



MEMORANDUM

To: Executive Committee of Faculty Council (February 3, 2025)
 Faculty Council (February 24, 2025)

From: Professor Lisa Romkey
 Chair, Engineering Graduate Education Committee

Date: January 17, 2025; revised February 7, 2025

Re: **Engineering Graduate Education Committee Information Update**

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 to receive for information.

MINOR MODIFICATION

The following modifications to the PhD and MEng programs in Civil and Mineral Engineering were approved by the Engineering Graduate Education Committee.

<p>PhD Program in Civil and Mineral Engineering Program Course Requirements</p>	<p>As written, the current policy requires a different number of courses for PhD students entering with a MASc degree (2.0 full-course equivalents, FCE) compared to those entering with a MEng (4.5 FCE, of which 3.0 from the prior MEng degree may be counted).</p> <p>The approved change eliminates the separate requirement for PhD students entering with a MEng (course-based masters) and harmonizes course requirements to 2.0 FCE for all incoming PhD students with a prior master's degree.</p> <p>See Appendix 1.</p>
<p>MEng Program in Civil and Mineral Engineering</p>	<p>MEng students must successfully complete 10 graduate (500- and 1000-level) courses (5.0 full-course equivalents [FCEs]).</p> <p>Previously, students were required to take 6 (3.0 FCE) courses from the CivMin department.</p> <p>The approved change is that students must take 6 (3.0 FCE) technical courses, of which 4 (2.0 FCE) must be offered by the</p>

<p>Program Course Requirements</p>	<p>CivMin Department (CIV, MIN or CME course codes). Four courses (2.0 FCE) may be non-technical and may include APS and TEP courses, or courses from other departments in other Faculties.</p> <p>The change provides more flexibility and aligns MEng requirements with other FASE departments.</p> <p>See Appendix 2.</p>
<p>CivMin MEng Emphasis in Building Science Course Requirements</p>	<p>Re-naming of courses lists from “core” and “elective” to “Group 1” and “Group 2”. Students are required to take 4 courses from “Group 1” and 2 courses from “Group 2”, for a total of 6 required courses (3.0 FCE).</p> <p>Minor revisions to the course lists were approved. The new course lists are as follows:</p> <p>Group 1: CIV575, CIV576, CIV578, CIV1282, CIV1320, MIE507, CIV501, CIV1231</p> <p>Group 2: CIV536, CIV577, CIV1279, CIV580, CIV1284, CIV1281, CIV1307, CIV1398, CME538, MIE1210, MIE1413</p> <p>One or two of the courses may be a project with the approval of the Building Science emphasis coordinator: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE).</p> <p>Other courses may be considered but will require approval of the Building Science emphasis coordinator.</p> <p>Some courses may satisfy the requirements of multiple Emphases. Students may double-count a maximum of 1 course towards the requirements of any two CivMin Emphases. This change will apply to all CivMin MEng Emphases.</p> <p>See Appendix 3.</p>
<p>CivMin MEng Emphasis in Concrete Course Requirements</p>	<p>The Emphasis in Concrete previously required completion of 6 courses (3.0 FCE) from a list of electives.</p> <p>The approved change is that the requirement is reduced to 4 courses (2.0 FCE) from an elective list. This change is motivated by the lack of available concrete courses.</p> <p>Minor revisions to the course list were approved. The new course list is as follows:</p> <p>CIV514, CIV517, CIV1201, CIV1250, CIV1252, CIV1260, CIV1262, CIV1275, CIV1504, CIV1164, CIV1169</p> <p>One or two of the courses may be a project with the approval of the Concrete emphasis coordinator: CIV1001H (0.5 FCE) or</p>

	<p>CIV1002Y (1.0 FCE).</p> <p>Other courses may be considered but will require approval of the Concrete emphasis coordinator.</p> <p>See Appendix 4.</p>
<p>CivMin MEng Emphasis in Construction Management Course Requirements</p>	<p>The Emphasis in Construction Management previously required completion of 6 courses (3.0 FCE) from a single list of electives.</p> <p>Students are now required to take 6 courses (3.0 FCE), with at least 4 courses (2.0 FCE) from a “Group 1” list. Students are permitted to take up to 2 courses (1.0 FCE) from a “Group 2” list. All courses may be taken from the Group 1 list.</p> <p>Minor revisions to the course list were approved. The new course lists are as follows:</p> <p>Group 1: CIV580, CIV1279, CIV1281, CIV1283, CIV1285, CIV1289, CIV1284</p> <p>Group 2: CIV577, CIV576, APS1005, APS1017, APS1052, APS1031</p> <p>One or two of the courses may be a project with the approval of the Construction Management emphasis coordinator: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE).</p> <p>Other courses may be considered but will require approval of the Construction Management emphasis coordinator.</p> <p>See Appendix 5.</p>
<p>CivMin MEng Emphasis in Environmental Engineering Course Requirements</p>	<p>The Emphasis in Environmental Engineering previously required completion of 6 courses (3.0 FCE) from a list of electives.</p> <p>Students are now required to take 4 courses (2.0 FCE). This change is motivated by the lack of available courses within each sub-specialty of environmental engineering, and to bring this emphasis in line with the Chemical engineering environmental engineering emphasis requirements.</p> <p>Minor revisions to the course list were approved. The new course list is as follows:</p> <p>CHE1134, CHE1150, CHE1180, CHE1431, CHE1432, CHE1152, CHE1433, CHL5903, CIV536, CIV550, CIV577, CIV1303, CIV1307, CIV1308, CIV1309, CIV1311, CIV1319, CIV1320, CIV1321, CIV1323, CIV1330, ENV1001, ENV1701, JCC1313, JNC2503, MIE1240</p> <p>One or two of the courses may be a project with the approval of the Environmental Engineering emphasis coordinator: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE).</p>

	<p>Other courses may be considered but will require approval of the Environmental Engineering emphasis coordinator.</p> <p>See Appendix 6.</p>
<p>CivMin MEng Emphasis in Geomechanics Course Requirements</p>	<p>The Emphasis in Geomechanics previously required completion of 6 courses (3.0 FCE) from a list of electives.</p> <p>Students are now required to take 4 courses (2.0 FCE). This change is motivated by the lack of available courses within the two major sub-specialties of geomechanics (soil and rock mechanics).</p> <p>Minor revisions to the course list were approved. The new course list is as follows:</p> <p>CIV523, CIV1404, CIV1420, CIV1425, CIV1429, MIN565, CIV1262, CME525, CIV521, CIV1430</p> <p>One or two of the courses may be a project with the approval of the Geomechanics emphasis coordinator: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE).</p> <p>Other courses may be considered but will require approval of the Geomechanics emphasis coordinator.</p> <p>See Appendix 7.</p>
<p>CivMin MEng Emphasis in Sustainable Urban Systems</p>	<p>The Emphasis in Sustainable Urban Systems previously required completion of 6 courses (3.0 FCE) from a list of electives.</p> <p>Students are now required to take 4 courses (2.0 FCE). This change is motivated by the lack of available courses within the emphasis.</p> <p>Students must complete:</p> <p>2 courses (1.0 FCE) from Group One (Sustainable Systems) 1 course (0.5 FCE) from Group Two (Policy/Decision Making) 1 course (0.5 FCE) from Group Three (Application Area)</p> <p>Revised course lists are as follows:</p> <p>Group One: CIV1307, CIV1321, CIV1323, MIE1715, CHE1151</p> <p>Group Two: CIV1322, ENV1001, CEM1001, MIE566</p> <p>Group Three: CIV576, CIV1320, CIV536, CIV1536, CIV531, APS1024, CIV1321, CEM1002, CEM1004, CIV550, CIV1311, CIV541, APS510, MIE515, MIE1120</p> <p>One or two of the courses may be a project with the approval of the Sustainable Urban Systems emphasis coordinator: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE).</p>

	<p>Other courses may be considered but will require approval of the Sustainable Urban Systems emphasis coordinator.</p> <p>See Appendix 8.</p>
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RECOMMENDATION FOR COUNCIL

For information.

