Welcome to our Faculty of Engineering and to the University of Ottawa! In a fast changing and interconnected world, with its significant challenges and opportunities, graduate studies have never been more important in pursuing an exciting and fulfilling career, particularly in engineering and computer science!

While attracting some of Canada’s most innovative and entrepreneurial minds, our graduate programs have gained tremendous reputation around the world: we attract some of the best students from over 154 countries. Our outstanding professors are excited to welcome and guide you with passion into a maze of technological knowledge and entrepreneurial prowess. There has never been a better time to be a graduate student in our Faculty as we offer programs that respond to the world’s rapid technological changes and to the requirements of a fast-paced job market. From robotics and photonics to telecommunication and multimedia applications, from the development of new turbine technologies to novel energy and green technologies, intelligent infrastructure and smart cities, our graduate programs have become tremendous launching pads for successful Canadian and international careers in a multitude of engineering and computer science enterprises as well as in academia.

Join us in our world-class laboratories and you will change the world!

Dr. Ioan Nistor
Vice-Dean, Graduate Studies
OTTAWA IS A GREAT PLACE WHERE...

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

WORK
- Ottawa offers access to a community of businesspeople, researchers and scholars, government officials and politicians as well as strong infrastructure support for applied research
- 1,700+ knowledge-based companies with 68,000+ employees
- 44+ national and academic research labs
- 90% of Canada’s industrial telecommunications research and development is conducted in Ottawa
- Over $4.7 billion invested in Ottawa technology companies in the last ten years

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

GROW
- #3 in quality of life for large cities in North America, 18th globally
- Ottawa is the least expensive Canadian city included in the Mercer rankings
- Population of 1.3M
  Source: mercer.com

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

MONEYSENSE MAGAZINE, 2017
OTTAWA IS AN ESTABLISHED GLOBAL TECHNOLOGY CENTRE

Boasting the highest proportion of residents with a postsecondary education in Canada, a bilingualism rate of 44%, and more engineers, scientists and PhDs per capita than any other city in the country, Ottawa is a world-class city whose highly creative and educated workforce has attracted international companies like IBM, Alcatel-Lucent, Amazon, Ericsson and Cisco, as well as a vibrant community of hundreds of startups.

“Ottawa has emerged as a global technology centre. The region is recognized for excellence in research and innovation.”
Source: Invest Ottawa

COLLABORATION AMONG DIVERSE SECTORS

Ottawa offers a community of businesspeople, researchers and scholars, bureaucrats and politicians, and strong infrastructure support for applied research.

“Its knowledge-based industries are comprised of almost 2,000 companies representing diverse sectors, including wireless, photonics, defence and security, life sciences, clean technology, digital media, and film and television production. They employ over 75,000 people across the region.”
Source: Invest Ottawa

STRONG ENTREPRENEURIAL CULTURE

“Ottawa is widely known for its proactive approach to development and business support. Several incubators and accelerators, including Invest Ottawa, operate throughout the city, designed to fortify the wealth, connectivity and entrepreneurial momentum of its business community. Canada’s largest research facility, the National Research Council, is based in Ottawa and is a pioneer with more than 50 years of support for startup and spinoff companies. Local business leaders prosper from Ottawa’s great location, making it one of the most competitive cities in North America for global trade and connectivity.”
Source: Invest Ottawa

Both the University of Ottawa (uOttawa Entrepreneurship Hub) and the Faculty of Engineering actively support and promote student entrepreneurship on and off campus. We aim to raise awareness about entrepreneurship, develop students’ entrepreneurial knowledge and skills, and connect students to the larger Ottawa-Gatineau entrepreneurial ecosystem.
THE FACULTY OF ENGINEERING AT UOTTAWA: YOUR DESTINATION OF CHOICE

THE FACULTY OF ENGINEERING AT THE UNIVERSITY OF OTTAWA PROVIDES YOU WITH A VIBRANT ENVIRONMENT TO PURSUE RESEARCH AND A STRONG FOUNDATION TO BUILD A SUCCESSFUL AND REWARDING CAREER.
GET EXCELLENT QUALITY PROGRAMS

Choose from a variety of graduate programs, master’s degrees and PhDs, all offering top-quality education in engineering and computer science.

STUDY IN A VIBRANT RESEARCH ENVIRONMENT

The Faculty of Engineering offers a vibrant research environment where the traditional disciplines of mechanical, civil, chemical, electrical, computer and software engineering, and computer science come together in a unique synergy. The Faculty has over 120 researchers and over 1,500 graduate students working in many laboratories and groups.

LEARN FROM REPUTABLE RESEARCHERS

As an engineering or computer science graduate student, you will have access to professors who are leading researchers in their field. From photonics to web security, clean technologies to biomedical engineering, and civil to mechanical engineering, our professors are making world-changing discoveries — and you can be part of these extraordinary advancements!

