

# ELECTRICAL AND COMPUTER ENGINEERING, M.ENG.

Electrical & Computer Engineering

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**Academic Staff:** Please refer to the Electrical and Computer Engineering (<https://umanitoba.ca/engineering/faculty-staff/electrical-and-computer-engineering/>) website for Faculty information.

## Electrical & Computer Engineering (ECE) Program Information

The department offers programs leading to the Master of Engineering, Master of Science, and Doctor of Philosophy. Students may select either a specialized research-oriented activity, an interdisciplinary program, or collaboration with industry or research centres in Canada.

## Admission Information

### Admission to the Faculty of Graduate Studies

Application and Admission Procedures are found in the Academic Guide (<https://catalog.umanitoba.ca/graduate-studies/academic-guide/application-admission-registration-policies/>).

Admission requirements for Master's students are found in the Master's Degrees General Regulations ([https://catalog.umanitoba.ca/graduate-studies/academic-guide/masters-degrees-general-regulations/#Admission\\_FGSMasters](https://catalog.umanitoba.ca/graduate-studies/academic-guide/masters-degrees-general-regulations/#Admission_FGSMasters)) section of the Guide.

### ECE M.Eng. Admission Requirements

A student must normally be employed as an engineer in Manitoba, and hold a Bachelor of Science Degree in Electrical or Computer Engineering (or its equivalent) from a recognized university.

Students must also receive tentative approval from a professor in the Department of Electrical & Computer Engineering prior to applying to the graduate program.

### Pre-Master's Option

This unit offers a Pre-Master's program of study (<https://catalog.umanitoba.ca/graduate-studies/academic-guide/general-regulations-pre-masters/>). The Pre-Master's program of study is intended to bring a student's background up to the equivalent of the required 4-year degree in the major department/unit, and to provide the student with any necessary prerequisites for courses to be taken in the Master's program. Completing the Pre-Master's program does not guarantee acceptance to the Master's program.

Students applying to a Pre-Master's program in the Department of Electrical & Computer Engineering are evaluated on a case-by-case basis with the permission of the Prospective Academic Advisor (professor) and Department. Students who do not meet the minimum GPA requirement of 3.0 / Department's requirement of 3.5; do not pass an English language

exam; and do not hold a B.Sc. in a subject approved by the department will not be accepted.

**Note:** The Pre-Master's or Qualifying Student program is not meant for those students with GPAs below the University's or Department's minimum requirement or who have not passed an English Language Examination.

## Application Information

Students should complete and submit their online application with supporting documentation by the date indicated on the ECE M.Eng. program of study (<https://umanitoba.ca/explore/programs-of-study/electrical-and-computer-engineering-msc-meng/>) page.

## Degree Requirements

This program is meant to satisfy the particular needs of students and practicing engineers wishing to extend their studies on a broad basis of coursework and an engineering project.

The M.Eng. program in Electrical and Computer Engineering requires a minimum of 24 credit hours of advisor-approved coursework as follows:

- **Minimum:** 9 credit hours at or above the 7000 level from the ECE department
- **Maximum:** 9 credit hours of elective courses from the ECE department at or above the 4000 level and a maximum of 12 credit hours from other departments at or above the 3000 level
- **Project:** The student is required to complete an advisor-approved engineering project and proposal. The effort involved in this project should be at least the equivalent of 6 credit hours of coursework.

**Expected Time to Graduate:** 2 years

## Progression Chart

Course	Title	Hours
<b>Year 1</b>		
GRAD 7300	Research Integrity Tutorial	0
GRAD 7500	Academic Integrity Tutorial	0
ECE 7XXX	ECE Courses designated 7000 level or higher <sup>1-4</sup>	9
Select courses from the following: <sup>1-4</sup>		9
ECE 7XXX	ECE Courses designated 7000 level or higher	
Related Studies 7XXX	Related Studies Courses designated 7000 level or higher	
Select courses from the following: <sup>1-4</sup>		6
ECE 4XXX	ECE Courses designated 4000 level or higher	
XXX 3000	Courses designated 3000 level or higher outside of ECE	
<b>Hours</b>		<b>24</b>
<b>Year 2</b>		
GRAD 7000	Master's Thesis	0
<b>Hours</b>		<b>0</b>
<b>Total Hours</b>		<b>24</b>

<sup>1</sup> TBD (Course must be in the student's research field) – Must be approved by Academic Advisor. With permission from the Academic Advisor and Department students may take courses outside of ECE.

<sup>2</sup> A **minimum of at least 9 credit hours** at or above the 7000-level is required from the **Department of Electrical and Computer Engineering**.

<sup>3</sup> A **minimum of 18 credit hours** at the 7000-level or higher is required. Of these 18-Credit Hours :

- **9 credit hours** must be from the ECE Graduate Program
- **9 credit hours** may come from other Departments relevant to the student course of study
- It is permissible for the **entire 24 credit hours, at the 7000-level or higher, from the Department of Electrical & Computer Engineering**

<sup>4</sup> Up to 6 credit hours may come from the undergraduate program:

- **ECE Department:** At or above the 400/4000 level may make up the remainder of the required credit-hours
- **Other Department:** (within the student's study area): at or above the 300/3000 level may make up the remainder of the required credit-hours

#GRAD7500) and Mandatory Research Integrity Online Course (<https://catalog.umanitoba.ca/graduate-studies/academic-guide/academic-performance-general/#GRAD7300>).

Students must also meet additional BFAR requirements (<https://umanitoba.ca/graduate-studies/student-experience/core-academic-requirements/#additional-requirements-by-program>) that may be specified for their program.

## General Regulations

All students must:

- maintain a minimum degree grade point average of 3.0 with no grade below C+,
- meet the minimum and not exceed the maximum course requirements, and
- meet the minimum and not exceed the maximum time requirements (in terms of time in program and lapse or expiration of credit of courses).

## Registration Information

Students should familiarize themselves with the Faculty of Graduate Studies 'GRAD' courses applicable to their program (<https://catalog.umanitoba.ca/graduate-studies/registration-information/>). If you have questions about which GRAD course(s) to register in, please consult your home department/unit.

Courses are subject to cancellation if there is insufficient enrolment. Courses with insufficient enrolment may be cancelled the first week of classes. Not all courses will be offered each year – contact the department for courses that will not be offered. All returning and newly admitted students must see an academic advisor or the department head prior to attempting to register.

## Regulations

Students must meet the requirements as outlined in both Supplementary Regulation and BFAR documents as approved by Senate.

### Supplementary Regulations

Individual units may require specific requirements above and beyond those of the Faculty of Graduate Studies, and students should consult unit supplementary regulations (<https://umanitoba.ca/graduate-studies/supplementary-regulations/>) for these specific regulations.

### Bona Fide Academic Requirements (BFAR)

Bona Fide Academic Requirements (BFAR) (<https://catalog.umanitoba.ca/graduate-studies/academic-guide/academic-performance-general/#BFAR>) represent the core academic requirements a graduate student must acquire in order to gain, and demonstrate acquisition of, essential knowledge and skills.

All students must successfully complete:

- GRAD 7300 prior to applying to any ethics boards which are appropriate to the student's research or within the student's first year, whichever comes first; and
- GRAD 7500 within the first term of registration;

unless these courses have been completed previously, as per Mandatory Academic Integrity Course (<https://catalog.umanitoba.ca/graduate-studies/academic-guide/academic-performance-general/>