UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Report No. 3367

MEMORANDUM

To: Executive Committee of Faculty Council

From: Dr. Graeme Norval
Chair, Undergraduate Curriculum Committee

Date: October 15, 2012 for November 29, 2012 Faculty Council Meeting

Re: Minor Undergraduate Curriculum Changes for the 2013-14 Academic Year

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REPORT CLASSIFICATION

This is minor policy matter that will be considered by the Executive Committee for approving and forwarding to Faculty Council for information.

BACKGROUND

This report summarizes the routine, minor changes to the Undergraduate Program. These changes are primarily administrative in nature.

STRUCTURE

Chemical Engineering

CHE471F – Modelling in Chemical Engineering
The course is changing from term F to term S. The title is modified to "Modelling in Chemical and Biological Systems", with the term "biological " added to the existing course description. The course is added to the list technical electives for the Bioengineering Minor.

CHE575F – Mechanical Properties of Bio-composites and Biomaterials
This course has been taught by Professor Yan, of Forestry. It is being converted to CHE4XXS, with a new title "Biocomposites: Mechanics and Bioinspiration", as well as a new course description.

Civil Engineering

CIV235S – Civil Engineering Graphics (from 2/2/2 to 0/6/0)
The word lecture is removed from the course description, and the lecture time slot is eliminated; this course involves teaching the use a graphical drawing, and it all occurs in a computer room, rather than a lecture room.

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CIV313S – Reinforced Concrete
The course description is revised, with more explicit reference to the engineering design elements, including a design project.

CME321F – Geotechnical Engineering I (from 3/1.5/1 to 3/0.5/1)
The course description is edited, with reference to soil slopes and compaction removed.

CIV324S – Geotechnical Engineering I
The course description is edited, with reference to soil slopes and compaction added.

CME358F – Survey Camp
A note regarding the extra fee has been added.

CIV541S – Environmental Biotechnology
The title is changed from Environmental Bioengineering. The course description is unchanged.

The Academic Unit count (AU) and distribution have been edited for the following courses: CIV201F, CIV235S, CIV250S, CIV331F, CIV498S, CIV516S, CIV519F, CME185S, CME321F and CME358.

Cross-Disciplinary Programs

The course APS510 – Innovative Technologies and Organizations in Global Energy Systems will add the course APS310 – Defining Energy Futures in India and Canada (Study Abroad Course) as an exclusion. APS310 already lists APS510 as an exclusion.

The course APS310 is added as an allowable elective for the Sustainable Energy Minor.

The course CIV342 – Water and Wastewater Treatment is removed from the Environmental Engineering Minor.

Three FOR courses that are listed for engineering are having changes to course titles and descriptions. FOR425S has a word change in the course description. FOR424 is renamed "Innovation in the Manufacturing of Sustainable Materials", with minor edits to the course description, and a mutual exclusion to CHE4XX (above), and an AU count of 100% ES. FOR421F, a CS elective "Urban Forest Conservation" has a new title and course description.

The Engineering Business Certificate course list will be adjusted from 1) program economics course, 2) JRE300 and 3) One of JRE410, JRE420, (CHE/CIV/ECE/MIE/ECE)488, to 1) program economics course, 2) and two of JRE300, JRE410, JRE420, or (CHE/CIV/ECE/MIE/ECE)488.

Electrical and Computer Engineering

The course ECE110 will have a revised course description that explicitly defines the inclusion of 1st order RC and RL transient responses.

Pre-requisites are added to ECE318 Fundamentals of Optics and ECE451 VLSI Systems and Design.

The course ECE533 – Advanced Power Electronics will be renamed Power Electronics: Switch-Mode Power Supplies.

The course ECE527 – Photonic Devices will have a revised course description; the course content remains the same, but the text is tightened up. Also, the course currently listed as "Background Preparation" are redefined to be Pre-requisites.

<u>Engineering Science</u>

ESC103 – Engineering Mathematics and Computation
The course description is changed with the addition of complex numbers.

PHY180 – Classical Mechanics
The course description is changed by the elimination of the textbook title.

BME205 – Biomolecules and Cells
The course contact time is changed from 2/1/25/1 to 2/1.75/1, with the addition of 2 lab safety sessions.

Notations of "Recommended Preparation" courses are being added to the following courses: AER301, AER302, AER307, AER310, AER315, AER336, AER372, AER373, AER406, AER501, AER503, AER506, AER507, AER510, AER525.

The 3S term in the Electrical and Computer Option will be changed from:

ECE353S – Systems Software	ECE353S – Systems Software
to	ECE356S – Linear Systems and Control
ECE356S – Linear Systems and Control	ESC301Y – EngSci Option Seminar
ECE362S – Digital Signal Processing	
ESC301Y – EngSci Option Seminar	
One of	Three of
ECE357S – Electromagnetic Fields	ECE357S – Electromagnetic Fields
ECE350S – Semiconductor Devices	ECE350S – Semiconductor Devices*
	ECE358S – Foundations of Computing*
	ECE354S – Electronic Circuits
	ECE316S – Communication Systems
	ECE Elective
	* ECE350S and ECE358S can not be taken in the same term

The course ECE362S is renumbered to ECE4XXF, and is a required course in term 4F.

There are minor changes to the Physics Option - Group A and Group B electives list. The course MAT410 – Polynomial Equations and Fields is moved from Group B to Group A. The courses AST320 – Introductory Astrophysics, AST325 – Practical Astronomy are added to the Group A elective list and PHY450 – Relativistic Electrodynamics is added to the Group B elective list.

Mechanical Engineering

The course MIE422S – Automated Manufacture changes term, and becomes the core course in the Manufacturing Stream.

The course MIE440F – Mechanical Design: Theory and Methodology, will be renamed, have a new course description, and receive a new course number, and become a technical elective.

The course MIE442F – Machine Design has minor edits to the course description.

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

"THAT the minor undergraduate curriculum changes be approved."