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Youtube.com/FacultyofEngineering

TALENT
- #1 Most educated workforce in Canada
- #1 Most technology intensive city in Canada
- #1 Highest concentration of scientists and engineers in Canada, and #2 in North America after Silicon Valley
- 44% of the population is bilingual
- The region is recognized for excellence in research and innovation

Source: Invest Ottawa & the Canadian Trade Commissioner Service
ABDALLA OSMAN  
PRASHANTH SIVOTHTHAMAN  
HARJOT CHAHAL  
SAMIR NAIK  
MATT IGNACZAK

TV FOOT REMOTE PROJECT

“In March 2017, we participated in the Design Day competition at the University of Ottawa. Our team won first place in the accessibility category as well as third place overall, for creating a television remote for our client, Jorge. Jorge is an elderly man who suffers from cerebral palsy, severely limiting his motor skills when trying to accomplish everyday tasks. Over one term, the five of us designed and created a large, foot-operated television remote that was mounted to a table, which catered to his specific needs. The remote was run by an Arduino microcontroller, with the majority of the hardware 3D printed and laser cut in the Richard L’Abbé Makerspace. This device resolved one of Jorge’s daily burdens, creating a much better experience for him at home.

The wealth of knowledge, resources and technology that were available to us through the Makerspace enabled us to go beyond what we had anticipated at the beginning of the term and allowed us to manufacture a working prototype for our client. The University of Ottawa has created an arena for future engineers to truly innovate and explore solutions to problems that everyday people have. Without the support from the Faculty and Makerspace, this would not have been possible.”
WHY CHOOSE THE UOTTAWA FACULTY OF ENGINEERING

The FACULTY OF ENGINEERING at the University of Ottawa provides you with a strong foundation to build a successful and rewarding career.

GET EXCELLENT QUALITY PROGRAMS

Choose from eight accredited undergraduate programs, each offering top quality education in engineering and computer science. Not only will you be well prepared to practice your profession, but you will also be more than able to meet the ever-changing needs of society.

PROFESSIONAL ACCREDITATIONS

www.cips.ca
The Honours BSc in Computer Science and the BASc in Software Engineering are accredited by the Computer Science Accreditation Council of CIPS

www.engineerscanada.ca / www.ingenieurscanada.ca
All Engineering programs are accredited by the Canadian Engineering Accreditation Board of Engineers Canada
CUSTOMIZE YOUR DEGREE

CHOOSE FROM VARIOUS OPTIONS

Through a number of options, you will acquire the skills you need to better prepare for the many challenges and opportunities you will face in today’s—and tomorrow’s—job market.

- Engineering Management and Entrepreneurship
- Computing Technology
- Cooperative Education
- Double Degree programs
- Power and Sustainable Energy
- And many more

STUDY IN A BILINGUAL ENVIRONMENT

As a bilingual institution, the University of Ottawa offers students the opportunity to study in English or in French (or both!) Enroll in the country’s largest bilingual engineering school.

IMPROVE YOUR FRENCH LANGUAGE SKILLS AND GAIN A CLEAR ADVANTAGE IN THE WORKPLACE

The Extended French Stream (EFS), which is available in both Software Engineering and Computer Science programs, allows you to take one third of your courses in French. You choose which courses to take in French and which to take in English. If you choose to take a minimum number of French courses, you could qualify for replace a $1,000 French Studies bursary.

ENTREPRENEURSHIP

DEVELOP YOUR ENTREPRENEURIAL SPIRIT

One of the main goals of the Faculty and the University of Ottawa’s Entrepreneurship Hub is to foster a culture of business and entrepreneurship among its students. The Faculty ensures its graduates are well equipped to become the leaders and entrepreneurs of tomorrow, able to take innovative ideas to market in a successful and timely manner in both established and start-up organizations. The Faculty supports entrepreneurship initiatives that involve student projects, such as conferences, competitions and more.
The Workshop is an engineering and computer science mentoring centre, a free resource that supports students in their studies and in their transition to university life. The mentors are third- and fourth-year students from the Faculty who offer the following services to help students fulfill their potential:

- Study guides
- Discussion forums
- Study groups
- Peer mentoring: tips and tricks on time management, exam prep, stress management, memorization and more

We want to see you succeed!

engineering.uOttawa.ca/about/life-on-campus

SHANNON BERRY
Fourth year, Mechanical Engineering and Computing Technology, Engineering Management and Entrepreneurship option
Outgoing SVP finance of ESS, incoming president of MESS, incoming treasurer of IEEE uOttawa Student Chapter, assistant director for OEC 2018 Organizing Committee

At the beginning of my first year, I began to get involved with multiple groups at uOttawa. I learned about many opportunities for involvement during the student clubs’ fair organized by the Faculty of Engineering during Welcome Week. I then signed up to become an engineering student ambassador, which introduced me to many new people, gave me opportunities to get involved and even lead to a job opportunity. In my first year, I became involved in many activities: I joined the Great Northern Concrete Toboggan Race (GNCTR) Team, began my involvement with the Engineering Student Society (ESS) and became a member of the Gee Gees’ dance team.

As a very shy person, I knew the best way for me to make friends was to get involved. I had a great time working with these groups in my first year, which encouraged me to continue exploring other extracurricular activities. Since then, I have held many roles, including senior VP finance for the ESS, VP social for the Mechanical Engineering Student Society (MESS), a captain for the GNCTR team, a member for both the organizing committee for the Professional Engineers of Ontario Student Conference (PEO-SC) and for the Ontario Engineering Competition (OEC). This year, I will be the president of MESS and the treasurer for the IEEE uOttawa Student Branch.

Being an engineering student can be very challenging but the relationships I’ve developed and the experiences I’ve had through my involvement have greatly contributed to my studies. And when I graduate, I will be getting much more than just a degree.

SUCCEED AND TAKE ADVANTAGE OF OUR MENTORING CENTRE

JOIN THE WOMEN’S START-UP NETWORK

You can take part in this program to help you reach your full potential as an entrepreneur, create your own company, take part in compelling projects, or build a network of women involved in engineering and computer science. Our team of mentors, made up of female senior-level students, is here to help you develop your entrepreneurial skills and make the most of your time at uOttawa.
WHY STUDY ENGINEERING OR COMPUTER SCIENCE?

DEGREES THAT PAY OFF

Where does your investment in your studies pay off the most? Workopolis analyzed the job histories in their database to determine which fields of study lead to the biggest paycheques after graduation. The most lucrative fields of study for first jobs right now are computer science, engineering, law, math and health care.

Source: careers.workopolis.com

The average starting salary for computer science graduates is $68,000.
The most popular first jobs for computer science graduates include:

- Web developer – $52,000
- Software developer – $68,000
- Business analyst – $74,000
- Consultant – $74,000
- Project manager – $75,000

The average starting salary for engineering graduates is $76,000.
The most common jobs for engineering graduates include:

- Mechanical engineer – $73,000
- Design engineer – $73,000
- Project engineer – $75,000
- Electrical engineer – $79,000
- Software engineer – $80,000

BENEFIT FROM A HIGH EMPLOYMENT RATE

91.7% of uOttawa engineering and 100% of uOttawa computer science alumni find jobs in their field within two years of graduating.*

*There is a large and growing need for employers to replace retiring engineers … This is particularly true for civil, mechanical, electrical and electronic engineers as well as computer engineers….Replacement demand for engineers is an important theme that will be relevant for the next decade as the baby boom generation retires.”**

* Source: www.uottawa.ca/institutional-research-planning/resources/facts-figures/performance-indicators
**Source: Engineering Labour Market in Canada: Projections to 2025, Final Report 2015

BE A DIFFERENCE MAKER

Engineers and computer scientists use creativity and imagination to turn ideas into reality, solve problems and shape the world around us. These professionals are essential to the safety, health, happiness and comfort of our friends, family and neighbours near and far.

Engineers and computer scientists make a world of difference!

Source: National Academy of Engineering’s Changing the conversations campaign
EARN A COMPETITIVE SALARY

Your hard work and dedication will pay off when you graduate with a degree in engineering or computer science. Many recent studies in Canada and in North America have shown that engineering and computer science graduates systematically place at the top of the starting salary scale among all university undergraduate programs of study.

Over the years, engineers can expect their salaries to continuously increase. Here are the average salaries of an engineer working in Ontario according to the level of responsibility and years of experience.

Source: 2016 Nateng: Mercer ospe National Engineering compensation survey Member Market summary
SCHOLARSHIPS TO SUPPORT YOUR STUDIES IN ENGINEERING

At the FACULTY OF ENGINEERING, effort and excellence are recognized values. The Faculty offers a wide range of admission scholarships to encourage academic success.

