



# THE UNIVERSITY OF WINNIPEG

For more information visit [www.uwinnipeg.ca](http://www.uwinnipeg.ca) or contact a student recruitment officer at [welcome@uwinnipeg.ca](mailto:welcome@uwinnipeg.ca) or 204.786.9844. In any case where The University of Winnipeg Course Calendar and this fact sheet differ, the current Calendar takes precedence.

## Pre-Engineering 2012 - 2013

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

*The University of Winnipeg and the University of Minnesota Twin Cities Campus College of Science and Engineering have teamed up to offer an exciting dual degree program in engineering for students who want to attend one of the top engineering schools in North America.*

You can begin your dual degree at The University of Winnipeg by studying Biology, Chemistry, Geography, Mathematics, or Physics. If you complete a 3-year Bachelor of Science degree in any of those majors and have a minimum GPA of 2.5 - 2.8 (depending on the program), you are guaranteed a place in the College of Science and Engineering program. You will complete the dual degree with a final two years or so of study in Minneapolis at IT, where you will earn an ABET-accredited engineering degree.

Upon graduation from the dual degree program, 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 IT's master of engineering program. Acceptance to that program is not guaranteed.

If you complete the Engineering dual degree, 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 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.

### IT ENGINEERING MAJORS

Aerospace Engineering  
Biomedical Engineering  
Bioproducts and Biosystems Engineering  
Chemical Engineering  
Civil Engineering Materials Science and Engineering

Computer Engineering  
Electrical Engineering  
Geological Engineering  
Mechanical Engineering  
Materials Science and Engineering

### SAMPLE CAREERS

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.

### WHAT OUR STUDENTS SAY...

"The most important way that The University of Winnipeg prepared me for Engineering was by helping me develop an analytical mind – the ability to think about problems and solve them – which has helped in everything that I have done since. The transition to the University of Minnesota was surprisingly easy, although it took me some time to adjust to a new university, city, and country. The campus was very nice, and the computer labs were quite impressive. I found that getting involved with other students through study groups and engineering student groups helped me with the transition, and to make the switch from a physics mindset to an engineering one." - *Vladimir Gidzak (B.Sc. '02 Physics) recently completed a bachelor's degree in Aerospace Engineering at the University of Minnesota through the dual degree program in engineering, and is currently working toward a master's degree in Engineering at the University of Minnesota.*

### BENEFITS OF THE DUAL DEGREE PROGRAM

- Aerospace Engineering, Biomedical Engineering, Bioproducts and Biosystems Engineering, Chemical Engineering, Geological Engineering, and Materials Science and Engineering may be especially attractive to Manitoban students, as none of these programs are offered at any other institution in Manitoba.
- The College of Science and Engineering undergraduate engineering programs are among the top engineering programs in the United States. The Chemical Engineering program is ranked first in the nation; Geological and Materials Science Engineering is ranked third; and Aerospace and Mechanical Engineering is ranked fourth.
- Manitoba students will also benefit from **Manitoba and Minnesota's reciprocity agreement**. 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. The same holds true for Minnesota students attending a Manitoba university.

### VISITING THE UNIVERSITY OF MINNESOTA

Considering engineering? If you are interested in engineering, we recommend that you visit the College of Science and Engineering at the University of Minnesota. You will learn about its strengths, facilities, history, and reputation, and be able to decide if the dual degree program in engineering is for you.

### A WINNING COMBINATION

“The dual degree program allows students to begin at a smaller institution closer to home before beginning their engineering curriculum. It combines the benefits of a quality education with highly regarded engineering training.” – *Benjamin Sharpe, Director of Admissions at the College of Science and Engineering, University of Minnesota*

### YOU SHOULD KNOW...

Your studies at The University of Winnipeg will form the foundation for further learning at the University of Minnesota. The College of Science and Engineering suggests that hard work and good study habits in The University of Winnipeg portion of your studies will be good preparation for Engineering, and will help make the transition easier.

### SAMPLE FIRST YEAR

*NOTE: This sample first year is representative of the courses you may take. For many of our programs, you may choose another set of courses and still be well on your way to a degree. Also, for most programs you do not have to take 30 credit hours (five full courses) in your first year.*

First-year students in the dual degree program with the University of Minnesota should select their courses according to the discipline of engineering where their interests lie.

### Courses that are consistently required are:

PHYS-1101(6) Foundations of Physics I  
MATH-1103 (3) Introduction to Calculus I AND MATH-1104 (3) Introduction to Calculus II  
OR the equivalent MATH-1101(6) Introduction to Calculus  
CHEM-1111(3) Introduction to the Chemical Properties of Matter (all but Computer Engineering)  
CHEM-1112(3) Basic Principles of Chemical Reactivity (required for some streams and recommended for others)

### First-year students should also take:

RHET-1105(3) Academic Writing, if required  
6 credit hours Humanities  
3 credit hour's 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 – Domestic Student

Apply online at [uwinnipeg.ca](http://uwinnipeg.ca) or pick up an Application for Admission from your high school counsellor's office or the Admissions Office at The University of Winnipeg. To meet Scholarship deadline submit your application and \$80 application fee.

### HOW TO APPLY – International Student

Apply online at [uwinnipeg.ca/index/intl-apply](http://uwinnipeg.ca/index/intl-apply) and submit all official documents by mail. To meet Scholarship deadline submit application, fee, and documents by March 1st. International application fee is \$100, which includes a one-time courier fee.

**In order to complete your degree at the University of Minnesota, you must contact Ben Sharpe (see “Contact Us” for his contact information) by January of your graduating year for the correct application papers.**

### CONTACT US

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