MASTER OF APPLIED SCIENCE ELECTRICAL AND COMPUTER ENGINEERING AND CONCENTRATION APPLIED ARTIFICIAL INTELLIGENCE

Overview

Summary

- Degree offered: Master of Applied Science (MASc)
- Registration status options: Full-time; Part-time
- Language of instruction: English
- Program option (expected duration of the program):
  - within two years of full-time study
- Academic units: Faculty of Engineering (http://engineering.uottawa.ca/), School of Electrical and Computer Science (http://engineering.uottawa.ca/eecs/)

Program Description

This program satisfies the requirements of the general Masters of Applied Science Electrical and Computer Engineering Program, but provides a concentration in Applied Artificial Intelligence by taking a minimum of 12 units of courses in the area. As electrical and computer engineers develop new generation systems, devices, applications and networks, it is critical to understand how to effectively, safely and responsibly leverage artificial intelligence theory and methodologies so to integrate them with system design and development. Core courses focus on Applied Machine Learning and Ethics for Design, AI, and Robotics. Furthermore, the students are able to specialize in option courses on deep learning, reinforcement learning, uncertainty, intelligence-enabled communications, autonomous, networked and multi-agent systems, adaptive signal processing, robotics, vision. and smart cities. Graduates of this concentration are equipped with the knowledge and skills to combine theory, research and practice in artificial intelligence to enable filling a wide range of career vacancies in industry, government and academia.

Learn more about this program (https://www.uottawa.ca/faculty-engineering/graduate-studies/programs/electrical-computer-engineering/)

Main Areas of Research

- Computer communications, multimedia and distributed systems
- Computer-aided design for electronic circuits
- Computer and software engineering
- Wired-Wireless communications/networks
- Microwave and electromagnetics
- Signal, speech and image processing
- Integrated circuits and devices
- Machine Learning
- Photonics systems
- Biomedical engineering
- Robotics and autonomous systems
- Cybersecurity

Other Programs Offered Within the Same Discipline or in a Related Area

- Master of Applied Science Electrical and Computer Engineering (MASc)
- Master of Applied Science Electrical and Computer Engineering Specialization in Science, Society and Policy (MASc)
- Master of Engineering Electrical and Computer Engineering (MEng)
- Master of Engineering Electrical and Computer Engineering and Concentration Applied Artificial Intelligence (MEng)
- Doctorate in Philosophy Electrical and Computer Engineering (PhD)

Fees and Funding

- Program fees

  The estimated amount for university fees (https://www.uottawa.ca/study/fees-financial-support/university-fees/) associated with this program are available under the section Finance your studies (https://www.uottawa.ca/study/graduate-studies/funding-financing/).

  International students enrolled in a French-language program of study may be eligible for a differential tuition fee exemption (https://www.uottawa.ca/study/fees-financial-support/differential-tuition-fee-exemption-scholarship/).

- To learn about possibilities for financing your graduate studies, consult the Awards and financial support (https://www.uottawa.ca/study/graduate-studies/awards-financial-support/) section.

Notes

- Programs are governed by the academic regulations (https://www.uottawa.ca/about-us/leadership-governance/policies-regulations/) in effect for graduate studies at the University of Ottawa.
- In accordance with the University of Ottawa regulation, students have the right to complete their assignments, examinations, research papers, and theses in French or in English.
- Research activities can be conducted either in English, French or both, depending on the language used by the professor and the members of his or her research group.

Program Contact Information

Graduate Studies Office, Faculty of Engineering (https://engineering.uottawa.ca/graduate-studies-office/)
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800 King Edward Ave.
Ottawa ON Canada
K1N 6N5

Tel.: 613-562-5347
Fax.: 613-562-5129
Email: engineering.grad@uottawa.ca

Twitter | Faculty of Engineering (https://twitter.com/uOttawaGenie/?lang=en)

Facebook | Faculty of Engineer (https://www.facebook.com/uottawa.engineering/)

Admissions Requirements

For the most accurate and up to date information on application deadlines, language tests and other admission requirements, please visit the specific requirements (https://www.uottawa.ca/graduate-studies/programs-admission/apply/specific-requirements/) webpage.

To be eligible, candidates must:

- Have a Bachelor's degree with a specialization or a major (or equivalent) in electrical and computer engineering (or equivalent) with a minimum admission average of 75% (B+).

  Note: International candidates must check the admission equivalencies (https://www.uottawa.ca/study/graduate-studies/international-equivalencies/) for the diploma they received in their country of origin.

