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 (http://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: Candidates are responsible for any fees associated with the language tests.

Notes
• The admission requirements listed above are minimum requirements and do not guarantee admission to the program.
• Admissions are governed by the general regulations (http://www.uottawa.ca/graduate-studies/students/general-regulations) in effect for graduate studies.
• A maximum of three units in equivalencies or advanced standing may be granted. To be eligible, the units in question must not have counted towards the requirements of a previous diploma or degree. Candidates who have already successfully completed some of the compulsory units may be allowed to replace those units with elective units. For details, consult section B.2.7. of the General Regulations in effect for graduate studies.

Documents Required for Admission
In addition to the documents required (http://www.uottawa.ca/graduate-studies/programs-admission/apply/required-documents) for graduate and postdoctoral studies, candidates must submit the following documents:

• A resume
• A letter of intent
  Letter outlining your professional goals and proposed research area.
• Two confidential letters of recommendation from professors who have known the applicant and are familiar with their work. You are strongly encouraged to contact your referee(s) prior to submitting your application in order to confirm their email address and their availability to complete your letter of recommendation.
• Transcripts from all universities attended:
  • This applies to all courses and programs at any university you attended, including regular programs (completed or not), exchanges, letters of permission, online or correspondence courses, courses taken as a special student or visiting student, etc.
  • If the transcript and degree certificate are not in English or French, a certified translation (signed and stamped/sealed) must be submitted.

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</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI 5130</td>
<td>Applications Design for Mobile Devices</td>
<td>3 Units</td>
</tr>
<tr>
<td>CSI 5905</td>
<td>Project</td>
<td>3 Units</td>
</tr>
</tbody>
</table>

9 course units to be chosen from the following themes:

1. Multimedia
   - CSI 4133 Computer Methods in Picture Processing and Analysis
   - CSI 5140 Selected Topics in Computer Science
   - CSI 5146 Computer Graphics
   - ELG 5163 Machine Vision
   - ELG 7173 Topics in Signal Processing II

2. Networks and Communication
   - CSI 5105 Network Security and Cryptography
   - CSI 5169 Wireless Networks and Mobile Computing

3. Software and Systems
   - ELG 5121 Multimedia Communications
   - CSI 5122 Software Usability
   - CSI 5380 Systems and Architectures for Electronic Commerce

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, Tutorial
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, secret-sharing, anonymity, intrusion detection, firewalls, defending network attacks and performance in communication networks. 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

CSI 5140 Selected Topics in Computer Science (3 units)
Selected topics, 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)
Research field overview. Splines, subdivision surfaces and hierarchical surface representations. Physics of light transport, rendering equation and Bidirectional Reflectance Distribution Function. Classical ray tracing, radiosity, global illumination and modern hybrid methods. Plenoptic function and image-based rendering. 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 5180 Systems and Architectures for Electronic Commerce (3 units)
Content and transactions in e-commerce systems. System architecture with a focus on frameworks, tools and development process. Application frameworks. Information management. Security, standards, and regulatory compliance. Current research issues. Hands-on experience with an integrated set of current e-commerce tools. E-commerce development project. This course is equivalent to COMP 5405 at Carleton University.

Course Component: Lecture
Prerequisite: CSI 5389
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. Préalable : approbation de la direction 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. Graded S (Satisfactory) or NS (Not satisfactory) by the supervisor and by another professor appointed by the program director. The project can normally be completed in one session.

Volet / Course Component: Cours magistral / Lecture

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