy and policy. Research project required.

Credit Hours 3 hour lecture

Prerequisites: Mktg 310 or Mktg 407 or Eng Mgt 251

CC 7359, Business 471, Advanced Business Negotiations. New course approved effective Fall 2008.

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 settings. The course is designed to be relevant to the broad spectrum of negotiation problems faced by managers, consultants, etc. A negotiation project is also required.

Credit Hours: 3 hour lecture

Prerequisites: Graduate Status

CC 7360, Biological Sciences 221, Microbiology. The following change is approved effective Spring 2009.

Prerequisites – Present: Bio Sci 211

Proposed: Chem 3

CC 7361, Business Administration 220, Managerial Accounting. The following change was approved effective Fall 2008.

Course Number – Proposed: Business 320

CC 7362, Art 90, Achieving a Life of Art. New course approved effective Fall 2008.

Catalog Description: An introduction to the profession and practice of art in its various forms. This is a Residential College Course.

Credit Hours: .5 hour lecture

Prerequisites: None

CC 7363, Mining Engineering 317, Mine Power and Drainage. The following changes are approved effective Fall 2008.

Catalog Description – Proposed: Engineering principles of mine power distribution and application and mine dewatering. Electric power: basis of electrical circuits, AC/DC power, transformers, electric meters, power distribution, power management. Fundamentals of thermodynamics. Hydraulic power systems. Compressed air in

mines. Mine dewatering: passive and active systems. Controlling water inflow.

Dewatering wells: horizontal and vertical. Water pumping and pumping systems.

Prerequisites – Present: Civ Eng 230

Proposed: No prerequisites

CC 7364, IST 141, Information Systems. The following changes are approved effective Fall 2008.

Course Number – Proposed: IST 50

Course Title – Proposed: Introduction to Management Information Systems

Catalog Description – Proposed: This course familiarizes the students with the fundamental concepts and principles of management information systems. Topics covered include the strategic role of IT, decision support systems, database and datawarehouse, enterprise applications, mobile applications, and social and ethical issues related to information systems.

Prerequisites – Present: IST 151

Proposed: None

CC 7365, IST 286, Web Development and Design. The following changes are approved effective Fall 2008.

Course Title – Proposed: Web and New Media Development and Design

Catalog Description – Proposed: This course covers techniques and tools for design and development of web-based media, including text, graphics, animation, audio, and video.

CC 7366, IST 443, Information Network Analysis. New course approved effective Fall 2008.

Catalog Description: Covers the applications and theoretical foundations of organizing and analyzing information of textual resources. Topics include information storage and retrieval systems, web search engines, text mining, collaborative filtering, recommender systems. Students will also learn the techniques with the use of interactive tools such as SAS.

Credit Hours: 3 hour lecture

Prerequisites: IST 345

CC 7367, IST 151, Introduction to Data Structures and Applications. The following changes are approved effective Fall 2008.

Course Title – Proposed: Implementing Information Systems: Data Perspective

Catalog Description – Proposed: Continuation of object-oriented programming in the context of developing and implementing the various components of an information

system with particular attention given to database incorporation. Class will include numerous projects covering intermediate topics.

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

Proposed: 3 hour lecture

Prerequisites – Present: Entrance Requirements

Proposed: IST 51

CC 7368, IST 51, Algorithms and Programming. The following changes are approved effective Fall 2008.

Course Title – Proposed: Implementing Information Systems: User Perspective

Catalog Description – Proposed: Introduction to object-oriented programming in the context of developing and implementing the various components of an information system with particular attention given to system interface such as window and web forms. Class will include numerous projects covering foundational programming.

Prerequisites – Present: Entrance Requirements

Proposed: IST 50

CC 7369, Speech 221, Art 221, Introduction to Photography. The following changes are approved effective Fall 2008.

Catalog Descriptions – Proposed: In this course the student will learn the basics of photographic composition and the use of the digital camera. A brief history of photography will provide context for the students' own development.

Prerequisites – Proposed: Speech 85 or 181 (required for Speech minor credit) Art 80 or Art 85 (required for Art minor credit)

Co-listing: Art 221

CC 7370, Art 221, Speech 221, Introduction to Photography. New course approved effective Fall 2008.

Catalog Description: In this course the student will learn the basics of photographic composition and the use of the digital camera. A brief history of photography will provide context for the students' own development.

