



[www.engineering.uoit.ca](http://www.engineering.uoit.ca)



# Welcome from the dean

Engineering is not only a worthy profession that provides countless career opportunities, it also drives development and innovation around the world. As a university that understands and promotes the use of technology across society, UOIT has excellent Engineering degree programs in a wide range of disciplines.

I believe that your engineering education needs to prepare you for a career that will almost inevitably change direction more than once. UOIT's Engineering programs offer innovative course delivery, state-of-the-art facilities and a globally experienced faculty to ensure you obtain the necessary skills to thrive in an increasingly complex world.

An innovative educational institution, UOIT is Ontario's first laptop-based university. This means you will be immersed in a leading-edge learning environment that will allow you to remain connected to your peers and professors anytime and anywhere, on campus and beyond. Our undergraduate courses make significant use of online opportunities to enhance the in-class experience.

Our energetic and committed professors have come to UOIT because they want to be part of a new kind of engineering program. UOIT's internationally recognized faculty will collaborate with you in the classroom, the lab and in the field, providing you with valuable hands-on research experience and an in-depth education.

Our commitment to a sustainable future is reflected everywhere on campus, including our environmentally progressive campus design. We are committed to producing engineers who will help redefine the automotive industry, the energy sector and the manufacturing trade, to name a few.

I encourage you to visit our campus to see for yourself what UOIT has to offer and review our website [www.engineering.uoit.ca](http://www.engineering.uoit.ca). I look forward to welcoming you to the UOIT engineering experience.

**Dr. George Bereznoi**  
 Faculty of Engineering and Applied Science  
 September 2011

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# Engineering at UOIT

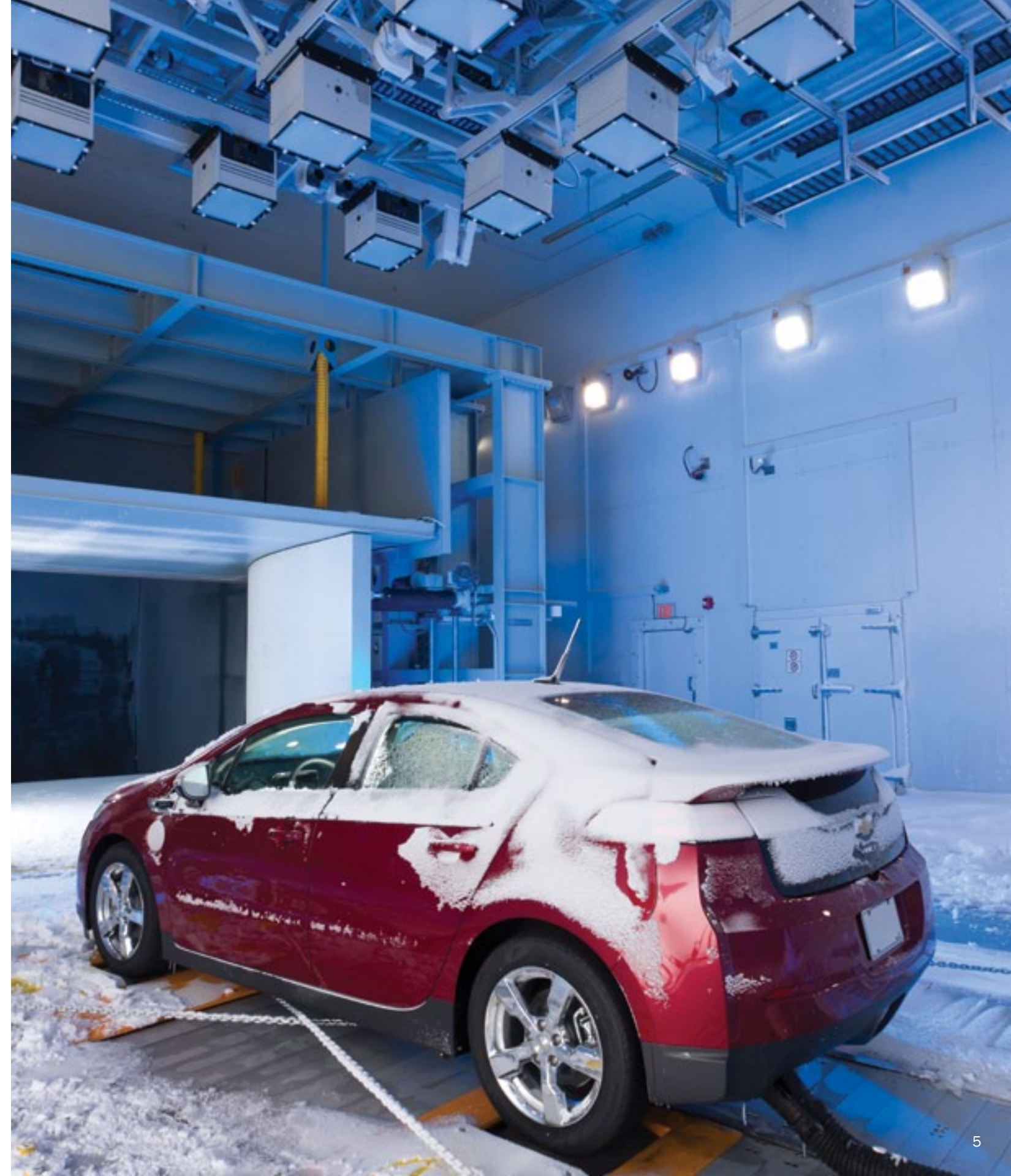
The Faculty of Engineering and Applied Science (FEAS) has developed innovative programs that will prepare you to succeed as a professional engineer. Our highly-engaged, world-class professors will teach you how to look at things with an engineering eye and acquire problem-solving skills that will set you apart and give you a competitive advantage when you graduate.

