



MEMORANDUM

To: Executive Committee of Faculty Council

From: Professor Markus Bussmann
Chair, Engineering Graduate Education Committee (EGEC)

Date: March 6, 2014 for April 7, 2014 Faculty Council Meeting

Re: **EGEC Information Report**

REPORT CLASSIFICATION

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

NEW COURSES APPROVED

CIV1275H	Construction Modeling Methods
APSXXXH	Engineering Presentations
CHE1150H	Industrial Water Technology

MINOR MODIFICATION

Department Chemical Engineering & Applied Chemistry
Department of Civil Engineering
Department of Materials Science & Engineering

Emphasis in Advanced Water Technologies & Process Design

Summary of change: In February, 2014 it was discovered that the Emphasis description in the SGS calendar entries for CHE, CIV and MSE was incorrect, and very different from the correct description posted on the FASE website. The problem was traced back to a misunderstanding within the FASE at the time this was approved.

The three calendar entries will be corrected for 2014/15. The revised Governance Form A and Calendar Entry are attached.

Minor Modifications to Graduate Curriculum Governance Form A: Procedures, Form and Guidelines 2012-13 – Version 1

Questions? Contact your Faculty Graduate Dean's Office (FGO).

Governance Form A: Procedures

Proposal Type	Procedures
<ul style="list-style-type: none"> • Changing Admission Requirements • Changing Program Requirements • Changes to Timing of Existing Program Requirements • Adding or Removing an Option to Existing Program (e.g. "direct-entry" PhD, flexible-time PhD, part-time, coursework-only, thesis, major research paper, internship, practicum, etc.) • New Emphasis* • Renaming of Emphasis* 	<ol style="list-style-type: none"> 1. Chair sends proposal to Faculty Graduate Dean's Office (FGO). 2. FGO accepts proposal (or refers back) and posts it on Graduate Curriculum Tracker (GCT). 3. School of Graduate Studies (SGS) reviews proposal. 4. Proposal goes to Faculty Council (FC) for final approval. 5. FGO posts FC approval on GCT.
<ul style="list-style-type: none"> • Renaming of Program* • Renaming of Field* • Renaming of Degree* 	<ol style="list-style-type: none"> 1. Chair sends proposal to FGO. 2. FGO accepts proposal (or refers back) and posts it on the Graduate Curriculum Tracker (GCT). 3. SGS and Provost's Office (PO) review proposal. 4. Proposal goes to Faculty Council for final approval. 5. FGO posts FC approval on GCT and informs PO of approval. 6. PO reports approved proposal to Quality Council for information.
Program Changes Affecting MoA with an External Institution* Collaborative Program Changes Affecting MoA *	<ol style="list-style-type: none"> 1. Chair sends proposal to FGO. 2. FGO accepts proposal (or refers back) and posts it on GCT. 3. SGS and PO review proposal. 4. Proposal goes to FC for final approval. 5. FGO posts FC approval on GCT.
Ceasing Admission to Program Temporarily	Does not require governance. Recommendation of graduate unit chair /director to the faculty Dean for final approval.

* Requires preliminary consultation with the Office of the Vice Provost, Academic Programs prior to Faculty Council Approval

A complete list of graduate curriculum proposal types, appropriate forms to use and required approvals is available from the [SGS website](#).

Administrators: Please delete the Procedures and Guidelines sections before the Form is posted on the GCT.

Governance Form A

Proposal Type:

[Mark all that apply; see Governance Form A Procedures and Guidelines.]

	Changing Admission Requirements
X	Changing Program Requirements
	Changes to Timing of Existing Program Requirements
	Adding Option to Existing Program
	Removing Option from Existing Program
	Renaming of Program
	Renaming of Field
	Renaming of Emphasis
	New Emphasis in Existing Program
	Renaming of Degree
	Program Changes Affecting MoA with an External Institution
	Collaborative Program Changes Affecting MoA (Complete Addendum)

Faculty: Applied Science & Engineering

Name of Graduate Unit: Chemical Engineering and Applied Chemistry, Civil Engineering, Materials Science and Engineering

Graduate Programs Involved in Proposal: Civil Engineering (MEng), Chemical Engineering and Applied Chemistry (MEng), Materials Science and Engineering (MEng)

Brief Summary of Proposed Change(s):

The Emphasis in Advanced Water Technologies & Process Design was approved in early 2013, and first offered in September, 2013.

In February, 2014 it was discovered that the Emphasis description in the SGS calendar entries for the three units offering the Emphasis was incorrect. The problem was traced back to a misunderstanding within the FASE at the time this was approved. This form A simply sets the record straight.

The incorrect calendar entry (CHE, CIV, MSE) was the following:

The emphasis includes completion of 2.0 full-course equivalents (FCEs) (four half courses), which are counted towards the total 5.0 FCEs required for the MEng program.

Students select four courses from the following list:

CIV 549H Groundwater Flow and Contamination
CIV 550H Water Resources Engineering
CIV 1303H Water Resources Systems Modeling
CIV 1319H Chemistry and Analysis of Water and Wastes
CIV 1308H Physical and Chemical Treatment Processes
CIV 1309H Biological Treatment Processes
CIV 1311H Advanced and Sustainable Drinking Water Treatment
CHM 1410H Analytical Environmental Chemistry
CHE 565H Aqueous Process Engineering
CHE 1180H Appropriate Technology and Design for Global Development
CHE 1213H Corrosion

CHE 1430H Hydrometallurgy, Theory and Practice

Upon successful completion of the emphasis requirements and the successful completion of the MEng degree requirements, the student will receive a Letter of Completion.