**DEAN’S MERIT SCHOLARSHIP**
Number: 35
Value: Depends on admission average; $5,000 awarded for 95–100% and $4,000 for 90–94.9%

To be eligible, you must:
- Be registered full time, and for the first time, in an undergraduate program at the Faculty of Engineering
- Have a minimum admission average of 90% (the admission average includes Faculty of Engineering prerequisites)

Note: This scholarship is open to all students admitted to the Faculty of Engineering, including international students. No application is required for this scholarship; all eligible applicants will be considered.

**CISCO SYSTEMS CANADA CO. FIRST ENGINEERING SCHOLARSHIP**
Number: 1
Value: $5,000

To be eligible, you must:
- Be a female student registered for the first time in an undergraduate program at the Faculty of Engineering
- Have a minimum admission average of 90% in the prerequisite courses for entrance into her program at the Faculty of Engineering
- Be registering for the first time in one of the Faculty’s undergraduate programs

**FACULTY OF ENGINEERING MEMORIAL SCHOLARSHIP**
Number: 7 (one scholarship for each engineering program)
Value: $2,000

To be eligible, you must:
- Be a female student registered for the first time in an undergraduate program at the Faculty
- Have a minimum admission average of 80%
- Submit a 250-word text on why you are applying for an engineering program
- Submit an up-to-date résumé highlighting your latest academic and extracurricular achievements

**DROSTE-KENNEDY ADMISSION SCHOLARSHIP IN CIVIL ENGINEERING**
Number: Variable
Value: $500 (minimum)

To be eligible, you must:
- Be registered full time in the first year of the Civil Engineering program (regular or CO-OP)
- Be an Ontario resident
- Have a minimum admission average of 80%
- Demonstrate financial need
- Submit a letter from a teacher outlining your leadership, communication and computer skills
- Submit a letter stating your intention to enter a CO-OP program at the School of EECS
- Submit an official transcript, including your most recent year of completed studies

**NORTEL FOUNDING SCHOLARSHIP FOR THE SCHOOL OF INFORMATION TECHNOLOGY AND ENGINEERING (SITE)**
Number: 2
Value: $2,500 (minimum)

To be eligible, you must:
- Be registered full time in first year in a program of study of the School of Electrical Engineering and Computer Science (EECS)—Computer Engineering, Electrical Engineering, Software Engineering or Computer Science
- Be an Ontario resident
- Have a minimum admission average of 80%
- Be a well-rounded individual and possess computer skills
- Demonstrate financial need
- Submit a letter from a teacher outlining your leadership, communication and computer skills
- Submit a letter stating your intention to enter a CO-OP program at the School of EECS
- Submit an official transcript, including your most recent year of completed studies
- Be a well-rounded individual and possess computer skills
- Demonstrate financial need
- Submit a letter from a teacher outlining your leadership, communication and computer skills
- Submit a letter stating your intention to enter a CO-OP program at the School of EECS
- Submit an official transcript, including your most recent year of completed studies

**ONTARIO PROFESSIONAL ENGINEERS FOUNDATION FOR EDUCATION SCHOLARSHIP**
Number: One for a male student and one for a female student
Value: $1,500

To be eligible, you must:
- Be registered full time in the first year of an undergraduate program at the Faculty
- Have a high academic standing in the final year of high school
- Be a well-rounded student who exhibits leadership
- Hold an Ontario Secondary School Diploma (OSSD)
- Submit a résumé
- Submit an official transcript, including your most recent year of completed studies

**APPLICATION DEADLINE**
March 31st, 2018

Application form: Online Scholarships and Bursaries (via uOZone) uOttawa.ca
ENTREPRENEURIAL ALUMNI

Many FACULTY OF ENGINEERING alumni start their own companies and become successful entrepreneurs. Read a few success stories.

TUNCH AKKAYA
BASc in Software Engineering / Engineering Management and Entrepreneurship option
MEng in Engineering Management
Co-founder and CEO of GameStrat

GameStrat is a software company based out of Ottawa that specializes in real-time analytics, specifically for the sports market. It provides solutions for a number of different sports, including football, basketball, hockey and volleyball. Its area of expertise is giving coaches access to instant video replay during games through wireless networks. GameStrat provides the necessary tools for coaches to win more games.

“Being a student-athlete playing football who was studying software engineering at the University of Ottawa is what lead to me getting started with GameStrat. In the summer of 2014, I was looking for an idea for my capstone project and, luckily, that was also the year when Ontario University Athletics had just allowed for sideline technology to be used. At first, I was excited that I could potentially build something that would help my own team and give us a competitive advantage. However, I later realized that every other team in the country had the same problem. We did a lot of market research, received some initial funding and then we were off.

One of the most defining moments for me as an entrepreneur was when I took the course Entrepreneurial Mind, taught by Stephen Daze, in the summer of 2014. I was looking for an idea for my capstone project and, luckily, that was also the year when Ontario University Athletics had just allowed for sideline technology to be used. At first, I was excited that I could potentially build something that would help my own team and give us a competitive advantage. However, I later realized that every other team in the country had the same problem. We did a lot of market research, received some initial funding and then we were off.

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We were lucky to receive grants through the University of Ottawa. We were able to take advantage of pitch competitions and internships, which has helped us greatly. As any struggling student knows, budgets are tight and being able to get financial assistance helped us get to where we are today.”

ANDRÉ BELLERIVE
BASc in Mechanical Engineering
Co-founder and CEO of Spivo

“Spivo Stick is a product I invented during my last year at uOttawa. While studying mechanical engineering, I came up with the idea of creating a simple and easy-to-use tool that would allow anyone to take better photos and videos. I worked on the prototype in the machine shop and used the 3D printers at the Makerspace to refine the design. The Spivo Stick is a lightweight, easy-to-use tool that has revolutionized the way people capture their memories. It is now used by amateur and professional photographers around the world.”

“I had no idea the prototype I was working on at school would turn into a start-up and become my biggest passion. It all began four years ago during my last year at uOttawa. I came up with the simple idea to rotate a GoPro camera 180° at the click of a button. This would allow you to create captivating videos by switching between filming yourself and your surroundings. To my surprise, it hadn’t been invented yet! I would be the first to create it and uOttawa would help me do it.

All the material and equipment I needed were at my disposal. I set out to learn how to use the various equipment in the machine shop. The technicians were amazing and showed me everything I needed to know about manufacturing. The first prototype was carved out of aluminium blocks and took over 120 hours in the machine shop to complete. It was heavy; it hurt your fingers, but it worked.

This was when I realized that I could start a company with my new idea. Soon after, my business partner, Marc Bjerring, came skiing with me and saw the prototype. He was instantly captivated by this simple yet effective way to film videos and wanted to join me. Spivo Inc. was founded. We used the 3D printers at the Makerspace to refine the design by creating over 100 different variations. To date, we have shipped out over 14,000 Spivo Sticks to 60 different countries. We grew our team to 9 full-time positions including two engineering students! Marc and I now get to help our customers all over the world to capture their feeling, and we couldn’t be happier.”

Read a few more success stories at: engineering.uOttawa.ca/entrepreneurship
NEW STEM COMPLEX TO OPEN IN 2018

Our STEM (science, technology, engineering, mathematics) complex will be an interdisciplinary research and teaching facility designed to foster connections between different faculties, encourage new ways of thinking, enable experiential learning, and promote entrepreneurship. This state-of-the-art facility will bring together departments from the faculties of Engineering and Science under the same roof. It will house open-concept teaching labs, the Entrepreneurship Hub, multidisciplinary spaces and our Centre for Entrepreneurship and Engineering Design (CEED) facilities such as the uOttawa Richard L’Abbé Makerspace, Makerlab and the Brunsfield Centre.
Sharpen your entrepreneurial and communications skills through competitions

The Entrepreneurial Idea, Entrepreneurship Concepts and Launching Entrepreneurs annual competitions let you build and apply your knowledge, with $60,000 in prize money up for grabs.

Design Day offers you the opportunity to showcase your engineering design projects. Many other competitions take place on campus through the Entrepreneurship Hub and the Telfer School of Management.

Entrepreneurial internships

As a student at our Faculty, you can work on developing your entrepreneurial idea during a CO-OP work term or just through an internship. Imagine getting funding to work on your own business plan!

Learn more about entrepreneurship and innovation opportunities available through CEED at engineering.uOttawa.ca/entrepreneurship/ceed

Curriculum focused on entrepreneurship

- Engineering Management and Entrepreneurship option available for all undergraduate programs
- Master’s in Engineering Management
- Master’s in Entrepreneurial Engineering Design

DEVELOP YOUR ENTREPRENEURIAL AND ENGINEERING DESIGN SKILLS

Our Centre for Entrepreneurship and Engineering Design (CEED) offers you engineering design and entrepreneurship education and experience that includes:

- Giving you opportunities throughout your studies to design, build and test products that meet customer needs
- Developing your business acumen by introducing you to essential business concepts and exposing you to industry
- Discovering a better client approach, one that allows the public to discover products and validate the design
- Building your sales and communication skills
- Offering you experiential learning opportunities with industry in the areas of design and prototyping services and commercialization of technologies
FACILITIES JUST FOR YOU

uOttawa Richard L'Abbé Makerspace
Invent, build and play at the uOttawa Richard L'Abbé Makerspace. It's equipped with 3D printers, Arduinos, CNC mills, Handibots, laser cutters and much more. A student-run space, it allows everyone to collaborate and build their dream projects for free!