TAKE ADVANTAGE OF EXCELLENT FACILITIES

In our two main buildings, Colonel By and SITE, students have access to a large number of teaching laboratory facilities and equipment, as well as computer labs. Research laboratories and graduate student space make up 44% of the Faculty’s surface area; teaching laboratories make up 32%.

The Advanced Research Complex (ARC), a powerhouse of photonics and geoscience expertise and facilities, brings together researchers, students and partners to foster greater scientific exchange.

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.

CREATING NEW GENERATIONS OF ELECTRONIC COMPONENTS USING CARBON-BASED SEMICONDUCTORS

Showing advantages over silicon-based semiconductors used in conventional electronics, organic electronic technology is increasing in demand. This technology uses carbon-based semiconductors such as polymers or small molecule semiconductors to fulfill a range of functions. To create this highly efficient material, Benoit Lessard and his team of researchers modify the microstructure of the final polymer by substituting the constituent monomer or by adding a second or even a third monomer into the mixture. This process can result in, for example, photovoltaics, which use organic electronics to convert sunlight into electricity. Photovoltaics can be manufactured with conventional printing processes, resulting in a flexible and inexpensive material. This could result in many applications, such as roll-up solar panels and carbon-neutral buildings, where semi-transparent photovoltaics could be used as curtains, reducing any light coming in while providing solar energy. Organic electronic sensors can also be used as biosensors, interacting with different biological systems to detect diseases in Third World countries.

Photo: davidtaylorphotostudio.com
CHOOSE FROM A VARIETY OF RESEARCH AREAS
The University of Ottawa is currently one of the top 10 research-intensive universities in Canada, and the Faculty of Engineering contributes to this ranking by leading research in over 35 areas. See the full list of research areas at:

engineering.uOttawa.ca/research-and-partnerships

BENEFIT FROM COLLABORATIONS WITH MANY INDUSTRY PARTNERS
The Faculty has strong connections with local industries, resulting in a dynamic environment of collaboration as well as practical impact and applications.

RECEIVE FINANCIAL SUPPORT AND FUNDING OPPORTUNITIES
As a graduate student at the Faculty of Engineering, you have access to a variety of scholarships, such as admission scholarships, excellence scholarships and many external scholarships (NSERC, OGS, Vanier, Banting, etc.) You may also obtain funding through research and teaching assistantships offered by the Faculty. These outstanding opportunities will enable you to acquire one-of-a-kind work and teaching experience, while providing you with additional ways of funding your graduate studies.

LIVE IN A MULTICULTURAL STUDENT AND STAFF COMMUNITY
Enrich your learning experience by meeting students from all around the world. International students make up 60% of the Faculty’s graduate students. Learn from and interact with professors who have extensive international experience: professors of the Faculty of Engineering have lived, studied or conducted research in a combined total of over 35 different countries.

WE WANT TO SEE YOU SUCCEED!
Take the opportunity to meet and talk with graduate student-mentors and address the concerns you may have during the course of your studies at the Graduate Student Mentoring Centre.

The mentoring centre can help you to:
- Identify and clarify your personal and professional goals
- Face challenges with greater ease and confidence
- Get back on track when distracted
- Develop strategies and action plans that yield results
- Stay motivated and committed until graduation

Discover the Mentoring Centre at:
sass.uOttawa.ca/mentoring/graduate
PREPARE FOR THE JOB MARKET WITH THE ALTITUDE PROGRAM

The Altitude program was designed to enhance the learning experience of graduate students and postdoctoral fellows, preparing them for the workforce and the professional academic world. Altitude offers a variety of events and workshops which help hone particular skill sets, such as communication, teaching, and writing. These free workshops allow you to not only improve your academic success, but also to gain an extensive understanding of the job market. Altitude takes learning beyond the classroom, bringing the graduate experience to greater heights.

Expand your horizons: altitude.uOttawa.ca

BUILD YOUR ENTREPRENEURIAL SPIRIT!

Graduate students can learn the ABCs of entrepreneurship through targeted graduate coursework and by enrolling in the Master of Engineering Management, a program that prepares engineering professionals for leadership roles and entrepreneurial responsibilities.

STUDENT COMPETITIONS

To build their entrepreneurial spirit, students can tap into plenty of opportunities, such as entering the annual Prizes in Entrepreneurship and Innovation student competitions, with $45,000 in awards up for grabs. Watch what winners from past years had to say at: youtube.com/FacultyofEngineering

GET INSIGHT FROM PROFESSIONALS

Through the Entrepreneurship Bridges lecture Series offered by the Faculty of Engineering and the Telfer School of Management, students receive insight from successful technological entrepreneurs. In addition, students can also take part in a variety of events such as panels, lunch and learns and elevator pitch competitions, offered by the Entrepreneurship Hub during uOttawa Entrepreneurship Week.