Credit Hours: 3 hour lecture

Prerequisites: Art 80 or Art 85 (required for art minor credit) or Speech 85 or Speech 181 (required for speech minor credit)

Co-listing: Speech 221

CC 7371, Engineering Management 124, Principles of Engineering Management. New course approved effective Fall 2008.

Catalog Description: This course is an introduction to engineering management principles and concepts and will address issues that are relevant to today's successful engineering managers. Topics covered include management practices;

communications; working in teams; project management; ethics and societal issues; and life long learning.

Credit Hours: 1 hour lecture

Prerequisites: None

CC 7372, Electrical Engineering 374, Wave Propagation and Transmission Lines. New course approved effective Fall 2008.

Catalog Description: The materials in this course are intended to provide a) follow up electromagnetics related courses, b) electromagnetics related career including RF design and c) a graduate degree in electromagnetics related fields an in-depth understanding of the basics of wave propagation and transmission lines.

Credit Hours: 3 hour lecture

Prerequisites: Elec Eng 271

CC 7373, Engineering Management 206, Principles of Engineering Management, effective Fall 2008. Withdrawn return to department. Duplicate of CC 7371.

CC 7374, Engineering Management 211, Managing Engineering and Technology. The following change is approved effective Fall 2008.

Course Number – Proposed: Engineering Management 134

CC 7375, Engineering Management 207, Economic Analysis of Engineering Projects. The following changes are approved effective Fall 2008.

Course Number – Proposed: Engineering Management 137

Catalog Description – Proposed: Engineering project analysis from an engineering economics perspective. Topics include: interest, equivalent worth, comparing alternatives, rate of return methods, depreciation and taxes, inflation and price changes, benefit-cost analysis and risk analysis.

CC 7376, Engineering Management 147, Engineering Accounting and Finance. New course approved effective Fall 2008.

Catalog Description: This course is designed to introduce the fundamentals of accounting and finance and provide the student with tools used in making financial decisions within a technically based enterprise.

Credit Hours: 3 hour lecture

Prerequisites: Eng Mgt 137

CC 7377, Engineering Management 282, Operations and Production Management. The following changes have been approved effective Fall 2008.

Course Number – Proposed: Engineering Management 253

Prerequisites – Present: Eng Mgt 211 and Stat 213 or 215

Proposed: Eng Mgt 134 and 147; Stat 211, 213, or 215

CC 7378, Engineering Management 261, Introduction to Project Management. The following changes are effective Fall 2008.

Course Number – Proposed: Engineering Management 254

Prerequisites – Proposed: Eng Mgt 134

CC 7379, Engineering Management 260, General Management-Design and Integration. The following change has been approved effective Fall 2008.

Prerequisites – Present: Eng Mgt 251, 252, and 282; senior standing

Proposed: Eng Mgt 147, 251, 253, 254; senior standing

CC 7380, Engineering Management 266, Quality Philosophies and Methods. New course approved effective Fall 2008.

Catalog Description: This course will provide an overview of quality tools and methodologies and how they apply to engineering management. Quality management methodologies will be explored as well as current and relevant tools and techniques used in the successful application of quality into various environments.

Credit Hours: 3 hour lecture

Prerequisites: Stat 211, 213, or 215

CC 7381, Engineering Management 299, Engineering Management Senior Design. New course approved effective Fall 2008.

Catalog Description: Open-ended design projects will be addressed with small teams. The emphasis will be on solving industry-based projects that are broad in nature and which will require the students to incorporate the knowledge and skills acquired in earlier course work in the solution of the problems.

Credit Hours: 3 hour lecture

Prerequisites: Eng Mgt 260 and 266

CC 7384, Metallurgical Engineering 204, Transport Phenomena in Metallurgy. The following change is approved effective Fall 2008.

Prerequisites – Present: Physics 23

Proposed: IDE 50

CC 7385, Metallurgical Engineering 215, Fundamentals of Materials Behavior. The following change is approved effective Fall 2008.

Prerequisites – Present: Met 121

Proposed: Met 121 and IDE 110

CC 7386, Metallurgical Engineering 123, Metals Processing In Art. Course deletion approved effective Summer 2008.

CC 7387, Metallurgical Engineering 213, Characterization of Metallurgical Structures. Course deletion approved effective Summer 2008.