Each of our programs is designed to address both your educational needs and the market-driven requirements of employers. Our growing national reputation for research excellence is reflected in the fact that you, as an undergraduate student, will have the opportunity to work on groundbreaking research projects supervised directly by professors with associated expertise.

You will work on team projects, learn to communicate clearly and graduate with the flexible and transferable skills essential for today's workplace. Engineering design principles are integrated throughout each program, culminating in a fourth-year Capstone project that will provide you with the opportunity to synthesize what you have learned as a member of a small student team tackling real-world research problems in collaboration with a faculty member.

## UOIT IS...

- An award-winning campus located less than an hour's drive east of Toronto;
- A university offering exceptional, cutting-edge facilities, including the one-of-a-kind General Motors of Canada Automotive Centre of Excellence and the new 9,290-square-metre Energy Research Centre (ERC);
- Home to Canada's only degree programs in Automotive Engineering and Manufacturing Engineering and offers an Engineering and Management (five-year) option for all programs;
- Dedicated to helping you obtain outstanding internship opportunities with leading employers; and
- Engaged, providing extracurricular opportunities for hands-on research and participation at national- and international-level university competitions.





# Start here >

Faculty of Engineering and  
Applied Science programs

# A solid foundation: UOIT's first-year common core

All first-year engineering students start with a common program of study. You will gain an in-depth understanding of mathematics, physics, chemistry, computing and technical communications, which form the foundation of all engineering disciplines. You will also have an opportunity to learn about the various programs available, providing an opportunity to select a different engineering discipline should you discover a new program preference once you have started your studies.

Common core program courses include:

- Engineering Graphics and Design;
- Environmental Science;
- Impact of Science and Technology on Society;
- Introduction to Programming for Engineers; and
- Technical Communications.

*"I have been involved in undergraduate research as the recipient of a Natural Sciences and Engineering Research Council of Canada research assistantship and with the EcoCAR team, which promotes research in alternative vehicle technologies."*

– Samantha Hazell, Electrical Engineering, class of 2010

## Automotive Engineering

[www.engineering.uoit.ca/undergraduate/automotive](http://www.engineering.uoit.ca/undergraduate/automotive)

The Automotive Engineering program is poised to meet the challenges associated with reshaping North America's most important industrial sector. The urgent need for advancements in transportation systems is accelerating the research and development opportunities for alternative technologies such as electric and fuel cell-driven vehicles. The cars, planes, motorcycles and trucks of tomorrow will be clean, green and transformative – and designed by automotive engineers being trained today.

The first of its kind in Canada, UOIT's Automotive Engineering program takes a multidisciplinary approach, combining a central focus on mechanical engineering with elements of manufacturing and electrical engineering. Based on this philosophy, the program has a course roster that covers a broad range of topics.

Program courses include:

- Automotive Component Design;
- Automotive Engineering;
- Automotive Structural Design and Material;
- Combustion and Engines; and
- Vehicle Dynamics and Control.



## Manufacturing Engineering

[www.engineering.uoit.ca/undergraduate/manufacturing](http://www.engineering.uoit.ca/undergraduate/manufacturing)

Two million Canadians work in the Canadian manufacturing sector, and the need for innovative approaches to developing a strong manufacturing base continues to grow. UOIT's Manufacturing Engineering program is the only such accredited program in Canada. Although the sector is facing many challenges, by the time you graduate you will be well-positioned to lead and leverage the recovery.

As a student in the Manufacturing Engineering program you will be exposed to the design and improvement of high-tech systems for the production and manufacturing of products. This includes the development and application of advanced technologies such as robotics, automation, new materials and intelligent controls. This interdisciplinary program involves working with other engineers to help find ways to bring designs to fruition, taking into account factors such as cost, quality, reliability and appearance.

