Change to Program/Graduate Diploma Academic Requirements
Proposal Template

1. Program/Graduate Diploma: Computer Science and Engineering

2. Effective Session of Proposed Change(s): September 2016

3. Proposed Change(s) and Rationale

a) A description of the proposed change(s) and rationale, including alignment with academic plans.

Proposed changes: add Electrical Engineering as an area of concentration to the Master of Applied Science program and change the name of the degree to Master of Applied Science in Electrical and Computer Engineering.

Rationale: A few years ago, the department was renamed from “Department of Computer Science and Engineering” to “Department of Electrical Engineering and Computer Science” to reflect the fact that expertise of the members in our department spans from Electrical Engineering to Computer Science.

Background: Our Master of Applied Science program covers both Electrical and Computer Engineering. However, currently Master’s students who work in the area of Electrical Engineering receive a MASc degree in Computer Engineering.

Currently, a proposal to modify our PhD degree is being developed to accommodate doctoral students who work in the area of Electrical Engineering. Once that proposal has been completed, the MASc degree in Electrical and Computer Engineering will be revisited.

The focus of this proposal is to accommodate current Master’s students specializing in Electrical Engineering.

b) An outline of the changes to requirements and the associated learning outcomes, including how the proposed requirements will support the achievement of program/graduate diploma learning objectives.

The breadth requirement for the Master of Applied Science program will be changed from

At least one course must be from each of the two fields of specialization: computer systems engineering and interactive systems engineering.

to

At least one course must be from two of the three fields of specialization: computer systems engineering, electrical engineering and interactive systems engineering.

in order to accommodate the electrical engineering area of concentration. This will allow students in the program to use recently introduced graduate courses in the electrical engineering area to satisfy their breadth requirement.

Learning outcomes are currently not in place. These will be developed for the next cyclical program review which will take place in 2016-17.
c) An overview of the consultation undertaken with relevant academic units and an assessment of the impact of the modifications on other programs/graduate diplomas.

The proposal was unanimously approved at the Graduate Faculty meeting on October 30, 2015.

d) A summary of any resource implications and how they are being addressed.

The change of the breadth requirement will have a limited impact on resources needed to ensure that students meet degree requirements.

e) A summary of how students currently enrolled in the program/graduate diploma will be accommodated.

Currently enrolled students in the Master of Applied Science program may take advantage of the recently introduced graduate courses in the electrical engineering area to satisfy their breadth requirement. These students will be informed of the change by email once this proposal has been approved. The change will also be reflected on the program’s website. New students will be informed of the breadth requirement during orientation.

4. Calendar Copy

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<tr>
<th>Existing Program/Graduate Diploma Information (change from)</th>
<th>Proposed Program/Graduate Diploma Information (change to)</th>
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<tr>
<td><strong>Computer Science &amp; Engineering</strong></td>
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<td>The Graduate Program in Computer Science &amp; Engineering offers courses and opportunities for advanced studies and research leading to the degrees of Master of Science (MSc), Master of Applied Science (MASc) and Doctor of Philosophy (PhD) in Computer Science and Engineering. The MSc program covers a wide variety of subdisciplines. The MASc program concentrates on Computer Systems Engineering and Interactive Systems Engineering. The PhD program concentrates on Theoretical Computer Science (especially, algorithms, complexity, computability, logic, parallel, concurrent and distributed computing), Intelligent and Interactive Systems (especially, artificial intelligence, computer vision, human-computer interaction, information retrieval, robotics, speech, virtual reality) and Systems Software and Hardware (especially, communications, data mining, databases, networks, signal processing and software engineering).</td>
<td>The Graduate Program in Computer Science &amp; Engineering offers courses and opportunities for advanced studies and research leading to the degrees of Master of Science (MSc), Master of Applied Science (MASc) and Doctor of Philosophy (PhD). The MSc program covers a wide variety of disciplines in Computer Science. The MASc program concentrates on Computer Systems Engineering, Electrical Engineering and Interactive Systems Engineering. The PhD program concentrates on Theoretical Computer Science (especially, algorithms, complexity, computability, logic, parallel, concurrent and distributed computing), Intelligent and Interactive Systems (especially, artificial intelligence, computer vision, human-computer interaction, information retrieval, robotics, speech, virtual reality) and Systems Software and Hardware (especially, communications, data mining, databases, networks, signal processing and software engineering).</td>
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<td><strong>Master of Science Program</strong></td>
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<td>Admission Requirements</td>
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<tr>
<td>Graduates with an honours degree in Computer Science</td>
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Science or equivalent, with at least a B+ average in the last two years of study, may be admitted as candidates for the Masters of Science program in computer science. In addition, those admitted must have completed the equivalent of a senior-level course in the area of theoretical computer science. The following are the minimum English Language test scores (if required): TOEFL 233/577 or YELT 4. The GRE general test and computer science subject test are strongly recommended, especially for applicants who did their work outside of Canada and/or the United States.