CC 7388, Metallurgical Engineering 325, Fundamentals of Materials Behavior I. Course deletion approved effective Summer 2008.

CC 7389, Metallurgical Engineering 327, Fundamentals of Materials Behavior II. Course deletion approved effective Summer 2008.

CC 7390, Metallurgical Engineering 407, Power Metallurgy. Course deletion approved effective Summer 2008.

CC 7391, Metallurgical Engineering 409, The Structure of Metals. Course deletion approved effective Summer 2008.

CC 7392, Metallurgical Engineering 413, Advanced Mill Design. Course deletion approved effective Summer 2008.

CC 7393, Metallurgical Engineering 415, Advanced Physical Metallurgy, Phase Transformations. Course deletion approved effective Summer 2008.

CC 7394, Metallurgical Engineering 431, Gas-Metal Reaction. Course deletion approved effective Summer 2008.

CC 7395, Metallurgical Engineering 454, Metallurgical Process Simulation and Control. Course deletion approved effective Summer 2008.

CC 7396, Metallurgical Engineering 459, Advanced Environmental Aspects of Metallurgy. Course deletion approved effective Summer 2008.

CC 7397, Geology 478, Advanced Isotope Geochemistry. New course approved effective Fall 2008.

Catalog Description – The use of radiogenic and stable isotopes in geology in the study of the evolution of Earth, crust, mantle, and the Solar System as well as applications to geothermometry, ore petrogenesis, paleontology, and the global climate system.

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

Prerequisites: Geo 130, 223, 275

CC 7398, Geology 378, Isotope Geochemistry. New course approved effective Fall 2008.

Catalog Description: Introduction to the fundamentals of radiogenic and stable isotopes as used to understand geologic processes. The use of selected isotopic systems in petrology, ore petrogenesis, paleontology, and the global climate systems will be discussed.

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

Prerequisites: Geo 130, 223, 275

CC 7399, Computer Engineering 443, Electrical Engineering 443, Systems Engineering 443 Wireless Ad hoc & Sensor Networks. New course approved effective Fall 2008.

Catalog Description: Introduction to ad hoc & sensor networks, IEEE standards, heterogeneity, quality of service, wireless channel issues, energy awareness, power and topology control, routing, scheduling, rate adaptation, self-organization, admission & flow control, energy harvesting, security & trust levels, hardware & applications.

Credit Hours: 3 hour lecture

Prerequisites: CpE 348 or CpE 349 or equivalent

CC 7400, Chemistry 411, Introduction to Chemistry Research. New course approved effective Fall 2008.

Catalog Description: An introduction to chemical research topics of interest to the department presented by different faculty members. Special emphasis will also be placed on a discussion of ethics, plagiarism, codes of conduct, research notebooks, publishing, and presentations.

Credit Hours: 1 hour lecture

Prerequisites: Graduate Student Status

CC 7401, Computer Science 448, Advanced Evolutionary Computing. The following change is approved effective Fall 2008.

Prerequisites – Present: Cmp Ss 301 – Evolutionary Computing

Proposed: Cmp Sc 348

CC 7402, MSE 351, Advanced Phase Equilibria. New course approved effective Fall 2008.

Catalog Description: Advanced aspects of unary, binary and ternary organic, phase equilibria. Includes practical examples of the applications of phase diagrams to solve engineering problems.

Credit Hours: 3 hour lecture

Prerequisites: Graduate standing

CC 7403, EE 302, Extra High Voltage Engineering. New course approved effective Fall 2008.

Catalog Description: The physical phenomena associated with high voltage dielectric breakdown are presented. Methods of generating and measuring high voltages and currents are explained. Demonstration of design and performance. Field trips to companies for laboratory testing of high voltage according to industry standards will serve as the lab part of the course.

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

Prerequisites: Senior Standing

CC 7404, Finance 330, Mathematical Finance. New course approved effective Fall 2008.

Catalog Description: The course objective is to provide an understanding of the fundamental concepts of mathematical finance. Topics include pricing, assets-liability management, capital budgeting, valuing cash flow, bonds, futures, swaps, and options.

Credit Hours: 3 hour lecture

Prerequisites: Math 12 or equivalent and Stat 211 or equivalent

CC 7405, Economics 305, Micro and Macro Economics Essentials. New course approved effective Fall 2008.

Catalog Description: This course is an introduction to the essentials of micro and macro economics for running a business. It 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, IST, or economics.