Program courses include:

- Industrial Ergonomics;
- Manufacturing and Production Processes;
- Modelling Manufacturing Systems;
- Quality Control;
- Reliability and Maintenance;
- Robotics and Automation; and
- Structure and Properties of Materials.





# Mechanical Engineering

[www.engineering.uoit.ca/undergraduate/mechanical](http://www.engineering.uoit.ca/undergraduate/mechanical)

Mechanical engineering is the most interdisciplinary field of engineering, overlapping with electrical, chemical, civil, computer and software engineering to name just a few disciplines.

As a Mechanical Engineering student you will have the choice of three educational streams:

- Comprehensive option;
- Energy Engineering option; and
- Mechatronics option.

The first two years are almost entirely common for all routes through the Mechanical Engineering program. In the final two years, you will focus on your area of specialization.

## COMPREHENSIVE OPTION

The comprehensive option offers exposure to the full breadth of Mechanical Engineering. Graduates will be well-positioned to find employment in a variety of industries including:

- Automotive;
- Dynamics and vibrations;
- Energy and environmental systems;
- Heating, ventilation and air-conditioning;
- Machines and mechanisms;
- Prime movers, robotics and automation;
- Telecommunications; and
- Transportation.

Program courses include:

- Advanced Solid Mechanics and Stress Analysis;
- Computer-Aided Design;
- Kinematics and Dynamics of Machines;
- Machine Design;
- Mechanical Vibrations;
- Mechatronics; and
- Thermodynamics.

## ENERGY ENGINEERING OPTION

A strong, vibrant economy requires responsible energy management. Energy engineering increasingly focuses on the efficient and environmentally benign use of energy systems, as well as energy security and reliability.

In the Energy option of Mechanical Engineering, students specialize in all aspects of energy, from its generation to its end use, including energy conversion, storage, transportation and distribution.

Program courses include:

- Applied Thermal and Fluids Engineering;
- Fossil Fuel Energy;
- Sustainable and Alternative Energy Technologies;
- Thermal Environmental Engineering; and
- Thermofluids and Energy Systems Design.

## MECHATRONICS ENGINEERING OPTION

Mechatronics engineering involves the design and application of intelligent, computer-controlled electromechanical systems. It facilitates the development of products and processes with significantly enhanced function and performance.

This specialization exposes students to the integration of electronics and mechanical systems using automated and intelligent computer-control systems to produce new devices such as artificial hearts, anti-lock braking systems and micro-electromechanical systems (MEMS and nanotechnology).

Program courses include:

- Circuit Design;
- Control Systems;
- Mechatronic Systems Design;
- Microprocessors; and
- Robotics and Automation.



# Electrical Engineering

[www.engineering.uoit.ca/undergraduate/electrical](http://www.engineering.uoit.ca/undergraduate/electrical)

Electrical engineering plays a critical role in both the Ontario and Canadian economy and is continually advancing and giving rise to new opportunities and challenges. Developed in consultation with industry, the Electrical Engineering curriculum provides a solid grounding in fundamentals, with significant content in engineering sciences and engineering design.

Our program focuses on the design and manufacturing of electrical and computer technologies and their component parts, as well as the integration of electrical components into complex systems. Graduates are prepared to find innovative solutions that lead to rapid advances in technology that are intrinsic to the electrical and computer industry sectors. These sectors include but are not limited to: computers, electronics, telecommunications, wireless communications, control systems and power transmission, such as the integration of power provided by renewable energy systems so blackouts can be avoided.

Electrical engineering is continually exploring new opportunities and challenges that include more advanced telecommunications networks (wireless communications and the Internet), more powerful computers with increased memory and computing power which can then be provided at a lower cost, and the application of complex controls to interdisciplinary systems, such as automotive control systems. Challenges on the horizon include determining how to use technology to tackle societal and environmental needs, such as the environmentally urgent requirement for efficient, long-range electric vehicles.

Program courses include:

- Digital Signal Processing Theory and Design;
- Electrical Engineering Systems Design;
- Electromagnetics;
- Electronic Circuit Design;
- Modern Control Systems;
- Power Systems; and
- Wireless Communications.

# Software Engineering

[www.engineering.uoit.ca/undergraduate/software](http://www.engineering.uoit.ca/undergraduate/software)

The Software Engineering program at UOIT provides intensive exposure to the engineering challenges associated with the development and utilization of computer software. This elite program also addresses the design of computers, computer science, integration of software into computer systems and the applications of software systems.

Demand for software engineers to meet emerging needs continues with increased technology advancement and new software being introduced to consumers, businesses and industry on a global scale.

The range of software engineering applications is growing. From special-effects software for the movie industry, through to software controlling devices such as digital cameras and robots, and software that drives businesses and the financial sector, new opportunities and challenges are being created all the time.

