DISCOVER.
BUILD.
CHANGE THE WORLD.

Located in the heart of Canada's capital, uOttawa Engineering is the best place to cultivate your talents for innovative design and to build your future. It's a vibrant and supportive community where you can share your passion for making the world a better place by challenging conventional thinking, finding solutions to real-world problems, and launching a smart business.

Study engineering at uOttawa and develop your creativity in the maker hub of the National Capital Region; the Faculty is a major player in the area's high-tech sector, which is also the number one tech hub in Canada.

Learn from leading researchers in our world-class facilities, state-of-the-art labs and broad, interdisciplinary collaborations.

Build your network through our extensive CO-OP program and our strong connections to industry.

TABLE OF CONTENTS
04 Study in the National Capital Region
07 Why study engineering or computer science?
09 Scholarships
10 Entrepreneurial Alumni
11 New STEM Complex
12 Centre for Entrepreneurship and Engineering Design
14 Student Experience
18 CO-OP
20 School of EECS
21 Electrical Engineering
22 Physics and Electrical Engineering
23 Software Engineering
24 Computer Science
25 Computer Engineering
26 Chemical Engineering
27 Biotechnology
28 Civil Engineering
29 Biomedical Mechanical Engineering
30 Mechanical Engineering
31 Customize your degree
32 Admission Requirements
34 Continuing your studies
35 How to Apply

engineering.uOttawa.ca
Become the best engineer or computer scientist by getting the right balance of theory and practice through our entrepreneurship and design ecosystem, which features advanced prototyping and manufacturing facilities, competitive teams, entrepreneurial competitions, start-up growth programs, and more.

Live a transformative and fulfilling university experience by studying in English or French at uOttawa.

**ARE YOU READY TO DESIGN YOUR FUTURE?**

**SKED HANDLE**

During the Design Day competition in March 2018, our team won first place in the accessibility category, as well as first place overall, for creating handles. Our client, the Ottawa Volunteer Search and Rescue group, needed an easy and comfortable upgrade of their stretcher handles. Over the course of a few months, our team designed, prototyped and built a sturdy, lightweight and comfortable handle that can easily hook onto existing stretcher handles. This allows for easy rotation of personnel carrying the victim. It also minimizes the time needed to bring the victim to proper medical facilities.

Thanks to the resources available to us, like the Makerspace and the Brunsfield Centre, we printed, cut, welded, glued and painted a working prototype for our client. It was a great experience to go through the entire design process of developing a product to fulfill a specific need. Our client gave us feedback throughout the process so we could constantly improve our prototypes. In the end, we got the chance to present our final product at Design Day. There were over a hundred other teams, with projects varying from hydroponic systems to beach-cleaning robots, and we won with handles. Who knew something so simple could be so successful?
STUDY IN THE NATIONAL CAPITAL REGION

OTTAWA IS A GREAT PLACE WHERE...

= TALENT

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

Source: Invest Ottawa & the Canadian Trade Commissioner Service

= WORK

n Ottawa offers access to a community of business people, researchers and scholars, government officials and politicians as well as strong infrastructure support for applied research
n 1,700+ knowledge-based companies with 68,000+ employees
n 44+ national and academic research labs
n 90% of Canada’s industrial telecommunications research and development is conducted in Ottawa
n Over 54.7 billion invested in Ottawa technology companies in the last ten years
n 7 Ski resorts
n Top 5 – Home to one of the top five white water rafting spots in the world
n 800 kilometres of bike paths
n 430+ kilometres of cross-country ski trails
n 7.8 kilometres of the world’s largest skating rink, the Rideau Canal, Ottawa’s very own UNESCO World Heritage Site
n 250+ outdoor skating rinks
n 14 national museums and 32 art galleries
n 180 annual festivals and events
n 4 public supervised beaches
n 3 professional sports teams

= PLAY

n 7 Ski resorts
n Top 5 – Home to one of the top five white water rafting spots in the world
n 800 kilometres of bike paths
n 430+ kilometres of cross-country ski trails
n 7.8 kilometres of the world’s largest skating rink, the Rideau Canal, Ottawa’s very own UNESCO World Heritage Site
n 250+ outdoor skating rinks
n 14 national museums and 32 art galleries
n 180 annual festivals and events
n 4 public supervised beaches
n 3 professional sports teams

= GROW

n #3 in quality of life for large cities in North America, 18th globally
n Ottawa is the least expensive Canadian city included in the Mercer rankings
n Population of 1.3M

Source: mercer.com

= LIVE

The University of Ottawa campus is located in the National Capital Region, rated second among the best places to live in Canada.

