

Memo To: Faculty Senate  
From: Missouri S&T Campus Curricula Committee Meeting  
RE: April 6, 2011

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

**Approved DC forms:**

DC 0381, Electrical Engineering, Bachelor of Science, approved effective Fall 2011. A proposal to modify the current ABC electives list by deleting El Eng 208 and El Eng 209.

DC 0383, Information Technology, Bachelor of Science, effective Fall 2011. A proposal to create a new Bachelor of Science degree in Information Technology for the students at American National College in Sri Lanka only. **The Campus Curricula Committee advises Faculty Senate to discuss two general principles related to this proposal which raise concern but are beyond the scope of this committee, namely: (1) Should degree programs be created which are only offered in a local market (Sri Lanka in this case)? (2) Should degree programs be created which are taught, completely or in majority, by non-S&T faculty (American National College faculty in this case), even if said faculty are vetted by S&T? If Faculty Senate is in favor of both these principles, then the Campus Curricula Committee recommends approval of this DC form**

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

**Approved CC forms:**

CC 8121, Electrical Engineering 391, Electrical Engineering Senior Project I. the following change is approved effective Fall 2011.

Prerequisites – Present: Stat 217, Cp Eng 111, Econ 121 or 122, Sp&M 85, English 160, at least 3 or the following : El Eng 205, El Eng 207, El Eng 265, El Eng 267, El Eng 271, El Eng 254.

Proposed: Stat 217, Cp Eng 111, Econ 121 or 122, Sp&M 85, English 160, at least 3 of the following: El Eng 205, El Eng 207, El Eng 215, El Eng 217, El Eng 271, El Eng 253.

CC 8122, Electrical Engineering 254, Electronics II. The following change is approved effective Fall 2011.

Prerequisites – Present: El Eng 253 and El Eng 255 each with a grade of “C” or better. El Eng 256 is a co-requisite.

Proposed: El Eng 253 and El Eng 255 each with a grade of “C” or better.  
El Eng 256 is optional, but recommended.

CC 8123, Computer Engineering 417, Computer Science 417, Network Performance Analysis. New course approved effective Fall 2011.

Catalog Description: Provides an introduction to performance modeling and analysis of computer networks. Topics include stochastic processes; performance measurement and monitoring; quantitative models for network performance, e.g., Markovian models for queues; simulation; and statistical analysis of experiments.

Credit Hours: 3 hour lecture

Prerequisites: Cp Eng 319 or CS 365; Stat 217 or Stat 343

Co-listing: Computer Science 417

CC 8125, ERP 442, Customer Relationship Management in ERP Environment. The following changes are approved effective Fall 2011.

Course Title – Proposed: Advanced Customer Relationship Management in ERP Environment

Catalog Description – Proposed: Identification (targeting), acquisition, retention, and development (expansion) of (profitable) customers. Effective and efficient management of customers using IT. SAP CRM and SAS BI tools used to enhance student education with real world applications. Research paper & presentation required.

CC 8126, ERP 342, Customer Relationship Management in ERP Environment. New course approved effective Fall 2011.

Catalog Description: Identification (targeting), acquisition, retention, and development (expansion) of (profitable) customers. Effective and efficient management of customers with utilization of information technology. SAP CRM and SAS BI tools are used to enhance student education with real world applications.

Credit Hours: 3 hour lecture

Prerequisites: ERP 345 or ERP 444 or IST 444

CC 8127, Petroleum Engineering 121, Intro to Oil Well Drilling. The following changes are approved effective Fall 2011.

Course Title – Proposed: Introduction to Petroleum Engineering

Catalog Description – Proposed: Introduction to and overview of petroleum engineering topics and fundamental areas including drilling, production, reservoir engineering and mechanical earth modeling.

CC 8128, Petroleum Engineering 331, Drilling and Well Design. The following changes are approved effective Fall 2011.

Course Number – Proposed: Pet Eng 313

Catalog Description – Proposed: This course covers drilling fluids, including mixing and analysis of rheological properties; pressure loss calculations; casing design; well cementing; pore pressure and geomechanical considerations in drilling; completion equipment; and completion design.

Prerequisites – Present: Pet Eng 121 and preceded or accompanied by Cv Eng 230

Proposed: Preceded or accompanied by Cv Eng 230

CC 8129, Petroleum Engineering 314, Advanced Drilling Tech. The following change is approved effective Fall 2011.

Prerequisites – Present: Pet Eng 331

Proposed: Pet Eng 313

CC 8130, Petroleum Engineering 325, Well Completion Design. New course approved effective Fall 2011.