Makerlab
The uOttawa Makerlab offers a course-based laboratory setting focused on rapid prototyping technologies. University courses can include lab sessions at the Makerlab to give students a structured experience learning about many of the technologies available at the Richard L'Abbé Makerspace.

Sandbox
The Sandbox provides a collaborative space for engineering students involved in small projects, pre-professional competitions and entrepreneurial projects.

Manufacturing Training Centre (MTC)
The Manufacturing Training Centre (MTC) provides training on a variety of traditional equipment, such as lathes, milling machines and saws, as well as on the latest processes, such as additive manufacturing. Students can register for free workshops throughout the year.

Project Integration and Team Space (PITS)
The Project Integration and Team Space (PITS) provides pre-competitive teams involved in large-scale projects with the space and infrastructure required to succeed. The PITS is located across from the Brunsfield Centre, which is also open to students.

Brunsfield Group Student Engineering Project and Entrepreneurship Centre
The Brunsfield Centre provides engineering students with tools and equipment to design, fabricate and test complex prototypes. Projects have included different types of vehicles, high-performance hybrid motor systems, highly fuel-efficient and off-road vehicles, as well as 3D prototyping printing, concrete toboggans, electrical energy storage and control systems.

DEVELOP YOUR ENTREPRENEURIAL AND ENGINEERING DESIGN SKILLS
Our Centre for Entrepreneurship and Engineering Design (CEED) offers you engineering design and entrepreneurship education and experience that includes:

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- Discovering a better client approach, one that allows the public to discover products and validate the design
- Building your sales and communication skills
- Offering you experiential learning opportunities with industry in the areas of design and prototyping services and commercialization of technologies
GET INVOLVED AND ENRICH YOUR

STUDENT EXPERIENCE!

Would you enjoy being part of a team building a highly fuel-efficient or off-road vehicle? Or would you like to design a human hamster wheel for a museum display that teaches people about energy consumption? Then join an engineering club to work on these kinds of exciting projects!

You could also participate in the Great Northern Concrete Toboggan Race or showcase your design talents at the Ontario Engineering Competition. Why not take on the challenge of testing your technical skills against students from other Canadian universities at the annual Computer Science Games? Or rise to the challenge of commercializing your end-of-studies capstone design project in the annual Prizes in Entrepreneurship and Innovation student competition? Join an association or a club and make the most of your university experience. And your student experience is not limited to here on campus! Various international opportunities are available for engineering students.

The life of a student at the Faculty of Engineering is anything but dull!

STUDY, WORK OR DO RESEARCH ABROAD

Are you interested in adding an international dimension to your program by studying, researching or working abroad? Our University offers many international mobility opportunities, allowing you to gain diverse experience in engineering and computer science.

INTERNATIONAL EXPERIENCE SCHOLARSHIP

As a student of our Faculty, you can apply for one of 60 International Experience annual scholarships for international activities, such as study and CO-OP terms, research internships and other international research activities. Each scholarship is worth up to $6,000!

EXCHANGE PROGRAM

Take part in the Exchange Program, which allows students to study at a partner university. The program allows our students to become true global citizens and educates graduates who are skilled and open to the world.

Engineering and computer science students can gain a new perspective during their academic experience at a partner institution, such as:

- Australian National University, Australia (computer science)
- Chinese University of Hong Kong, Hong Kong (software engineering)
- National University of Singapore, Singapore (chemical engineering)
- University of Southampton, United Kingdom (electrical engineering)
- Newcastle University, United Kingdom (civil engineering)

SUMMER EXCHANGE PROGRAM

Study part-time abroad during the summer without having to pay international student fees. You get an automatic mobility scholarship of at least $500.

CO-OP OPPORTUNITIES

Benefit from the many international work experience opportunities offered by the Co-operative Education (CO-OP) Programs, which allow engineering and computer science students to develop unique skills in their field of interest.
As a child, I loved to take things apart and attempt to reassemble them. This childhood passion drove me to tackle greater challenges, making engineering the perfect fit for me. During my degree, I worked and volunteered at schools, shelters, hospitals and community centres, as I believe that becoming a great engineer starts with striving to become a great citizen.

I think that being honourable, righteous, compassionate and ready to lend a helping hand builds a strong foundation for our society. Trying to make a difference through using the Richard L’Abbé Makerspace and participating in the Undergraduate Research Opportunity Program (UROP), I merged my passion for social awareness and my engineering skills by designing a low cost, 3D-printed four-bar linkage knee prosthetic for developing countries. This experience allowed me to present my project at the Ontario Biomechanics Conference, where I received positive feedback, discovered new opportunities and broadened my network. It also sparked my interest in higher education and my love for orthopedic and rehabilitation applications, which geared my educational path towards this newfound interest.

I am currently designing a surrogate lower limb to evaluate AFO (ankle foot orthosis) performance at the Ottawa Hospital Rehabilitation Centre, and I continue to learn every day about the fascinating human body and phenomenal technological advancements in the biomedical field. These opportunities, which were facilitated through the University of Ottawa, has enabled me to contribute as a community member in my own unique way.
Throughout my years at uOttawa, I have had the opportunity to be an active member of an innovative and exciting team whose members are united by a strong interest in engineering and robotics — the Ottabotics team. Our team not only works together to increase education and research about robotics, but also uses our engineering skills and knowledge to participate in various competitions, such as Robot Racing, RoboBoat and the International Aerial Robotic Competition. My involvement on the team began as a first-year student working closely with eight other engineering students to organize the start-up. Due to the team’s rapid expansion, I was promoted to director of marketing. This role allows me to seek opportunities for sponsorship, organize team events and promote robotics at uOttawa. I will also help introduce our innovative recycling sorter that will be implemented on campus this coming year.

Through my involvement with this team, I have had the opportunity to meet many people and have developed lifelong friendships. The Ottabotics team has been one of my greatest experiences at the University of Ottawa thus far.

Ottabotics is a robotics team designed to foster a competitive interest in robotics and dedicated to research, education and innovation in the multidisciplinary field of engineering. The team was founded in 2016 and has added new members since then. It has participated in the International Autonomous Robot Racing, RoboBoat and International Aerial Robotics competitions. As well, the team is implementing an automated recycling sorter on the uOttawa campus to help promote a sustainable student life. The original purpose of Ottabotics was to apply engineering skills and principles towards a common goal, which we still do today.

Put your engineering talents to good use! Engineers Without Borders (EWB) works to support developing communities around the world by helping them gain access to technologies that could improve their lifestyle. Find out more about EWB at uOttawa.ewb.ca.
UOTTAWA’S SUPERMILEAGE TEAM

The Supermileage team is working on designing and building a super-fuel-efficient prototype car. The team is using a custom fuel-injected engine and low friction transmission as well as composites like carbon fibre to produce the lightest car possible. It competes against other prototypes in competitions where teams are judged based on their fuel economy as well as their technical report.

In 2016, the Supermileage team participated in the Shell Eco-marathon, which challenges student teams around the world to design, build, test and drive ultra-energy-efficient vehicles on a track and achieve the highest combined kilometres per litre (miles per gallon) rating. The team finished 16th out of 128 registered teams. At the 2016 SAE Supermileage Competition, the team finished fifth, with an average of 870 miles per gallon. At this year’s Supermileage SAE Competition, the team took first place for its design report and second for creativity and innovation, while ranking 12th overall after technical inspection.

As for the future, the Supermileage team hopes to compete in the Shell Eco-marathon urban concept category and maintain its presence in the prototype category, while running both gasoline and battery-electric drive systems.

facebook.com/uosupermileage
EXPERIENCE YOUR FUTURE CAREER AND HELP FUND YOUR STUDIES THROUGH THE CO-OP PROGRAM

COMBINE STUDY AND WORK EXPERIENCE

With the Co-operative Education (CO-OP) Program, you can gain hands-on experience in your field of study while you complete your degree. CO-OP can be added to any of the eight undergraduate programs offered by the Faculty.

The University of Ottawa CO-OP program has been running for over 30 years. Now the second largest university program in Ontario, and the fifth-largest in Canada, uOttawa CO-OP boasts a very high placement rate.