– MoneySense, 2018
WHY CHOOSE UOTTAWA 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 ten 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.engineerscanada.ca / www.ingenieurscanada.ca
All Engineering programs are accredited by the Canadian Engineering Accreditation Board of Engineers Canada

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

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 a $1,000 French Studies bursary.

LIVE IN A MULTICULTURAL COMMUNITY OF STUDENTS AND STAFF

Enrich your learning experience by meeting students from all over the world. In 2017-2018, the Faculty of Engineering, which comprised of over 4,500 undergraduate students, welcomed over 1,000 students from outside Canada.

Learn from professors who have gained their knowledge around the world; professors at the Faculty of Engineering have lived, studied or worked in over 40 different countries.

LEARN FROM EXPERTS

As an engineering or computer science student, you will be studying with leading researchers in their fields. In everything from photonics to web security, hydraulics to advanced materials, our professors are making world-changing discoveries.

FINANCE YOUR EDUCATION THROUGH OUR GENEROUS SCHOLARSHIP AND BURSARY PROGRAM

The University of Ottawa has one of Canada’s leading scholarship and bursary programs, with over $42 million in scholarships and bursaries distributed every year. In addition to the generous University program, engineering and computer science students have access to a wide range of admission scholarships offered by the Faculty of Engineering. More details on page 9.
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
- Workshops
- Study groups
- Peer mentoring
- Networking
- Professional development

We want to see you succeed!

engineering.uOttawa.ca/the-workshop

SHANNON BERRY
Fifth year, Mechanical Engineering and Computing Technology

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 led to a job opportunity. In my first year, 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 during 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 of the GNCTR team, a member of the organizing committees for the Professional Engineers of Ontario Student Conference (PEO-SC) and for the Ontario Engineering Competition (OEC). And last year, I was the president of MESS and the treasurer of the IEEE uOttawa Student Branch. This year, I have decided to take on an open volunteer position to help out any of the executive committees of the many engineering societies at uOttawa. Every position I have held in uOttawa teams and societies has created unique and worthwhile experiences for me.

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

The average starting salary for graduates of computer science programs 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

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: 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
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: 2017 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 in her final year of high school
• Be (or have been) extensively involved in her school’s FIRST team (FIRST Robotics Competition or FIRST Tech Challenge)
• Have a minimum 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

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

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

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 31, 2019
Application form: Online Scholarships and Bursaries (via uOZone) uOttawa.ca
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 five 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 30,000 Spivo Sticks to 60 different countries. Marc and I now get to help our customers all over the world to capture their feeling, and we couldn’t be happier.
STEM

Our new STEM (science, technology, engineering, mathematics) Complex is 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 brings together departments from the faculties of Engineering and Science under the same roof.
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; and
- Offering you experiential learning opportunities with industry in the areas of design and prototyping services and commercialization of technologies.

engineering.uOttawa.ca/CEED

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/CEED

CURRICULUM FOCUSED ON ENTREPRENEURSHIP
- Engineering Management and Entrepreneurship option available for all undergraduate programs
- Master’s in Engineering Management

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.

SIMON NEHME SUMMER SCHOOL IN ENGINEERING ENTREPRENEURSHIP
This program leverages the growing entrepreneurial and innovative community at the University of Ottawa and in the Ottawa region. It brings together like-minded individuals from across Canada and other countries to collaborate on exciting ventures.

The school offers hands-on workshops and events, delivered by members of the entrepreneurial community as well as academia, covering ideation, pitching, customer discovery, marketing, sales and legal issues for startups.
John McEntyre Team Space
The John McEntyre Team Space provides pre-competitive teams involved in large-scale projects with the space and infrastructure required to succeed.

Simon Nehme Design Commons
This brand new pop-up space is open to student teams looking to brainstorm and develop their ideas.

Brunsfield 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.

Makerlab
The 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 uOttawa 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.

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!

Located on the first floor of the new STEM Complex, students can take advantage of amazing facilities.
Are you interested in adding an international dimension to your program by studying, researching or working abroad? uOttawa 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)

Would you enjoy being part of a team and 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 entrepreneurial student competitions? 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 uOttawa Engineering is anything but dull!
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.