Credit Hours: 1.5 hour lecture

Prerequisites: Senior or Junior standing and 3.0 GPA

CC 7406, Economics 405, Advanced Micro and Macro Economics Essentials. The following changes are approved effective Fall 2008.

Catalog Description – Proposed: An introduction to the essentials of micro and macro economics for running a business. It 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 cannot be applied to any major or minor in business, IST, or economics. Additional case or report required.

CC 7407, Geological Engineering 441, Engineering Geology and Geotechnics II. The following changes are approved effective Spring 2008.

Course Title – Proposed: Geotechnical Construction Practice

Catalog Description – Proposed: Advanced level lecture topics on procedures used for site characterization, standards for earthquake grading and construction, including embankments, building pads, retention structures, roads, levees, and earthen dams. Specific emphasis on preparation of documents involved in such work and engineer's responsibilities.

CC 7408, Geological Engineering 248, Geology 248, Fundamentals of Geographic Information Systems. The following change is approved effective Fall 2008.

Prerequisites – Present: GE 275

Proposed: None

CC 7409, Business 305, Accounting Essentials. New course approved effective Fall 2008.

Catalog Description: This course is an introduction to the essentials of financial and managerial accounting for running a business. It 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, IST, or economics.

Credit Hours: 1.5 hour lecture

Prerequisites: Senior or Junior Standing; 3.0 GPA required

CC 7410, Business 306, Management and Business Law Essentials. New course approved effective Fall 2008.

Catalog Description: This course is an introduction to the essentials of management and business law for running a business. It 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, IST, or economics.

Credit Hours: 1.5 hour lecture

Prerequisites: Senior or Junior Standing; 3.0 GPA required

CC 7411, Business 307, Marketing and Strategy Essentials. New course approved effective Fall 2008.

Catalog Description: This course is an introduction to the essentials of marketing and strategy for running a business. It 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, IST, or economics.

Credit Hours: 1.5 hour lecture

Prerequisites: Senior or Junior Standing; 3.0 GPA required

CC 7412, Business 308, Operations Management Essentials. New course approved effective Fall 2008.

Catalog Description: This course is an introduction to the essentials of operations management for running a business. It 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 cannot be applied to any major or minor in business, IST, or economics.

Credit Hours: 1.5 hour lecture

Prerequisites: Senior or Junior Standing; 3.0 GPA required

CC 7413, Business 309, Mathematics and Statistics Essentials. New course approved effective Fall 2008.

Catalog Description: This course is an introduction to the essentials of mathematics and statistics for running a business. It 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 cannot be applied to any major or minor in business, IST, or economics.

Credit Hours: 1.5 hour lecture

Prerequisites: Senior or Junior standing; 3.0 GPA required

CC 7414, Business 312, Management Information Systems Essentials. New course approved effective Fall 2008.

Catalog Description: This course is an introduction to the essentials of management information systems for running a business. It 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 cannot be applied to any major or minor in business, IST, or economics.

Credit Hours: 1.5 hour lecture

Prerequisites: Senior or Junior Standing; 3.0 GPA required

CC 7415, ERP 448, Strategic Enterprise Management System Configuration. New course approved effective Fall 2008.

Catalog Description: Implementation and design practices for enterprise Management System Configuration.

Credit Hours: 3 hour lecture

Prerequisites: ERP 346 or Bus 426, ERP 345, some experience in accounting and strategic management, and Graduate Standing.

CC 7416, Finance 305, Finance Essentials. New course approved effective Fall 2008.
Catalog Description: This course is an introduction to the essentials of corporate finance for running a business. This course is designed for students planning to enter the MBA program. Credit in this course cannot be applied to any major or minor in business, information sciences and technology.

Credit Hours: 1.5 hour lecture

Prerequisites: Senior or Junior Standing; 3.0 GPA

CC 7417, Finance 405, Graduate Finance Essentials. The following changes have been approved effective Fall 2008.

Course Title – Proposed: Advanced Finance Essentials

Catalog Description – Proposed: This course is an introduction to the essentials of corporate finance for running a business. This course is designed for students planning to enter the MBA program. Credit in this course cannot be applied to any major or minor in business, information sciences and technology. Additional case or report required.