University of Toronto

Minor Modification Proposal:

Change to an Existing Graduate Program or Collaborative Specialization

This template should be used to bring forward all proposals for minor modifications to program or admissions requirements for existing graduate programs or collaborative specializations under the University of Toronto's Quality Assurance Process.

Program/Collaborative Specialization being modified: E.g., MSc in Immunology	PhD in Civil & Mineral Engineering
Graduate unit:	CIVIL
Faculty/academic division:	FASE
Dean's office contact:	Prof. Julie Audet
Version date: (Please change as you edit this proposal.)	November 18, 2024

1 Summary

- Check box for type(s) of change.
- Summarize what the change is, including details about any changes to FCEs.

	Changing admission requirements		Renaming field, concentration or emphasis*
X	Changing program requirements		Renaming of program or collaborative specialization (please notify VPAP before governance)
	Changing timing of program requirements		Creating a new emphasis
			Changes to programs affecting an MOA
<p>Summary:</p> <p>As written, the current policy requires a different number of courses for PhD students entering with an MASc degree (2.0 full-course equivalents, FCE) compared to those entering with an MEng (4.5 FCE of which 3.0 from the prior MEng degree may be counted). The proposed change eliminates the separate requirement for MEng students and harmonizes course requirements to 2.0 FCE for all incoming PhD students with a prior master's degree.</p> <p>This change aligns the language of the Department of Civil & Minerals Engineering's calendar entry for the standard and flex-time PhD programs with our department's actual practices. When admitting students with prior master's degrees into these programs, we do not differentiate between thesis-based and course-based master's programs. Once admitted to the standard or</p>			

flex-time PhD program, the student's minimum coursework requirements remain consistent, requiring the completion of 2.0 FCEs.

* Anything with a changed/new name requires consultation with VPAP Office prior to governance; if name change implies significant change to what is being offered or how it is being offered, this may be a major modification or new program.

2 Effective Date of Change

Fall 2025

3 Academic Rationale

- What are the academic reasons for the change?

Students are admitted to the standard and flex-time PhD programs when their academic background demonstrates strong research potential. Where a student with a course-based master's degree is admitted, the Graduate Admissions Committee will have assessed the student's qualifications and determined that they meet the necessary research aptitude. Having separate coursework requirements depending on the type of master's degree previously completed is not relevant or necessary. Further, there are no MEng- or MASc-specific courses as all graduate students have access to and take the same courses.

This proposed change aligns our department's course requirements for the standard and flex-time PhD programs with those of other FASE departments, which do not differentiate between thesis-based and course-based master's degrees when determining coursework requirements.

Doctoral students in the standard or flex-time program are required to complete a minimum of 2.0 FCEs. The specific coursework requirements for each student are determined in consultation with their supervisor, who will consider the student's unique academic profile and any identified knowledge gaps and may propose additional required coursework. This proposed course plan must be approved by the departmental Graduate Studies Committee

4 Impact on Students

- Outline the expected impact on continuing and incoming students, if any, and how they will be accommodated.

There is minimal impact on students as this aligns with existing practice.

5 Consultation

- Describe any consultation undertaken with the students, faculty, Dean and chair/director. Address any major issues discussed.

Approved by the Department of Civil & Mineral Engineering Graduate Studies Committee on November 18, 2024, and by the Civil & Mineral Engineering Departmental Council on Nov 26, 2024

6 Resources

- Describe any resource implications of the change(s) including, but not limited to, faculty complement, space, libraries and enrolment/admissions).

7 Governance Approval

Unit sign-off	CivMin Departmental Council meeting November 26, 2024
Dean's Office sign-off	Julie Audet, Vice Dean Graduate January 21, 2025
Engineering Graduate Education Committee approval	January 29, 2025
Faculty/division council approval (or delegated body) if applicable	February 24, 2025

Appendix A: Calendar Entry

Please use track changes to indicate where changes have been made.

Civil and Mineral Engineering: Civil Engineering PhD

The **Doctor of Philosophy (PhD) program** is designed for outstanding individuals interested in a rewarding career in fundamental or applied research. This program involves advanced courses and an intensive research program culminating in a thesis.

Applicants may enter the PhD program via one of three routes: 1) following completion of an appropriate master's degree in engineering, mathematics, physics, or chemistry; 2) transfer from the University of Toronto MASc or MEng program; 3) direct entry following completion of a bachelor's degree.

PhD Program

Minimum Admission Requirements

- Applicants are admitted under the General Regulations of the School of Graduate Studies. Applicants must also satisfy the Department of Civil and Mineral Engineering's additional admission requirements stated below.
- A completed undergraduate degree equivalent to a four-year University of Toronto program with a minimum final-year grade point average (GPA) of B+ (3.3 out of 4.0 or 78%), and successful completion of a master's degree with an overall average of at least B+ (or equivalent).
- Applicants whose primary language is not English and who graduated from a university where the language of instruction and examination was not English must demonstrate proficiency in English. See [General Regulations section 4.3](#) for requirements.
- Applicants must satisfy the department of the ability to undertake advanced research.

Completion Requirements

- **Coursework: students must successfully complete at least 2.0 full-course equivalents (FCEs) (four half courses).** The number and specific courses required must be approved by the Department's Graduate Studies Committee in consultation with the student's supervisor.
- **Comprehensive examination** after completing most of the coursework and preferably within one year after first enrolment in the PhD program. This examination consists of a four- to five-day take-home written examination, followed approximately a week later by an oral examination. The examination is administered by a Comprehensive Examination Committee created and supervised by the department's Graduate Studies Committee.
- **Residence.** Students normally must spend at least two academic years of their program on campus on a full-time basis.

- The academic program must be approved by the department's Graduate Studies Committee.
- Students must participate in the non-credit seminar course [JDE1000H](#) *Ethics in Research*.
- Students have the option of completing an emphasis in Sustainable Energy as part of their degree program. Please see details in the Civil and Mineral Engineering Emphases section.

