GRADUATE DIPLOMA MOBILE DEVICE APPLICATIONS

Summary
• Degree offered: Graduate Diploma
• Registration status options: Full-time; Part-time
• Language of instruction:
  • English
  • French

Note: The program is offered mostly in English with courses in French when enrollments warrant it.

• Program option (expected duration of the program):
  • with coursework (3 full-time terms; 12 consecutive months)
• Academic units: Faculty of Engineering (http://engineering.uottawa.ca), School of Electrical Engineering and Computer Science (http://engineering.uottawa.ca/eecs).

Other Programs Offered Within the Same Discipline or in a Related Area
• Master of Computer Science (MCS)
• Master of Computer Science Specialization in Bioinformatics (MCS)
• Doctorate in Philosophy Computer Science (PhD)
• Graduate Diploma Modelling and Animation for Computer Games Technology (Diploma)

Fees and Funding
• Program fees:
  
  The estimated amount for university fees (https://www.uottawa.ca/university-fees) associated with this program are available under the section Finance your studies (http://www.uottawa.ca/graduate-studies/programs-admission/finance-studies).

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

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

Notes
• Programs are governed by the general regulations (http://www.uottawa.ca/graduate-studies/students/general-regulations) in effect for graduate studies.
• 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.

Program Contact Information
Graduate Studies Office, Faculty of Engineering (http://engineering.uottawa.ca/about/programs/graduate)
161 Louis-Pasteur, Colonel By Hall, Room B111
Ottawa, Ontario, Canada
K1N 6N5
Tel.: 613-562-5347
Email: engineering.grad@uottawa.ca

Twitter | Faculty of Engineering (https://twitter.com/uOttawaGenie?lang=en)
Facebook | Faculty of Engineering (https://www.facebook.com/uottawa.engineering)

Admission 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 four-year Bachelor’s degree with honours (or equivalent), with a minimum average of B (70%) in one of the following:
  • Electrical Engineering
  • Computer Engineering
  • Software Engineering
  • Computer Science

Notes:
• International candidates must check the admission equivalencies (https://www.uottawa.ca/graduate-studies/international/study-uottawa/admission-equivalencies) for the diploma they received in their country of origin.
• The admissions committee may, however, also admit other candidates who satisfy the minimum admission requirements in effect for graduate studies and have demonstrated relevant knowledge and/or experience. In
some cases, candidates may be required to complete a maximum of three qualifying courses prior to admission, and achieve a minimum grade of B+ in each of the qualifying courses.

- Pay the $100 (CDN non-refundable) application fee.

**Language Requirements**

Applicants must be able to understand and fluently speak the language of instruction (French or English) in the program to which they are applying. Proof of linguistic proficiency may be required.

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

**Language tests recognized by the University of Ottawa:**

- TOEFL: 570 (paper-based) or 88-89 (internet-based); or
- IELTS: Overall 6.5 – Individual 6.0 (paper-based or internet-based); or
- An equivalent language test (http://www.uottawa.ca/graduate-studies/programs-admission/apply/required-documents).

Note: Documents that are not required for admission will not be consulted, conserved or returned to the student. These documents will be destroyed according to our administrative procedures.

**Information about how to apply to this program is available under the Apply Now (http://www.uottawa.ca/graduate-studies/programs-admission/apply/#apply-now) section.**

Students should complete and submit their online application with supporting documentation (if applicable) by the deadline indicated above.

**Program Requirements**

**Graduate Diploma**

Students must meet the following requirements:

**Compulsory Courses:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>CSI 5130</td>
<td>Applications Design for Mobile Devices</td>
<td>3</td>
</tr>
<tr>
<td>CSI 5905</td>
<td>Project</td>
<td>3</td>
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9 course units to be chosen from the following themes:

1. Multimedia

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>CSI 4133</td>
<td>Computer Methods in Picture Processing and Analysis</td>
<td></td>
</tr>
<tr>
<td>CSI 5140</td>
<td>Selected Topics in Computer Systems (Category S)</td>
<td></td>
</tr>
<tr>
<td>CSI 5146</td>
<td>Computer Graphics</td>
<td></td>
</tr>
<tr>
<td>ELG 5163</td>
<td>Machine Vision</td>
<td></td>
</tr>
<tr>
<td>ELG 7173</td>
<td>Topics in Signal Processing II</td>
<td></td>
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2. Networks and Communication

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>CSI 5105</td>
<td>Network Security and Cryptography</td>
<td></td>
</tr>
<tr>
<td>CSI 5169</td>
<td>Wireless Networks and Mobile Computing</td>
<td></td>
</tr>
<tr>
<td>ELG 5121</td>
<td>Multimedia Communications</td>
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</tbody>
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3. Software and Systems

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<th>Units</th>
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</thead>
<tbody>
<tr>
<td>CSI 5122</td>
<td>Software Usability</td>
<td></td>
</tr>
<tr>
<td>CSI 5380</td>
<td>Systems and Architectures for Electronic Commerce</td>
<td></td>
</tr>
</tbody>
</table>

Note(s)

| Note(s) | 1 A maximum of 6 course units may be selected in any one theme. |

**Fast-Track from the Diploma to the Master's**

On completion of the graduate diploma, students meeting admission requirements may apply to the existing master's degree in Computer Science. To do so, they must satisfy the conditions set by section A-7.1 of the regulations in effect for graduate studies regarding transfer from graduate diploma to master's.
Minimum Requirements
The passing grade in all courses is B.

A student who fails 6 units must withdraw from the program.