Prerequisites – Present: Bachelor Degree or Senior Standing. Not open to IST or Business & Management Systems majors or minors

Proposed: Bachelor Degree

CC 7418, Business 405, Accounting Essentials. The following changes have been approved effective Fall 2008.

Course Title – Proposed: Graduate Accounting Essentials

Catalog Description – Proposed: This course is an introduction to the essentials of management information systems for running a business. It is designed for students planning to enter the MBA program. Credit in this course cannot be applied to any major or minor in business, IST, or economics. Additional case or report required.

Prerequisites – Present: Bachelor Degree or Senior Standing. Not open to IST or Business & Management Systems majors or minors

Proposed: Bachelor Degree

CC 7419, Business 406, Management and Business Law Essentials. The following changes have been approved effective Fall 2008.

Course Title – Proposed: Graduate Management and Business Law Essentials

Catalog Descriptions – Proposed: This course is an introduction to the essentials of management information systems for running a business. It is designed for students planning to enter the MBA program. Credit in this course cannot be applied to any major or minor in business, IST, or economics. Additional case or report required.

Prerequisites – Present: Bachelor Degree or Senior Standing. Not open to IST or Business & Management Systems majors or minors
Proposed: Bachelor Degree

CC 7420, Business 407, Marketing and Strategy Essentials. The following changes are approved effective Fall 2008.

Course Title – Proposed: Graduate Marketing and Strategy Essentials

Catalog Description – Proposed: This course is an introduction to the essentials of management information systems for running a business. It is designed for students planning to enter the MBA program. Credit in this course cannot be applied to any major or minor in business, IST, or economics. Additional case or report required.

Prerequisites – Present: Bachelor Degree or Senior Standing. Not open to IST or Business & Management Systems majors or minors
Proposed: Bachelor Degree

CC 7421, Business 408, Operations Management Essentials. The following changes are approved effective Fall 2008.

Course Title – Proposed: Graduate Operations Management Essentials

Catalog Description – Proposed: This course is an introduction to the essentials of management information systems for running a business. It is designed for students planning to enter the MBA program. Credit in this course can not be applied to any major or minor in business, IST, or economics. Additional case or report required.

Prerequisites – Present: Bachelor Degree or Senior Standing. Not open to IST or Business & Management Systems majors or minors
Proposed: Bachelor Degree

CC 7422, Business 409, Mathematics and Statistics Essentials. The following changes are approved effective Fall 2008.

Course Title – Proposed: Graduate Mathematics and Statistics Essentials

Catalog Description – Proposed: This course is an introduction to the essentials of management information systems for running a business. It is designed for students planning to enter the MBA program. Credit in this course cannot be applied to any major or minor in business, IST, or economics. Additional case or report required.

Prerequisites – Present: Bachelor Degree or Senior Standing. Not open to IST or Business & Management Systems majors or minors
Proposed: Bachelor Degree

CC 7423, Business 411, Management Information systems Essentials. The following changes are approved effective Fall 2008.

Course Number – Proposed: 412

Course Title – Proposed: Graduate Management Information Systems Essentials

Catalog Description – Proposed: This course is an introduction to the essentials of management information systems for running a business. It is designed for students planning to enter the MBA program. Credit in this course cannot be applied to any major or minor in business, IST, or economics. Additional case or report required.

Prerequisites – Present: Bachelor Degree or Senior Standing. Not open to IST or Business & Management Systems majors or minors

Proposed: Bachelor Degree

CC 7424, Computer Science 253, Data Structures II. The following changes are approved effective Spring 2009.

Course Title – Proposed: Algorithms

Catalog Description – Proposed: Students will work to solve recurrence relations, analyze algorithms for correctness and time and space complexity, develop strategies for dynamic programming and greedy algorithms, create fundamental computing algorithms for shortest-path, minimal spanning trees, maximum flow, and hard problems.

Prerequisites – Present: Cmp Sc 158 and (Cmp Sc 153 or 274)

Proposed: Cmp Sc 158 and Cmp Sc 153

CC 7425, Computer Science 228, Introduction to Numerical Methods. The following change is approved effective Spring 2009.

Prerequisites – Present: Math 22 and programming competency

Proposed: Math 21 and programming competency

CC 7426, Computer Science 330, Automata Theory. The following changes are approved effective Spring 2009.

