2015-2016 Graduate Calendar

The information published in this Graduate Calendar outlines the rules, regulations, curricula, programs and fees for the 2015-2016 academic years, including the Summer Semester 2015, Fall Semester 2015 and the Winter Semester 2016.

For your convenience the Graduate Calendar is available in PDF format.

If you wish to link to the Graduate Calendar please refer to the Linking Guidelines.

The University is a full member of:

• The Association of Universities and Colleges of Canada

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Disclaimer

The Office of Graduate Studies has attempted to ensure the accuracy of this on-line Graduate Calendar. However, the publication of information in this document does not bind the university to the provision of courses, programs, schedules of studies, fees, or facilities as listed herein.

Limitations

The University of Guelph reserves the right to change without notice any information contained in this calendar, including any rule or regulation pertaining to the standards for admission to, the requirements for the continuation of study in, and the requirements for the granting of degrees or diplomas in any or all of its programs.

The university will not be liable for any interruption in, or cancellation of, any academic activities as set forth in this calendar and related information where such interruption is caused by fire, strike, lock-out, inability to procure materials or trades, restrictive laws or governmental regulations, actions taken by the faculty, staff or students of the university or by others, civil unrest or disobedience, Public Health Emergencies, or any other cause of any kind beyond the reasonable control of the university.

The University of Guelph reaffirms section 1 of the Ontario Human Rights Code, 1981, which prohibits discrimination on the grounds of race, ancestry, place of origin, colour, ethnic origin, citizenship, creed, sex, sexual orientation, handicap, age, marital status or family status.

The university encourages applications from women, aboriginal peoples, visible minorities, persons with disabilities, and members of other under-represented groups.

Introduction

Collection, Use and Disclosure of Personal Information

Personal information is collected under the authority of the University of Guelph Act (1964), and in accordance with Ontario's Freedom of Information and Protection of Privacy Act (FIPPA) http://www.e-laws.gov.on.ca/DBLaws/Statutes/English/90f31_e.htm. This information is used by University officials in order to carry out their authorized academic and administrative responsibilities and also to establish a relationship for alumni and development purposes. Certain personal information is disclosed to external agencies, including the Ontario Universities Application Centre, the Ministry of Training, Colleges and Universities, and Statistics Canada, for statistical and planning purposes, and is disclosed to other individuals or organizations in accordance with the Office of Registrarial Services Departmental Policy on the Release of Student Information. For details on the use and disclosure of this information call the Office of Registrarial Services at the University at (519) 824-4120 or see https://www.uoguelph.ca/registrar/

Statistics Canada - Notification of Disclosure

For further information, please see Statistics Canada's web site at http://www.statcan.gc.ca and Section XIV Statistics Canada.

Address for University Communication

Depending on the nature and timing of the communication, the University may use one of these addresses to communicate with students. Students are, therefore, responsible for checking all of the following on a regular basis:

Email Address

The University issued email address is considered an official means of communication with the student and will be used for correspondence from the University. Students are responsible for monitoring their University-issued email account regularly.

Home Address

Students are responsible for maintaining a current mailing address with the University. Address changes can be made, in writing, through the Office of Graduate Studies.

Name Changes

The University of Guelph is committed to the integrity of its student records, therefore, each student is required to provide either on application for admission or on personal data forms required for registration, his/her complete, legal name. Any requests to change a name, by means of alteration, deletion, substitution or addition, must be accompanied by appropriate supporting documentation.

Student Confidentiality and Release of Student Information Policy Excerpt

The University undertakes to protect the privacy of each student and the confidentiality of his or her record. To this end the University shall refuse to disclose personal information to any person other than the individual to whom the information relates where disclosure would constitute an unjustified invasion of the personal privacy of that person or of any other individual. All members of the University community must respect the confidential nature of the student information which they acquire in the course of their work.

Complete policy at http://www.uoguelph.ca/policies.

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Computational Sciences

The School of Computer Science (SoCS) offers an Interdisciplinary PhD degree in Computational Sciences that encompasses Departments/Schools across Colleges within the University of Guelph.

The program provides a unique opportunity for students to study computing within the context of another discipline commensurate within their own interests and career goals. Students entering this Interdisciplinary PhD program will have the opportunity to perform research that bridges Computer Science with at least one other discipline. This approach recognizes that by the 21st century there is no other discipline like Computer Science that intersects virtually every other one in the sciences and humanities. All have been "colonized" by computerization, and their very success and future advances depend on educated individuals to bring the two together (Computer Science and disciplines within the Sciences and Humanities).