DEVELOP THE PROFESSIONAL SKILLS YOU NEED TO MAXIMIZE YOUR CAREER OPPORT

MyGradSkills.ca is a professional skills training portal for graduate students featuring free self-paced online module developed by the Ontario Consortium for Graduate Professional Skills.

Choose from 18 graduate professional development modules that develop skills in areas such as:

• Academic and professional communication
• CV/resume development and job search
• Entrepreneurship and venture creation
• Mentoring and people management
• Teaching and learning

To learn more, visit: MyGradSkills.ca

GET INSIGHT FROM PROFESSIONALS

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RESEARCH AT THE FACULTY

NURTURING START-UPS IN THE SOLAR ENERGY SECTOR

The University of Ottawa’s SUNLAB, one of Canada’s leading solar energy research labs, is spinning off technology and talent to fuel the future of solar energy companies in Canada and beyond. Founded in 2007, by professor and Canada Research Chair Karin Hinzer, the lab has served over 85 alumni, 3 of which founded the solar start-up Spectrafy.

SUNLAB provided the trio with world-class equipment to develop and test their prototype SolarSIM (Solar Spectral Irradiance Meter). Developed in 2014 as a Master’s project, the prototype has since evolved into a compact product replacing the work of seven solar and atmospheric sensors. It is now sold to solar energy companies and national research labs around the world, enabling users to measure the solar spectrum and total radiant energy, while simultaneously gauging atmospheric levels of ozone, water and aerosols for a fraction of the cost of previously used methods.
FOCUS ON ENTREPRENEURSHIP

At the University of Ottawa’s Faculty of Engineering, entrepreneurial savvy goes hand-in-hand with engineering and computer science expertise. The Faculty supports entrepreneurial initiatives that foster an entrepreneurial culture and enable graduate students to develop essential business skills in their field of expertise.
Pushing the Boundaries of Metallic 3D Printing

Through the use of a novel technology called Cold Spray, PhD candidates Aleksandra Nastic and Daniel MacDonald are helping to push the boundaries of metallic 3D printing. This process, part of the thermal spray family, has primarily been developed as a metallic coating technology, but recent advancements have pushed the process into bulk material deposition for repair and additive manufacturing applications, specifically in the aerospace sector. The process is unique to thermal spray methods as the particles are never melted or exposed to an oxidative environment. In Cold Spray, inert gas is accelerated through a De Laval nozzle to supersonic velocities, in which metallic particles are injected and propelled towards a substrate. The focus of Daniel and Aleksandra is in exploring the mechanism of adhesion between these particles in order to further develop the technology.

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

Uottawa Richard L’Abbé Makerspace

Invent, build and play at the uOttawa Richard L’Abbé Makerspace. It’s equipped with 3D printers, Arduino, 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.

Facilities Just For You
BRUNSFIELD GROUP STUDENT ENGINEERING PROJECT AND ENTREPRENEURSHIP CENTRE

The Brunsfeld 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.

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 Brunsfeld Centre, which is also open to students.
Biofilms are everywhere around us. This cluster of micro-organisms covers the rocks in our rivers and lakes, attaching itself to grains of soil in the subsurface. Biofilms also live in Antarctic ice, grow around thermal vents deep in the ocean and are prevalent inside the human body. Professor Robert Delatolla’s research group is exploring methods to design and optimize systems, harnessing the power of biofilms to remove pollutants from our waters. His research group is currently studying an innovative hybrid biofilm technology, which operates as a full-scale testing cell at the Cornwall wastewater treatment plant, to improve our existing methods of municipal wastewater treatment. His group also studies the use of biofilms to remove ammonia in very cold Canadian waters as well as how to harness biofilms to treat wastewater generated by local industries such as Beau’s All Natural brewery.
SCHOLARSHIPS AND FUNDING

INTERNAL SCHOLARSHIPS

The following scholarships are offered through the Office of Graduate and Postdoctoral Studies. For more information, visit:

uOttawa.ca/graduate-studies/students/awards

<table>
<thead>
<tr>
<th>SCHOLARSHIP NAME</th>
<th>LEVEL</th>
<th>VALUE</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission Scholarships</td>
<td>Master’s with thesis</td>
<td>$7,500 from GPS + $7,500 or more from Faculty of Engineering; minimum of $15,000 per year</td>
<td>2 Years</td>
</tr>
<tr>
<td>(Available to Canadian citizens and permanent residents of Canada.)</td>
<td>PhD</td>
<td>$9,000 from GPS + $9,000 or more from Faculty of Engineering; minimum of $18,000 per year</td>
<td>4 Years</td>
</tr>
<tr>
<td>Excellence Scholarships</td>
<td>Awarded to recipients of major external awards in lieu of the Admission Scholarship</td>
<td>Amount equivalent to tuition fees. Replaces Admission Scholarship. Recipients are not guaranteed matching funds by the Faculty of Engineering</td>
<td>Awarded for each year that the student holds the external award</td>
</tr>
<tr>
<td>(Available to both Canadian and international students.)</td>
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</tbody>
</table>

These internal scholarships are offered through the Office of Graduate and Postdoctoral Studies.