Course Number – Proposed: 230

Course Title – Proposed: Theory of Computer Science

Catalog Description – Proposed: This course will cover the theoretical underpinnings of computer science. In particular, this course will cover the following topics: basic computability and formal language concepts, regular languages, context free languages, recursively-enumerable languages, and classes P, NP, and NP-completeness.

Prerequisites – Present: Cmp Sc 158

Proposed: Cmp Sc 158 and Cmp Sc 153

CC 7427, Computer Science 153, Data Structures I. The following change has been approved effective Spring 2009.

Course Title – Proposed: Data Structures

CC 7428, Computer Science 332, Modular Software Systems. The following changes are approved effective Spring 2009.

Course Number – Proposed: Computer Science 232

Course Title – Proposed: Java and Object Oriented Design

Catalog Description – Proposed: This course will cover Basic Java, Applets, Application, Classes, interfaces, Strings, Arrays, Generics, inheritance, Polymorphism, Algorithm and Object Oriented Design, Software Testing, Exception Handling, File I/O. The use of Graphical User Interfaces in program design and introduction to Software Life Cycle. Project included.

Prerequisites – Present: CS 253 or IST 231

Proposed: None

CC 7449, Business 397, Senior Business Design I. New course approved effective Fall 2008.

Course Description: In this course, students will become familiar with the principles of entrepreneurship; learn about the basic purpose, content and structure of business plans; and develop business presentation skills through practice. At the end of the semester, student teams will give presentations to a bank in an attempt to secure a loan to run the business the following semester.

Credit Hours: 1 hour lecture

Prerequisites: Senior Standing

CC 7450, Business 398, Senior Business Design II. New course approved effective Fall 2008.

Catalog Description: In this course students will be expected to carry out the business plans created in Bus 397. Progress reports are submitted roughly every 3 weeks during the semester. At the end of the semester, students terminate the business organization and profits are donated to a non-profit organization in the team's name.

Credit Hours: 2 hour lecture

Prerequisites: Bus 397

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 2026, Computer Science 301, Agile Software Development, approved effective Fall 2008.

Course Description: Understand principles of agile software development and contrast them with prescriptive processes. Specifically: Eliciting, organizing, and prioritizing requirements; Design, Implementation, Test processes; Understand how a particular process promotes quality; Estimate costs and measure project progress and productivity. Projects will utilize agile processes.

Credit Hours: 3 hour lecture

Prerequisites: Computer Science 206

EC 2027, Computer Science 201, Introduction to Computer Security, approved effective Fall 2008.

Course Description: This course provides an entry point for the study of computer security and encompasses threats and vulnerabilities and trust, security policies, and enforcement. Specific topics include access control, risk management, systems and application life cycle, physical security, key management, transmission security and cryptography.

Credit Hours: 3 hour lecture

Prerequisites: At least sophomore standing

EC 2028, Biological Sciences 301, Environmental Microbiology, approved effective Fall 2008.

Course Description: Topics to be explored include but are not limited to microbial growth and metabolic kinetics, life in extreme environments, biogeochemical cycling, bioremediation, control of water-borne pathogens. This course differs from Bio Sci 451 in that this is an upper-level undergraduate course and no NSF-style research proposal and presentation is required.

Credit Hours: 3 hour lecture

Prerequisites: Bio Sci 221

EC 2029, Biological Sciences 301, Environmental Microbiology Laboratory, approved effective Fall 2008.

Course Description: This course will be offered as a companion laboratory for both the undergraduate- and the graduate- level Environmental Microbiology courses. The isolation and characterization of pertinent microorganisms will be carried out as well as DNA extraction and characterization of unculturable microorganisms. In

addition, methods for detecting and quantifying water-borne pathogens will be exercised.

Credit Hours: 1 hour lecture

Prerequisites: Bio Sci 221

EC 2030, Biological Sciences 101, Genetics: Decoding your Genes, approved effective Fall 2008.

Course Description: This class is intended for non-majors interested in learning about genetics. Students will explore the questions: What are genes? How do our genes affect our health? How are genes inherited? What are the societal implications of genetic knowledge? What is the Human Genome Projects and what can we learn from it? (Does not full fill requirements for Biology majors).

Credit Hours: 3 hour lecture

Prerequisites: None

EC 2031, Biological Sciences 301, Cancer Cell Biology, approved effective Fall 2008.

Course Description: This is an advanced cell biology course examining cellular processes that go away 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 2032, French 301, Business French, approved effective Fall 2008.