Mode of Delivery: In person

Program Length: 4 years full-time (typical registration sequence: Continuous)

Time Limit: 6 years full-time

PhD Program (Transfer)

Transfer Requirements

- Very strong MAsc and MEng students may apply to transfer to the PhD program with approval of the Associate Chair. Please contact the department for more information.

Completion Requirements

- Students enrolled in the MAsc or MEng degree program who transfer to the PhD program must complete a minimum of **4.5 full-course equivalents (FCEs)** (nine half courses). Courses taken during the master's program may be applied to the PhD program.
- **Comprehensive examination** after completing most of the coursework and preferably within one year after first enrolment in the PhD program. This examination consists of a four- to five-day take-home written examination, followed approximately a week later by an oral examination. The examination is administered by a Comprehensive Examination Committee created and supervised by the department's Graduate Studies Committee.
- **Residence.** Students normally must spend at least two academic years of their program on campus on a full-time basis.
- The academic program must be approved by the department's Graduate Studies Committee.
- Students must participate in the non-credit seminar course [JDE1000H](#) *Ethics in Research* during their first or second session of registration.

- Students have the option of completing an emphasis in Sustainable Energy as part of their degree program. Please see details in the Civil and Mineral Engineering Emphases section.

Mode of Delivery: In person

Program Length: 5 years full-time (typical registration sequence: Continuous)

Time Limit: 7 years full-time

PhD Program (Direct-Entry)

Minimum Admission Requirements

- Applicants are admitted under the General Regulations of the School of Graduate Studies. Applicants must also satisfy the Department of Civil and Mineral Engineering's additional admission requirements stated below.
- A completed undergraduate degree equivalent to a four-year University of Toronto program with a minimum final-year grade point average (GPA) of A– (3.7 out of 4.0 or 80%).
- Applicants whose primary language is not English and who graduated from a university where the language of instruction and examination was not English must demonstrate proficiency in English. See [General Regulations section 4.3](#) for requirements.
- Applicants must satisfy the department of the ability to undertake advanced research.

Completion Requirements

- **Coursework.** Students must successfully complete a minimum of **4.5 full-course equivalents (FCEs)** (nine half courses).
- **Comprehensive examination** after completing most of the coursework and preferably within one year after first enrolment in the PhD program. This examination consists of a four- to five-day take-home written examination, followed approximately a week later by an oral examination. The examination is administered by a Comprehensive Examination Committee created and supervised by the department's Graduate Studies Committee.
- **Residence.** Students normally must spend at least two academic years of their program on campus on a full-time basis.
- The academic program must be approved by the department's Graduate Studies Committee during the student's first session.

- Students must participate in the non-credit seminar course [JDE1000H Ethics in Research](#).
- Students have the option of completing an emphasis in Sustainable Energy as part of their degree program. Please see details in the Civil and Mineral Engineering Emphases section.

Mode of Delivery: In person

Program Length: 5 years full-time (typical registration sequence: Continuous)

Time Limit: 7 years full-time

PhD Program (Flexible-Time)

Minimum Admission Requirements

- Applicants are admitted under the General Regulations of the School of Graduate Studies. Applicants must also satisfy the Department of Civil and Mineral Engineering's additional admission requirements stated below.
- A completed undergraduate degree equivalent to a four-year University of Toronto program with a minimum final-year grade point average (GPA) of B+ (3.3 out of 4.0 or 78%), and successful completion of a master's degree with an overall average of at least B+ (or equivalent).
- Applicants whose primary language is not English and who graduated from a university where the language of instruction and examination was not English must demonstrate proficiency in English. See [General Regulations section 4.3](#) for requirements.
- Applicants must satisfy the department of the ability to undertake advanced research.
- In addition, applicants must demonstrate that they are actively engaged in professional activities related to their proposed program of study.

Completion Requirements

- **Coursework: students must successfully complete at least 2.0 full-course equivalents (FCEs) (four half courses).** The number and specific courses required must be approved by the Department's Graduate Studies Committee in consultation with the student's supervisor.
- **Comprehensive examination** after completing most of the coursework and preferably within one year after first enrolment in the PhD program. This examination consists of a four- to five-day take-home written examination,

followed approximately a week later by an oral examination. The examination is administered by a Comprehensive Examination Committee created and supervised by the department's Graduate Studies Committee.

- **Residence.** Students normally must spend at least two academic years of their program on campus on a full-time basis.
- The academic program must be approved by the department's Graduate Studies Committee.
- Students must participate in the non-credit seminar course [JDE1000H](#) *Ethics in Research*.
- Students have the option of completing an emphasis in Sustainable Energy as part of their degree program. Please see details in the Civil and Mineral Engineering Emphases section.

Mode of Delivery: In person

Program Length: 6 years full-time (typical registration sequence: Continuous)

Time Limit: 8 years full-time

University of Toronto

Minor Modification Proposal:

Change to an Existing Graduate Program or Collaborative Specialization

This template should be used to bring forward all proposals for minor modifications to program or admissions requirements for existing graduate programs or collaborative specializations under the University of Toronto's Quality Assurance Process.

Program/Collaborative Specialization being modified: E.g., MSc in Immunology	Master of Engineering (MEng)
Graduate unit:	Civil & Mineral Engineering
Faculty/academic division:	Applied Science & Engineering
Dean's office contact:	
Version date: (Please change as you edit this proposal.)	October 28, 2024

1 Summary

- Check box for type(s) of change.
- Summarize what the change is, including details about any changes to FCEs.

<input type="checkbox"/>	Changing admission requirements	<input type="checkbox"/>	Renaming field, concentration or emphasis*
<input checked="" type="checkbox"/>	Changing program requirements	<input type="checkbox"/>	Renaming of program or collaborative specialization (please notify VPAP before governance)
<input type="checkbox"/>	Changing timing of program requirements	<input type="checkbox"/>	Creating a new emphasis
<input type="checkbox"/>		<input type="checkbox"/>	Changes to programs affecting an MOA
<p>Summary: We are proposing changes to the course requirements for the CivMin MEng degree.</p> <p>CivMin MEng Degree Requirements Current Requirements</p> <ul style="list-style-type: none"> • MEng students must successfully complete 10 courses (5.0 full-course equivalents [FCEs]). <ul style="list-style-type: none"> ○ 6 courses must be in the CivMin Department (CIV, MIN, or CME course codes). APS1001 - Project Management, APS 1410 - Waterpower Essentials or APS 1411 - Renewal of Waterpower Facilities may be counted towards this requirement. <ul style="list-style-type: none"> ▪ With approval, 1 or 2 courses may be replaced by an MEng Project: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE). 			

- **4** courses may be taken outside the CivMin Department and may include APS and TEP courses, courses from other engineering Departments, or other faculties.

New Requirements

- MEng students must successfully complete **10** graduate (500- and 1000-level) courses (5.0 full-course equivalents [FCEs]).
 - At least **6** courses must be technical, **4** of which must be offered by the CivMin Department (CIV, MIN, or CME course codes).
 - With approval, **1** or **2** CivMin courses may be replaced by an MEng Project: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE).
 - Technical courses include:
 - Courses offered by Departments within the Faculty of Applied Science & Engineering (MSE, MIE, ECE, CHE, BME, AER course codes).
 - Courses from a list (found on the Department's website) of APS courses deemed technical.
 - **4** may be non-technical (but must still be relevant to the program) and may include APS and TEP courses, or courses from other departments in other faculties.

