



## PRE-PROFESSIONAL STUDIES

# PRE-ENGINEERING

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Engineering is the application of math and science for purposes such as construction, propulsion, communication, or manufacture.

The University of Winnipeg is an excellent place to fulfill the admission requirements for the University of Minnesota Twin Cities Campus College of Science and Engineering, or other engineering programs. This is an exciting possibility for students who want to attend one of the top engineering schools in North America.

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## YOUR EDUCATION

You can begin your degree at The University of Winnipeg by studying Physics. If you complete a Physics 3-year Bachelor of Science degree and have a minimum GPA of 3.0 (depending on the Engineering Major), you are competitive to transfer to the University of Minnesota's engineering program. After transferring your course credits acquired in Winnipeg to the University of Minnesota, you will complete your engineering degree with a final two years of study in Minneapolis, where you will earn an ABET-accredited engineering degree.

Upon graduation, you can make application to practice engineering in the Canadian province or other jurisdiction in which you wish to practice. In addition, you would be eligible to apply for CSE's master of engineering program (acceptance to that program is not guaranteed).

In the end, you will have earned two degrees: a **Bachelor of Science from The University of Winnipeg** and a **Bachelor of Engineering from the University of Minnesota**. At this stage, you can apply to have your 3-year Bachelor of Science degree upgraded to a 4-year degree, subject to approval by the appropriate department based on transfer credits being granted for courses taken in Minnesota.

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## CSE ENGINEERING MAJORS

Aerospace engineering and mechanics	Biomedical engineering
Bioproducts and biosystems engineering	Chemical engineering
Civil engineering	Computer engineering
Electrical engineering	Environmental engineering
Geoengineering	Industrial and systems engineering
Materials science and engineering	Mechanical engineering

An engineering degree from the University of Minnesota is an asset for future employment or further study. Companies that have recently hired graduates of the College of Science and Engineering programs include 3M, Boeing, Cargill, Dow Corning, Hewlett Packard Company, IBM, Microsoft, and Motorola Inc.

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***“The University of Winnipeg’s 3-year B.Sc. program promoted the development of a strong foundation in physics, mathematics and informatics which are the fundamental building blocks when assessing, understanding and analyzing complex engineering problems.”***

- Henri Salmon, BSc Physics, BAsC aeronautical engineering (2019),  
University of Winnipeg/University of Minnesota.

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## **BENEFITS OF THE PROGRAM**

- The College of Science and Engineering undergraduate engineering programs are consistently ranked among the top engineering programs in the United States.
- Manitoba students benefit from **Manitoba and Minnesota’s tuition reciprocity agreement** <https://www.edu.gov.mb.ca/ie/domestic/minnesota.html>. This means that Manitoba students attending school in Minnesota will not have to pay the higher tuition usually associated with being an out-of-state student. They will pay the same affordable tuition as a student from Minnesota.
- The transfer program allows students to begin at a smaller institution closer to home before beginning their engineering curriculum.

## **YOU SHOULD ALSO KNOW...**

The pre-engineering program also prepares students for other engineering programs besides Minnesota. This includes the Engineering Physics program at University of Manitoba, and international engineering programs like the one at the Coburg University of Applied Sciences and Arts (Coburg, Germany), with which the University of Winnipeg has a student exchange program.

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## **SAMPLE FIRST YEAR**

**PHYS-1101(6)** Foundations of Physics

**MATH-1103(3)** Introduction to Calculus I and **MATH-1104(3)** Introduction to Calculus II

**CHEM-1111(3)** Introduction to the Chemical Properties of Matter (required for all but Computer Engineering)

**CHEM-1112(3)** Basic Principles of Chemical Reactivity (if required for some streams)

**RHET-11xx(3)** Academic Writing, if required

6 credit hours Humanities (consult Minnesota’s liberal education requirements for advice)

3 credit hours Elective (dependent on the engineering stream).

## **REQUIRED HIGH SCHOOL COURSES**

In addition to meeting The University of Winnipeg’s general admission requirements, you must have Chemistry 40S (except Computer Engineering), Physics 40S, and Pre-Calculus Mathematics 40S.

## **HOW TO APPLY**

For details on application requirements and deadlines, and to apply online to UWinnipeg, please visit: [uwinnipeg.ca/apply](http://uwinnipeg.ca/apply).

Reminder: Admission to The University of Winnipeg does not guarantee admission to engineering.

(In any case where the University’s Academic Calendar and this fact sheet differ, the current Calendar takes precedence.)

## **CONTACT US**

**Academic Advising**

P: 204.786.9257

E: [advising@uwinnipeg.ca](mailto:advising@uwinnipeg.ca)

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