- Demonstrate a good academic performance in previous studies as shown by official transcripts, research reports, abstracts or any other documents demonstrating research skills.
- Identify at least one professor who is willing to supervise your research and thesis.
  - We recommend that you contact potential thesis supervisors as soon as possible.
  - To enroll, you need to have been accepted by a thesis supervisor.
  - The supervisor's name is required at the time of application.

Language Requirements

Courses are delivered in English as the international language for advanced technology in engineering. However, the program will provide an appropriately supportive environment for francophone students to develop professional competence in technical English at their own pace. Students have the right, as stipulated in the University's bilingualism regulations (Academic Regulations I-2), to complete all their work, including their thesis, in the official language of their choice (French or English). There are fully bilingual professors and advisors who can support students in French.

Applicants whose first language is neither French nor English must provide proof of proficiency in the language of instruction.

Note:

- Candidates are responsible for any fees associated with the language tests.
- Test scores cannot be more than two-years-old as of September 1 of the year of potential entry into the program.

Notes

- The admission requirements listed above are minimum requirements and do not guarantee admission to the program.
- Admissions are governed by the academic regulations (https://www.uottawa.ca/about-us/leadership-governance/policies-regulations/) in effect for graduate studies.

Program Requirements

Requirements for this program have been modified. Please consult the 2021-2022 calendars (http://catalogue.uottawa.ca/en/archives/) for the previous requirements.

Master's with Collaborative Specialization

Compulsory Courses		
ELG 5255	Applied Machine Learning	3 Units
ELG 5295	Ethics for Design, AI, and Robotics	3 Units
3 optional course units from the list of optional courses in Applications		3 Units
3 optional course units from the list of optional courses in Foundations or the list of optional courses in Applications		3 Units
3 optional course units in Electrical Engineering (ELG) at the graduate level		3 Units
Thesis:		
THM 7999	Master's Thesis [1]	

Note(s)

[1] Students are responsible for ensuring they have met all of the thesis requirements (https://www.uottawa.ca/study/graduate-studies/thesis/). The thesis must be based on original research carried out under the direct supervision of a research faculty member in the Department.

List of Optional Courses in Applications:		
ELG 5121	Multimedia Communications	3 Units
ELG 5142	Ubiquitous Sensing for Smart Cities	3 Units
ELG 5143	AI-Enabled Wireless Networks	3 Units
ELG 5163	Machine Vision	3 Units
ELG 5218	Uncertainty Evaluation in Engineering Measurements and Machine Learning	3 Units
ELG 5228	Mobile Robotics	3 Units
ELG 5271	Topics in Applied Artificial Intelligence	3 Units
List of Optional Courses in Foundations:		
ELG 5131	Graphical Models	3 Units
ELG 5161	Robotics: Control, Sensing and Intelligence	3 Units
ELG 5170	Information Theory	3 Units
ELG 5214	Deep Learning and Reinforcement Learning	3 Units
ELG 5377	Adaptive Signal Processing	3 Units
ELG 5386	Neural Networks and Fuzzy Systems	3 Units

Minimum Requirements

The passing grade in all courses is B.

Fast-Track from Master's to PhD

Students enrolled in the master's program in electrical and computer engineering at the University of Ottawa may be eligible to fast-track directly into the doctoral program without writing a master's thesis. For additional information, please consult the "Admission Requirements" section of the PhD program.

Research

Research at the University of Ottawa

Located in the heart of Canada's capital, a few steps away from Parliament Hill, the University of Ottawa ranks among Canada's top 10 research universities. Our research is founded on excellence, relevance and impact and is conducted in a spirit of equity, diversity and inclusion.

Our research community thrives in four strategic areas:

- Creating a sustainable environment
- Advancing just societies
- Shaping the digital world
- Enabling lifelong health and wellness

From advancing healthcare solutions to tackling global challenges like climate change, the University of Ottawa's researchers are at the forefront of innovation, making significant contributions to society and beyond.

Research at the Faculty of Engineering

Areas of research:

- Chemical and Biological Engineering
- Civil Engineering
- Electrical Engineering and Computer Science
- Mechanical Engineering

For more information, refer to the list of faculty members and their research fields on **Uniweb**.

IMPORTANT: Candidates and students looking for professors to supervise their thesis or research project can also consult the website of the faculty or department (https://www.uottawa.ca/study/graduate-studies/academic-unit-contact-information/) of their program of choice. Uniweb does not list all professors authorized to supervise research projects at the University of Ottawa.