* Anything with a changed/new name requires consultation with VPAP Office prior to governance; if name change implies significant change to what is being offered or how it is being offered, this may be a major modification or new program.

2 Effective Date of Change

Start of the Fall Semester 2025.

3 Academic Rationale

- What are the academic reasons for the change?

CivMin stands out among the other FASE Departments as having the highest number of required courses offered by the home Department (see below).

- CIVMIN: 6/10 courses must be from CIV.
- MIE: 6/10 courses must be technical. All MIE courses are technical and there is a list of approved technical APS courses similar to the one presented above. Students can also request other courses be counted as technical, for example, an ECE course.
- ECE: 6/9 courses must be technical. Non-technical course codes are APS, LAW, etc. At least 5/6 technical courses must be from ECE.
- CHE: 6/10 courses must be technical. 3/6 technical courses must be from CHE. They created a list of all FASE grad courses and listed them as technical and non-technical (see here). We'd like to avoid maintaining a list of this size.
- MSE: 6/10 courses must be technical. 3/6 technical courses must be from MSE. No definition is provided of what a technical course is.

The concern is that this requirement provides less flexibility to CivMin MEng students compared to other FASE Departments and may work against our recruitment goals. By changing the requirement to **6** technical courses, of which **4** must be CivMin, we would bring our requirements more in line with other FASE Departments while improving flexibility, which is a key consideration for prospective students.

4 Impact on Students

- Outline the expected impact on continuing and incoming students, if any, and how they will be accommodated.

All new students will follow the new requirements. All current students will have the choice to follow the old or new requirements.

5 Consultation

- Describe any consultation undertaken with the students, faculty, Dean and chair/director. Address any major issues discussed.

In CivMin, each Emphasis has an assigned Coordinator. Our MEng Coordinators are as follows: Ron Hofmann (Environmental Engineering), Marianne Touchie (Building Science and Sustainable Urban Systems), Tamer El-Diraby (Construction Management), Kamran Esmaili (Geomechanics), Jeffrey Packer (Structural Engineering and Concrete), Khandker Nurul Habib (Transportation Engineering & Planning). Each MEng Coordinator was consulted and approved the proposed change to the CivMin MEng Degree requirements. The Department Leadership Team was also consulted and approved this change.

6 Resources

- Describe any resource implications of the change(s) including, but not limited to, faculty complement, space, libraries and enrolment/admissions).

7 Governance Approval

Unit sign-off	CivMin Departmental Council meeting November 26, 2024
Dean's Office sign-off	Julie Audet, Vice-Dean, Graduate Studies January 21, 2025
Engineering Graduate Education Committee approval	January 29, 2025

Appendix A: Calendar Entry

Please use track changes to indicate where changes have been made.

7.1.1 Completion Requirements

- **Coursework.** Students must complete **5.0 full-course equivalents (FCEs)** (10 half courses), of which up to two half courses (1.0 FCE) may be replaced by a research/design project: [CIV1001H](#) or [CIV1002Y](#).
 - At least 6 courses must be technical, 4 of which must be offered by the CivMin Department (CIV, MIN, or CME course codes).
 - With approval, 1 or 2 CivMin courses may be replaced by an MEng Project: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE).
 - Technical courses include:
 - Courses offered by Departments within the Faculty of Applied Science & Engineering (MSE, MIE, ECE, CHE, BME, AER course codes).
 - Courses from a list (found on the Department's website) of APS courses deemed technical.
 - 4 may be non-technical (but must still be relevant to the program) and may include APS and TEP courses, or courses from other departments in other faculties.

University of Toronto

Minor Modification Proposal:

Change to an Existing Graduate Program or Collaborative Specialization

This template should be used to bring forward all proposals for minor modifications to program or admissions requirements for existing graduate programs or collaborative specializations under the University of Toronto's Quality Assurance Process.

Program/Collaborative Specialization being modified: E.g., MSc in Immunology	Master of Engineering (MEng), Emphasis in Building Science
Graduate unit:	Civil & Mineral Engineering
Faculty/academic division:	Applied Science & Engineering
Dean's office contact:	
Version date: (Please change as you edit this proposal.)	October 28, 2024

1 Summary

- Check box for type(s) of change.
- Summarize what the change is, including details about any changes to FCEs.

<input type="checkbox"/>	Changing admission requirements	Renaming field, concentration or emphasis*
<input checked="" type="checkbox"/>	Changing program requirements	Renaming of program or collaborative specialization (please notify VPAP before governance)
<input type="checkbox"/>	Changing timing of program requirements	Creating a new emphasis
<input type="checkbox"/>		Changes to programs affecting an MOA
<p>Summary: We are proposing changes to the CivMin MEng Emphasis in Building Science requirements.</p> <p>CivMin MEng Emphasis in Building Science <i>Current Requirements</i></p> <ul style="list-style-type: none"> • To complete the Emphasis, you must complete 6 courses (3.0 full-course equivalents [FCEs]), at least 4 of which must be from the list of core courses (up to 2 can be from the list of electives). <ul style="list-style-type: none"> ○ Other courses may be considered but would require approval from the Emphasis Coordinator. ○ With approval, 1 or 2 courses may be replaced by an MEng Project: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE). 		

New Requirements

- To complete the Emphasis, you must complete **6** courses (3.0 full-course equivalents [FCEs]) from the following lists, with at least **4** courses taken from the Group 1 list.
 - **4** courses must be from the Group 1 course list.
 - **2** courses may be from the Group 2 course list.
 - Other courses may be considered but would require approval from the Emphasis Coordinator.
 - With approval, **1** or **2** courses may be replaced by an MEng Project: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE).
- Some courses may satisfy the requirements of multiple Emphases. Students may double-count a maximum of **1** course towards the requirements of any two CivMin Emphases. This change will apply to all CivMin MEng Emphases.

* Anything with a changed/new name requires consultation with VPAP Office prior to governance; if name change implies significant change to what is being offered or how it is being offered, this may be a major modification or new program.

2 Effective Date of Change

Start of the Fall Semester 2025.

3 Academic Rationale

- What are the academic reasons for the change?

The Building Science Emphasis currently refers to lists of “Core Courses” and “Elective Courses”. This language is misleading, because the courses are actually grouped into two lists of elective courses. Referring to the Group 1 list of courses as ‘core’ prohibits us from including ‘new topics’ courses (CIVXX99) in this list. We would like to include ‘new topics’ courses in both lists, and are therefore proposing to change the name of these elective lists to Group 1 and Group 2 courses.

4 Impact on Students

- Outline the expected impact on continuing and incoming students, if any, and how they will be accommodated.

All new students will follow the new requirements. All current students will have the choice to follow the old or new requirements.

5 Consultation

- Describe any consultation undertaken with the students, faculty, Dean and chair/director. Address any major issues discussed.