INTERNATIONAL STUDENTS

The Faculty of Engineering awards international scholarships to excellent international students, who must qualify in accordance with the criteria set forth by the Office of Graduate and Postdoctoral Studies. No application is required; all eligible international students will be considered and notified.
### EXTERNAL SCHOLARSHIPS

Only a few external scholarships are listed here. Consult our resources for external scholarship applications for tools to help you complete all of your applications effectively at:

[uOttawa.ca/graduate-studies/students/awards](uOttawa.ca/graduate-studies/students/awards)

<table>
<thead>
<tr>
<th>AGENCIES</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Queen Elizabeth II graduate scholarships in science and technology (QEII — GSST)</strong></td>
<td>The Queen Elizabeth II graduate scholarships in science and technology were created to encourage and support the best students involved in science and technology research. <strong>Valued at $15,000 per year ($5,000 per session) and available to Canadian students.</strong></td>
</tr>
<tr>
<td><strong>Vanier Canada Graduate Scholarships</strong></td>
<td>The Vanier Canada Graduate Scholarship (Vanier CGS) was created to attract and retain world-class doctoral students and to establish Canada as a global centre of excellence in research and higher learning. <strong>Valued at $50,000 per year for three years and available to both Canadian and international PhD students studying at Canadian universities.</strong></td>
</tr>
</tbody>
</table>
| **Natural Sciences and Engineering Research Council (NSERC)** | The NSERC Postgraduate Scholarships (PGS) Program provides financial support to high-calibre students in master’s or doctoral programs in the natural sciences or engineering. This support allows students to fully concentrate on their studies and to seek out the best research mentors in their chosen fields. **Value:**  
  CGS M: $17,500 (for one year)  
  PGS M: $17,300 (for one year)  
  CGS D: $35,000 per year (for two or three years)  
  PGS D: $21,000 per year (for two or three years)  
  Available to Canadian citizens and permanent residents of Canada. |
| **Ontario Graduate Scholarship** | The Ontario Graduate Scholarship (OGS) program encourages excellence in graduate studies at the master’s and doctoral levels. It is a merit-based scholarship. Awards are available to students in all disciplines of academic study. An Ontario Graduate Scholarship is awarded for one academic year, which may consist of two or three consecutive sessions. **Valued at $5,000 per session up to a maximum of $15,000 and available to both Canadian and international students.** |
| **Ontario Trillium Scholarships** | The Ontario Trillium Scholarships (OTS) program helps the best doctoral students from around the world to study in Ontario. Ontario universities are responsible for selecting and awarding the OTS to international PhD students based on merit and program criteria. **Valued at $40,000 annually and is renewable for a maximum of four years.** |

### WHAT’S YOUR SCHOLARSHIP POTENTIAL?

Find out what funding you may be eligible for based on your program of interest. Try the easy-to-use Potential Scholarship Portfolio tool at:

[uOttawa.ca/graduate-studies/students/awards/portfolio](uOttawa.ca/graduate-studies/students/awards/portfolio)
At the Faculty of Engineering, you may choose to pursue your studies at the graduate level by completing a master’s with thesis, a master’s with project, a master’s by course work or even a PhD.
## Types of Programs

<table>
<thead>
<tr>
<th>Program and Description</th>
<th>Duration</th>
<th>Funding From University</th>
<th>Structure</th>
</tr>
</thead>
</table>
| Master's with Thesis  | 2 Years* | Funding possible for 2 years *** | Year 1: courses and research preparation  
Year 2: research and thesis writing |
| Master's with Project | 1 to 2 Years | Only external funding available | Coursework for the duration with a project enrolled for at least a session |
| Master's by Coursework | 1 to 2 Years | Only external funding available | Coursework for the duration |
| PhD                    | 4 Years** | Funding possible for 4 years *** | Typical structure:  
Years 1 and 2: coursework, comprehensive exam, thesis proposal  
Years 3 and 4: research and thesis writing |

* Expected duration of program is 6 full-time terms, or 24 consecutive months of enrolment.

** Expected duration of program is 16 full-time terms, or 64 consecutive months of enrolment.

*** Funding is based on specific academic standards that must be met by the student. See the Scholarships and Funding section for more details.

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### Important Information on Our Programs:

All courses in the graduate programs are offered in English only.