Program courses include:

- Design and Analysis of Algorithms;
- Distributed Systems;
- Computer Networks;
- Introduction to Artificial Intelligence;
- Operating Systems;
- Software Design and Architectures; and
- Software Project Management.

*"I love the small class sizes and knowing the professors. UOIT also had a spin on the Engineering program I didn't see anywhere else: focusing on the alternative energies, which is what I'm interested in."*

– Janelle MacDougall, Mechanical Engineering, class of 2011



# Engineering and management: take your degree to the next level

To meet the growing need for engineers with the leadership ability to succeed in a business environment, our programs offer an innovative management option. You can choose to complement the technical studies of your engineering program with business and management courses by opting for a five-year Bachelor of Engineering and Management program.

Program courses include:

- Engineering Operations and Project Management;
- Finance;
- Financial and Managerial Accounting;
- Marketing; and
- Organizational Behaviour and Management of Human Resources.

You will complete the first three years of your engineering program followed by a specialized Business and Management year. In the fifth and final year you will finish your Engineering program, while incorporating aspects of the knowledge gained during your Business and Management year.

If you are interested in applying to a five-year Engineering and Management program, you are first required to apply to the Engineering program that you wish to pursue. Once accepted, you can apply to enrol in the Engineering and Management option.

# Graduate Studies

[www.gradstudies.uoit.ca](http://www.gradstudies.uoit.ca)

If you wish to continue your studies after completing your undergraduate degree at UOIT, we offer several graduate programs and will continue to introduce new graduate engineering opportunities.

UOIT presently offers the following graduate programs:

## MASTER OF APPLIED SCIENCE (MASc) AND MASTER OF ENGINEERING (MEng) IN:

- Automotive Engineering;
- Electrical and Computer Engineering; and
- Mechanical Engineering.

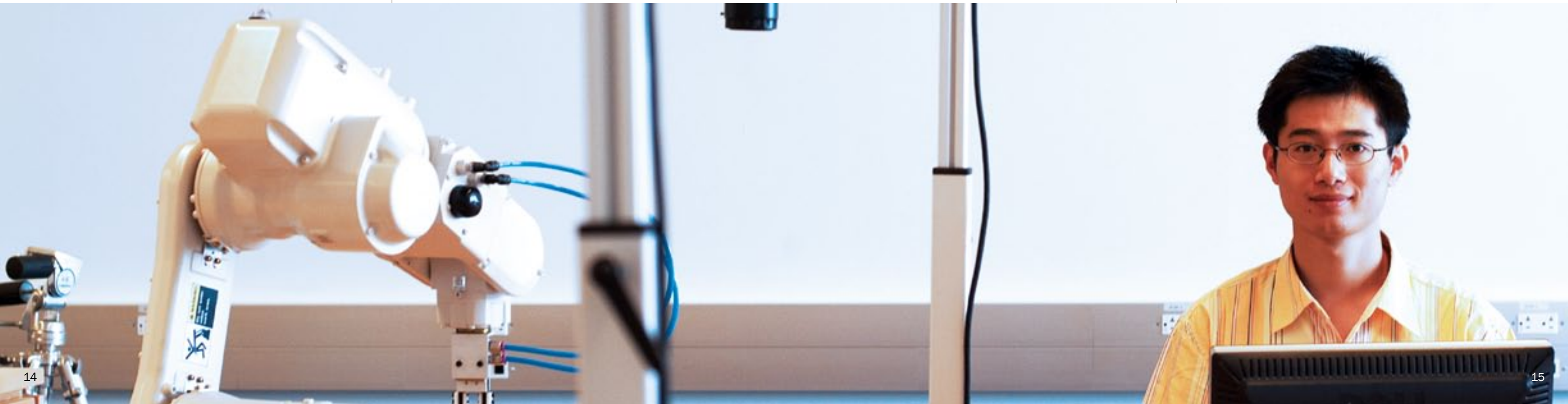
## MASTER OF ENGINEERING MANAGEMENT (MEngM)\*

## DOCTOR OF PHILOSOPHY (PHD) IN:

- Electrical and Computer Engineering; and
- Mechanical Engineering.

## GRADUATE DIPLOMA (GDIP) IN ENGINEERING MANAGEMENT\*

\*At the time of printing, these programs were pending approval by the Ontario Council of Graduate Studies.





What's  
**next** >

# Hands-on experience: your competitive advantage

Research opportunities for undergraduate students are a key differentiator between UOIT and traditional higher-learning institutions.

Our faculty members are eager to provide you with opportunities to undertake research projects and understand that hands-on experience will give you an edge in getting a job or pursuing graduate studies and research careers. Student-faculty research collaboration happens at UOIT on an ongoing basis and this unique one-on-one model is an important part of our student experience.