As a Faculty of Engineering student, you can benefit significantly from the CO-OP program:

- Find work (96.6% faculty placement rate for winter 2017*)
- Find a public or private sector employer in Canada or even abroad
- Build your professional skills and increase your knowledge
- Network with valuable contacts who can help you kick-start your career
- Benefit from a quality program that meets national criteria and standards and is approved by the Canadian Association for Co-operative Education
- Alternate between work and study terms. Start working in the summer of your second year and then alternate between four-month work and study terms. Eight- and twelve-month work terms are now also available.

* Based on winter 2017 CO-OP data

WORK/STUDY SEQUENCES

The majority of students follow this sequence, although it can be adapted to suit your circumstances.

<table>
<thead>
<tr>
<th>YEAR OF STUDY</th>
<th>FALL</th>
<th>WINTER</th>
<th>SUMMER</th>
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ROBERT WANG
Civil Engineering
Public Services and Procurement Canada
Ottawa, Ontario

REILLY WALKER
Chemical Engineering
Husky Energy Inc.
Calgary, Alberta
ENTREPRENEURIAL CO-OP AND INTERNSHIPS

As a CO-OP student at our Faculty, you can work on your entrepreneurial idea during a CO-OP work term. Imagine getting financial support to work on your own business plan! Or if you prefer, you can try working in a start-up company by doing an entrepreneurial internship!

MANDATORY CO-OP FOR SOFTWARE ENGINEERING

Participation in the CO-OP program is now mandatory for Software Engineering program students to help them develop practical and solution-driven thinking!

ALEX POITRAS
Fourth year, Chemical Engineering, CO-OP

I started out my uOttawa adventure by being selected as the recipient of the Faculty of Engineering’s President's Scholarship. This scholarship supported me financially throughout my studies and allowed me to focus more extensively on my studies. I had been very involved throughout high school and I was happy to find out, once I started, that the opportunities to get involved at uOttawa were almost endless. I became involved with the Chemical Engineering Student Society and became a student ambassador for the University. I also joined the CO-OP coordinating committee, where student representatives from various faculties meet with University staff to voice the concerns of fellow CO-OP students.

Being in the CO-OP program, I had the opportunity to work at the Point Lepreau Nuclear Generating Station. I worked on various projects involving corrosion, flow accelerated corrosion, thermal fatigue, and heat exchanger and snubber inspections. Working in this field of chemical engineering made me a more versatile engineer, and I have gained a much better understanding of the realities of the engineering workplace. The CO-OP program is, in my opinion, the best way to acquire work experience before even graduating.

VIRAN DALUWATTE
Mechanical Engineering
Canadian Coast Guard
Ottawa, Ontario

ALEXIS BRITTANY MCMORRAN
Chemical Engineering
Public Services and Procurement Canada
Ottawa, Ontario

JIARUI SUN
Software Engineering
Nanjing Innovative Data Technologies Inc.
Nanjing, China

EMMANUELLE KEOGH
Biomedical Engineering
Agnico Eagle Mines Ltd
Keewatin, Nunavut

ANTS AT WORK
The School of Electrical Engineering and Computer Science (EECS) is part of the Faculty of Engineering. This interdisciplinary school combines four cutting-edge programs. Having these closely-related programs together in one academic unit means that you benefit from professors with interdisciplinary knowledge gained from teaching in one or more of the four programs offered by the school.

<table>
<thead>
<tr>
<th>Program</th>
<th>Electrical Engineering</th>
<th>Software Engineering</th>
<th>Computer Science</th>
<th>Computer Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program description</td>
<td>Offers a solid foundation in mathematics and physics. The study of electricity, circuit theory and electronics to design communication devices, power generators, solid-state circuits, microelectronic devices and computing devices.</td>
<td>Studies the systematic design and development of large-scale software within time and cost constraints. Students learn how to apply engineering principles through various stages: requirements analysis, measurement, modelling, validation, design, construction, testing, documentation, and management.</td>
<td>Combines the fundamental study of computation and information processing with its application to the world around us. Computer scientists build fast, reliable and secure software systems to organize, store and analyse information.</td>
<td>Combines fundamental principles from both electrical engineering and computer science, leading to more specialized studies in microprocessor-based systems, computer architecture, programming concepts, real-time systems and computer control in robotics.</td>
</tr>
<tr>
<td>Examples of subject matter</td>
<td>Circuit theory, electronics, telecommunications, networks, photonics, power generation, microwaves</td>
<td>Software construction, requirements engineering, software design and architecture, analysis and design of user interfaces</td>
<td>Data structures and algorithms, design and analysis of algorithms, artificial intelligence, WWW structures, techniques and standards, databases</td>
<td>Electronics and circuit theory, software construction, computer architecture, real-time systems design, computer network design</td>
</tr>
</tbody>
</table>

Graduates from EECS have exciting, high-quality and well-paid jobs

In recent surveys, alumni have indicated their satisfaction with the quality of education they received at the School of EECS. They recognize how much the programs contributed toward strengthening their analytic abilities, and they found positions in their fields soon after graduating. These results are not surprising given the quality of jobs available in this field across North America.

According to a CareerCast study, software engineer and computer systems analyst are ranked among the top 10 best jobs of 2016.

Electrical engineering is at the heart of today’s exciting advances in technology. With five technical specializations—communications, systems, electronics, microwave and photonic, and power and sustainable energy—our curriculum will enable you to influence how the world’s communities communicate, generate sustainable energy and cure diseases. As an electrical engineer, you will work with other engineers or scientists on emerging technologies.

The Engineering Management option will provide you with the necessary skills to pursue entrepreneurial activities and start your own technology-related business. The double degree program—BASc in Electrical Engineering and BSc in Computing Technology—will put you at the intersection of two areas that propel technological development.

**CAREER OPPORTUNITIES**

- Electronics and chip designer
- Electromagnetics engineer
- Communications engineer
- Signal-processing engineer
- Product engineer
- Automation engineer
- Avionics engineer
- Biomedical engineer
- Power systems and renewable energy engineer

**WHERE DO OUR ELECTRICAL ENGINEERING GRADUATES WORK?**

- Rami Abielmona (MASc ’02, PhD ’07), VP Research & Engineering, Larus Technologies in Ottawa
- Frank Bouchard (BASc ‘11, MEng ‘13), Inventor and cofounder of Wipebook in Ottawa
- Asif Hameed (BASc ’05), Senior Sales Engineer, Unity Connected Solutions in Toronto
- Raihan Khondker (BASc ’08), Senior Electrical Systems Engineer, STP Nuclear Operating Company in Houston, Texas

**EXAMPLES OF COURSES IN ELECTRICAL ENGINEERING**

- ELG4115 Microwave Circuits
- ELG4117 Optoelectronics and Optical Components
- ELG4118 Wave Propagation and Antennas
- ELG4125 Electric Power Transmission, Distribution and Utilization
- ELG4126 Sustainable Electrical Power Systems
- ELG4137 Principles and Applications of VLSI Design
- ELG4139 Electronics III
- ELG4159 Integrated Control Systems
- ELG4176 Communication Systems
- ELG4179 Wireless Communication Fundamentals
- ELG4177 Digital Signal Processing
- ELG4178 Optical Communications and Networking

Consult the full course sequence at engineering.uOttawa.ca. All courses are offered in English and most courses are available in French.

**UNDERGRADUATE PROGRAMS (bachelor’s degrees)**

- BASc in Electrical Engineering
- BASc in Electrical Engineering, Engineering Management and Entrepreneurship Option
- BASc in Electrical Engineering and BSc in Computing Technology

**GRADUATE PROGRAMS (master’s and doctorate degrees)**

- Master of Engineering (MEng) in Electrical and Computer Engineering
- Master of Applied Science (MASc) in Electrical and Computer Engineering
- Master of Applied Science (MASc) Electrical and Computer Engineering Specialization in Science, Society and Policy
- Doctorate (PhD) in Electrical and Computer Engineering
Discover the fundamental laws of nature and then apply this knowledge to design breakthrough technologies that will transform our society. While physics probes big questions ranging from the origin of the universe to the workings of the quantum world, electrical engineering underlies the technologies that are ubiquitous to our modern world, from power generation to the computer chip. By teaching you the foundations of how nature works, and then how to innovate with this knowledge, this integrated program will uniquely equip you to tackle societal and technological problems facing us and future generations. At the end of five years, you will earn two degrees, one in physics and one in electrical engineering, and will be truly equipped to defy the conventional.

To be admitted into this program, applicants must submit their application to the Faculty of Science.