In CivMin, each Emphasis has a faculty Coordinator with Marianne Touchie being the Building Science Coordinator. Professor Touchie was consulted and approved the proposed change to the Emphasis requirements. The Department Leadership Team was also consulted and approved this change.

6 Resources

- Describe any resource implications of the change(s) including, but not limited to, faculty complement, space, libraries and enrolment/admissions).

7 Governance Approval

Unit sign-off	CivMin Departmental Council meeting November 26, 2024
Dean's Office sign-off	Julie Audet, Vice-Dean, Graduate Studies January 21, 2025
Engineering Graduate Education Committee approval	January 29, 2025
Faculty/division council approval (or delegated body) if applicable	February 24, 2025

Appendix A: Calendar Entry

Please use track changes to indicate where changes have been made.

7.1.1.1.1 Participating Programs:

- Civil Engineering MEng

MEng students must successfully complete ~~at least six half courses (3.0 full-course equivalents [FCEs])~~ from the following lists, with at least four half courses from with a combination of core Group One and elective courses Group Two as detailed below. One or two of the ~~optional~~ courses may be a ~~one-session (CIV1001H) or two-session (CIV1002Y) project (not listed below)~~ project (not listed below): CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE). Other courses may be considered but will require approval of the Building Science emphasis coordinator.

Core Courses Group One (complete at least ~~four~~4):

~~CIV575H1 *Building Science,*~~

~~CIV576H1 *Sustainable Buildings,*~~

~~CIV578H1 *Design of Building Enclosures,*~~

~~CIV1282H *Case Studies in Building Science,*~~

~~CIV1320H *Indoor Air Quality,*~~

~~MIE507H1 *HVAC Fundamentals.*~~

~~CIV501H1~~

~~CIV1231H~~

~~CIV1299 - (Advanced Technologies for Smart Buildings – Energy Performance and Indoor Environmental Quality)~~

Elective Courses Group Two (~~others can be approved by the emphasis coordinator may complete 2~~):

~~CIV514H1, CIV536H1, CIV577H1, CIV1279H, CIV1299H,~~

~~MIE515H1, - CIV580H1, CIV1284H, CIV1281H, CIV1307H, CIV1398H, CME538H1, MIE1210H, MIE1413H~~

University of Toronto

Minor Modification Proposal:

Change to an Existing Graduate Program or Collaborative Specialization

This template should be used to bring forward all proposals for minor modifications to program or admissions requirements for existing graduate programs or collaborative specializations under the University of Toronto's Quality Assurance Process.

Program/Collaborative Specialization being modified: E.g., MSc in Immunology	Master of Engineering (MEng), Emphasis in Concrete
Graduate unit:	Civil & Mineral Engineering
Faculty/academic division:	Applied Science & Engineering
Dean's office contact:	
Version date: (Please change as you edit this proposal.)	October 28, 2024

1 Summary

- Check box for type(s) of change.
- Summarize what the change is, including details about any changes to FCEs.

<input type="checkbox"/>	Changing admission requirements	Renaming field, concentration or emphasis*
<input checked="" type="checkbox"/>	Changing program requirements	Renaming of program or collaborative specialization (please notify VPAP before governance)
<input type="checkbox"/>	Changing timing of program requirements	Creating a new emphasis
<input type="checkbox"/>		Changes to programs affecting an MOA
<p>Summary: We are proposing changes to the CivMin MEng Emphasis in Concrete requirements.</p> <p>CivMin MEng Emphasis in Concrete Requirements</p> <p><i>Current Requirements</i></p> <ul style="list-style-type: none"> • To complete the Emphasis, you must complete 6 courses (3.0 full-course equivalents [FCEs]) from a list of courses. <ul style="list-style-type: none"> ○ Other courses may be considered but would require approval from the Emphasis Coordinator. ○ With approval, 1 or 2 courses may be replaced by an MEng Project: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE). 		

New Requirements

- To complete the Emphasis, you must complete **4** courses (2.0 full-course equivalents [FCEs]) from a list of courses.
 - Other courses may be considered but would require approval from the Emphasis Coordinator.
 - With approval, **1** or **2** courses may be replaced by an MEng Project: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE).
- Some courses may satisfy the requirements of multiple Emphases. Students may double-count a maximum of **1** course towards the requirements of any two CivMin Emphases. This change will apply to all CivMin MEng Emphases.

* Anything with a changed/new name requires consultation with VPAP Office prior to governance; if name change implies significant change to what is being offered or how it is being offered, this may be a major modification or new program.

2 Effective Date of Change

Start of the Fall Semester 2025.

3 Academic Rationale

- What are the academic reasons for the change?

The Concrete Emphasis currently requires taking **6** courses from one list of courses. Through consultation with the Concrete Coordinator, Professor Jeffrey Packer, we decided to reduce the number of required courses from **6** to **4**. The primary reason for the change is the lack of available concrete courses and faculty to support the requirement for **6** courses. A secondary motivation is based on very low enrollment.

4 Impact on Students

- Outline the expected impact on continuing and incoming students, if any, and how they will be accommodated.

All new students will follow the new requirements. All current students will have the choice to follow the old or new requirements.

5 Consultation

- Describe any consultation undertaken with the students, faculty, Dean and chair/director. Address any major issues discussed.

In CivMin, each Emphasis has a faculty Coordinator with Jeffrey Packer being the Concrete Coordinator. Professor Packer was consulted and approved the proposed change to the Emphasis requirements. The Department Leadership Team was also consulted and approved this change.

6 Resources

- Describe any resource implications of the change(s) including, but not limited to, faculty complement, space, libraries and enrolment/admissions).

7 Governance Approval

Unit sign-off	CivMin Departmental Council meeting November 26, 2024
Dean's Office sign-off	Julie Audet, Vice-Dean, Graduate Studies January 21, 2025
Engineering Graduate Education Committee approval	January 29, 2025
Faculty/division council approval (or delegated body) if applicable	February 24, 2025

Appendix A: Calendar Entry

Please use track changes to indicate where changes have been made.

7.1.1.1.1 Participating Programs:

- Civil Engineering MEng

MEng students must successfully complete **six-four** of the following technical courses (**32.0 full-course equivalents [FCEs]**), one or two of which may be a ~~one-session~~ [\(CIV1001H\)](#) or ~~two-session~~ [\(CIV1002Y\)](#) ~~project (not listed below)~~ [project \(not listed below\): CIV1001H \(0.5 FCE\) or CIV1002Y \(1.0 FCE\)](#). Other courses may be considered but will require approval of the Concrete emphasis coordinator.

CIV514H1, CIV517H1, [CIV1201H](#), [CIV1250H](#), [CIV1252H](#), [CIV1260H](#), [CIV1262H](#), [CIV1275H](#), [CIV1504H](#)- [CIV1164H](#), [CIV1169H](#)

University of Toronto

Minor Modification Proposal:

Change to an Existing Graduate Program or Collaborative Specialization

This template should be used to bring forward all proposals for minor modifications to program or admissions requirements for existing graduate programs or collaborative specializations under the University of Toronto's Quality Assurance Process.

