

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

**CAS-2014-06**

**1 Master of Engineering (M.Eng.) in Software  
Engineering and Virtual System Design**

This program is intended to those interested in a career as a practicing professional in Software Engineering and Virtual System Design. Students must:

1. Successfully complete six half (one-term) graduate courses.
2. Complete an independent software development project, including professional oral and written reports, demonstrating the ability to apply the material studied and carry out independent study and reach a satisfactory conclusion in an area of Software Engineering and Virtual System Design.

**1.1 Admission Policy and Standards**

Students can be admitted to the M.Eng. program in Software Engineering and Virtual System Design if they have a recognized Bachelor's degree in Engineering, Computer Science or Mathematics. Students with a degree in another field and substantial background in computer science or 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. Each student's program of study will be individually designed to ensure appropriate depth and breadth in Software Engineering and Virtual System Design.
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 Computer Science*
    - Introduction to programming
    - Data structures

## 1.2 Advanced Credit Option

Students in McMaster's Software Engineering (Game Design) 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 obtain an invitation to apply from the department. 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 Game Design program with an additional graduate component. Currently the two courses are: SFWR ENG 4/6GA3 and 4/6GC3. A student may be admitted to the M. Eng. program in Software Engineering and Virtual System Design 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 software development project (see Section 1.6). 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 1.6).

### **1.5 Course Requirements**

All students in the Software Engineering and Virtual System Design M. Eng. program must complete six half (one-term) graduate courses. Students must complete:

1. CAS 701
2. SFWR ENG 6GA3 or CAS 704
3. At least two of: SFWR ENG 6GC3, CAS 702, 703, 708, 723, 724, 725, 726, 730, 736, 740, 745, 748, 749, 750, and 753, DIGSOC 713 and 727, PSYCH 723, 724, and 734, ECE 728, 6TN3, 6TL4, and 797, MATH 747.

At most two courses may be at 600 level, proposed by students and approved by the Chair or delegate. Necessary changes must be proposed and approved in the same way.

### **1.6 Software Development Project**

This 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 software product to be utilized by users other than the developer.
2. Projects may be specified by the supervisor in CAS, or by 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 grading.
6. The project will be judged on more than its functionality. The project must exemplify the design approach taught in the program.
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 software development project should be completed within 20 months of entry into the program.