Getting involved with a vehicle team is a popular choice for UOIT engineering students, giving them an opportunity to collaborate, design, build and test next-generation vehicles, in many cases against engineers from other leading universities.

## CAPSTONE PROJECTS

In Capstone and thesis projects, students tackle a specific research question in their subject area and complete a formal report, applying previous undergraduate studies to a practical, hands-on project, often based on a real-world problem or question. In addition to the written report, findings are also presented to faculty, classmates, higher academic groups and/or clients.

### POOL/DECK LIFT SYSTEM

Partnering with Enable Industries of Ogden, Utah, six engineering students developed a lift mechanism for the disabled for use at either a dock or a pool for their 2010 Capstone project. A similar product does not exist in the market, and furthermore, the students' design meets the guidelines and standards of Americans with Disabilities Act (ADA).

The system's adjustable arm and telescopic boom can be powered by battery pack or electrical outlet and features a 360-degree powered rotation in either direction, the ability to clear 75 cm walls/obstructions and a light-weight aluminum design that supports up to 225 kg. The 100 per cent polyester mesh sling seat is strong and easily folded for storage and transport.

## INTERNSHIP OPPORTUNITIES

UOIT's strong partnerships provide students with outstanding optional, paid internship and placement opportunities. This real-world experience with leading employers will allow you to gain a competitive edge upon graduation and develop engineering and business skills that will in turn enhance your:

- Confidence level;
- Understanding of the role of engineering; and
- Marketability to future employers.

Students who participate in our internship programs can accumulate credit up to 12 months towards their professional engineer designation based on relevant working experience. The internship gives students the chance to handle complex, challenging work projects and be treated as employees within an organization. Most often, students find that their internship experience exceeds their expectations, resulting in conditional offers of employment upon graduation.

Internships are available after your third-year of studies and are 12 to 16 months in duration.

Students can also choose an intensive internship which offers you valuable practical hands-on experience enabling you to explore your career options in a two- to four-month placement that typically occurs during the summer months. If you choose to participate in one of our engineering placements, you can do so at any stage of your academic studies.

## INDUSTRY CONNECTIONS

Each of our innovative programs is created in collaboration with our strong industry partners. Our program content is current and you will graduate with the skills that today's employers demand.

Here's a sample of leading employers who recently provided internship opportunities for UOIT Engineering students:

- Aiolos;
- Bruce Power;
- Cameco Corporation;
- CAMI Automotive;
- Celestica;
- Canadian Nuclear Safety Commission;
- DDACE;
- General Dynamics Canada;
- General Electric;
- General Motors of Canada;
- Hydro One;
- IBM;
- Johnson Controls;
- Klensoid;
- Linamar Corporation;
- Magna International;
- Messier-Dowty;
- Morrison Lamothe;
- Ontario Power Generation;
- Research in Motion;
- Roll Form Group; and
- Smurfit-MBI.

### FAST FACT

UOIT is officially recognized as an international contributor to the Partners for the Advancement of Collaborative Engineering Education (PACE), partnering with universities around the world and entities such as GM, Hewlett-Packard, Siemens, EDS and Sun Microsystems in order to compete in today's high-tech, global economy.



# Leading-edge learning environment

UOIT is a leader among North American universities in implementing and using course- and industry-specific software for mobile learning. You will receive a high-end laptop at the beginning of your studies and your professors also develop sophisticated course content using a powerful campus-wide online learning management system.

One of the greatest advantages of our Mobile Learning program ([www.uoit.ca/mobile](http://www.uoit.ca/mobile)) is that all students have equal access to the same technology, resources and services. UOIT's approach to technology-enhanced learning includes the use of smart classrooms that are equipped with data projectors, wireless access, electric drop plugs and the latest available lecture podiums.

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*"I like the fact that the university is new – it's a beautiful campus. And I like the fact that it is a laptop-based learning environment."*

– Shane Comella, Mechanical Engineering, class of 2012

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## ONTARIO POWER GENERATION (OPG) ENGINEERING BUILDING

The 3,700 square-metre, three-storey OPG Engineering building includes 17 laboratories designed to give you the latest in hands-on skills. These state-of-the-art learning areas include a rapid prototyping and manufacturing lab, a combustion and engines lab, a mechatronics and robotics lab and an emerging energy systems lab with solar, wind, hydrogen and fuel-cell technology.

## ENERGY RESEARCH CENTRE (ERC)

Opened in 2011, the ERC enables leading-edge study and research into clean and green energies and technologies needed to sustain the planet and promote Canada's entrepreneurial advantage through public-private research and commercialization partnerships. UOIT is strategically located in Durham Region, Ontario's energy capital. The ERC houses UOIT's unique-in-Canada energy science and engineering programs, including courses in wind, solar, hydrogen, hydraulic, geothermal natural gas and nuclear energy.