Research activities can be conducted in English, French or both, depending on the language used by the professor and the members of his or her research group. In accordance with University of Ottawa regulation, students have the right to answer examination questions and produce their work and thesis in French or in English.
# Our Programs

Here are the degrees offered by the Faculty of Engineering

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Master's with Thesis (MASc, MCS, MSc)</th>
<th>Master's with Project (MCS, MEBT, MEng, MSysSc)</th>
<th>Master's by Coursework (MEng, MSysSc)</th>
<th>Doctorate (PhD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Materials and Manufacturing</td>
<td>MASc</td>
<td>MEng</td>
<td>MEng</td>
<td>PhD</td>
</tr>
<tr>
<td>Biomedical Engineering</td>
<td>MASc</td>
<td>MEng</td>
<td>MEng</td>
<td>PhD</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>MASc</td>
<td>MEng</td>
<td>MEng</td>
<td>PhD</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>MASc</td>
<td>MEng</td>
<td>MEng</td>
<td>PhD</td>
</tr>
<tr>
<td>Computer Science</td>
<td>MCS</td>
<td>MCS</td>
<td></td>
<td>PhD</td>
</tr>
<tr>
<td>E-Business</td>
<td></td>
<td></td>
<td></td>
<td>PhD</td>
</tr>
<tr>
<td>E-Business Technologies</td>
<td>MSc</td>
<td>MEBT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical and Computer Engineering</td>
<td>MASc</td>
<td>MEng</td>
<td>MEng</td>
<td>PhD</td>
</tr>
<tr>
<td>Engineering Management</td>
<td></td>
<td></td>
<td>MEng</td>
<td></td>
</tr>
<tr>
<td>Environmental Engineering</td>
<td>MASc</td>
<td>MEng</td>
<td>MEng</td>
<td>PhD</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>MASc</td>
<td>MEng</td>
<td>MEng</td>
<td>PhD</td>
</tr>
<tr>
<td>Systems Science</td>
<td>MSc</td>
<td>MSysSc</td>
<td>MSysSc</td>
<td></td>
</tr>
</tbody>
</table>
Advanced Materials and Manufacturing

With a primary focus on materials, the program enables graduates to meet manufacturing challenges related to a broad range of mechanical, armour, energy, aeronautical, naval, thermal and biomedical systems and devices. This broad-based area of engineering holds career opportunities in almost every industrial sector, including high tech, aerospace, automotive, defence, energy, biomedical and consulting. The program provides state-of-the-art education and cutting-edge research in materials, manufacturing processes, coatings, characterization and testing. The master’s program includes a CO-OP option, which provides two consecutive terms of valuable industry experience.

Graduate programs offered:
- Master of Applied Science in Advanced Materials and Manufacturing (MASc)
- Master of Engineering in Advanced Materials and Manufacturing (MEng)
- Doctorate of Philosophy in Advanced Materials and Manufacturing (PhD)

Research interests:
- Thermal and fluid engineering
- Solid mechanics and design
- Materials and manufacturing
- Controls and robotics
- Biomedical engineering
- Aeronautical and space engineering

Biomedical Engineering

The Ottawa–Carleton Institute for Biomedical Engineering (OCIBME) is a multi-disciplinary institute that combines resources from seven participating academic units at the University of Ottawa and Carleton University, including:

University of Ottawa
- Department of Mechanical Engineering
- School of Electrical Engineering and Computer Science
- Department of Chemical and Biological Engineering

Carleton University
- Department of Systems and Computer Engineering
- Department of Mechanical and Aerospace Engineering
- School of Computer Science
- Department of Physics

The Institute draws on the expertise of its two participating medical research units, the University of Ottawa Heart Institute (UOHI) and the University of Ottawa Eye Institute. It also relies on the expertise of a number of prominent researchers from associated academic units in both universities, medical professionals and well-established medical research institutions. The OCIBME offers a multi-disciplinary graduate program and four main research fields—medical instrumentation, biomedical image processing, biomechanics and biomaterials and medical informatics and telemedicine.

The OCIBME has close ties with local Ottawa hospitals, including The Ottawa Hospital, which provides unique opportunities for graduate students. As a leading academic health sciences centre in Canada, The Ottawa Hospital is one of the largest teaching hospitals in Canada, with specialty centres for cancer, heart, kidney and vision care and in rehabilitation services.

Graduate programs offered:
- Master of Applied Science in Biomedical Engineering (MASc)
- Master of Engineering in Biomedical Engineering (MEng)
- Doctorate in Philosophy in Biomedical Engineering (PhD)

Research interests:
- Medical instrumentation
- Biomedical image processing
- Biomechanics and biomaterials
- Medical informatics and telemedicine

For admission requirements and more details, visit engineering.uOttawa.ca/programs
For information about research areas, visit engineering.uOttawa.ca/research-and-partnerships
CHEMICAL ENGINEERING

The main objective of the master’s programs from the Department of Chemical and Biological Engineering is to refine the skills and research expertise of the students by expanding their specialized knowledge of chemical engineering, primarily through coursework, research seminars and technical training.