Students will have the ability to study Computer Science within the context of following disciplines: Computer Science, Economics, Engineering, English, Geography, History, Integrative Biology, Mathematics and Statistics, Pathobiology, Psychology and Veterinary Medicine.

Graduates will have demonstrable competence in the assessment of existing literature, research conceptualization and design, quantitative research methods and data-analysis techniques, as well as the ability to communicate scientific and technological findings effectively to professionals working in other research areas, all of which will prepare them for thriving careers in teaching, research and industry.

Administrative Staff

Director
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Graduate Faculty

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William Gardner
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Gary Gréwal
BSc Brock, MSc, PhD Guelph - Associate Professor

Stefan C. Kremer
BSc Guelph, PhD Alberta - Associate Professor and Director

Xining Li
BSc, MSc Nanjing, PhD Calgary - Professor

Pascal Matsakis
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Blair Nonnecke
BSc, MSc Guelph, PhD South Bank - Associate Professor

Charlie F. Obimbo
MSc Kiev, PhD New Brunswick - Associate Professor

Joseph Sawada
BSc, PhD Victoria (British Columbia) - Associate Professor

Fei Song
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BSc Guelph, MASc, PhD Waterloo - Associate Professor and Assistant Dean, Research and Graduate Studies, College of Physical and Engineering Science

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BE Changsha, MSc Peking, PhD Waterloo - Professor and Graduate Coordinator

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BSc Toronto, MSc, PhD Carleton - Associate Professor

Michael A. Wirth
BSc New England (Aust.), MSc Manitoba, PhD RMIT Melbourne - Associate Professor

Yang Xiang
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BSc Technical University of Cluj (Romania); MA Georgetown (Washington, D.C.); PhD Western - Associate Professor and Interim Associate Dean, Research and Graduate Programs, College of Business and Economics

From the School of Engineering

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Stefano Gregori
Laurea, Doctorate Univ. of Pavia - Associate Professor

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From the Department of Geography

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From the Department of History

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From the Department of Integrative Biology

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Lana M. Trick
BSc Calgary, MA, PhD Western Ontario - Associate Professor

PhD Program

The objective of the Interdisciplinary PhD program is to produce interdisciplinary scholars who are capable of tackling emerging problems in the sciences and humanities through investigation and application of current computer technologies. This objective will be met by requiring full-time study in a research-based program targeted at students and professionals who wish to engage in research topics that link topics of traditional computer science with another discipline. Students will also meet the program objective by having two Advisors. One Advisor will be from the School of Computer Science and the other will be from the application discipline.

Admission Requirements

Most spaces are filled in March for entry the following September, and in October for entry the following January. Prospective students should check the SOCS website http://www.socs.uoguelph.ca/ for admission procedures and deadlines.

General Requirements

Admission to the PhD program will normally require a recognized thesis-based Master's degree or equivalent independent research experience demonstrated through publications in scholarly journals or conferences. The Master's degree must be in Computer Science or be closely related to the research area that will be studied in the thesis.

In addition to the Faculty of Graduate Studies requirements, applicants must submit (i) a current CV including publications, and (ii) a statement of research (maximum of 1500 words) which would normally include the following sections:

- background,
- research questions,
- literature review,
- research methodology,
- intellectual merit of proposed research, and
- broader impact of proposed research.

The statement should clearly explain the interdisciplinary nature of the proposed research and relevant areas of computing and the associated discipline that will be studied. The statement of research should also indicate if ethics approval maybe required to carry out the proposed research.

English Proficiency

A test of English proficiency is required of all applicants whose first language is not English. Required scores are shown below:

- Paper-based TOEFL- 600.
- Internet-based TOEFL- 100, 26 speaking and writing, 21 reading and listening
- IELTS- 7.5.
- MELAB- 90, speaking 3, no score lower than 80.
- CAEL- 70 overall, 70 writing and speaking, no score lower than 60.
- University of Guelph English Language Certificate at the Advanced Level.

The proof of English proficiency requirement may be waived in exceptional circumstances (e.g., applicants who have studied full-time for two years in a country where English is the native language AND in a university where English is the language of instruction). Graduate Program Committee approval required.

GRE Tests

Students who have obtained a Masters degree from a university outside of Canada are encouraged to supply GRE scores (GRE General and/or GRE Subject in CS).