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### FAST FACT

UOIT's Clean Energy Research Lab will produce five kilograms of nuclear hydrogen daily and also house innovative research in multi-phase flow, heat transfer, electrical and nanotechnologies and solar thermal water splitting.

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## GENERAL MOTORS OF CANADA AUTOMOTIVE CENTRE OF EXCELLENCE (ACE)

Our students have the opportunity to be part of automotive history – playing a key role in the reinvention of the automotive manufacturing sector. Automotive Engineering students have access to the ACE, an innovative, world-class testing centre for research and development focused on automotive manufacturing and industrial applications.

ACE is equipped with one-of-a-kind features including a climatic wind tunnel that is sized to accommodate cars, buses, trucks, trains and airplane wings. This 13,560 square-metre facility will support automotive-related undergraduate and graduate teaching, and collaborative and industry-sponsored research.

## INTEGRATED MANUFACTURING CENTRE

Our Integrated Manufacturing Centre is a fully automated, industrial-grade, flexible, manufacturing facility capable of fabricating and assembling a wide range of products from raw materials. Students use advanced technologies to create fully functional, automated work cells, which they can integrate and program in robotic assembly facilities.

## CLEAN ENERGY RESEARCH LABORATORY (CERL)

CERL is a cutting-edge research facility unlike any other in the world. CERL houses the first lab-scale demonstration of a copper-chlorine cycle for thermo chemical water splitting and nuclear hydrogen production. Hydrogen is a clean energy carrier of the future and potentially a major solution to the problem of climate change.



# World-class faculty help broaden your knowledge

At UOIT, our students have a unique opportunity to study and learn from outstanding renowned professors in their field of interest, using world-class facilities and laboratories. These women and men will challenge and inspire you to push your own boundaries of thinking and learning while broadening your knowledge and understanding in your chosen field.

Our programs and faculty members are multidisciplinary, covering areas such as:

- Clean energy systems;
- Control systems;
- Electric, hybrid and hydrogen vehicles;
- Energy efficiency and conservation;
- Health-care information technology;
- Labour and production scheduling;
- Manufacturing;
- Materials science;
- Mechatronics;
- Medical image processing;
- Power systems and electronics;
- Robotics and automation;
- Satellite communications;
- Sensor networks;
- Software engineering and software disasters;
- Vehicle dynamics and performance; and
- Wireless communications.

Specific areas of faculty research include (but are not limited to):

- AC/DC transmission systems;
- Active vibration control;
- Advanced kinematics;
- Advanced manufacturing technologies;
- Directional control and stability of vehicles;
- Evolutionary computation;
- Food refrigeration systems and applications;
- Fluid mechanics;
- Heat transfer;
- Hydrogen energy and fuel cells;
- Instrumentation and control;
- Medical image processing;
- Polymer processing and characterization;
- Solar, wind and renewable energy;
- Solid mechanics and stress analysis;
- Statistical signal processing;
- Thermal spray coatings;
- Thermal energy storage; and
- Vehicle system dynamics.

Our professors are also award-winning published authors with patents in areas such as software engineering. For example, Dr. Ramiro Liscano has patented new breakthrough technologies in distributed computing, communications and computer networking. When we think about computer communications, we generally think of streams of information flowing from one database or computer to another. The questions that Dr. Liscano poses are threefold: how do we find the information we need, how do we understand that information and how do we gain access to it? Important questions and issues for the software industry – and Dr. Liscano is pursuing the answers, using his past research experience at the National Research Council of Canada and Mitel Networks.

To view our faculty's publications list and current research topics, please visit [www.engineering.uoit.ca](http://www.engineering.uoit.ca).

Faculty members have also received major awards, including Dr. Ahmad Barari as the faculty advisor of the Society of Automotive Engineers (SAE) student team that received the Best Connections Project Award of the 2010 Ontario Centres of Excellence (OCE) Discovery Showcase. UOIT's Formula SAE team of automotive engineers designed and built a scaled-down Formula style car that helped them capture top prize at OCE. During the two-day event, members of Dr. Barari's team presented the findings of their project entitled Mechanical Property Enhancement of a FSAE Body Structure Utilizing Composite Materials. The team effort was sponsored by industry partners Multimatic Technical Solutions Inc. of Markham, Ontario, and Durmach Tool and Die of Bowmanville, Ontario.

The faculty has also received major grants from such funding authorities as the Natural Sciences and Engineering Research Council of Canada (NSERC). For example, Dr. Min Dong received major NSERC grants in electrical engineering entitled Resource-Constrained Communications and Networking through Adaptation and Cooperation as well as Cognitive Sensing for Dynamic Spectrum Access. Through her groundbreaking work on wireless communications, Dr. Dong's research is significantly improving the signal quality, reducing the power consumed and fine tuning the capabilities of Canada's wireless communications networks.