The PhD program prepares candidates for a career in teaching, research or development. Graduates are expected to have acquired independence in conducting research, preparing scholarly publications and promoting chemical engineering.

Graduate programs offered:
- Master of Applied Science in Chemical Engineering (MASc)
- Master of Engineering in Chemical Engineering (MEng)
- Doctorate of Philosophy in Chemical Engineering (PhD)

Research interests:
- Materials development
- Process engineering
- Clean technologies
- Biomedical engineering

CIVIL ENGINEERING

Civil engineers have a direct impact on society through the design and construction of the nation’s infrastructure—buildings, highways, railroads, bridges, airports, dams, tunnels, pipelines, municipal services, water resource systems and more. Civil engineering is perhaps the broadest field in terms of engineering professions.

Professors and students at the Department of Civil Engineering conduct research aimed at improving the physical infrastructure of our society, with a particular focus on sustainable infrastructure, infrastructure security and water resources. State-of-the-art laboratories and other major facilities support research in six sub-disciplines: civil engineering materials, construction engineering and management, environmental engineering, geotechnical engineering, structural engineering and water resources engineering. The program’s broad scope gives its graduates a wide range of career options, not only in the technical fields of design and construction but also in management and science.

Graduate programs offered:
- Master of Applied Science in Civil Engineering (MASc)
- Master of Engineering in Civil Engineering (MEng)
- Doctorate of Philosophy in Civil Engineering (PhD)

Research interests:
- Environmental engineering
- Fire safety engineering
- Geotechnical engineering
- Structural engineering
- Transportation engineering
- Water resources engineering

For admission requirements and more details, visit engineering.uOttawa.ca/programs
For information about research areas, visit engineering.uOttawa.ca/research-and-partnerships
COMPUTER SCIENCE

Students who wish to pursue graduate studies in computer science can do so in joint programs offered by the University of Ottawa’s School of Electrical Engineering and Computer Science (EECS) and Carleton’s School of Computer Science (SCS) under the auspices of the Ottawa–Carleton Institute for Computer Science (OCICS). The Institute is responsible for supervising these programs and for providing a framework for interaction between both schools in the graduate computer science programs.

Research facilities are located on both campuses. Students have access to the professors, courses and facilities of both universities; however, they must enrol at the university of their thesis supervisor. The master’s program offers a CO-OP option, which provides two consecutive terms of valuable industry experience.

Research areas include algorithms, distributed computing, information management and data mining, machine vision and autonomous systems, multimedia and virtual environments, privacy and security, software engineering, text analysis and machine learning, wireless networks and mobile computing.

Graduate programs offered:
- Master of Computer Science (MCS)
- Doctorate of Philosophy in Computer Science (PhD)

Research interests:
- Algorithms
- Bioinformatics
- Distributed Computing
- Information Management and Data Mining
- Machine Vision and Autonomous Systems
- Multimedia and Virtual Environments
- Privacy and Security
- Software Engineering
- Text Analysis and Machine Learning
- Wireless Networks and Mobile Computing

E-BUSINESS AND E-BUSINESS TECHNOLOGIES

The focus of these programs is the integration of information technologies with business processes and strategies within a dynamic legal and business environment. The core of e-business technologies is centred on the concept that the application of Internet and information technologies lead to remarkable new ways of conceiving and organizing businesses. This, in turn, leads to many innovative modes of management, new organizational structures and information architectures, new legislation as well as new legal and corporate strategies.

Graduate programs offered:
- Master in Electronic Business Technologies (MEBT)
- Master of Science in Electronic Business Technologies (MSc)
- Doctorate of Philosophy in Electronic Business (PhD)

Research interests:
- Electronic Business
- Electronic Technologies
- Electronic Society

For admission requirements and more details, visit engineering.uOttawa.ca/programs
For information about research areas, visit engineering.uOttawa.ca/research-and-partnerships
ELECTRICAL AND COMPUTER ENGINEERING

Delivered through the Ottawa–Carleton Institute for Electrical and Computer Engineering (OCIECE), the electrical and computer engineering programs benefit from the combined research strengths of uOttawa's School of Electrical Engineering and Computer Science (EECS) at and Carleton's electronics department and systems and computer engineering department.

The Institute represents one of the largest graduate programs in electrical engineering in Canada and has the unique advantage of being located in a region with extensive federal government and industry research laboratories. The Institute, and its members, have many links to local industry and federal government research laboratories, allowing it to provide one of the best opportunities in Canada for graduate students to connect with industry and conduct research in the area of electrical and computer engineering.