Catalog Description: An overview of the hardware, fluids and processes employed in completing oil and gas wells. Examination of types of well completions and considerations in their design. Introduction to downhole mechanics and tubing movement and stress calculations.

Credit Hours: 3 hour lecture

Prerequisites: Pet Eng 241

CC 8131, Petroleum Engineering 338, Finite Element Analysis with Applications in Petroleum Engineering. The following change is approved effective Spring 2012.

Prerequisites – Present: Pet Eng 241; Geo 220 or Mi Eng 232

Proposed: Pet Eng 241, Geo 220, Math 204

CC 8133, Engineering Graphics 212, Computer Aided Drafting. Course deletion approved effective Fall 2011.

CC 8134, Engineering Graphics 200, Special Problems. Course deletion approved effective Fall 2011.

CC 8135, Math 305, Modern Algebra I. The following changes are approved effective Fall 2011.

Catalog Description – Proposed: Equivalence relations and functions, basic properties of groups, subgroups, permutations, cosets and Lagrange’s Theorem, homomorphisms and isomorphisms, and factor groups.

Prerequisites – Present: Math 209

Proposed: Math 209 or graduate standing; preceded or accompanied by Math 208

CC 8136, Math 309, Advanced Calculus I. The following change is approved effective Fall 2011.

Prerequisites – Present: Math 209 or a 300-level mathematics course or graduate standing

Proposed: Math 22 and Math 209, or a 300-level mathematics course, or graduate standing

CC 8137, Statistics 355, Statistical Models in Actuarial Science. The following change is approved effective Fall 2011.

Prerequisites – Present: Stat 343

Proposed: Stat 343 and either Stat 344 or a 200-level stat course

CC 8139, Biological Sciences 364, Global Ecology. New course approved effective Fall 2011.

Catalog Description: This class covers ecological topics at large scales, emphasizing global scales. Topics include global energy balance, biogeochemical cycles of water, carbon, nitrogen, and other biologically important elements, and global biodiversity.

Credit Hours: 3 hour lecture

Prerequisites: Bio Sci 251

CC 8148, Explosives Engineering 301, Special Topics. New course approved effective Summer 2011.

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

Credit Hours: 0-6

Prerequisites: None

CC 8149, Explosives Engineering 401, Special Topics. New course approved effective Summer 2011.

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

Credit Hours: 0-6

Prerequisites: None

**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 2321, Petroleum Engineering 301, Well Stimulation, approved effective Fall 2011.

Course Description: This course reviews fundamentals of hydraulic fracturing and builds on the basic theory through the use of STIMPLAN software and hands on industry examples. The course teaches the methods used to plan, execute and evaluate hydraulic fracturing treatments.

Credit Hours: 3 hour lecture

Prerequisites: Pet Eng 241

EC 2322, Petroleum Engineering 401, Advanced Well Stimulation, approved effective Fall 2011.

Course Description: This course reviews fundamental of hydraulic fracturing and builds on the basic theory through the use of STIMPLAN software and hands on industry examples. The course teaches the methods used to plan, execute and evaluate hydraulic fracturing treatments. Students completing this graduate level course will be required to complete a research assignment in addition to other course requirements.

Credit Hours: 3 hour lecture

Prerequisites: Pet Eng 241, Graduate Standing

EC 2332, ERP 301, ERP Systems in Health Care, approved effective Summer 2011.

Course Description: Specialization of ERP systems and concepts to the field of Health Care, with special emphasis on Business Process Integration in this environment.

Credit Hours: 3 hour lecture

Prerequisites: IST 51 or equivalent; ERP 246 or preceded or accompanied by ERP346

EC 2335, Petroleum Engineering 401, Advanced Natural Gas Engineering, approved effective Fall 2011.

Course Description: Gas Properties. Gas production metering gauging and transmission. Gas reserves estimation. Gas flow in pipe and porous media. Future production performance prediction. Deliverability, drawdown and buildup testing. Gasfield development. Unconventional Gas development, including coal bed methane, shale gas, tight gas and gas hydrates.

Credit Hours: 3 hour lecture

Prerequisites: Pet Eng 240, Pet Eng 241

EC 2336, Petroleum Engineering 401, Advanced Well Test Analysis, approved effective Fall 2011.

Course Description: Pressure transient analysis equations, well test analysis for fractured wells, horizontal wells, and other special situations, and rate transient analysis.

Credit Hours: 3 hour lecture

Prerequisites: Pet Eng 341

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Daniel Tauritz, Chair  
Missouri S&T Campus Curricula Committee