# Our faculty

## ADMINISTRATION

### Dean

George Bereznai, BE, MEng, PhD, PEng

### Associate dean, Academic and Research

Greg Naterer, BMath, MSc, PhD, PEng, FCSME, FASME, FEIC

### Associate dean, Accreditation and Internships

Michael Bennett, BSc, MA, PhD, PEng, PMP

**Director, Automotive, Manufacturing and Mechanical Engineering programs**

### Director, Electrical and Software Engineering programs

Mikael Eklund, BSc, MSc, PhD, PEng

## CORE FACULTY

**Ahmad Barari**, BSc, MSc, PhD, PEng

**Ibrahim Dincer**, BSc, MSc, PhD, PEng

**Min Dong**, BEng, PhD

**Mikael Eklund**, BSc, MSc, PhD, PEng

**Moustafa El-Gindy**, BSc, MSc, PhD, FASME

**Ebrahim Esmailzadeh**, BSc (Hons)(Eng), MPhil, PhD CEng, PEng, FASME, FCSME, FIMechE, SMIEEE

**Kamiel Gabriel**, BSc, MBA, MSc, PhD, PEng

**Ali Grami**, BSc, MEng, PhD, PEng, SMIEEE

**Marnie Ham**, Engineering Technology diploma, BSc, MSc, PhD, PEng

**Yuping He**, BSc, MSc, PhD, PEng

**Hossam Kishawy**, BSc, MSc, PhD, PEng, FASME

**Ramiro Liscano**, BSc (Eng), MSc (Eng), PhD, PEng, SMIEEE

**Lixuan Lu**, BES, MES, PhD, PEng

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**Ruth Milman**, BSc, MSc, PhD

**Walid Morsi**, BSc, MSc, PhD

**Scott Nokleby**, BEng, MSc, PhD, PEng

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**Bale Reddy**, BTech, MTech, PhD

**Jing Ren**, BSc, MSc, PhD, PEng

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**Shahram ShahbazPanahi**, BSc, MSc, PhD, PEng

**Vijay Sood**, BSc, MSc, PhD, FCAE, FIEEE, FEIC, IOQ

**Ying Wang**, BEng, MSc, PhD, PEng

**Dan Zhang**, BSc, MSc, PhD, PEng

**Ying Zhu**, BSc, MSc, PhD

## COMPLEMENTARY FACULTY

**Vinh Quan**, BSc, MSc, PhD, PEng

**Yuelei Yang**, BE, MS

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*"My UOIT is the fastest expanding school and has the newest features. They offered a degree program for a specialization I was looking for (Automotive Engineering) but then I switched to Mechanical."*

-Peter Fernandes, Mechanical Engineering, class of 2011

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# Challenge yourself outside the classroom

There are dozens of campus clubs, including faculty-related groups such as:

- Engineers Without Borders;
- The Institute of Electrical and Electronics Engineers (IEEE) Student Chapter;
- The IEEE Engineering in Medicine and Biology Society Club;
- The National Society of Black Engineers; and
- Women in Engineering.

We even offer a Co-curricular Recognition program that supports and recognizes your participation and leadership in campus activities. Leadership awards and recognition ceremonies are held for graduating students in the spring.

UOIT Engineering students continue to demonstrate that they are a cut above, participating in on-campus design competitions as well as regional, national and international events and a number of vehicle team challenges.

*“Through UOIT Motorsports, we’ve been challenged to push the boundaries of our thinking and learning at UOIT. The hands-on skills we’ve learned in our engineering courses will hopefully set us apart from the competition.”*

– Sam Ashtiani, Automotive Engineering, class of 2010. Ashtiani, with fellow graduates Shane Viccary and Jonathon Rolstin, launched the auto racing team AVR Motorsports.

## EXTERNAL DESIGN COMPETITIONS

As a UOIT Engineering student, there are plenty of opportunities to get involved in external design competitions that bring together engineering students from a variety of other educational institutions.

Here are a few examples of the extraordinary accomplishments our engineering students have achieved:

### ONTARIO CENTRES OF EXCELLENCE

- 2011 finalist – Best Connections Project; and
- 2010 first place – Best Connections Project.

### ONTARIO ENGINEERING COMPETITION

- 2009 first place – Senior Design Competition;
- 2007 first place – Junior Design Competition;
- 2007 third place – Senior Design Competition; and
- 2006 third place – Junior Design Competition.

### CANADIAN ENGINEERING COMPETITION

- 2009 third place – Senior Design Competition.

### FORMULA SAE WEST COMPETITION

- William C. Mitchell Rookie Award – Best finish for a first-year team (2007); and
- Second-best Canadian team overall (2007).