Research specialties include computer-aided design for electronic circuits, computer and software engineering, computer communications, distributed systems, microwaves and electromagnetics, integrated circuits and devices, System and machine intelligence, photonic systems, biomedical engineering, power engineering as well as multimedia, digital and wireless communications and signal, speech and image processing.

Graduate programs offered:

- Master of Applied Science in Electrical and Computer Engineering (MASc)
- Master of Engineering in Electrical and Computer Engineering (MEng)
- Doctorate of Philosophy in Electrical and Computer Engineering (PhD)

Research interests:

- Computer communications, multimedia and distributed systems
- Computer-aided design for electronic circuit
- Computer and software engineering
- Digital and wireless communications
- Microwave and electromagnetics
- Signal, speech and image processing
- Integrated circuits and devices
- Systems and machine intelligence
- Photonics systems
- Biomedical engineering

ENGINEERING MANAGEMENT

The purpose of the master’s degree in engineering management is to introduce the graduate with two or more years of engineering experience and who is interested in a career in management to the foundations of management knowledge and skills. The program is designed for engineers of all disciplines who are currently, or aspire to be, team or project leaders, section leaders or managers. These engineers recognize that management is a distinct profession and that when the necessary skills are mastered it can lead to significant improvements in the performance of an organization.

The program begins with a series of compulsory courses in engineering management, innovation, finance and accounting and continues with a series of electives. Students finish with a compulsory major consulting project (MCP). The choice of electives and MCP topic allows students to prepare for roles such as operations manager, systems manager, IT project manager, product manager and technology entrepreneur.

Graduate program offered:

- Master of Engineering in Engineering Management (MEng)

Research interests:

- Production and operations management
- Robotics and manufacturing management
- Reliability and maintainability engineering
- Human resource management
- Industrial and technology marketing
- Technical project management and control
- Research, development and innovation management
- Operation research
- Forecasting operations research

For admission requirements and more details, visit engineering.uOttawa.ca/programs
For information about research areas, visit engineering.uOttawa.ca/research-and-partnerships
MECHANICAL ENGINEERING

Mechanical engineers are responsible for a wide range of mechanical, energy, aeronautical, naval, thermal and biomedical systems and devices—from computer parts to power plants, manufacturing systems and spacecraft. This is a broad-based area of engineering with career opportunities in almost every industrial sector, including high tech, aerospace, materials, manufacturing, automotive, energy, ship building, biomedical and consulting. The program provides state-of-the-art education and cutting-edge research opportunities in all core areas of mechanical engineering, including materials, solid mechanics, design and thermofluids.

Graduate programs offered:
- Master of Applied Science in Mechanical Engineering (MASc)
- Master of Engineering in Mechanical Engineering (MEng)
- Doctorate of Philosophy in Mechanical Engineering (PhD)

Research interests:
- Biomedical engineering
- Dynamics, controls, automation and robotics
- Thermal and fluids engineering
- Materials and manufacturing engineering
- Solid mechanics and design engineering
- Aeronautical and space engineering

ENVIRONMENTAL ENGINEERING

Delivered through the Ottawa-Carleton Institute of Environmental Engineering (OCIENE), the programs benefit from the teaching and research strengths of uOttawa’s Department of Civil Engineering and Department of Chemical Engineering and Carleton’s Department of Civil and Environmental Engineering.

Research areas include air pollution, water resources management, groundwater management, contaminant transport, pollution prevention, water and wastewater treatment, environmental impact assessment and management of solid, hazardous and radioactive waste.

The objective of these programs is to prepare graduates for careers in engineering, teaching and in research in the private and public sectors. Students benefit from gaining knowledge in applied concepts of environmental engineering and acquire independence in conducting research and preparing scholarly publications.

Graduate programs offered:
- Master of Applied Science in Environmental Engineering (MASc)
- Master of Engineering in Environmental Engineering (MEng)
- Doctorate of Philosophy in Environmental Engineering (PhD)

For admission requirements and more details, visit engineering.uOttawa.ca/programs
For information about research areas, visit engineering.uOttawa.ca/research-and-partnerships
The graduate program in system science is an interdisciplinary program drawing on contributions from the School of Electrical Engineering and Computer Science, Department of Economics, Telfer School of Management and Department of Mathematics and Statistics. The program offers numerous opportunities to study complex systems in nature, society and science itself, aiming to develop interdisciplinary foundations that are applicable in a variety of areas, such as engineering, business and the social sciences. It provides students with the skills and knowledge required to understand, control, predict and optimize behaviour in a variety of fields, from engineering and computer science to management and applied economics. The program’s broad scope offers its graduates a wide range of career options, not only in the technical fields but also in management and science.