Research

Research Fields & Facilities
Located in the heart of Canada’s capital, a few steps away from Parliament Hill, the University of Ottawa is among Canada’s top 10 research universities.

uOttawa focuses research strengths and efforts in four Strategic Areas of Development in Research (SADRs):

- Canada and the World
- Health
- e-Society
- Molecular and Environmental Sciences

With cutting-edge research, our graduate students, researchers and educators strongly influence national and international priorities.

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/graduate-studies/students/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.

Courses

CSI 4133 Computer Methods in Picture Processing and Analysis (3 units)
Course Component: Laboratory, Lecture
Prerequisite: CSI 3105.

CSI 5105 Network Security and Cryptography (3 units)
Advanced methodologies selected from symmetric and public key cryptography, network security protocols and infrastructure, identification, anonymity, privacy technologies, secret-sharing, intrusion detection, firewalls, access control technologies, and defending network attacks. This course is equivalent to COMP 5406 at Carleton University.
Course Component: Lecture
Prerequisites: familiarity with basic concepts in networks, network security, and applied cryptography.

CSI 5122 Software Usability (3 units)
Design principles and metrics for usability. Qualitative and quantitative methods for the evaluation of software system usability: Heuristic evaluation, usability testing, usability inspections and walkthroughs, cognitive walkthroughs, formal usability experimentation. Ethical concerns when performing studies with test users. Economics of usability. Integration of usability engineering into the software engineering lifecycle. This course is equivalent to COMP 5301 at Carleton University.
Course Component: Lecture

CSI 5130 Applications Design for Mobile Devices (3 units)
Course Component: Lecture
Permission of the Department is required.

CSI 5140 Selected Topics in Computer Systems (Category S) (3 units)
Selected topics in Computer Systems (Category S), not covered by other graduate courses. Details will be available from the School at the time of registration. This course is equivalent to COMP 5900 at Carleton University.
Course Component: Lecture

CSI 5146 Computer Graphics (3 units)
Course Component: Lecture

CSI 5149 Network Security and Cryptography (3 units)
Advanced methodologies selected from symmetric and public key cryptography, network security protocols and infrastructure, identification, anonymity, privacy technologies, secret-sharing, intrusion detection, firewalls, access control technologies, and defending network attacks. This course is equivalent to COMP 5406 at Carleton University.
Course Component: Lecture
Prerequisites: familiarity with basic concepts in networks, network security, and applied cryptography.

CSI 5169 Wireless Networks and Mobile Computing (3 units)
Computational aspects and applications of design and analysis of mobile and wireless networking. Topics include Physical, Link Layer, Media Access Control, Wireless, Mobile LANs (Local Area Networks), Ad-Hoc, Sensor Networks, Power Consumption optimization, Routing, Searching, Service Discovery, Clustering, Multicasting, Localization, Mobile IP/TCP (Internet Protocol/Transmission Control Protocol), File Systems, Mobility Models, Wireless Applications. Courses CSI 5169, ELG 6168 cannot be combined for units. This course is equivalent to COMP 5402 at Carleton University.
Course Component: Lecture

CSI 5169 Wireless Networks and Mobile Computing (3 units)
Computational aspects and applications of design and analysis of mobile and wireless networking. Topics include Physical, Link Layer, Media Access Control, Wireless, Mobile LANs (Local Area Networks), Ad-Hoc, Sensor Networks, Power Consumption optimization, Routing, Searching, Service Discovery, Clustering, Multicasting, Localization, Mobile IP/TCP (Internet Protocol/Transmission Control Protocol), File Systems, Mobility Models, Wireless Applications. Courses CSI 5169, ELG 6168 cannot be combined for units. This course is equivalent to COMP 5402 at Carleton University.
Course Component: Lecture

CSI 5170 Systems and Architectures for Electronic Commerce (3 units)
E-commerce system architecture with a focus on relevant design patterns. Web servers, containers, and application frameworks. Web protocols, services, and client technologies. Scalability through load balancing, clustering, and code optimization. Internationalization, accessibility, and privacy. Data mining and sharing approaches for digital targeted advertising. E-commerce user interface design and evaluation. Current research issues. Hands-on experience with an integrated set of current e-commerce tools. E-commerce development project. Courses EBC 5380, CSI 5380 cannot be combined for units. This course is equivalent to COMP 5405 at Carleton University.
Course Component: Lecture

CSI 5905 Projet / Project (3 crédits / 3 units)
Développement d’une application pour appareils mobiles. L’étudiant identifie un projet, qui doit comprendre une importante part de logiciel s’exécutant sur l’appareil mobile et se prêter à une évaluation raisonnablement indépendante d’autres logiciels. Le projet est dirigé par un professeur approuvé par la direction du programme. Le projet est normalement complété en une session. Noté S (satisfaisant) ou NS (non satisfaisant) par le directeur du projet et un autre professeur nommé par le directeur du programme. / Development of an application for mobile devices. Students identify a project that must include a significant portion of software running on device, and should be reasonably self-contained. The project can normally be completed in one session. Graded S (Satisfactory) or NS (Not satisfactory) by the supervisor and by another professor appointed by the program director.

Volet / Course Component: Cours magistral / Lecture
Permission du Département est requise. / Permission of the Department is required.

ELG 5121 Multimedia Communications (3 units)

Course Component: Lecture

ELG 5163 Machine Vision (3 units)

Course Component: Lecture

ELG 7173 Topics in Signal Processing II (3 units)
This course is equivalent to EACJ 5601 at Carleton University.

Course Component: Lecture