Program/Collaborative Specialization being modified: E.g., MSc in Immunology	Master of Engineering (MEng), Emphasis in Construction Management
Graduate unit:	Civil & Mineral Engineering
Faculty/academic division:	Applied Science & Engineering
Dean's office contact:	
Version date: (Please change as you edit this proposal.)	October 28, 2024

1 Summary

- Check box for type(s) of change.
- Summarize what the change is, including details about any changes to FCEs.

<input type="checkbox"/>	Changing admission requirements	<input type="checkbox"/>	Renaming field, concentration or emphasis*
<input checked="" type="checkbox"/>	Changing program requirements	<input type="checkbox"/>	Renaming of program or collaborative specialization (please notify VPAP before governance)
<input type="checkbox"/>	Changing timing of program requirements	<input type="checkbox"/>	Creating a new emphasis
<input type="checkbox"/>		<input type="checkbox"/>	Changes to programs affecting an MOA
<p>Summary: We are proposing changes to the CivMin MEng Emphasis in Construction Management requirements.</p> <p>CivMin MEng Emphasis in Construction Management <i>Current Requirements</i></p> <ul style="list-style-type: none"> • To complete the Emphasis, you must complete <u>6</u> courses (3.0 full-course equivalents [FCEs]) from a list of courses. <ul style="list-style-type: none"> ○ Other courses may be considered but would require approval from the Emphasis Coordinator. ○ With approval, <u>1</u> or <u>2</u> courses may be replaced by an MEng Project: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE). 			

New Requirements

- To complete the Emphasis, you must complete **6** courses (3.0 full-course equivalents [FCEs]) from the following lists, with at least **4** courses taken from the Group 1 list.
 - **4** courses must be from the Group 1 course list.
 - **2** courses may be from the Group 2 course list.
 - Other courses may be considered but would require approval from the Emphasis Coordinator.
 - With approval, **1** or **2** courses may be replaced by an MEng Project: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE).
- Some courses may satisfy the requirements of multiple Emphases. Students may double-count a maximum of **1** course towards the requirements of any two CivMin Emphases. This change will apply to all CivMin MEng Emphases.

* Anything with a changed/new name requires consultation with VPAP Office prior to governance; if name change implies significant change to what is being offered or how it is being offered, this may be a major modification or new program.

2 Effective Date of Change

Start of the Fall Semester 2025.

3 Academic Rationale

- What are the academic reasons for the change?

The Construction Management Emphasis currently requires taking **6** courses from one list of courses. Through consultation with the Construction Management Coordinator, Professor Tamer El-Diraby, we decided to include two lists of courses, Group 1 courses and Group 2 courses. The objective of this change is to ensure students have taken at least **4** Construction Management courses, which are listed as Group 1 courses. Group 2, on the other hand, contains courses like CIV1307 – Life Cycle Analysis, which are more tools-based.

4 Impact on Students

- Outline the expected impact on continuing and incoming students, if any, and how they will be accommodated.

All new students will follow the new requirements. All current students will have the choice to follow the old or new requirements.

5 Consultation

- Describe any consultation undertaken with the students, faculty, Dean and chair/director. Address any major issues discussed.

In CivMin, each Emphasis has a faculty Coordinator with Tamer El-Diraby being the Construction Management Coordinator. Professor El-Diraby was consulted and approved the proposed change to the Emphasis requirements. The Department Leadership Team was also consulted and approved this change.

6 Resources

- Describe any resource implications of the change(s) including, but not limited to, faculty complement, space, libraries and enrolment/admissions).

7 Governance Approval

Unit sign-off	CivMin Departmental Council meeting November 26, 2024
Dean's Office sign-off	Julie Audet, Vice-Dean, Graduate Studies January 21, 2025
Engineering Graduate Education Committee approval	January 29, 2025
Faculty/division council approval (or delegated body) if applicable	February 24, 2025

Appendix A: Calendar Entry

Please use track changes to indicate where changes have been made.

7.1.1.1.1 Participating Programs:

- Civil Engineering MEng

MEng students must successfully complete **six half courses of the following technical courses (3.0 full-course equivalents [FCEs])** from the following lists, with at least four half courses from Group One with a combination of Group One and Group Two as detailed below. One or two of which courses may be a one-session (CIV1001H) or two-session (CIV1002Y) project (not listed below) project (not listed below): CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE). Other courses may be considered but will require approval of the Construction Management emphasis coordinator.

Group One (complete at least 4)

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Updated on March 6, 2018

CIV580H1, CIV1279H, CIV1281H, CIV1283H, CIV1285H, CIV1289H, CIV1299H
(Construction Safety: IoT and AI Solutions) CIV1299H - (Virtualization and
Analytics in Construction), CIV1284H

Group Two (may complete 2)

CIV577H1, CIV576H1, APS1005, APS1017, APS1052, APS1031

APS1001H, APS1005H, APS1049H, APS1031H,

CIV580H1, CIV1279H, CIV1281H, CIV1283H, CIV1284H, CIV1285H, CIV1289H, CIV1299H,
CIV1307H, CIV1504H.

University of Toronto

Minor Modification Proposal:

Change to an Existing Graduate Program or Collaborative Specialization

This template should be used to bring forward all proposals for minor modifications to program or admissions requirements for existing graduate programs or collaborative specializations under the University of Toronto's Quality Assurance Process.

Program/Collaborative Specialization being modified: E.g., MSc in Immunology	Master of Engineering (MEng), Emphasis in Environmental Engineering
Graduate unit:	Civil & Mineral Engineering
Faculty/academic division:	Applied Science & Engineering
Dean's office contact:	
Version date: (Please change as you edit this proposal.)	October 28, 2024

1 Summary

- Check box for type(s) of change.
- Summarize what the change is, including details about any changes to FCEs.

<input type="checkbox"/>	Changing admission requirements	Renaming field, concentration or emphasis*
<input checked="" type="checkbox"/>	Changing program requirements	Renaming of program or collaborative specialization (please notify VPAP before governance)
<input type="checkbox"/>	Changing timing of program requirements	Creating a new emphasis
<input type="checkbox"/>		Changes to programs affecting an MOA
<p>Summary: We are proposing changes to the CivMin MEng Emphasis in Environmental Engineering requirements.</p> <p>CivMin MEng Emphasis in Environmental Engineering Requirements <i>Current Requirements</i></p> <ul style="list-style-type: none"> • To complete the Emphasis, you must complete 6 courses (3.0 full-course equivalents [FCEs]) from a list of courses. <ul style="list-style-type: none"> ○ Other courses may be considered but would require approval from the Emphasis Coordinator. ○ With approval, 1 or 2 courses may be replaced by an MEng Project: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE). 		

New Requirements

- To complete the Emphasis, you must complete **4** courses (2.0 full-course equivalents [FCEs]) from a list of courses.
 - Other courses may be considered but would require approval from the Emphasis Coordinator.
 - With approval, **1** or **2** courses may be replaced by an MEng Project: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE).
- Some courses may satisfy the requirements of multiple Emphases. Students may double-count a maximum of **1** course towards the requirements of any two CivMin Emphases. This change will apply to all CivMin MEng Emphases.
 -

* Anything with a changed/new name requires consultation with VPAP Office prior to governance; if name change implies significant change to what is being offered or how it is being offered, this may be a major modification or new program.