INTERNATIONAL CO-OP OPPORTUNITIES

Benefit from the many international work experience opportunities offered by the Co-operative Education (CO-OP) Program, which allows engineering and computer science students to develop unique skills in their field of interest.

MAKER AWARD

Do you have a passion for design, technology and prototyping? Do you love creating, innovating and discovering new ways of doing things? If so, you might be in the run to win the Faculty of Engineering’s Maker Award.

This $10,000 award has been created to recognize a student with inspiring achievements in the fields of engineering, design and technology.

The recipient must display their hands-on projects, have the ability to work independently and create a positive impact on a given community. He or she should possess exceptional aptitudes for self-efficacy outside of their academic activities, demonstrating resourcefulness and passion for their projects.

For more details, visit engineering.uOttawa.ca/maker-award

MAKE YOUR PROJECTS AND ACTIVITIES A REALITY THROUGH A VARIETY OF AVAILABLE FUNDING!

Funds to support your student projects and activities are now more available than ever thanks to the support of the Faculty and various funds, including the Engineering Endowment Fund and the Centre for Entrepreneurship and Engineering Design.

The common objective of these funds is to enhance the quality of engineering students’ education and university experience. We encourage all engineering students to submit a fund application to finance a project or activity that would benefit the engineering student body.
STUDENT ASSOCIATIONS AND CLUBS

ENGINEERING STUDENT SOCIETY (ESS) AND COMPUTER SCIENCE STUDENT ASSOCIATION (CSSA)

The ESS and CSSA represent uOttawa Faculty of Engineering students; these are your associations. Get involved in your student community! You’ll come to know your colleagues better by participating in the various activities and events put on by and for students.

Find out more about the ESS at essaeg.ca and the CSSA at cssa-aei.ca.

GET INVOLVED

OTHER SUB-ASSOCIATIONS AND CLUBS INCLUDE:

- Mechanical Engineering Students Society (MESS)
- Canadian Society for Civil Engineering (CSCE)
- Chemical Engineering Student Society (ChESS)
- Iron Otis
- uOttahack
- Engineering without Borders
- Jeux de Génie
- Difference Makers

Check out our website for more details on associations and clubs: engineering.uOttawa.ca/student-experience/clubs-and-competitive-teams
COMPETITIVE TEAMS

Join a team and apply your classroom knowledge to fun and challenging real-world problems!

As an engineering student, you can join one of our competitive teams and get involved in pre-professional competitions and work on large-scale projects. These teams represent the University at diverse international competitions.

- Formula uOttawa
- SAE Supermileage
- Urban Concept (uOttawa Supermileage)
- UOE Racing
- BAJA uOttawa
- Ottabotics (Robot Racing, Drone, Roboboat)
- SAE Aerospace
- uOttawa Rocketry
- uOttawa Bionics
- Great Northern Concrete Toboggan Competition (GNCTR)
- Concrete Canoe
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 ten 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 (95% faculty placement rate for winter 2018*)
- 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 also available

* Based on winter 2018 CO-OP data

WORK/STUDY SEQUENCES

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

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<th>YEAR OF STUDY</th>
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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 mandatory for Software Engineering program students to help them develop practical and solution-driven thinking!

DAVID WEN

Fourth year, Civil Engineering, CO-OP

When I began my studies four years ago, I would have never believed that I would be managing a crew of 30 trade workers, coordinating concrete orders on the most public infrastructure project in the core of downtown Ottawa. Yet working with Ellis Don as a Field Engineer Assistant, this is exactly what I did; I worked on the Ottawa Light Rail Transit in Segment #2 Underground stations. I was entrusted with the responsibility of ordering the appropriate concrete mix from Lafarge, coordinating the scope of work for various trades, managing downtown Ottawa traffic during rush hour, and working with inspectors to sign off on the work of the tradespeople, amongst many other tasks.

My biggest takeaway from this experience was the ability to solve problems. I learned that an effective approach in resolving challenging tasks is to dissect and break them down into smaller, more manageable duties, then prioritize and complete them on time. The ability to solve problems through logical breakdown is at the core of engineering principles, and the elements learned in class only reinforced this notion. I am grateful that I had the opportunity to experience this first hand and to practice what I preach through my CO-OP experiences.
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 Description</th>
<th>Electrical Engineering</th>
<th>Software Engineering</th>
<th>Computer Science</th>
<th>Computer Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<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 analyze 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>
<td></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, data scientist, information security analyst and software developer are ranked among the top 11 best jobs of 2018.

