



MEMORANDUM

To: Executive Committee of Faculty Council

From: Dr. Graeme Norval
Chair, Undergraduate Curriculum Committee

Date: November 15, 2011 for December 2, 2011 Faculty Council Meeting

Re: **Proposed Curriculum Changes for the 2012-2013 Academic Year**

REPORT CLASSIFICATION

This is a *Routine Matter* that will be considered by the Executive Committee for approving and forwarding to Faculty Council for information.

BACKGROUND

A number of minor curriculum changes are being proposed for the upcoming academic year.

STRUCTURE

Chemical Engineering

Correct the requisites for the following courses:

CHE561S – Risk Based Safety Management; CHE451S – Petroleum Processing; CHE353F – Engineering Biology; CHE204Y – Applied Chemistry III – Laboratory; CHE220F – Applied Chemistry 1 – Inorganic Chemistry; CHE230S – Environmental Chemistry.

Adjust the course description for the following course: CHE113S – Concepts in Chemical Engineering.

Rename and Adjust the course description for CHE223S – from “Statistics and Experimental Design” to “Statistics”.

Cross-Disciplinary Office

The following courses have been added to the list of approved courses for the respective minors:

Bioengineering Minor: FOR308, FOR421, CHM426, FOR410

Business Minor: APS520, FOR308, HPS308

Environmental Minor: FOR308, FOR421, APS530

Sustainable Energy: ECE349
Robotics and Mechatronics: ECE359, MIE422

Civil And Mineral Engineering

The courses CME362 Engineering Mathematics and CME368 Engineering Economics and Decision Making will have the term switched, with the former course in the second term and latter course in the first term. It is proposed to switch the terms of delivery for the courses CIV342F - Water and Wastewater Treatment Processes and CIV340S - Municipal Engineering.

Minor course description changes are proposed that CIV335 – Urban Operations Research and CIV516 – Public Transit Operations.

Electrical and Computer Engineering

It is proposed that course ECE311 – Dynamic Systems and Control, be offered in both F and S terms.

Prerequisites have been added for ECE316 – Communication Systems, ECE521 – Inference Algorithms. An exclusion has been added to ECE470 – Robot Modeling and Control (AER525 – as a result of the Robotic Minor); ECE330 – Semiconductor and Device Physics, ECE335 – Introduction to Electronic Devices and PHY335 – Introduction to Quantum Mechanics will have an exclusion with MSE235.

Course descriptions edits are proposed for ECE110 – Electrical Fundamentals, ECE350 – Semiconductor Electronic Devices (also name change from Physical Electronics) ECE454 – Computer Systems Programming, ECE445 – Neural Bioelectricity, ECE472 – Engineering Economic Analysis and Entrepreneurship, ECE527 – Photonic Devices.

Engineering Science

A new course description (with exclusion to CHE353F) is proposed for BME205S. The title of CSC190 is changed to Computer Algorithms, Data Structures – with “and Languages” removed.

The Aerospace Option has removed these courses from list of technical electives has ECE354H1S-Electronic Circuits, ECE357H1S-Electromagnetic Fields, ECE360H1F-Electronics, MIE313-Heat and Mass Transfer and PHY356-Quantum Mechanics I.

The calendar entry Footnote 2 will now state “Students must take at least two of AER503, AER506, AER510 and AER525 (the later course is added).

For the Electrical and Computer Option – the elective requirement will be “Choose one of ECE357 – Electromagnetic Fields or ECE350 – Physical Electronics”. ECE470 – Robot Modelling and Control will be added as an allowable technical elective.

For the Engineering Mathematics, Statistics and Finance Option, the Group A and Group B elective lists are combined, and students will select 4 electives from the combined list.

For Nanoengineering – course MSE457 – Microelectro Mechanical Systems is removed from the list of electives.

For the Physics Options CHE374 – Economic Analysis and Decision Making is not required in 3F – it can be taken in 3F or 4F.

Mechanical and Industrial Engineering

Correct course exclusions for: MIE438S – Microprocessors and Embedded Microcontrollers.

Adjust the course descriptions for:

MIE230F – Engineering Analysis; MIE236F – Probability (with a contact change from 3/2/2 to 3/0/2); MIE237 – Statistics; MIE242F – Psychology for Engineers; MIE262F – Operations Research 1; MIE315S – Design for the Environment; MIE320S – Mechanics of Solids II (with contact hour change from 3/3/2 to 3/1.5/2); MIE341S Computer Aided Design 1 (with title change to Mechanical Engineering Design); MIE360F – Systems Modelling and Simulation; MIE404F – Control Systems 1; MIE442F – Machine Design; MIE468S – Facility Planning (with contact hour change from 3/1/1 to 3/0/2); MSE270F – Materials Science.

Term Change for course MIE439 (first to second), with a minor edit to the course description.

Modify course contact time for:

MIE418S – Fluid Mechanics II (from 2/2/0 to 2/3/2); MIE441S – Design Optimization (from 2/2/0 to 3/2/0); MIE517S – Fuel Cell Systems (from 3/0/0 to 3/0/1); MIE540S - Product Design (from 2/0/1 to 3/0/1).

Delete the following courses:

MIE447S – Electromechanical Energy Conversion; MIE449S – Human Computer Interface Design for Complex Systems; MIE460S – Manufacturing and Production Systems; MIE539S – Biomechanics.

Materials Science and Engineering

MSE330-Introduction to Polymer Engineering- updated course description

MSE351-Design and Simulation of Materials Process-contact hour change from 2/2/1 to 3/2/1

MSE352-Biomaterials and Biocompatibility-removal of MSE350 as an exclusion

MSE401-Materials Selection in Design II-correction of contact hours

MSE431-Forensic Engineering-change of term from Fall to Winter

PROCESS

The Committee is composed of representatives from each program; the Vice-Dean, Undergraduate Studies; the Chair, First Year; the Associate Dean, Cross-Disciplinary Programs; and the Registrar's Office. The Committee meets regularly, and reviews changes to the curriculum.

PROGRAM

All programs are involved in these changes, and the impact on students in the various programs has been considered.

PROPOSAL/MOTION

For Information.