#### FAST FACT

The core research facility in the Automotive Centre of Excellence facility features a climatic wind tunnel capable of wind speeds in excess of 240 km/h, temperatures ranging from – 40 C to 60 C and the ability to create humidity from five to 95 per cent. The tunnel is capable of simulating extreme conditions such as driving a car up a steep mountain road in dry desert heat or through the middle of an arctic blizzard.

## UOIT MOTORSPORTS

[www.uoitmotorsports.com](http://www.uoitmotorsports.com)

The Faculty of Engineering and Applied Science continues to earn high praise and awards through UOIT Motorsports – the Formula Society of Automotive Engineers (SAE) auto racing team. In 2009, UOIT competed against 79 other universities at an international SAE event at the California Speedway, and ranked in the top half of all entries, and second among the nine Canadian teams.

In 2010, the team won top honours in the province at the prestigious Ontario Centres of Excellence (OCE) Discovery Showcase in Toronto. The automotive engineers designed and built a scaled-down Formula style car that helped them capture top prize in the Best Connections Project (university level) at OCE for outstanding collaboration with industry partners Multimatic Technical Solutions Inc. of Markham, Ontario and Durmach Tool and Die of Bowmanville, Ontario.

## OMEGA SOLAR

[www.omegasolar.ca](http://www.omegasolar.ca)

Founded by a UOIT Manufacturing Engineering student, Omega Solar is student-run solar car racing team comprised of UOIT engineering students who partner with students from the School of Applied Sciences at Durham College. Rayce is the term used to describe solar car races. The team’s first solar vehicle is being readied for the World Solar Challenge in Australia.





# Admission requirements

## FAST FACTS

UOIT is home to North America's second largest geothermal well field, which uses a ground-source heat recovery system to heat and cool university buildings.

Applicants must present at minimum an Ontario Secondary School Diploma (or equivalent) with a minimum of six 4U or 4M credits, including:

- English (ENG4U);
- Advanced Functions (MHF4U);
- Calculus and Vectors (MCV4U);
- Chemistry (SCH4U); and
- Physics (SPH4U).

In addition, a combined minimum average of 70 per cent in math and science courses is required.

Student selection is determined through consideration of a wide range of criteria including school marks, distribution of subjects taken and performance in subjects relevant to the academic program. The specific average or standing required for admission varies from year to year. Possession of minimum requirements does not guarantee acceptance. Preference will be given to applicants with the best qualifications.

For complete information on the current admission requirements to UOIT undergraduate programs, please visit [www.uoit.ca/programs](http://www.uoit.ca/programs).

# Financing your education

[www.uoit.ca/safa](http://www.uoit.ca/safa)

Because your education is one of the most important investments you'll ever make, our Student Awards and Financial Aid (SAFA) office works hard to ensure you have everything you need to meet your financial obligations. We are committed to helping you with the financial aspect of your post-secondary experience and encourage you to take advantage of the Ontario Student Assistance Program (OSAP), budget counselling and on-campus and summer employment opportunities to help offset the cost of your tuition, books and other fees.

We offer a variety of scholarship awards and bursaries to help you meet the cost of a university education. Engineering faculty scholarships are awarded to selected Ontario secondary school students who are admitted to UOIT and possess an outstanding admissions average. Thanks to the generosity of donors, there are also a variety of other student awards available if you are in financial need and in good academic standing.

OSAP and the Canada Student Loans program will also provide financial assistance if you qualify.

# See for yourself

The best way to experience UOIT is to participate in one of our campus tours where you will have the opportunity to ask questions to a student ambassador and learn more about our buildings, classrooms, residences and student services. We offer a variety of tour times including weekend bookings.

## BOOK A CAMPUS TOUR

[www.uoit.ca/tours](http://www.uoit.ca/tours)

## VIRTUAL TOURS

[www.uoit.ca/maps/uoit](http://www.uoit.ca/maps/uoit) – click on specific buildings

If you have any questions at all about our faculty and programs, feel free to write to Dr. Greg Naterer, associate dean, Academic at [greg.naterer@uoit.ca](mailto:greg.naterer@uoit.ca) and Dr. Michael Bennett, associate dean, Accreditation and Internship at [michael.bennett@uoit.ca](mailto:michael.bennett@uoit.ca).

# Open House events

[www.uoit.ca/openhouse](http://www.uoit.ca/openhouse)

Twice a year we host an Open House and invite you to join us for a tour of our award-winning campus. During this event you will have the opportunity to meet current students, staff and faculty and learn more about academic programs and student life at UOIT.

## FALL OPEN HOUSE

Saturday, November 5, 2011  
10 a.m. to 2 p.m.

## WINTER OPEN HOUSE

Saturday, March 3, 2012  
10 a.m. to 2 p.m.



## We are here to help.

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