ELECTRICAL ENGINEERING

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 Co-Founder 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

- GNG1103  Engineering Design
- 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
PHYSICS AND ELECTRICAL 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:
- GNG1103  Engineering Design
- 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 and 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

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 concentration in Applied Artificial Intelligence
- 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 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 concentration in Applied Artificial Intelligence
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?
- Lethogonolo 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
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
CHG3316  Transport Phenomena
CHG3335  Process Control
CHG4244  Plant Design Project
CHG4305  Advanced Materials in Chemical Engineering
CHG4307  Clean Processes and Sustainable Development
CHG4343  Computer-Aided Design in Chemical Engineering
CHG4381  Biochemical Engineering

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

CHEMICAL 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.
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
- BCH3125   Protein Structure and Function
- BCH3170   Molecular Biology
- BCH4172   Topics in Biotechnology
- BIO3124   General Microbiology
- 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 ENGINEERING

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, as well as 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.
BIOMEDICAL MECHANICAL 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
- Erika Warren (BASc ’14), Project Designer at Gold Coast Upper Limb Center in Queensland, Australia
- Rachelle Bernier (BASc ’15), Rehabilitation Engineer at Horizon Health Network in Fredericton, New Brunswick

EXAMPLES OF COURSES IN BIOMEDICAL MECHANICAL ENGINEERING

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
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<tbody>
<tr>
<td>GNG1103</td>
<td>Engineering Design</td>
</tr>
<tr>
<td>MCG2131</td>
<td>Thermodynamics II</td>
</tr>
<tr>
<td>MCG2142</td>
<td>Biological and Engineering Materials II</td>
</tr>
<tr>
<td>MCG3110</td>
<td>Heat Transfer</td>
</tr>
<tr>
<td>MCG3131</td>
<td>Machine Design</td>
</tr>
<tr>
<td>MCG3141</td>
<td>Biomechanics</td>
</tr>
<tr>
<td>MCG3143</td>
<td>Bio-fluid Mechanics</td>
</tr>
<tr>
<td>MCG3305</td>
<td>Biomedical system dynamics</td>
</tr>
<tr>
<td>MCG4150</td>
<td>Bioinstrumentation</td>
</tr>
<tr>
<td>MCG4151</td>
<td>Design of Artificial Joint Prostheses and Implants</td>
</tr>
<tr>
<td>MCG4152</td>
<td>Design of Artificial Organs</td>
</tr>
</tbody>
</table>

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 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 in Vankleek Hill, Ontario
- Navien Baskaran (BASc ’13), AVD Surface Integration Design Engineer, General Motors in Warren, Michigan

EXAMPLES OF COURSES IN MECHANICAL ENGINEERING

- GNG1103   Engineering Design
- MCG2360   Engineering Materials I
- MCG2361   Engineering Materials II
- 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 stand out 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/programs.

STUDENT STORIES

CHRISTOPHER MCINTYRE
Fourth year, Chemical Engineering, CO-OP

Throughout my time at the University of Ottawa, I have been fortunate enough to receive different types of financial aid. In my first year, I received an Admission Scholarship ($3,000). In my third year, the University granted me the Dean’s Merit Scholarship for each semester ($3,000). These scholarships have provided me with the opportunity to focus on my studies and curricular activities without worrying about my financial situation. As a result, I have been able to actively participate in student government, 101 Week guiding, and the CO-OP program.

The University of Ottawa offered me the most attractive scholarship of all the universities I applied to. The Admission Scholarship was a significant reason why I chose to study here. I come from a family of modest means, so this financial aid not only provided me with peace of mind, but also alleviated some of the financial stress on my family.