CAREER OPPORTUNITIES
- Physicist
- Electrical engineer
- Industrial research and development scientist or engineer
- Materials scientist
- Avionics engineer
- Power systems and renewable energy engineer
- Biomedical researcher or engineer

EXAMPLES OF COURSES IN PHYSICS AND ELECTRICAL ENGINEERING:
- PHY2311 Waves and Optics
- PHY3355 Statistical Thermodynamics
- PHY4370 Quantum Mechanics
- PHY4382 Introduction to Solid State Physics
- ELG2138 Circuit Theory I
- ELG3126 Random Signals and Systems
- ELG4115 Microwave Circuits
- ELG4126 Sustainable Electrical Power Systems

Consult the full course sequence at engineering.uOttawa.ca.
All compulsory courses are offered in English and in French.

UNDERGRADUATE PROGRAMS (bachelor’s degrees)
Honours BSc with Specialization in Physics/BASc in Electrical Engineering
To be admitted to this program, applicants must submit their application to the Faculty of Science.

GRADUATE PROGRAMS (master’s and doctorate degrees)
Master of Applied Science (MASc) in Electrical and Computer Engineering
Master of Applied Science (MASc) in Electrical and Computer Engineering with Specialization in Science, Society and Policy
Master of Engineering (MEng) in Electrical and Computer Engineering
Master of Science (MSc) in Physics
Master of Science (MSc) in Physics with Specialization in Science, Society and Policy
Doctorate (PhD) in Electrical and Computer Engineering
Doctorate (PhD) in Physics
Software engineering is a CO-OP only program that emphasizes innovation and teamwork to develop practical, solution-driven thinking. During their fourth-year project, students in this program can form teams and leverage their work experience to create real applications; some students even start their own companies. They learn how to apply engineering principles—including rapid prototyping, requirements analysis, system modelling, design, implementation, testing and project management—to develop software. Software engineers are key professionals in fields such as high tech, finance, telecommunications, government, health care, transportation and entertainment. The Extended French Stream (EFS) is available to students who want to continue their French immersion studies during their university career.

CAREER OPPORTUNITIES
- Software engineer
- Systems architect
- Computer security analyst
- Quality assurance engineer
- Video game designer
- Mobile application developer
- Systems analyst
- User interface designer
- Telecommunications engineer

WHERE DO OUR SOFTWARE ENGINEERING GRADUATES WORK?
- Jeffrey Arcand (BASc ’13), Software Engineer, Cisco in Ottawa
- Daniel Godfrey (BASc ’12), Software Development Manager, Wealthsimple in Toronto
- Marc Stogaitis (BASc ’08), Software Engineer, Google in San Francisco, California
- Nicolas Dubus (BASc ’16), Software Development Engineer, Amazon in Toronto

EXAMPLES OF COURSES IN SOFTWARE ENGINEERING
- SEG2105  Introduction to Software Engineering
- SEG2106  Software Construction
- SEG3101  Software Requirements Analysis
- SEG3102  Software Design and Architecture
- SEG3103  Software Quality Assurance
- SEG3125  Analysis and Design of User Interfaces
- SEG4105  Software Project Management
- SEG4145  Real Time and Embedded Software Design
- SEG4910  Software Engineering Capstone Project

Consult the full course sequence at engineering.uOttawa.ca. Courses are offered in English and in French. Some advanced courses are offered in English only.

UNDERGRADUATE PROGRAMS (bachelor’s degrees)
- BASc in Software Engineering (CO-OP)
- BASc in Software Engineering (CO-OP), Engineering Management and Entrepreneurship Option

The Extended French Stream (EFS) is available.

GRADUATE PROGRAMS (master’s and doctorate degrees)
- Master of Computer Science (MCS)
- Master of Computer Science (MCS) with Specialization in Bioinformatics
- Master of Computer Science (MCS) with CO-OP option
- Master of Engineering (MEng) in Engineering Management
- Doctorate (PhD) in Computer Science
Computer science at the School of Electrical Engineering and Computer Science combines the study of computation and information processing fundamentals with their application in the world around us. Computer scientists build fast, reliable, scalable and secure software systems to organize and analyze information. The honours curriculum comprises advanced topics in databases, artificial intelligence, computer graphics, security, distributed computing and algorithm design, culminating in an honours project. This program teaches graduates how to use their creative and innovative talents to conceive, design and implement software systems.

The Extended French Stream (EFS) is now available to all students in the Computer Science program. Our degrees are very flexible and include options, minors and a major, which can be used to explore connections between computer science and many other fields of study.

CAREER OPPORTUNITIES
Software technologies and systems developer in many diverse fields, including entertainment, government and business.

WHERE DO OUR COMPUTER SCIENCE GRADUATES WORK?
- Julie Kathryn Luckham (BSc ’08), Software Engineer, Wayfair in Boston, Massachusetts
- Naim El-Far (PhD ’08), Investment Engineer, Bridgewater Associates in Greater New York City Area
- Pengcheng Xi (MCS ’07), Research Officer, National Research Council Canada in Ottawa

EXAMPLES OF COURSES IN COMPUTER SCIENCE
- CSI3104  Introduction to Formal Languages
- CSI3105  Design and Analysis of Algorithms I
- CSI3120  Programming Language Concepts
- CSI4142  Introduction to Data Science
- CSI3131  Operating Systems
- CSI3140  WWW Structures, Techniques and Standards
- CSI4900  Honours Project
- CSI4139  Design of Secure Computer Systems
- CSI4106  Introduction to Artificial Intelligence
- CSI4130  Computer Graphics

Consult the full course sequence at engineering.uOttawa.ca. All compulsory courses are offered in English and in French.

UNDERGRADUATE PROGRAMS (bachelor’s degrees)
- Honours BSc with Specialization in Computer Science
- Honours BSc with Specialization in Computer Science, Management and Entrepreneurship Option
- Honours BSc with Specialization in Computer Science, Data Science option
- Joint Honours BSc in Computer Science and Mathematics
- Major in Computer Science
- Minor in Computer Science*
- Minor in Computer Science for Scientists*

The Extended French Stream (EFS) is available.
*Complimentary program offered only as a second discipline. Registration starts in second year.

ACCELERATED STREAM
You can complete your Honours BSc with Specialization in Computer Science and your Master of Computer Science within five years with the newly introduced Accelerated Stream.

GRADUATE PROGRAMS (master’s and doctorate degrees)
- Master of Computer Science (MCS)
- Master of Computer Science (MCS) with Specialization in Bioinformatics
- Master of Computer Science (MCS) with CO-OP option
- Doctorate (PhD) in Computer Science
Building on a solid foundation of traditional engineering skills, this program covers many different aspects of computer software and hardware, and allows for more specialized studies in microprocessor-based systems, computer architecture, programming concepts, real-time operating systems, software engineering and robotics. This program provides multiple paths to diverse careers.

**CAREER OPPORTUNITIES**
- Hardware designer
- Computer applications engineer
- Embedded microsystems engineer
- Wireless and network systems technical manager
- Software developer
- Systems engineer

**WHERE DO OUR COMPUTER ENGINEERING GRADUATES WORK?**
- Lethigonolo Letto Moshabi (BASc ’08), Senior Systems Analyst, Mascom Wireless in Gaborone, Botswana
- Carla Dinardo (BASc ’03), Section Head, Canadian Intellectual Property Office in Ottawa
- Raghid Shreih (BASc ’02), Program Manager, Google in Waterloo

**EXAMPLES OF COURSES IN COMPUTER ENGINEERING**
- CEG3136 Computer Architecture II
- CEG3155 Digital Systems II
- CEG3156 Computer Systems Design
- CEG4158 Computer Control in Robotics
- CEG4166 Real-Time Systems Design
- CEG4190 Computer Network Design
- CEG4316 Digital Image Processing
- CEG4399 Design of Secure Computer Systems

*Consult the full course sequence at engineering.uOttawa.ca. All courses are offered in English and most courses are available in French.*

**UNDERGRADUATE PROGRAMS (bachelor’s degrees)**
- BASc in Computer Engineering
- BASc in Computer Engineering, Engineering Management and Entrepreneurship Option

**GRADUATE PROGRAMS (master’s and doctorate degrees)**
- Master of Engineering (MEng) in Electrical and Computer Engineering
- Master of Applied Science (MASc) in Electrical and Computer Engineering
- Master of Applied Science (MASc) in Electrical and Computer Engineering with Specialization in Science, Society and Policy
- Doctorate (PhD) in Electrical and Computer Engineering
Chemical engineering is at the intersection of many disciplines, linking knowledge of basic and applied sciences, economics, and health and safety. Chemical engineering graduates use a series of operations to sustainably process raw natural materials into finished products. They work in any number of industries and during their careers, they may face a variety of challenges, such as optimizing processes and monitoring pollution, converting waste materials into renewable energy, processing foods and drugs, and manufacturing new materials.