**Degree Requirements**

Students are expected to choose between the degree by thesis or by project before the end of their second term. There is a breadth requirement on the selected graduate courses. At least one course must be from each of the following three areas:
- Theory of Computing & Scientific Computing
- Artificial Intelligence & Interactive Systems
- Systems: Hardware & Software
No more than one-third of the course requirements can be integrated with undergraduate courses.

**MSc Degree by Thesis**

Candidates for the MSc degree must complete five graduate three-credit courses and successfully defend a master’s thesis. Candidates must conduct a piece of approved research under the general direction of a supervisor. The resulting thesis should demonstrate the Candidates’ research ability in the research subject.

**MSc Degree by Project**

Candidates for the MSc degree must complete seven graduate three-credit courses and conduct a research project. The research project will have a more limited scope and/or degree of originality than a thesis. The project is under the general direction of a supervisor. A paper describing the project must be submitted and graded by the supervisory committee.

**Time Requirements**

Students are expected to complete all of their master’s degree requirements in no more than five terms (twenty months). For more details refer to
Master of Applied Science Program

Admission Requirements

Graduates with an honours undergraduate degree or equivalent (typically a four-year program with full-time enrolment) from an accredited university in computer engineering, with at least a B+ average in the last two years of study, may be admitted as candidates for the Master of Applied Science program in computer engineering. In addition, those admitted must have completed the equivalent of a senior-level project course or thesis in computer engineering. Significant industrial or research experience in computer engineering coupled with an honours undergraduate degree program or equivalent from an accredited university will be considered equivalent to an undergraduate computer engineering thesis. The following are the minimum English Language test scores (if required): TOEFL 233/577 or YELT 4. The GRE general test is strongly recommended, especially for applicants who did their work outside of Canada and/or the United States.

Degree Requirements

Candidates for the MASc degree in computer engineering must complete three graduate three-credit courses, a full-year, six-credit research project course (Computer Science & Engineering 6400 6.0) and write and successfully defend a master’s thesis. The Computer Science & Engineering 6400 6.0 project must be distinct from course assignments and the MASc thesis.

There is a breadth requirement for selected graduate courses. At least one course must be from each of the two fields of specialization: computer systems engineering and interactive systems engineering. No more than one course integrated with an undergraduate course can be used to satisfy degree requirements.

A candidate must conduct approved thesis research that demonstrates their ability in the selected field of specialization under the general direction of a supervisor. Typically, the thesis includes a practical demonstration or
implementation of the research work undertaken. For more details refer to the program's supplemental calendar.

Time Requirements

Students are expected to complete all of their master’s degree requirements in no more than five terms (twenty months). For more details refer to the program’s supplemental calendar.

Doctor of Philosophy Program

Admission Requirements

Applicants must have an MSc degree equivalent to the MSc Computer Science degree (thesis option) at York University. The York MSc Computer Science degree is based upon course work and a defended thesis. A minimum average grade of B+ on all course work is required. Applications must include official copies of all academic transcripts, a breadth statement, an extended abstract/copy of the MSc thesis, three letters of reference and a one-page statement of purpose and previous experience. The statement of purpose should indicate the applicant’s area(s) of interest in computer science. The following are the minimum English Language test scores (if required): TOEFL 233/577 or YELT 4. The GRE general test and computer science subject test are strongly recommended, especially for applicants who did their work outside of Canada and/or the United States.

Degree Requirements

Candidates for the PhD degree must complete at least three three-credit graduate courses to satisfy both breadth and depth requirements. No more than one-third of the course requirements can be integrated with undergraduate courses. Candidates must successfully complete a qualifying examination consisting of a written report on the candidate’s field of interest and have an oral defense of the report. Candidates must present a dissertation proposal outlining the anticipated results of their dissertation. Candidates are required to enrol in either an industrial internship or a teaching practicum. Finally, candidates must conduct a significant body of original research under the supervision of a supervisory committee and successfully defend the resulting dissertation.
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<th>Time Requirements</th>
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<td>Students are expected to complete their requirements in no more than four years. More detailed information is available in the program’s supplemental calendar.</td>
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