All students should apply for the scholarships and bursaries available at uOttawa. There are scholarships not only for academic excellence, but also success in athletics, community involvement, and much more. Every little bit helps, and this can ultimately help you enjoy a more fulfilling experience at the University of Ottawa.
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>
</table>
| Biomedical Mechanical Engineering | English or Français 4U; Advanced Functions 4U; Calculus and Vectors 4U; Biology 4U; Chemistry 4U; Physics 4U  
A combined minimum average of 70% is required for all prerequisite science and mathematics courses. | High 80s          |
| Biotechnology (Biochemistry and Chemical Engineering) | English or Français 4U; Advanced Functions 4U; Calculus and Vectors 4U; two of the following: 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.  
See www.science.uOttawa.ca for recommended courses. | Mid 80s |
| Chemical Engineering              | English or Français 4U; Advanced Functions 4U; Calculus and Vectors 4U; Chemistry 4U; Physics 4U  
A combined minimum average of 70% is required for all prerequisite science and mathematics courses. | Mid 80s          |
| Civil Engineering                 |                                                                                                           |                   |
| Mechanical Engineering            |                                                                                                           |                   |
| Computer Science                  | English or Français 4U; Advanced Functions 4U; Calculus and Vectors 4U  
A combined minimum average of 70% is required for all prerequisite mathematics courses. | Low 80s           |
| Computer Science and Mathematics  |                                                                                                           |                   |
| Computer Engineering              | English or Français 4U; Advanced Functions 4U; Calculus and Vectors 4U; Chemistry 4U; Physics 4U  
A combined minimum average of 70% is required for all prerequisite science and mathematics courses. | Low 80s           |
| Electrical Engineering            |                                                                                                           |                   |
| Physics and Electrical Engineering| English or Français 4U; Advanced Functions 4U; Calculus and Vectors 4U; Chemistry 4U; Physics 4U  
A combined minimum average of 70% is required for all prerequisite science and mathematics courses. | Low 80s           |
| Software Engineering (Offered with the CO-OP option only) | English or Français 4U; Advanced Functions 4U; Calculus and Vectors 4U; one of the following: Biology 4U, Chemistry 4U, Computer Science 4U, Physics 4U  
A minimum average of 70% is required for each prerequisite course in science and mathematics. | Mid 80s           |

1 Past experience indicates that students with a strong background in biology, chemistry and physics have an increased rate of success.
ADMISSION REQUIREMENTS

QUÉBEC

These are minimum requirements only. They are subject to change. Admission is not guaranteed.

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.

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 a student’s best Secondary V courses, including the prerequisites for the student’s selected program.

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.

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

<table>
<thead>
<tr>
<th>DISCIPLINE</th>
<th>SECONDARY SCHOOL</th>
<th>ADMISSION AVERAGE</th>
<th>CEGEP</th>
<th>ADMISSION AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical Mechanical Engineering</td>
<td>Mathematics Technical and Scientific Option; Science Option (Secondary V); Science and Technology (with or without option) (Secondary IV); Chemistry 504; Physics 504</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</td>
<td>High 70s</td>
</tr>
<tr>
<td>Biotechnology (Biochemistry and Chemical Engineering)</td>
<td>Mathematics Technical and Scientific Option; Science Option (Secondary V); Science and Technology (with or without option) (Secondary IV); Chemistry 504; Physics 504</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</td>
<td>Mid 70s</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>Mathematics Technical and Scientific Option; Science Option (Secondary V); Science and Technology (with or without option) (Secondary IV); Chemistry 504; Physics 504</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</td>
<td>Mid 70s</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>Mathematics Technical and Scientific Option; Science Option (Secondary V); Science and Technology (with or without option) (Secondary IV); Chemistry 504; Physics 504</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</td>
<td>Mid 70s</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>Mathematics Technical and Scientific Option; Science Option (Secondary V); Science and Technology (with or without option) (Secondary IV); Chemistry 504; Physics 504</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) Calculus I</td>
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</tr>
<tr>
<td>Electrical Engineering</td>
<td>Mathematics Technical and Scientific Option; Science Option (Secondary V); Science and Technology (with or without option) (Secondary IV); Chemistry 504; Physics 504</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) Calculus I</td>
<td>Mid 70s</td>
</tr>
<tr>
<td>Computer Science</td>
<td>Mathematics Technical and Scientific Option; Science Option (Secondary V); Science and Technology (with or without option) (Secondary IV); Chemistry 504; Physics 504</td>
<td>84%</td>
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</tr>
<tr>
<td>Software Engineering (Offered with the CO-OP option only)</td>
<td>Mathematics Technical and Scientific Option; Science Option (Secondary V); Science and Technology (with or without option) (Secondary IV); Chemistry 504; Physics 504</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) Calculus I</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.
DAVID CORTES
Third year, Biomedical Mechanical Engineering

A few years ago, I made the difficult decision of leaving friends and family to pursue a career in biomedical mechanical engineering. Although this decision was not an easy one, my desire to become a researcher was stronger than the fear of the unknown.

