Agenda:
Call the meeting to order
New Business
Old Business
Adjourn

New Business

Review the types of changes and the final approval required.

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<th>Type of Course</th>
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Motion:
The following changes to the 2010-2011 Undergraduate Catalog be approved

Approved by the CMBE faculty on Nov 5, 2009.

Courses for Removal  http://www.catalog.uconn.edu/cheq.htm#2103

CHEG 3161. Introduction to Nuclear Engineering
Nuclear physics, reactor kinetics, and the nuclear fuel cycle; classification and analysis of nuclear power reactors; environmental effects of nuclear power; analysis of severe nuclear accidents.

CHEG 3174. Bioremediation
Application of engineering and biological principles toward remediation of hazardous waste; degradation of toxic chemicals using genetically-engineered microorganisms; and biological contacting devices for waste remediation.

CHEG 3230. Introduction to Air Pollution
(285) (Also offered as ENVE 3230.) Second semester. Three credits. Recommended preparation: CHEG 2111 or ME 2233.
Gaseous pollutants and their properties; basic analytical techniques for air pollutants; particulate pollutants and their properties; equipment design for removal of gaseous and particulate materials; economic and environmental impact of air pollutants; federal and state regulations.

CHEG 3260. Introduction to Environmental Rate Processes
(280) (Also offered as ENVE 3260.) First semester. Three credits. Recommended preparation: CHEM 1128.
Application of thermodynamics, chemical kinetics and transfer operations to environmental problems; water pollution control. Open only to students not majoring in chemical engineering.

CHEG 4175. Fermentation and Separation Laboratory
(275) Either semester. Three credits. Recommended preparation: Course work in biochemistry or microbiology.
Introduction to industrial mass culture of prokaryotic and eukaryotic cells and methods used to extract useful products from these cultures. Metabolic processes, energetics, growth kinetics and nutrition of microorganisms. Heat exchange, oxygen transfer, pH control, sterilization, design of fermenters and product recovery.

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Approved by the ME faculty at the October 2009 Faculty meeting
Below is the list of courses for conversion to normal course catalogue status.
Eric Jordan Chair of the CC committee ME department.

I. UG Catalog Corrections:
Following are corrections to be consistent with the currently offered ME curriculum:

- ME 2233: Change from “Second semester” to “Both semesters”
- ME 3234: Change from “First semester” to “Second semester”
- ME 3224: Change from “First Semester” to “Either semester”
- ME 3242: Change from “First semester” to “Second semester”
- ME 3250: Change from Second semester” to “First semester”

II. UG Catalog Deletions:
Following two courses are no longer offered and should be deleted from the catalog:

- ME 3257 - Mechanical Engineering Analysis
- ME 3260W - Version of ME 3260, Measurement Techniques, with writing component.
(Requires University Senate Approval-Paperwork submitted by ME Dept.)

III. New additions of ME courses converted from ME 295
These courses have been offered at least twice as ME 3295 Special Topics and are ready to receive new course numbers.

ME 3270 Fuel Cells
Either semester. Three credits. Prerequisite: ME 2233, ME 3242, ME 3250.
This is an advanced course on fuel cells as an alternative energy conversion technology. Subjects covered include: thermodynamics and electrochemistry of fuel cells, operating principles, types of fuel cells, overview of intermediate/high temperature fuel cells, polymer electrolyte fuel cells and direct methanol fuel cells.

ME 3275 Introduction to Computational Fluid Dynamics
Either semester. Three credits. Prerequisite: ME 3242, ME 3250.
Introductory course on computational fluid dynamics (CFD) based on pressure-based finite volume methods. Topics covered include: integral derivations of governing equations of fluid flow, finite volume discretization of diffusion and convection equations, pressure-velocity coupling algorithms based on SIMPLE method for flow field solutions and finite volume solutions of unsteady problems. The course also covers iterative and non-iterative solution methods for large systems of linear equations, as well as methods for verification and validation of computational solutions.

