Computer Science
PhD / MSc

Yeates SCHOOL OF GRADUATE STUDIES
www.ryerson.ca/graduate

RYERSON UNIVERSITY
Everyone Makes a Mark
The Department of Computer Science offers cutting-edge graduate programs leading to Master of Science and Doctor of Philosophy degrees in Computer Science. These programs are designed to promote high achievement in theoretical and practical problems within the field of computer science and to address the burgeoning education demands for graduates and professionals with advanced Computer Science education.

Students will further develop critical and independent thinking throughout the wide spectrum of graduate courses offered.

Ryerson University’s Department of Computer Science is located in the George Vari Engineering and Computing Centre, a state-of-the-art building that opened in 2004 and is located in the heart of downtown Toronto.
Program Objectives:

- To provide a technically oriented and scientific post-graduate education to individuals who are motivated either to extend their computer expertise and education or to acquire new technical and scientific skills in the computer science discipline.

- To offer students opportunities to study the philosophical and theoretical foundations underlying the discipline.

- To offer students a solid background in core areas and exposure to cutting-edge research in computer science.

- To provide students with the tools needed to compete in any marketplace.

These objectives will lead to intellectual growth in our students. The central mechanism for this intellectual growth will be the preparation of a research-based thesis. Students will be required to conduct, report and defend original research that makes a scholarly contribution to their field. Prior to commencing their thesis work, candidates will be required to prepare a detailed research proposal, which includes a thorough review of the relevant scientific literature. At this stage, guided by their faculty supervisor(s), students will learn how to clearly define a research problem and how to specify a systematic plan for its investigation. They will learn the methodologies used for the analysis of the problem, which may include experimental techniques, numerical/mathematical methods and software tools.
Requirements & Curriculum

Doctor of Philosophy (PhD)

The PhD program contains the fields of Intelligence and Robotics in addition to Computer Communication Networks. The program is three years long, thesis-based, and requires participants to take four one-term graduate courses (two from each field).

In addition, students must take one research methods course, one method of instruction course, and a mandatory non-credit seminar. Candidates must also pass written and oral qualifying exams. Students must be full-time residents within the program for at least two years.

The program’s objective is to provide scientific research experience to participating students in the field of computer science. Additional urban search and rescue (USAR) research and testing facilities are available for use through the Ontario Provincial Police (OPP) at their Urban Search and Rescue, Chemical, Biological, Radiological, Nuclear, Explosive Response Team (UCRT) headquarters in Bolton, Ontario; where approximately two acres of purpose-built urban disaster simulations are available for research in computational public safety through a memorandum of understanding between the OPP and Ryerson.

Master of Science (MSc)

The program is offered on a full-time basis over a period of two years (six semesters).

Heavy emphasis is placed on the research thesis, which usually requires at least three terms to complete. Full-time students with adequate preparation for graduate work should plan on spending at least five full-time terms in the program. Normally, students are expected to fulfill all the requirements in six terms or two years. Registration must be continuous. There is no part-time option for this program.

Each student conducts thesis research by working closely with a thesis supervisor(s). The supervisor is a member of the Computer Science graduate faculty who provides academic guidance in the area in which the student and faculty members are interested.

All students in the MSc program will be required to enrol as full-time students for a minimum of one year. The normal length of the program is two years, and it may be extended with the approval of the program director and the student’s supervisor(s). The time limit for completion is limited to three years from initial registration. Extension beyond three years will require the approval of the dean of the Yeates School of Graduate Studies.
Faculty Areas of Research Expertise

Participating faculty members have wide-ranging research interests which include:

- Human Computer Interaction (Usability and Human Factors)
- Robotics: Interaction; Cognition; Mobility; Urban Search and Rescue (USAR); Chemical, Biological, Radiological and Nuclear (CBRN)
- Artificial Intelligence (Neural Networks, Genetic Algorithms, Knowledge Representation, Natural Language Processing)
- Networking (Design, Security, Error-Correcting Codes)
- Software Engineering (Reliability, Programming Languages)
- Image Analysis and Visualization
- WWW services (Search Engines, Active Web Intermediaries)
- And others
Admission

MSc

- A curriculum vitae.
- A statement of interest.
- A bachelor of science honours degree in Computer Science. The minimum grade requirement is a B average (or equivalent) in the last two years of study from a four-year undergraduate program in Computer Science or a similar program in a related field.
- Two letters of recommendation from former instructors or research supervisors.
- A test of English language proficiency for applicants whose language of instruction during their undergraduate studies was a language other than English.

PhD

- A curriculum vitae.
- A statement of interest.
- Successful completion of a research-based master’s program in Computer Science or a closely related discipline at a recognized university (candidates with demonstrated exceptional research capabilities may also apply to this program after completing the second term of an applicable master’s program). Such application, if accepted, will require an approval from the program director at his or her sole discretion.
- At least a B+ average with demonstrated research capabilities.
- Three letters of reference, at least two of which must be from former professors.
- Applicants whose previous language of instruction was not English must submit proof of proficiency in the English language. A list of acceptable standard tests and score requirements can be found at www.ryerson.ca/graduate/admissions.
Additional Information

For detailed program information, visit www.ryerson.ca/graduateprograms/computerscience.

Program Contact Information

Telephone: 416-979-5000, ext. 2656
Email: computerscience@ryerson.ca

International Students

The International Services for Students (ISS) at Ryerson University provides support for registered international students and promotes international awareness to the Ryerson community.

More information on ISS can be found at www.ryerson.ca/studentservices/internationalservices.

Financial Support

Ryerson University provides financial support in the form of scholarships, awards and assistantships for as many full-time students as possible. Financial support is offered on a competitive basis, and the number of scholarships, awards and assistantships in any given year will vary. For more information on available funding, visit www.ryerson.ca/graduatefunding.

How to Apply

Online application instructions are available at www.ryerson.ca/graduateadmissions.

Yeates School of Graduate Studies
Admissions
Ryerson University
350 Victoria Street
Toronto, ON M5B 2K3
Telephone: 416-979-5150
Fax: 416-979-5153
Email: grdadmit@ryerson.ca