

Regulations for the
M.Eng. in Mechatronics Engineering
Master's Program in the Department of Computing
and Software at McMaster University

CAS-2014-04

1 Master of Engineering (M.Eng.) in Mechatronics Engineering

This program is intended for those interested in a career as a practicing professional in Mechatronics Engineering. Students must:

1. Successfully complete six half (one-term) graduate courses.
2. Complete an independent Mechatronics design project, including professional oral and written reports, demonstrating the ability perform independent study, apply the material studied and reach a satisfactory conclusion in an area of Mechatronics Engineering.

1.1 Admission Policy and Standards

Students can be admitted to the M.Eng. program in Mechatronics Engineering if they have a recognized Bachelor's degree in Mechatronics Engineering, Mechanical Engineering, or Electrical/Computer Engineering. Students with a degree in another field and substantial background in Software, Mechanical, Electrical or Computer Engineering may also be considered. Admissions are on a competitive basis.

1. The admission requirements are as given in the General Regulations of the Graduate School.

2. The Admission's committee may restrict a student's course choices in order to ensure appropriate depth and breadth in Mechatronics Engineering.
3. Students should have completed the following courses:
 - *Basic Mathematics*
 - Three courses in calculus
 - * Calculus 1
 - * Calculus 2
 - * Calculus 3
 - One course in scientific computation
 - One course in linear algebra
 - One course in discrete mathematics and predicate logic
 - *Basic Mechatronics Engineering*
 - Basic Electronics
 - Basic Mechanics
 - Basic Software
 - Basic Control Systems

1.2 Advanced Credit Option

Students in McMaster's Mechatronics Engineering undergraduate program may apply for the Advanced Credit Option. To take the Advanced Credit Option, a student must have an average of at least B- in the third year of study and are invited to apply by the department after a review. Students taking the Advanced Credit Option are allowed to take two 600 level courses while in level 4. These are core 400 level courses in the Mechatronics Engineering program with an additional graduate component. A student may be admitted to the advanced credit option of the M. Eng. program in Mechatronics Engineering after completing level 4 and

- Completing the advanced credit courses with a minimum of B- for each.
- Having a minimum of B- sessional average in level 4 of their undergraduate program.

1.3 Funding Models

Funding is normally the responsibility of the candidate. Funds may be available in the form of teaching assistantships, entrance scholarships and funding to support the Mechatronics design project (see Section ??). Students may also enter the program on a part-time basis. In most instances, part-time students will have external employment while participating in the program.

1.4 Supervisor

All students will have a supervisor in CAS to guide them through the program. The supervisor will be assigned in the offer of admission and in particular serves as the project supervisor (see Section ??).

1.5 Course Requirements

All students in the Mechatronics Engineering M. Eng. program must complete six half (one-term) graduate courses. Students must complete:

1. SFWR ENG 6GA3 and MECH ENG 6K03
2. Two 700 level courses taken from the list of approved courses for the M.Eng. in Mechatronics Engineering (see Appendix).
3. At least two additional 700 level courses, freely chosen.

The two 600 level courses may be taken as an Advanced Credit in the last year of undergraduate studies.

1.6 The Project

The project provides an opportunity for students to demonstrate that they can apply what has been learned in the program.

1. This project should produce a Mechatronics product to be utilized by users other than the developer.
2. Projects will be specified by the supervisor in CAS, possibly in collaboration with industry.
3. The duration of a project is typically four months. A project could be completed at a company, but it must be conducted under the supervision of a faculty member who can supervise students within the program.

4. An Examination Committee is formed, consisting of the supervisor(s) and at least one faculty member in CAS. The student and the supervisor(s) nominate the Examination Committee. The committee is appointed by the Chair or delegate.
5. Students must submit the project, including all documentation, to the Examination Committee for evaluation.
6. The project will be judged on more than its functionality.
7. The documentation must include an “executive level” description of the product and its structure.
8. The Examination Committee decides on the outcome: pass or fail. If the decision is fail, comments must be provided to aid in a revision. The decision must be made within three weeks of receipt of the project.
9. If the initial decision was fail, the student may resubmit the project after addressing the committee’s concerns. If the subsequent decision is fail, the student is dismissed from the program.

1.7 Program Timing

1. All courses should be completed within 16 months of entry into the program.
2. The project should be completed within 20 months of entry into the program.

1.8 Appendix - Approved Course List

1. Courses from Computing and Software: 701, 702, 703, 704, 708, 724, 725, 730, 736, 740, 745, 748, 750, 753, 765
2. Courses from Mechanical Engineering: 702, 710, 711, 728, 729, 742, 743, 750, 751, 752, 755
3. Courses from Electrical and Computer Engineering: 722, 742, 744, 745, 774, 794