ME 3279 Honors Research (3 credits)
Either semester. Three credits. Prerequisite: consent of instructor.
This course may be used to convert independent research into course credit that may be applied toward the Honors Program requirements and will count as a technical elective. As part of the course, students will be involved in research programs of their choice in areas of emerging technologies. The research work will be directed by a Mechanical Engineering faculty member who serves as the research advisor for the course. The work will typically involve collaborative efforts with graduate students and other researchers, and will provide significant independent problem solving experience to supplement the classroom experience obtained from traditional coursework. This course is open to students in the University Honors Program.
ME 3280: Turbines and Centrifugal Machinery
Either semester, 3 credits, Prerequisite: ME 3250
Review of fundamental fluids and thermodynamics. Introduction to compressible flow concepts. Theory, design and performance of centrifugal and axial flow machinery including turbines, blowers, fans, compressors, superchargers, pumps, fluid couplings and torque converters. A detailed study of the mechanics of the transfer of energy between a fluid and a rotor. Preparation for practical design of turbomachinery.

ME 3285-Sustainable Energy Sources and Systems
Either semester, 3 credits, Prerequisite: ME 2234, ME 3250 or can be taken concurrently
Covered topics include current energy sources and usage, environmental pollution from use of fossil fuels, nuclear energy, biomass energy, geothermal energy resources and usage, hydroelectric, solar, wind and tidal energy conversion principles, hydrogen generation and usage in electrochemical devices, energy economics and effects of energy pricing on economically viable energy options.

Computer Science & Engineering

CSE 1010. Introduction to Computing for Engineers
Either semester. Three credits. Two 1-hour lectures and one 2-hour lab.
Not open for credit to students who have passed CSE 110, 130 or 1100.

Introduction to computing logic, algorithmic thinking, computing processes, a programming language and computing environment. Knowledge obtained in this course enables use of the computer as an instrument to solve computing problems. Representative problems from science, mathematics, and engineering will be solved.
Environmental Engineering Catalog Changes:

A. Add two New Courses:

**ENVE 1000 Environmental Sustainability**
Second semester. Three credits. Two 1-hour lectures and one 1-hour discussion

Detailed examination of anthropogenic impacts on the environment, resulting from the need for energy, food and shelter. Subtopics in the broad areas of energy, food and shelter will be grounded with case studies of UCONN activities/programs in sustainability. Resolution of scientific/technological, public policy and economic aspects of environmental sustainability problems, including strategies for success, and possible pitfalls, in achieving environmental sustainability in the subtopic areas. CA2.

**ENVE 3240 Environmental Microbiology**
Fall Semester. Three credits.
The course content includes general microbiology, cell structure, cell growth kinetics, and genetics. In addition to the fundamental microbiological mechanisms, the application of microbial knowledge in natural environment and engineering systems (including water and wastewater treatment, soil and solid waste treatment) is also included. This course will broaden the students' views of microbiological fundamentals and the applications to environmental systems.

B. Remove two courses and remove associated cross listing due to CHEG removing courses from catalog.

Remove **ENVE 1320 Environmental Debate I**
Remove **ENVE 3260 Introduction to Environmental Rate Processes** (this was cross listed with CHEG 3260)
Remove “also offered as CHEG 3230” from ENVE 3230 course description.

C. Name Change for ENVE 2320

Change from **Environmental Debate II** to **Environmental Debate**. Eliminated Environmental Debate I

D. Curriculum Changes:

1) Change the program requirement for ENVE 2320 (Environmental Debate) from twice to one time.