Course Description: This course addresses practical reading, speaking, listening, and writing strategies for conducting business in French-speaking countries. Students will also improve their knowledge of contemporary culture of the Francophone world. Readings, lectures, and discussions are in French.

Credit Hours: 3 hour lecture

Prerequisites: French 170

EC 2033, Spanish 301, Phonetics and Phonology of Spanish, approved effective Fall 2008.

Course Description: Theoretical and practical approach to the phonetics and phonology of Spanish from the dual perspective of the mental representation of the sound system and pronunciation within syllables, words and phrases. Practice in listening comprehension, and sound discrimination with transcription exercises.

Credit Hours: 3 hour lecture

Prerequisites: Spanish 80

EC 2034, Speech 201, Orality and Public Speaking, approved effective Fall 2008.

Course Description: Theory and practices of orality applied to various communication situations with particular emphasis on effective public speaking.

Credit Hours: 3 hour lecture

Prerequisites: Speech 85 or 181; 250 or 265

EC 2035, Theatre 101, Stagecraft, approved effective Fall 2008.

Course Description: This course is a hands-on lab class in technical theatre. Some of the topics covered include theatre carpentry, technical direction, theatre electrics, props artistry, and stage management. This class will focus on current technologies used in theatres worldwide.

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

EC 2036, Technical Communication, approved effective Fall 2008.

Course Description: Students will learn to design, implement, and evaluate usability studies that focus on the ability of documents, documentation products, software, and electronic resources to meet the needs of their users.

Credit Hours: 3 hour lecture

Prerequisites: English or Tch Com 65; English or Tch Com 240

EC 2039, Computer Engineering 401, Electrical Engineering 401, Math 401, Economics 401, Engineering Management 401, approved effective Spring 2009.

Course Description: This course will provide an introduction to game theory and the multi-agent modeling of complex systems with an emphasis on using the methods of computational intelligence in our investigations. Topics will include Nash equilibria, replicator dynamics, mechanism design, artificial markets, social ecological systems, neural networks, genetic algorithms, dynamic programming, and stochastic control.

Credit Hours: 3 hour lecture

Prerequisites: Math 204 and a course in Artificial Intelligence, Computational Intelligence, Neural Networks, or related programming skills, or permission of the instructor.

EC 2040, Engineering Management 301, Psychology 301, Leadership for Engineers, approved effective Fall 2008.

Course Description: Provides engineering 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 commitments, conflict resolution, change management, emotional intelligence, team dynamics and business ethics.

Credit Hours: 3 hour lecture

Prerequisites: Emgt 313 or Psych 374

EC 2041, Engineering Management 401, Human Systems Integration., approved effective Spring 2009.

Course Description: This course considers Human System Integration (HIS) in a variety of applications including systems acquisition and training, HIS tools, techniques, and procedures.

Credit Hours: 3 hour lecture

Prerequisites: Emgt/Psych 311

EC 2042, Biological Science 301, Algal Lipid Biosynthesis and Biotechnology, approved effective Fall 2008.

Course Description: This is an advanced course examining lipid biosynthesis process in algae, which is a potential source of bio-diesel. We will discuss biochemistry of lipid biosynthesis in algae and plants, physiology that influences lipid biosynthesis, techniques for lipid assay, and enhancement of lipid biosynthesis by transformation.

Credit Hours: 3 hour lecture

Prerequisites: None

EC 2043, History 301, History of Modern Japan, approved effective Spring 2009.

Course Description: This course covers the history of modern Japan from 1600 to the present and includes Japan's political, social, and cultural/intellectual history.

Credit Hours: 3 hour lecture

Prerequisites: Hist 111 or Hist 112 or Hist 175 or Hist 176

EC 2044, Stat 301, Statistical Consulting, approved effective Fall 2008.

Course Description: This course provides an essential educational experience for Statistics graduate students who will collaborate with engineers and scientists. Students will learn technical, interpersonal and project management skills necessary for their success as professional statisticians.

Credit Hours: 3 hour lecture

Prerequisites: Stat 213 or 215 or 217; Stat 353 or Stat 346 or Stat 444

EC 2045, IDE 301, Engineering Management 301, Introduction to Decision Analysis, approved effective Fall 2008.