2 Effective Date of Change

Start of the Fall Semester 2025.

3 Academic Rationale

- What are the academic reasons for the change?

The Environmental Engineering Emphasis currently requires taking **6** courses from one list of courses. Through consultation with the Environmental Engineering Coordinator, Professor Ron Hofmann, we decided to reduce the number of required courses from **6** to **4**. The primary reason for the change is the many sub-specialization/research groups within our Environmental section. With these sub-specializations, there is a lack of available courses and faculty support to support the requirement for **6** courses. A secondary motivation is based on very low enrollment and the fact that Chemical Engineering has a similar Emphasis, which only requires **4** courses.

4 Impact on Students

- Outline the expected impact on continuing and incoming students, if any, and how they will be accommodated.

All new students will follow the new requirements. All current students will have the choice to follow the old or new requirements.

5 Consultation

- Describe any consultation undertaken with the students, faculty, Dean and chair/director. Address any major issues discussed.

In CivMin, each Emphasis has a faculty Coordinator with Ron Hofmann being the Environmental Engineering Coordinator. Professor Hofmann was consulted and approved the proposed change to the Emphasis requirements. The Department Leadership Team was also consulted and approved this change.

6 Resources

- Describe any resource implications of the change(s) including, but not limited to, faculty complement, space, libraries and enrolment/admissions).

7 Governance Approval

Unit sign-off	CivMin Departmental Council meeting November 26, 2024
Dean's Office sign-off	Julie Audet, Vice-Dean, Graduate Studies January 21, 2025
Engineering Graduate Education Committee approval	January 29, 2025
Faculty/division council approval (or delegated body) if applicable	February 24, 2025

Appendix A: Calendar Entry

Please use track changes to indicate where changes have been made.

Participating Programs:

- Civil Engineering MEng

MEng students must successfully complete **four of the following technical courses (2.0 full-course equivalents [FCEs])**, one or two of which may be a project (not listed below): CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE) Other courses may be considered but will require approval of the Environmental Engineering emphasis coordinator.

[CHE1134H](#), [CHE1150H](#), [CHE1180H](#), [CHE1431H](#), [CHE1432H](#), CHE1152H, CHE1433H
[CHL5903H](#),
CIV536H, CIV550H1, CIV577H1, [CIV1303H](#), [CIV1307H](#),

Developed by the Office of the Vice-Provost, Academic Programs

Updated on March 6, 2018

[CIV1308H](#), [CIV1309H](#), [CIV1311H](#), [CIV1319H](#), [CIV1320H](#), CIV1321H, CIV1323,
CIV1330

[ENV1001H](#), [ENV1701H](#),
[JCC1313H](#),
[JNC2503H](#),
[MIE1240H](#).

University of Toronto

Minor Modification Proposal:

Change to an Existing Graduate Program or Collaborative Specialization

This template should be used to bring forward all proposals for minor modifications to program or admissions requirements for existing graduate programs or collaborative specializations under the University of Toronto's Quality Assurance Process.

Program/Collaborative Specialization being modified: E.g., MSc in Immunology	Master of Engineering (MEng), Emphasis in Geomechanics
Graduate unit:	Civil & Mineral Engineering
Faculty/academic division:	Applied Science & Engineering
Dean's office contact:	
Version date: (Please change as you edit this proposal.)	October 28, 2024

1 Summary

- Check box for type(s) of change.
- Summarize what the change is, including details about any changes to FCEs.

<input type="checkbox"/>	Changing admission requirements	Renaming field, concentration or emphasis*
<input checked="" type="checkbox"/>	Changing program requirements	Renaming of program or collaborative specialization (please notify VPAP before governance)
<input type="checkbox"/>	Changing timing of program requirements	Creating a new emphasis
<input type="checkbox"/>		Changes to programs affecting an MOA
<p>Summary: We are proposing changes to the CivMin MEng Emphasis in Geomechanics requirements.</p> <p>CivMin MEng Emphasis in Geomechanics Requirements</p> <p><i>Current Requirements</i></p> <ul style="list-style-type: none"> • To complete the Emphasis, you must complete 6 courses (3.0 full-course equivalents [FCEs]) from a list of courses. <ul style="list-style-type: none"> ○ Other courses may be considered but would require approval from the Emphasis Coordinator. ○ With approval, 1 or 2 courses may be replaced by an MEng Project: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE). 		

New Requirements

- To complete the Emphasis, you must complete **4** courses (2.0 full-course equivalents [FCEs]) from a list of courses.
 - Other courses may be considered but would require approval from the Emphasis Coordinator.
 - With approval, **1** or **2** courses may be replaced by an MEng Project: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE).
- Some courses may satisfy the requirements of multiple Emphases. Students may double-count a maximum of **1** course towards the requirements of any two CivMin Emphases. This change will apply to all CivMin MEng Emphases.
 -

* Anything with a changed/new name requires consultation with VPAP Office prior to governance; if name change implies significant change to what is being offered or how it is being offered, this may be a major modification or new program.

2 Effective Date of Change

Start of the Fall Semester 2025.

3 Academic Rationale

- What are the academic reasons for the change?

The Geomechanics Emphasis currently requires taking **6** courses from one list of courses. Through consultation with the Geomechanics Coordinator, Professor Kamran Esmaili, we decided to reduce the number of required courses from **6** to **4**. The primary reason for the change is that the list of Geomechanics is comprised of Geotechnical Engineering (Soil) courses and Rock Mechanics/Rock Engineering courses. With these two sub-specializations, there is a lack of available courses and faculty support to support the requirement for **6** courses. A secondary motivation is based on very low enrollment.

4 Impact on Students

- Outline the expected impact on continuing and incoming students, if any, and how they will be accommodated.

All new students will follow the new requirements. All current students will have the choice to follow the old or new requirements.

5 Consultation

- Describe any consultation undertaken with the students, faculty, Dean and chair/director. Address any major issues discussed.

In CivMin, each Emphasis has a faculty Coordinator with Kamran Esmaili being the Geomechanics Coordinator. Professor Esmaili was consulted and approved the proposed change to the Emphasis requirements. The Department Leadership Team was also consulted and approved this change.

6 Resources

- Describe any resource implications of the change(s) including, but not limited to, faculty complement, space, libraries and enrolment/admissions).

7 Governance Approval

Unit sign-off	CivMin Departmental Council meeting November 26, 2024
Dean's Office sign-off	Julie Audet, Vice-Dean, Graduate Studies January 21, 2025
Engineering Graduate Education Committee approval	January 29, 2025
Faculty/division council approval (or delegated body) if applicable	February 24, 2025

Appendix A: Calendar Entry

Please use track changes to indicate where changes have been made.