In my second year of studies, I participated in the Undergraduate Research Opportunity Program (UROP) and conducted a research project on the synthesis of injectable biomimetic materials for cardiac tissue regeneration, under the supervision of Dr. Emilio Alarcon and Dr. Christopher McTiernan. Not only did they help and support me throughout the project, but they also became my mentors, and both are people I aspire to be like someday. During those four months, I not only learned about chemistry, biology, medicine, and engineering, but I also grew as an individual. I learned that we do research not only for the publications, but for the patients’ health and wellness, and for the love of science.

WANT TO TRY OUT RESEARCH AS AN UNDERGRADUATE STUDENT?

UNDERGRADUATE RESEARCH OPPORTUNITY PROGRAM

Sign up for the Undergraduate Research Opportunity Program (UROP) and explore cutting-edge research as a second- or third-year undergraduate student at the University of Ottawa. Work on unique and exciting projects, while defining your professional goals. Not only do you have the chance to gain relevant experience and get to know your professors and peers, but you will also be paid for your work. 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/centre-research-opportunities.

EXPERIENCE UNIVERSITY WHILE YOU’RE IN HIGH SCHOOL

We offer enrichment programs for students who have completed Grade 9, 10 or 11 and are interested in learning about engineering, technology and science. These programs, led by our engineering students, mix a variety of lectures and laboratory projects to allow you to experience undergraduate life first-hand. If you want to get a sneak peek at real university life, gain insight into different fields of study or just increase your knowledge with interactive hands-on experiences, these programs are for you!

For more information, visit engineering.uOttawa.ca/outreach-programs.

FACULTY OF ENGINEERING SECONDARY SCHOOL

Earn high school credits by taking a summer course at the Faculty of Engineering Secondary School. Gain hands-on experience in engineering and computer science through project-based learning with new technologies, such as 3D printers and Arduino microcontrollers. This is a great opportunity to become familiar with the university labs at the Faculty of Engineering and to learn more about career opportunities in engineering.

For more information, visit engineering.uOttawa.ca/outreach-programs/faculty-of-engineering-secondary-school

CONTINUING YOUR STUDIES

Once you have completed your undergraduate program, you may want to consider pursuing your education at the graduate level.

The Faculty of Engineering provides its graduates with a top-quality education in engineering and computer science and offers a variety of masters and doctoral programs in various fields.

MASTERS AND/OR DOCTORATE DEGREES:

- Advanced Material Manufacturing
- Biomedical Engineering
- Chemical Engineering
- Civil Engineering
- Computer Science
- Electrical and Computer Engineering
- Environmental Engineering
- Mechanical Engineering
- Engineering Management
- E-Business Technologies
HOW TO APPLY

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

Check the academic admission requirements that apply to you.

Check application deadlines and complete any required admission tests.

Include all documents and forms needed for your application.

Track your application for admission via UOZone.

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

VISIT THE FACULTY OF ENGINEERING

We would be pleased to show you around our facilities. To schedule a visit, send us an email at genie.engineering@uOttawa.ca.

COME MEET US IN PERSON

September 28 to 30, 2018
Ontario Universities' Fair (OUF) Toronto

October 27, 2018
University of Ottawa Day

March 16, 2019
Spring Open House

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Youtube.com/FacultyofEngineering

STUDENT STORIES

MIDIA SHIKH HASSAN
Graduate (2018), Chemical Engineering

During my studies at the Faculty of Engineering, I got involved in several entrepreneurial programs on campus that further enriched my education at the University of Ottawa. Currently, I coordinate the Simon Nehme Summer Entrepreneurship School and the Difference Makers program. I was also involved with the Refugee Outreach program.

Developing an entrepreneurial mindset has allowed me to take part in the launch of several start-ups. One of the social ventures I started, thanks to the Difference Makers program, is Dextra. As part of this venture, I get to use my engineering and entrepreneurial skills to provide solutions—thanks to the resources at the Richard L'Abbé Makerspace—for war refugees who have suffered an amputation.

By accessing the resources, support and mentorship of the Faculty of Engineering, I have developed my leadership, technology, entrepreneurship and engineering skills so that I can take action on social issues within my community. As a result, I was one of three Canadian recipients of the Queen's Young Leaders Award. I travelled to London to receive a medal from Queen Elizabeth at Buckingham Palace in June 2018. The Faculty's entrepreneurial community has helped me gain valuable experience in new, innovative fields and to find solutions to important issues. Overall, my community involvement has significantly enriched my student experience.

ACCELERATED STREAM

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

- Systems Science
- And many more

For more information, visit engineering.uOttawa.ca/programs.