Course Description: This course introduces the basic concepts of decision analysis to advanced undergraduate and graduate students and provides an opportunity to apply decision analysis to a project that may include product development and design, business, public policy, medical and personal decision making.

Credit Hours: 3 hour lecture

Prerequisites: None

EC 2046, IDE 301, Engineering management 301, Creativity and Innovation, approved effective Spring 2009.

Course Description: This course discusses creativity techniques, up-to-date research results in theory of creativity, examples of engineering innovations, how innovations occur, and the relationships between creativity techniques and innovations.

Credit Hours: 3 hour lecture

Prerequisites: None

EC 2047, Marketing 401, Advanced New Product Development, approved effective Fall 2008.

Course Description: The process of developing a new product is studied. Major emphasis is given to the concept of customer focus, with coverage of techniques for obtaining customer needs, measuring customer satisfaction, developing products and services to satisfy customers, and maximizing the benefits of customer feedback. Detailed study of NPD process.

Credit Hours: 3 hour lecture

Prerequisites: Mktg 310, or Mktg 307 or Eng Mgt 251

EC 2048, Stat 301, Physics 301, Science Education and Quantitative Literacy for Elementary School, approved effective Summer 2008.

Course Description: An integrated science-mathematics course for elementary school teachers. Course covers selected science/mathematics topics/skills specified in Missouri standards for grades 3-5. 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

EC 2049, Education 301, Teachers' Academy: Effective Instructional Strategies, approved effective summer 2008.

Course Description: Participants will develop an understanding of research-based instruction and the ability to implement the instructional strategies in their classrooms. In addition to effective instructional practices, the teachers' academy will focus on leadership, empowerment, collaboration and renewal

Credit Hours: 3 hour lecture

Prerequisites: None

EC 2050, Engineering Management 401, Systems Engineering 401, Systems Optimization, approved effective fall 2008.

Course Description: This course explores the theory and practice of modern system optimization with an emphasis on nonlinear programming and algorithm development.

Credit Hours: 3 hour lecture

Prerequisites; Math 204 or 209

EC 2051, Engineering Management 401, Tolerance Design, approved effective Fall 2008.

Course Description: This course is an examination of the theory and practice of allowance allocation for high quality and low cost manufacture of mass-produced consumer products, including technology intensive products, such as automobiles, trucks, military and commercial airplanes, computers and consumer electronics.

Credit Hours: 3 hour lecture

Prerequisites: Emgt 375 or equivalent

EC 2052, Biological Sciences 201, Principles of Human Nutrition, approved effective Fall 2008.

Course Description: The study of the nutrients derived from foods, their reactions, interactions, and physiological impact; and subsequent application of knowledge acquired to health improvement.

Credit Hours: 3 hour lecture

Prerequisites: Bio Sci 110 or Bio Sci 111 or any college level chemistry course.

EC 2053, Nuclear Engineering 301, Applied Mathematics in Nuclear Engineering II, approved effective Fall 2008.

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 2054, Mining Engineering 201, Surface Mine Design, approved effective Fall 2008.

Course Description: Introduction to surface mining methods. Engineering design and optimization of surface mine layouts. Geomechanical, geometric and computer-aided surface mine layouts, haul roads, and waste dump design. Layouts optimization using the floating cone and the Lerchs-Grossmann's algorithms. Design of materials scheduling and sequencing for long and short range mine planning. Use of an industry standard and commercially available mine design software.

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

Prerequisites: Mining Engineering 3

EC 2055, Mining Engineering 201, Underground Mine Design, approved Fall 2008.

Course Description: Introduction to underground mining methods. Engineering design and optimization of underground mine layouts. Geomechanical, geometric and computer-aided underground mine layouts design. Empirical and numerical design methods for underground mine openings; pillar and roof span design using beam theories; caving and ore drawing mechanics. Design of materials scheduling and sequencing for long and short range mine planning. Use of an industry standard and commercially available mine design software.

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

Prerequisites: Mining Engineering 3

EC 2056, Mining Engineering 301, Soils and Overburden Materials for Mining Engineering, approved effective Fall 2008.

Course Description: Physical and mechanical properties of soils and overburden materials. Soils and overburden characterization for reclamation and mine closure and overburden blasting. Soil failure modes and slope stability for surface mine layouts, waste dumps and foundations for heavy mining machinery.

Credit Hours: 2 hour lecture

Prerequisites: IDE 140 and Geo 220

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