**CAREER OPPORTUNITIES**

- Chemical engineer
- Process engineer
- Petrochemical engineer
- Biotechnological engineer
- Environmental engineer
- Biomedical engineer

**WHERE DO OUR CHEMICAL ENGINEERING GRADUATES WORK?**

- Daniel Dicaire (BASc ‘07, MASc ‘10), Energy Efficiency and Sustainability Officer, Community Housing Corporation in Ottawa
- Nicholas Chan (BASc ‘03, MASc ‘08), Waste Characterization Analyst, Atomic Energy of Canada Limited in Chalk River, Ontario
- Denis Myre (BASc ‘08, MASc ‘11), Environment Supervisor, Fortress Cellulose Spécialisée in Thurso, Quebec

**EXAMPLES OF COURSES IN CHEMICAL ENGINEERING**

- CHG3112 Process Synthesis, Design and Economics
- CHG3335 Process Control
- CHG4305 Advanced Materials in Chemical Engineering
- CHG4307 Clean Processes and Sustainable Development
- CHG4343 Computer-Aided Design in Chemical Engineering
- CHG4244 Plant Design Project

*Consult the full course sequence at engineering.uOttawa.ca. All courses are offered in English. French courses are available in first and second year, and are very limited in third and fourth year.*

**UNDERGRADUATE PROGRAMS** *(bachelor’s degrees)*

- BASc in Chemical Engineering
- BASc in Chemical Engineering, Engineering Management and Entrepreneurship Option
- BASc in Chemical Engineering, Environmental Engineering Option
- BASc in Chemical Engineering and BSc in Computing Technology

**GRADUATE PROGRAMS** *(master’s and doctorate degrees)*

- Master of Engineering (MEng) in Chemical Engineering
- Master of Applied Science (MASc) in Chemical Engineering
- Master of Engineering (MEng) in Environmental Engineering
- Master of Applied Science (MASc) in Environmental Engineering
- Master of Applied Science (MASc) in Chemical Engineering with Specialization in Science, Society and Policy
- Doctorate (PhD) in Chemical Engineering
- Doctorate (PhD) in Environmental Engineering
Learn how living organisms grow and develop, and how we can use this knowledge to create manufacturing processes, chemical products and life-saving drugs. Did you know that proteins, yogurt and biodiesel are all biotechnology products? So are insulin and the chickenpox vaccine, both of which have saved or improved the lives of millions. The Biotechnology program covers the fields of biology, chemistry, mathematics, engineering science and engineering design. Students in this program receive two degrees upon graduation: a BSc in Biochemistry and a BASc in Chemical Engineering.

To be admitted into this program, applicants must submit their application to the Faculty of Science.

CAREER OPPORTUNITIES
- Process engineer
- Biomedical engineer
- Chemical engineer
- Environmental engineer
- Biochemist
- Biotechnology engineer
- Cell biologist
- Patent-law specialist

WHERE DO OUR BIOTECHNOLOGY GRADUATES WORK?
- Marc Duchesne (BASc ’08), Research Scientist, Natural Resources Canada in Ottawa
- Kamil Mroz (BASc ’10), Managing Director and Principal Consultant, CENPREX SPRl in Brussels, Belgium
- Nilesh Patel (MASc ’03, PhD ’08), Deputy General Manager, Shantha Biotechnics Limited in Hyderabad Area, India

EXAMPLES OF COURSES IN BIOTECHNOLOGY
- BCH3170 Molecular Biology
- BCH4172 Topics in Biotechnology
- CHG3127 Chemical Reaction Engineering
- BCH4101 Human Genome Structure and Function
- CHG4381 Biochemical Engineering
- CHG4244 Plant Design Project

Consult the full course sequence at engineering.uOttawa.ca. All courses are offered in English. French courses are available in first, second and third year.

UNDERGRADUATE PROGRAMS (bachelor’s degrees)
Honours BSc in Biochemistry (biotechnology) and BASc in Chemical Engineering (biotechnology)

To be admitted to this program, applicants must submit their application to the Faculty of Science.

GRADUATE PROGRAMS (master’s and doctorate degrees)
Master of Engineering (MEng) in Chemical Engineering
Master of Applied Science (MASc) in Chemical Engineering
Master of Applied Science (MASc) in Chemical Engineering with Specialization in Science, Society and Policy
Master of Engineering (MEng) in Environmental Engineering
Master of Applied Science (MASc) in Environmental Engineering
Master of Science (MSc) in Biochemistry
Master of Science (MSc) in Biochemistry with Specialization in Bioinformatics
Master of Science (MSc) in Biochemistry with Specialization in Human and Molecular Genetics
Master of Science (MSc) in Biochemistry with Specialization in Pathology and Experimental Medicine
Doctorate (PhD) in Chemical Engineering
Doctorate (PhD) in Environmental Engineering
Doctorate (PhD) in Biochemistry
Doctorate (PhD) in Biochemistry with Specialization in Human and Molecular Genetics
Doctorate (PhD) in Biochemistry with Specialization in Pathology and Experimental Medicine
Civil engineers design the infrastructure on which their communities depend, such as buildings and their foundations, bridges, canals, dams, transportation facilities, municipal sewer and water networks, and wastewater and solid waste treatment systems.

Civil engineering students at the University of Ottawa can take advantage of world class teaching laboratories, multimedia classrooms and outstanding computer facilities. Students develop expertise in computer application, field and laboratory testing, and project management. Upon graduation, they are well-equipped to serve their communities.

CAREER OPPORTUNITIES

- Consulting engineer
- Structural or construction engineer
- Geotechnical engineer
- Environmental engineer
- Water-resources engineer
- Municipal engineer
- Research engineer
- Contractor

WHERE DO OUR CIVIL ENGINEERING GRADUATES WORK?

- Alexandra Lavictoire (BASc ’12, MASc ’14), Water Resources Engineer, Lake of the Woods Control Board Secretariat in Ottawa
- Andrew Dowie (BASc ’06), Project Administrator, the City of Windsor in Windsor, Ontario
- Bailey Arnott (BASc ’15), Designer, Clelande Jardine Engineering Ltd. in Ottawa
- Stephane D’Aoust (BASc ’90), Managing Principal, Stantec Consulting Ltd in Ottawa

EXAMPLES OF COURSES IN CIVIL ENGINEERING

- CVG2107 Geotechnical Materials and Processes
- CVG2116 Introduction to Fluid Mechanics
- CVG2132 Fundamentals of Environmental Engineering
- CVG3109 Soil Mechanics I
- CVG3116 Hydraulics
- CVG3132 Physical / Chemical Unit Operations of Water and Wastewater Treatment
- CVG3140 Theory of Structures I
- CVG3147 Structural Steel Design I
- CVG3148 Reinforced Concrete Design
- CVG4108 Geotechnical Design I
- CVG4150 Highway and Transportation Engineering
- CVG4173 Construction Management

Consult the full course sequence at engineering.uOttawa.ca. All courses are offered in English. French courses are available in first and second year.

UNDERGRADUATE PROGRAMS (bachelor’s degrees)

- BASc in Civil Engineering
- BASc in Civil Engineering, Engineering Management and Entrepreneurship Option
- BASc in Civil Engineering, Environmental and Water Resources Option
- BASc in Civil Engineering, Structural Geotechnical Option
- BASc in Civil Engineering and BSc in Computing Technology

GRADUATE PROGRAMS (master’s and doctorate degrees)

- Master of Engineering (MEng) in Civil Engineering
- Master of Applied Science (MASc) in Civil Engineering
- Master of Applied Science (MASc) in Civil Engineering with Specialization in Science, Society and Policy
- Master of Engineering (MEng) in Environmental Engineering
- Master of Applied Science (MASc) in Environmental Engineering
- Doctorate (PhD) in Civil Engineering
- Doctorate (PhD) in Environmental Engineering
The purpose of the Biomedical Mechanical Engineering program is to graduate engineers proficient in the areas of biomedical science related to mechanical engineering. These engineers specialize in areas that include the following:
- the design of artificial hearts, implants, prostheses, and other medical devices;
- the development and selection of bio-compatible metallic and non metallic materials for implants and medical equipment;
- robotics for medical applications; and
- biomechanics and rehabilitation engineering.

This program’s broad scope gives its graduates a wide range of career options, not only in the biomedical field but also in conventional mechanical engineering. Biomedical systems are among the most complex mechanical systems; therefore, a strong and comprehensive education in standard mechanical engineering principles is provided, with emphasis on their application to biomedical systems.

CAREER OPPORTUNITIES
- Rehabilitation engineer
- Biomedical engineer
- Mechanical engineer

WHERE DO OUR BIOMEDICAL MECHANICAL ENGINEERING GRADUATES WORK?
- Thomas Souchen (BASc ’10), Resident Medical Officer, Peninsula Health in Victoria, Australia
- Arwen Moore (BASc ’11), Mechanical Designer, Ross Video in Ottawa

EXAMPLES OF COURSES IN BIOMEDICAL MECHANICAL ENGINEERING
- MCG2131 Thermodynamics II
- MCG2142 Biological and Engineering Materials II
- MCG3110 Heat Transfer
- MCG3131 Machine Design
- MCG3141 Biomechanics
- MCG3143 Bio-fluid Mechanics
- MCG3305 Biomedical system dynamics
- MCG4150 Bioinstrumentation
- MCG4151 Design of Artificial Joint Prostheses and Implants
- MCG4152 Design of Artificial Organs

Consult the full course sequence at engineering.uOttawa.ca. All courses are offered in English. All first and second year courses, and some third year courses, are also available in French.