7.1.1.1.1 Participating Programs:

- Civil Engineering MEng

MEng students must successfully complete **six-four** of the following technical courses (**32.0 full-course equivalents [FCEs]**), one or two of which may be a ~~one-session~~ [\(CIV1001H\)](#) or ~~two-session~~ [\(CIV1002Y\)](#) ~~project (not listed below)~~ [project \(not listed below\): CIV1001H \(0.5 FCE\) or CIV1002Y \(1.0 FCE\)](#). Other courses may be considered but will require approval of the Geomechanics emphasis coordinator.

CIV523H1, [CIV1404H](#), ~~[CIV1419H](#)~~, [CIV1420H](#), [CIV1425H](#), [CIV1429H](#), [CIV1499H](#); ~~[\(Reliability-based Design in Rock Engineering\)](#)~~

~~MIN540H1~~, MIN565H1. CIV1498H (Geotechnical Earthquake Engineering), CIV1497H (Rock Engineering Design Practice), CIV1262H, CME525H1, CIV521H1, CIV1430H

University of Toronto

Minor Modification Proposal:

Change to an Existing Graduate Program or Collaborative Specialization

This template should be used to bring forward all proposals for minor modifications to program or admissions requirements for existing graduate programs or collaborative specializations under the University of Toronto’s Quality Assurance Process.

Program/Collaborative Specialization being modified: E.g., MSc in Immunology	Master of Engineering (MEng), Emphasis in Sustainable Urban Systems
Graduate unit:	Civil & Mineral Engineering
Faculty/academic division:	Applied Science & Engineering
Dean’s office contact:	
Version date: (Please change as you edit this proposal.)	October 28, 2024

1 Summary

- Check box for type(s) of change.
- Summarize what the change is, including details about any changes to FCEs.

<input type="checkbox"/>	Changing admission requirements	Renaming field, concentration or emphasis*
<input checked="" type="checkbox"/>	Changing program requirements	Renaming of program or collaborative specialization (please notify VPAP before governance)
<input type="checkbox"/>	Changing timing of program requirements	Creating a new emphasis
<input type="checkbox"/>		Changes to programs affecting an MOA
<p>Summary: We are proposing changes to the CivMin MEng Emphasis in Sustainable Urban Systems requirements.</p> <p>CivMin MEng Emphasis in Sustainable Urban Systems <i>Current Requirements</i></p> <ul style="list-style-type: none"> • To complete the Emphasis, you must complete 6 courses (3.0 full-course equivalents [FCEs]) from a list of courses. <ul style="list-style-type: none"> ○ Other courses may be considered but would require approval from the Emphasis Coordinator. ○ With approval, 1 or 2 courses may be replaced by an MEng Project: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE). 		

New Requirements

- To complete the Emphasis, you must complete **4** courses (2.0 full-course equivalents [FCEs]) from the following lists.
 - **2** courses must be from the Group 1 course list.
 - **1** course must be from the Group 2 course list.
 - **1** course must be from the Group 3 course list.
 - Other courses may be considered but would require approval from the Emphasis Coordinator.
 - With approval, **1** or **2** courses may be replaced by an MEng Project: CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE).
- Some courses may satisfy the requirements of multiple Emphases. Students may double-count a maximum of **1** course towards the requirements of any two CivMin Emphases. This change will apply to all CivMin MEng Emphases.

* Anything with a changed/new name requires consultation with VPAP Office prior to governance; if name change implies significant change to what is being offered or how it is being offered, this may be a major modification or new program.

2 Effective Date of Change

Start of the Fall Semester 2025.

3 Academic Rationale

- What are the academic reasons for the change?

The Sustainable Urban Systems Emphasis currently requires taking **6** courses from one list of courses. Through consultation with the Sustainable Urban Systems Coordinator, Professor Marianne Touchie, we decided to reduce the number of required courses from **6** to **4**. The primary reason for the change is the lack of available Sustainable Urban Systems courses and faculty to support the requirement for **6** courses. A secondary motivation is based on very low enrollment.

4 Impact on Students

- Outline the expected impact on continuing and incoming students, if any, and how they will be accommodated.

All new students will follow the new requirements. All current students will have the choice to follow the old or new requirements.

5 Consultation

- Describe any consultation undertaken with the students, faculty, Dean and chair/director. Address any major issues discussed.

In CivMin, each Emphasis has a faculty Coordinator with Marianne Touchie being the Sustainable Urban Systems. Professor Touchie was consulted and approved the proposed change to the Emphasis requirements. Professors Daniel Posen, Shoshanna Saxe, and Heather McLean were consulted and approved of this change. The Department Leadership Team was also consulted and approved this change.

6 Resources

- Describe any resource implications of the change(s) including, but not limited to, faculty complement, space, libraries and enrolment/admissions).

7 Governance Approval

Unit sign-off	CivMin Departmental Council meeting November 26, 2024
Dean's Office sign-off	Julie Audet, Vice-Dean, Graduate Studies January 21, 2025
Engineering Graduate Education Committee approval	January 29, 2025
Faculty/division council approval (or delegated body) if applicable	February 24, 2025

Appendix A: Calendar Entry

Please use track changes to indicate where changes have been made.

7.1.1.1.1 Participating Programs:

- Civil Engineering MEng

MEng students must successfully complete ~~six~~ **four half of the following technical courses (3.0 full-course equivalents [FCEs])** ~~from the following lists, with a combination of two courses from Group One, one course from Group Two and one course from Group Three as detailed below.~~ **One or two of which courses** may be a ~~one-session (CIV1001H) or two-session (CIV1002Y) project (not listed below) project (not listed below):~~ **CIV1001H (0.5 FCE) or CIV1002Y (1.0 FCE)**. Other courses may be considered but will require approval of the Sustainable Urban Systems emphasis coordinator.

Developed by the Office of the Vice-Provost, Academic Programs

Updated on March 6, 2018

Group One - Sustainable Systems (complete 2 courses)

CIV 1307H, CIV1321H, CIV1323H, MIE1715H, CHE1151H

Group Two - Policy/Decision Making (complete 1 course)

CIV1322H, ENV1001H, CEM1001H, MIE566H1, CIV1399H (New Topics In Civil and Mineral Engineering: Designing and Sensing Behaviour Change for Global Good)

Group Three – Application Area (complete 1 course)

CIV 576H1, CIV1320H, CIV536H1, CIV1536H, CIV531H1, APS1024H, CIV 1321H [cannot count if already used as a core course], CEM1002H, CEM1004H, CIV 550H1, CIV1311H, CIV541H1, APS510H1, MIE515H1, MIE1120H, ECE1049H (Special Topics in Energy Systems: Electric Vehicle Systems & Energy Management), CIV1499H (New Topics In Civil and Mineral Engineering: Environment, Social & Governance in Mining)

~~APS510H1, APS1024H, APS1025H, CIV514H1, CIV516H1, CIV531H1, CIV575H1, CIV576H1, CIV577H1, CIV1201H, CIV1252H, CIV1280H, CIV1303H, CIV1307H, CIV1535H, ECE1092H, ENV1001H, MIE515H1, MIE1120H, MIE1240H, MIE1715H.~~