2) Replace **ENVE 3250 Introduction to Biochemical Engineering** with **ENVE 3240 Environmental Microbiology**
BME Faculty Meeting
Nov. 6, 2009
Approved the following catalog changes

1. Add the following courses to the biomaterials track. This will allow students to obtain a Nano-Materials Minor:
   a. MSE 4001 Electrical and Magnetic Properties of Materials (3 cred)
   b. MSE 4240 Nanomaterials Synthesis and Design (3 cred)
   c. MSE 4241 Nanomaterials Characterization and Application (3 cred)
   d. MSE 4095 Special Topics (3 credits)

2. Change the prerequisites:
   a. BME 3120 LabView Basics
      i. Change pre-requisites from “CSE 1100” to “CSE 1010 or CSE 1100”.
   b. BME 3600W Biomechanics
      i. Change pre-requisites from “BME 3100 and CE 2110; ENGL 1010 or 1011 or 3800” to “BME 3100 and BME 3150; ENGL 1010 or 1011 or 3800”.
   c. BME 3810 Computational Genomics
      i. Change pre-requisites from “BIOL 1107; CSE 1100 and either STAT 3025Q or 3345Q” to “BIOL 1107; CSE 1010 or CSE 1100; and either STAT 3025Q or 3345Q”.
   d. BME 4800 Bioinformatics
      i. Change pre-requisites from “BIOL 1107, CSE 1100, and either STAT 3025Q or 3345Q” to “BIOL 1107, CSE 1010 or CSE 1100, and either STAT 3025Q or 3345Q”.

3. Remove the following courses from BME Track Elective list:
   a. Biofluid-Biomechanics
      i. Remove CE 2120 Applied Mechanics II (3 cred)
   b. Biosolid-Biomechanics
      i. Remove CE 2120 Applied Mechanics II (3 cred)
   c. Biomaterials
      i. Remove CE 3110 (287) Mechanics of Materials (3 cred)

4. Add ME 3275 (Introduction to Computational Fluid Dynamics) to the Biofluid Biomechanics track.

5. Remove BME 3310 (Fermentation and Separation Technologies Laboratory) from the catalog. CHEG is dropping their version of the course, so it makes sense for us to do it as well.

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New Minors:

Minor in Nanomaterials (Not open for students majoring in Materials Science & Engineering)
Group I: Required courses (7 credits): MSE 2001 (or 2101), MSE 2002, MSE 2053
Group II: Three courses from the following list (9 credits): MSE 4001, MSE 4240, MSE 4241, MSE 4095 (if related to nanomaterials)
Note: Group II courses cannot be simultaneously used towards the Materials Science & Engineering Minor and the Nanomaterials Minor

This minor is offered by the Materials Science and Engineering Program of the Chemical, Materials, and Biomolecular Engineering Department. For more information, contact Dr. R. Ramprasad (860) 486-4102 or rampi@ims.uconn.edu
Minor in Computer Science (Not open to students majoring in Computer Science & Engineering, Computer Science, or Computer Engineering.)

This minor requires at least 15 credits of 2000-level or above Computer Science & Engineering course work.
Required courses are: CSE 2100 and CSE 2500.

The minor is offered by the Computer Science & Engineering Department. For more information, contact Robert McCartney in the Computer Science & Engineering Dept.

Revised Minors

Minor in Nanotechnology
The emerging field of nanotechnology, which involves studying and manipulating matter on an ultra-small scale (a nanometer is one-billionth of a meter), is expected to have far-reaching consequences in engineering applications as diverse as sustainable energy and next-generation microprocessors and flash memories.

A minor in nanotechnology requires the completion of at least 15 credits as follows:

Group I: Required courses (9 credits): ECE 4211, ECE/ENGR 4243 and ECE/ENGR 4244

Group II: Two courses from the following list (at least 6 credits): ECE 3223, ECE 3243, ECE 4242, ECE 4095 or any engineering special topics course [if related to nanoscience/technology], ECE 4079 or any engineering independent design lab course [if related to nanoscience/technology], ECE 4099 or any engineering independent studies course [if related to nanoscience/technology], the two-course sequence ECE 4901 and 4902 [if the project is related to nanoscience/technology].

The minor is offered by the School of Engineering. For information about the Nanotechnology minor contact, John Chandy (john.chandy@uconn.edu).