UNDERGRADUATE PROGRAMS (bachelor’s degrees)
- BASc in Biomedical Mechanical Engineering
- BASc in Biomedical Mechanical Engineering and BSc in Computing Technology

GRADUATE PROGRAMS (master’s and doctorate degrees)
- Master of Engineering (MEng) in Biomedical Engineering
- Masters of Engineering (MEng) in Biomedical Engineering Concentration in Clinical Engineering
- Master of Applied Science (MASc) in Biomedical Engineering
- Doctorate (PhD) in Biomedical Engineering
Mechanical engineers apply the fundamentals of science and math to create practical, useful solutions for a wide range of mechanical, thermal and biomedical systems and devices, from computer parts to power plants, from manufacturing systems to spacecraft.

This is a broad-based area of engineering, and graduates find work in almost every industrial sector, including high tech, aerospace, manufacturing, automotive, energy, biomedicine and consulting.

**CAREER OPPORTUNITIES**

- Aeronautical/aerospace engineer
- Automotive engineer
- Manufacturing engineer
- Robotics/automation/controls engineer
- Energy systems engineer
- Biomedical engineer
- Consulting engineer
- Renewable energy engineer

**WHERE DO OUR MECHANICAL ENGINEERING GRADUATES WORK?**

- Anthony Bagnulo (BASc ’10), Engineering Manager, Tesla Motors in California
- Miguel Clément (BASc ’05), Co-Founder, Inovatech Engineering Corporation, Vankleek Hill, Ontario
- Navien Baskaran (BASc ’13), AVD Surface Integration Design Engineer, General Motors in Warren, Michigan

**EXAMPLES OF COURSES IN MECHANICAL ENGINEERING**

- MCG3110  Heat Transfer
- MCG3131  Machine Design
- MCG3145  Advanced Strength of Materials
- MCG3306  System Dynamics
- MCG3340  Fluid Mechanics I
- MCG4308  Mechanical Vibration Analysis
- MCG4322  Computer-Aided Design
- MCG4328  Manufacturing
- MCG4136  Mechatronics
- MCG4345  Aerodynamics
- MCG4102  Finite Element Analysis
- MCG4134  Robot design and control
- MCG4325  Gas Dynamics

Consult the full course sequence at engineering.uOttawa.ca. All courses are offered in English. All first and second year courses, and some third year courses, are also available in French.

**UNDERGRADUATE PROGRAMS** *(bachelor’s degrees)*

- BASc in Mechanical Engineering
- BASc in Mechanical Engineering, Engineering Management and Entrepreneurship Option
- BASc in Mechanical Engineering and BSc in Computing Technology

**GRADUATE PROGRAMS** *(master’s and doctorate degrees)*

- Master of Engineering (MEng) in Mechanical Engineering
- Master of Applied Science (MASc) in Mechanical Engineering
- Doctorate (PhD) in Mechanical Engineering
GET MORE THAN JUST A DEGREE — PERSONALIZE YOUR PROGRAM TO SUIT YOUR INTERESTS! YOU CAN CHOOSE TO ADD ONE OF THESE TWO OPTIONS TO MOST ENGINEERING OR COMPUTER SCIENCE PROGRAMS:

ENGINEERING MANAGEMENT AND ENTREPRENEURSHIP
This option provides students with the opportunity to develop their entrepreneurial spirit and the tools to develop their management skills. Students learn about product development, financing, marketing and building a business plan. You may add this option to your program without having to prolong your degree.

COMPUTING TECHNOLOGY
In many industries, such as automotive, aerospace and construction, the integration of mechanical, electrical and computer engineering is very high. Sensors, controllers and microprocessors are integrated into cars, airplanes, smart houses, and even smart roads; computing technologies are omnipresent!

In a competitive job market, this option can make your résumé standout from the others. Computing Technology is offered as a second degree and consists of courses that are common to all programs as well as courses that can complement your specific engineering program.

OR YOU MAY WANT TO CHOOSE A SPECIFIC OPTION ACCORDING TO YOUR CHOICE OF PROGRAM. HERE ARE SOME EXAMPLES:

ELECTRICAL ENGINEERING PROGRAM
- Power and Sustainability
- Communications
- Systems Engineering
- Electronics
- Microwave and Photonics Engineering

CIVIL ENGINEERING PROGRAM
- Environmental and Water Resources
- Structural and Geotechnical

CHEMICAL ENGINEERING PROGRAM
- Environmental Engineering

COMPUTER SCIENCE PROGRAM
- Mathematics
- Select a complementary minor or major from a large array of disciplines.

Consult the full list of options with all the details at engineering.uOttawa.ca/about/programs.

JAWWAD AKBARI
Fourth year, Mechanical Engineering, CO-OP

In my first year, I was fortunate to receive the Dean’s Merit Scholarship ($5,000) and the Admission Scholarship ($4,000). In third year, I participated in the UROP program and received $1,000. The scholarships that I have received during my studies have helped alleviate the financial burdens of university, which has allowed me to focus my attention on my studies and extracurricular activities. Out of all the universities I had applied to, uOttawa offered the most generous scholarships. This definitely contributed to my decision to come here, as the scholarships helped give my family and me peace of mind. Having a scholarship that is conditional on GPA also keeps you motivated to succeed academically.

I encourage all uOttawa students to apply and take advantage of as many scholarships and bursaries as possible. Even a small amount can really help. In addition, scholarships are not just given for academic excellence, but for athletic achievements, as well as community involvement. Therefore, getting involved in extracurricular activities is great. Not only will it make you eligible for more scholarships but you will have a more fulfilling university experience.
## GENERAL REQUIREMENTS

Students must have an Ontario Secondary School Diploma with at least six 4U or 4M courses, including the prerequisites listed below. Your admission average is calculated based on your six best interim or final Grade 12 courses at the 4U or 4M level, including the prerequisites for your program of choice. These are minimum requirements only. They are subject to change. Admission is not guaranteed.

<table>
<thead>
<tr>
<th>DISCIPLINE</th>
<th>PREREQUISITES AND ADDITIONAL REQUIREMENTS</th>
<th>ADMISSION AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical Mechanical Engineering</td>
<td>English or Français 4U; Advanced Functions 4U; Calculus and Vectors 4U(^1); Biology 4U; Chemistry 4U; Physics 4U A combined minimum average of 70% is required for all prerequisite science and mathematics courses.</td>
<td>High 80s</td>
</tr>
<tr>
<td>Biotechnology (Biochemistry and Chemical Engineering)</td>
<td>English or Français 4U; Advanced Functions 4U; Calculus and Vectors 4U(^1); Biology 4U, Chemistry 4U, Physics 4U, Earth and Space Science 4U A combined minimum average of 70% is required for all prerequisite science and mathematics courses. 1 For this program, you need to submit your admission application to the Faculty of Science.</td>
<td>Mid 80s</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>English or Français 4U; Advanced Functions 4U; Calculus and Vectors 4U(^1); Physics 4U A combined minimum average of 70% is required for all prerequisite science and mathematics courses.</td>
<td>Mid 80s</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>English or Français 4U; Advanced Functions 4U; Calculus and Vectors 4U(^1); Chemistry 4U A combined minimum average of 70% is required for all prerequisite science and mathematics courses.</td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>English or Français 4U; Advanced Functions 4U; Calculus and Vectors 4U(^1); Physics 4U A combined minimum average of 70% is required for all prerequisite science and mathematics courses.</td>
<td></td>
</tr>
<tr>
<td>Computer Science</td>
<td>English or Français 4U; Advanced Functions 4U; Calculus and Vectors 4U(^1); Physics 4U A combined minimum average of 70% is required for all prerequisite mathematics courses.</td>
<td>Low 80s</td>
</tr>
<tr>
<td>Computer Science and Mathematics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer Engineering</td>
<td>English or Français 4U; Advanced Functions 4U; Calculus and Vectors 4U(^1); Physics 4U A combined minimum average of 70% is required for all prerequisite science and mathematics courses.</td>
<td>Low 80s</td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physics and Electrical Engineering</td>
<td>English or Français 4U; Advanced Functions 4U; Calculus and Vectors 4U(^1); Chemistry 4U; Physics 4U A combined minimum average of 70% is required for all prerequisite science and mathematics courses.</td>
<td>Low 80s</td>
</tr>
<tr>
<td>Software Engineering (Offered with the CO-OP option only)</td>
<td>English or Français 4U; Advanced Functions 4U; Calculus and Vectors 4U(^1); One of the following: Biology 4U, Chemistry 4U, Computer Science 4U, Physics 4U A minimum average of 70% is required for each prerequisite course.</td>
<td>Mid 80s</td>
</tr>
</tbody>
</table>

\(^1\) Students who have completed Advanced Functions 4U but have not completed Calculus and Vectors 4U can take the replacement course at the University of Ottawa either the summer before or during their first term.