Graduate programs offered:
- Master of System Science (MSysSc)
- Master of Science in Systems Science (MSc)

Research interests:
- Operations research
- Deterministic and probabilistic modelling
- Optimization
- Computer science
- Information systems
- Control
- Economic modelling

For admission requirements and more details, visit engineering.uOttawa.ca/programs
For information about research areas, visit engineering.uOttawa.ca/research-and-partnerships
WHY CHOOSE GRADUATE STUDIES?

Here is what some of our alumni have to say about their choice to pursue graduate studies at the Faculty of Engineering.
ALUMNI STORIES

ALEXANDRA BISSINGER
MEng, Civil Engineering
Engineering Officer, Real Property Operations Unit at Department of National Defence

“I chose to pursue graduate studies at the University of Ottawa as I knew it would give me an edge and the added value of being an expert in a specific field of civil engineering. Most of my master’s courses were related to coastal engineering, which has allowed me to now be involved in exciting work, specifically coastal construction projects. Some of my tasks include managing dredging contracts, reviewing rock armour wall design, coordinating construction projects and inspecting shoreline erosion protection contract sites. My graduate program allowed me to develop all the tools required to grow in my position and ultimately move up within the organization. As a result, I’ve become more confident working in a team environment and improved my public speaking skills—both invaluable assets in this industry.”

AALI ALIZADEH
PhD, Civil Engineering
Co-founder, Giatec Scientific
Adjunct Professor, University of Ottawa

“I came to Canada from Iran as an international student. What attracted me to pursuing my doctoral studies at the Faculty of Engineering was the world-famous researchers in the civil engineering department, which offered an excellent cross-institute program with various opportunities for multidisciplinary projects. This was pivotal in my career development as I had a unique opportunity to develop deep critical thinking and problem-solving skills. As the engineers of the future, you need to leverage this open environment that allows the exchange of ideas and different opinions and challenge yourselves to grow and become well-equipped to solve the problems of today’s world. In this country, this city and this university, there are no boundaries to excelling, except those that you create for yourself!”

PATRICK DUMOND
PhD, Mechanical Engineering
Assistant Professor, University of Ottawa

“Looking back, I never would have imagined that I’d end up being a professor. But when you realize that you are passionate about something, pursuing graduate studies is a great way to explore that topic in detail without much else getting in the way. I enjoyed it so much that I kept studying until I became a professor. I’ve always enjoyed sharing my knowledge, trying new things and pushing my limits. I have an entrepreneurial spirit. Being a professor is great because it’s like running your own little business because you’re in charge. But you have all the support and resources of a large organization. Not to mention that the schedule is flexible! Every day, you get to do something different and overcome new challenges while being surrounded by highly motivated people trying to make a difference in the world.”

Photo: davidtaylorphotostudio.com
HOW TO APPLY

APPLY NOW TO A MASTER’S OR PHD PROGRAM AT THE FACULTY OF ENGINEERING.

First off, you should verify that you meet the admission requirements. To do so, consult the program-specific requirements on the Graduate and Postdoctoral Studies website: uOttawa.ca/graduate-studies
STEP 1: SELECT THE PROGRAM AND DETERMINE YOUR ELIGIBILITY
• Check the program-specific requirements tool

STEP 2: DETERMINE THE DEADLINES FOR SUBMITTING AN APPLICATION
• Deadlines vary for residents of Canada and international students
• Deadlines also vary for Fall or Winter Admission preference

STEP 3: GATHER ALL REQUIRED DOCUMENTS BEFORE SENDING YOUR APPLICATION
• Be prepared to upload all documents electronically
• All Program specific documents can be found in the above web site.
• Only if admitted will you be asked to submit official and original sealed documents (such as transcripts or diplomas)

STEP 4: APPLY NOW
• Create a profile on the OUAC Web portal

STEP 5: CHECK YOUR APPLICATION STATUS
• Once you apply the University will provide you with a uOZone account by email invitation to login
• With uOZone you can see what documents are required and send them to us electronically

• For permanent residents: If you are a permanent resident of Canada, you must enclose evidence of your valid permanent resident status.
• For international students: Please consult our admission equivalencies to find out which diploma is required to apply to a master's degree or a PhD at grad.uOttawa.ca
  You might also need a study permit or a temporary resident visa; to verify this, please visit the University’s International Office website: international.uOttawa.ca/en

Please note that the information included in this document may change at any time. Refer to grad.uOttawa.ca for all the latest information.

GET YOUR PERSONALIZED CAMPUS VISIT!
The Office of Graduate and Postdoctoral Studies can arrange a personalized visit of the campus for you and answer your questions one-on-one. Your visit could include meetings with representatives or professors from the Faculty of Engineering.
To book a visit, go to: uOttawa.ca/graduate-studies/programs-admission/plan-visit

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