The correct Emphasis description is the following:

Four Core Courses:

1. CHE 1150, Industrial Water Treatment
2. CIV 1319, Chemistry and Analysis of Water and Waste
3. STA 1004, Introduction to Experimental Design
4. At least one of the following (either of the other two can count as the specialization course):
 - CIV 1308, Physical/Chemical Treatment Processes
 - CIV 541, Environmental Biotechnology
 - CIV 1311, Advanced and Sustainable Drinking Water Treatment

One Specialization Course:

Pick from the following list, or from #4 above:

- CIV 549, Groundwater Flow and Contamination
- CIV 550, Water Resources Engineering
- CIV 1303, Water Resources Systems Modeling
- CHE 565, Aqueous Process Engineering
- CHE 1213, Corrosion
- CHE 1403, Hydrometallurgy Theory and Practice
- JNC 2503, Environmental Pathways

Rationale: The emphasis will leverage an expressed demand from the private sector for MEng-level students with stronger backgrounds in water treatment technologies. By consolidating existing strengths in this area among the partner departments within one readily-identifiable emphasis, it is anticipated that greater student enrolment will follow, as well as greater industry participation and support for academic activities (guest lectures, equipment donations for labs, etc.).

Does this change have any financial and/or resource implications? [Mark one]

<input checked="" type="checkbox"/> No	<input type="checkbox"/>
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Effective Session Date: January 2014

Approvals/Actions prior to Faculty governance approval:

- The Engineering Graduate Education Committee approved the changes in February 2014.

Chair/Director Name(s): [Name of the Graduate Chair/Director of the unit(s) involved. Also list names and contact information for other individuals who will attend meetings at which the proposal will be discussed.]

- Kirk, Don; Professor, Chemical Engineering (Director of the emphasis)
- Heather MacLean, Civil Engineering (Associate Chair, Graduate Studies)
- Steven Thorpe, Materials Science and Engineering (Associate Chair)

Date: February 22, 2014

Faculty Council/Delegated Body Meeting Date: [Identify the Faculty Council or delegated body that will consider the proposal for final approval and provide the expected meeting date.]

- Faculty Council, April 7, 2014

Please note: Posting of this form on the GCT indicates that the Faculty Vice-Dean Graduate, or designate, has reviewed the proposal.

For SGS use only	
GPO	
Comments	

Governance Form A: Guidelines

Effective August 1, 2012

Governance Form A is designed to be used by graduate units when proposing certain types of Minor Modifications to graduate curriculum for approval through university governance. The Minor Modifications for which this form should be used are listed under Governance Form A: Procedures.

Normally, each Governance Form A should address changes to one program or proposal. For example, two separate forms should be used to propose changes to two separate programs (even if located in the same graduate unit), or to propose changes to the same program some of which are to go into effect on one date and the rest on another date. In some cases, proposing changes to different degree levels in one program (e.g. MA and PhD) using separate governance forms may be advantageous.

IMPORTANT: In order to guarantee inclusion in the SGS Calendar for the following academic year, proposals must have final Faculty approval by your Faculty's [calendar deadline](#).

Substantial Changes: "Requirements that differ substantially from those existing at the time of the previous cyclical program review" (see [UTQAP](#)) are considered Major Modifications; for Major Modifications, please contact your FGO.

Revised Calendar Entry: Attach a Calendar entry showing only the changes being considered in the proposal, using the "Track Changes" feature in Word. Clean and current Calendar entry templates are [available from the SGS website](#). Do not accumulate other changes in the Calendar entry that have been proposed/approved earlier in the Calendar production cycle. Instead, use a fresh Calendar entry template. SGS will accumulate all changes made and update the final Calendar entry accordingly. Do not submit revised Calendar entries that require governance approval directly to SGS; your FGO will forward them to SGS by way of the Graduate Curriculum Tracker (GCT).

Effective Session Date: The Faculty Graduate Dean's Office and SGS reserve the right to alter the effective session date. Proposals are effective no sooner than the beginning of the following session. Most program changes, including name changes, are effective as of September of the following (or later) academic year. Retroactive proposals require SGS approval.

Admissions changes: The effective date for a change to an admission requirement that is approved by the SGS Calendar deadline in one academic year would be September of the next year. Students who are offered admission to a program commencing September the next year would be the first ones affected by the change.

Program changes: Students have the right to follow the program requirements in place at the time of initial registration. The effective date for a program change that is approved by the SGS Calendar deadline in one academic year would be September of the next year, with one exception. If the change *eases program requirements*, e.g., reduces the number of courses required, then the effective date may be "immediately" and it may be offered as a choice to all students already in the program. If the program change makes the requirements more demanding or merely does not ease then (e.g., if it increases the number of courses required, or changes which courses are required but not their number), then the change would be in effect for the following September and will only be in effect for students newly admitted that September and thereafter.

Requests for retroactive application of a proposed change to earlier cohorts of students will require SGS approval. Please contact: Erin McMahon, SGS, Governance & Policy Officer; 416.978.7709
erin.mcmahon@sgs.utoronto.ca

Emphasis: Advanced Water Technologies and Process Design

The emphasis includes completion of four core courses (2.0 FCE) and one specialization course (0.5 FCE), which are counted towards the total 5.0 FCEs required for the MEng program.

- Students complete the following four core courses:
 1. CHE 1150H
 2. CIV 1319H
 3. STA 1004H
 4. One of the following courses: CIV 1308H, or CIV 541H, or CIV 1311H.
- Students complete one of the following specialization courses: CIV 549H, CIV 550H, CIV 1303H, CHE 565H, CHE 1213H, CHE 1430H, JNC 2503H Environmental Pathways, or student may choose one of the two remaining courses from the core course list, item 4.
- Upon successful completion of the emphasis requirements and the successful complete of the MEng degree requirements, the student will receive a Letter of Completion.