\(^2\) Past experience indicates that students with a strong background in biology, chemistry and physics have an increased rate of success.
### Québec Admission Requirements

#### Secondary V General Requirements
Students must have a Quebec Secondary School Diploma with five Secondary V courses, including program-specific prerequisites. A minimum average of 84% is required but does not guarantee admission. The admission average is calculated based on a student’s best Secondary V courses, including the prerequisites for the student’s selected program.

#### CEGEP General Requirements
Students must have a minimum of 12 CEGEP courses, including program-specific prerequisites, but excluding physical education and make-up courses. Your admission average is calculated based on completed courses, excluding physical education and make-up courses. We do not take the “R” rating into consideration. You may receive up to 15 credits of advanced standing. The credits we grant depend on the courses you’ve completed, the grades you’ve achieved and the program to which you are admitted. These are minimum requirements only. They are subject to change. Admission is not guaranteed.

<table>
<thead>
<tr>
<th>DISCIPLINE</th>
<th>SECONDARY SCHOOL Prerequisites and additional requirements</th>
<th>ADMISSION AVERAGE</th>
<th>CEGEP Prerequisites and additional requirements</th>
<th>ADMISSION AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical Mechanical Engineering</td>
<td>English or Français; Mathematics Technical and Scientific Option¹ or Science Option¹ (Secondary V); Science and Technology (with or without option) (Secondary IV); Chemistry 504; Physics 504. A combined minimum average of 84% is required for all prerequisite science and mathematics courses.</td>
<td>84%</td>
<td>English (603) or Français (601); Biology (101) General Biology; Chemistry (202) General Chemistry or Organic Chemistry; Physics (203) Mechanics or Electricity and Magnetism; Mathematics (201) Calculus I. A combined minimum average of 70% is required for all prerequisite science and mathematics courses.</td>
<td>High 70s</td>
</tr>
<tr>
<td>Biotechnology (Biochemistry and Chemical Engineering)</td>
<td>English or Français; Mathematics Technical and Scientific Option¹ or Science Option¹ (Secondary V); Science and Technology (with or without option) (Secondary IV); Chemistry 504; Physics 504. A combined minimum average of 84% is required for all prerequisite science and mathematics courses.</td>
<td>84%</td>
<td>English (603) or Français (601); Mathematics (201) Calculus I; two of the following: Biology (101) General Biology; Chemistry (202) General Chemistry or Organic Chemistry; Physics (203) Mechanics or Electricity and Magnetism; Mathematics (201) Algebra I. A combined minimum average of 70% is required for all prerequisite science and mathematics courses.</td>
<td>Mid 70s</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>English or Français; Mathematics Technical and Scientific Option¹ or Science Option¹ (Secondary V); Chemistry 504; Physics 504. A combined minimum average of 84% is required for all prerequisite science and mathematics courses.</td>
<td>84%</td>
<td>English (603) or Français (601); Chemistry (202) General Chemistry or Organic Chemistry; Physics (203) Mechanics or Electricity and Magnetism; Mathematics (201) Calculus I. A combined minimum average of 70% is required for all prerequisite science and mathematics courses.</td>
<td>Mid 70s</td>
</tr>
<tr>
<td>Civil Engineering Mechanical Engineering</td>
<td>English or Français; Mathematics Technical and Scientific Option¹ or Science Option¹ (Secondary V); Chemistry 504; Physics 504. A combined minimum average of 84% is required for all prerequisite science and mathematics courses.</td>
<td>84%</td>
<td>English (603) or Français (601); Chemistry (202) General Chemistry or Organic Chemistry; Physics (203) Mechanics or Electricity and Magnetism; Mathematics (201) Calculus I. A combined minimum average of 70% is required for all prerequisite science and mathematics courses.</td>
<td>Low 70s</td>
</tr>
<tr>
<td>Computer Engineering Electrical Engineering</td>
<td>English or Français; Mathematics Technical and Scientific Option¹ or Science Option¹ (Secondary V); Chemistry 504; Physics 504. A combined minimum average of 84% is required for all prerequisite science and mathematics courses.</td>
<td>84%</td>
<td>English (603) or Français (601); Chemistry (202) General Chemistry or Organic Chemistry; Physics (203) Mechanics or Electricity and Magnetism; Mathematics (201) Calculus I. A combined minimum average of 70% is required for all prerequisite science and mathematics courses.</td>
<td>Low 70s</td>
</tr>
<tr>
<td>Computer Science Computer Science and Mathematics</td>
<td>English or Français; Mathematics Technical and Scientific Option¹ or Science Option¹ (Secondary V). A minimum average of 84% is required in the prerequisite mathematics course.</td>
<td>84%</td>
<td>English (603) or Français (601); Mathematics (201) Calculus I. A minimum average of 70% is required in the prerequisite mathematics course.</td>
<td>Low 70s</td>
</tr>
<tr>
<td>Physics and Electrical Engineering</td>
<td>English or Français; Mathematics Technical and Scientific Option¹ or Science Option¹ (Secondary V); Science and Technology (with or without option) (Secondary IV); Chemistry 504; Physics 504. A combined minimum average of 84% is required for all prerequisite science and mathematics courses.</td>
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<td>English (603) or Français (601); Chemistry (202) General Chemistry or Organic Chemistry; Physics (203) Mechanics or Electricity and Magnetism; Mathematics (201) Calculus I. A combined minimum average of 70% is required for all prerequisite science and mathematics courses.</td>
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<td>English (603) or Français (601); Mathematics (201) Calculus I; One of the following: Biology (101) General Biology; Chemistry (202) General Chemistry or Organic Chemistry; Physics (203) Mechanics or Electricity and Magnetism. A minimum average of 70% is required for each prerequisite course.</td>
<td>Mid 70s</td>
</tr>
</tbody>
</table>

¹ Students are required to take a make-up course in functions and/or calculus and vectors at the University of Ottawa either the summer before or during their first term.
² Past experience indicates that students with a strong background in biology, chemistry and physics have an increased rate of success.

To learn more on admission requirements for students coming from provinces or territories other than Ontario and Quebec, please visit www.uottawa.ca/admission.
CONTINUING YOUR STUDIES

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By participating in UROP, you will receive a $1,000 award and must devote, from October to March, at least 50 hours to a research project conducted by a Faculty of Engineering sponsor. There’s no better way to learn and discover whether you want to continue on to graduate school.

For more information, visit research.uottawa.ca/urop/undergrad-research-opportunity.

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We offer enrichment programs for students who have completed Grade 9, 10 or 11 and are interested in learning about engineering, technology or science.

These programs, led by our engineering students, mix a variety of lectures and laboratory projects to allow you to experience undergraduate life firsthand.

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HOW TO APPLY

1. Choose the program you want to study in the Faculty of Engineering. For more details on our different programs, visit engineering.uOttawa.ca.

2. Check the academic admission requirements that apply to you.

3. Check application deadlines and complete any required admission tests.

4. Include all documents and forms needed for your application.

5. Track your application for admission via UOZone.

For more information on how to apply, please visit uottawa.ca/undergraduate-admissions.

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COME MEET US IN PERSON
September 22 to 24, 2017
Ontario Universities’ Fair (OUF)
Toronto

October 28, 2017
University of Ottawa Day

March 17, 2018
Spring Open House

MIDIA SHIKH HASSAN
Fourth year, Chemical Engineering

I am involved with several entrepreneurial programs on campus that further enrich my education at the University of Ottawa. I coordinate the Difference Makers program and I am also involved with the Engineering Outreach program.

Developing an entrepreneurial mindset and set of skills has allowed me to take part in the launch of several start-ups. One of my social ventures that started from the Difference Makers program is Dextra, which allows me to use my engineering and entrepreneurial skills to provide solutions for amputated war refugees, using the resources of the Richard L’Abbé Makerspace.

As a woman studying engineering and as a mentor in the Women’s Startup Network in the Faculty of Engineering, I have become a strong advocate for women in this field. I was chosen as one of the panellists for the #BreakTheGlass campaign with United Nations Women, which aims to empower women, especially in the STEM fields.

The Faculty’s entrepreneurial community has helped me to gain valuable experience in new, innovative fields and to find solutions to important issues. Overall, my community involvement has significantly enriched my student experience.