Direct Entry to PhD

In exceptional circumstances, a student who has completed an honours undergraduate Computer Science degree (or an equivalent 4-year undergraduate degree) may apply for direct admission to the PhD program. The successful applicant must have an outstanding academic record, breadth of knowledge in Computer Science, demonstrated research accomplishments, and strong letters of recommendation. Contact the SoCS for additional information.

Degree Requirements

Once a student has been admitted to the PhD program, the following components are required for successful completion of the PhD degree:

- Completion within the specified duration of the program.
- Completion of the Technical and Communication Research Methodology Course CIS*6890. A PhD student is required to take the CIS*6890 during the first year that they are enrolled in the program. This course seeks to help students understand the links between different disciplines, and to appreciate the diverse interpretations and techniques involved in identifying and solving interdisciplinary research problems.
- Completion of any additional graded courses (with an overall minimum average of 70%) assigned by the Advisory Committee on entry to the program.
- Completion of all Computational Learning Modules as assigned by the Advisory Committee.
- Completion of the seminar requirement.
- A successfully completed qualifying examination.
- An accepted thesis and the successful completion of a final oral examination.

Duration of the Program

A typical PhD student is expected to complete the program in 9 semesters. At least 5 semesters of full-time study must be completed in the doctoral program.

Students who are unable to complete their PhD within 9 semesters will be required to apply to the School of Computer Science Graduate Committee to request an extension (https://www.uoguelph.ca/registrar/calendars/graduate/preview/genreg/genreg-reg-maxreg.shtml). If granted, the student will normally receive a one-semester extension in which they must complete their degree.

Course Requirement

Based on the recommendation of the Advisory Committee, a student may be required to take one or more graded senior-undergraduate or graduate-level course offerings in the interdisciplinary academic disciplines. These courses will normally be taken in the first semester.

Moreover, students may be required to take one or more non-graded Computational Study Modules (online tutorials) to upgrade their knowledge of different aspects of computing. The number and subject matter of the modules will be determined by the student's Advisory Committee upon entry to the program. These modules must be completed before the qualifying exam.

Seminar Requirement

A PhD student must give two publicly announced research seminars on his/her PhD thesis research.

The first seminar is intended to be an exploratory look at the student's research area. It may include a literature review and a survey of the research area. The following apply:

- Must be presented in Semester 2.
- The student will be allocated times and dates for the seminars.
- The seminar must be attended by all members of the student's Advisory Committee.

The quality of the presentation is graded on a pass/fail basis. Students that fail will be required to re-do the seminar at a later date.

The second seminar is intended for students to present their preliminary results to get feedback on analysis presentation and progress towards defense. The following apply:

- Must be presented after the qualifying exam and before the end of Semester 7.
- Must be presented prior to the thesis defence.
- The student will be allocated times and dates for the seminars.
- Students will provide a title and extended abstract to the Graduate Program Assistant at least two weeks before seminar.
- The seminar must be attended by at least two members of the student's Advisory Committee and two SoCS regular graduate faculty members, selected by the SoCS Graduate Committee.
- Must be one hour in length. The student must speak for a minimum of thirty minutes and no more than forty-five minutes.
- The quality of the presentation is graded on a pass/fail basis. The student must receive three or more pass votes to pass. Two pass votes and two fails votes will mean the student must attempt the seminar again.

Qualifying Examination

The PhD Qualifying Examination (QE) should normally be completed by the end of the student's third registered semester, but no later than semester five. The examination is held after the student has completed his/her first seminar and any required coursework specified by the student's Advisory Committee. The focus of the examination is to assess the candidate's ability and promise in the selected research area.

Arrangements for the QE should be made at least 4 weeks prior to the anticipated date of the QE oral presentation, and the student must submit a research proposal to the Examination Committee at least 2 weeks prior to the QE. The research proposal should contain, as a minimum, the following items:

- A survey of appropriate background literature.
- A statement that sets out what makes the research interdisciplinary.
- A description of the proposed research.
- A statement describing the merits and scholarly value of the proposed research.
- A schedule of the research program that the candidate will follow, including a sequence of milestones and objectives.

Typically, the examination consists of an oral presentation by the student followed by questions from the Examination Committee based on the research proposal.

In the case where a student has been required by his/her advisory committee to take one or more Computational Study Modules, the QE will also include a written component, and will be normally completed one week prior to the oral examination. The written part consists of questions related specifically to the Computational Study Modules, and serves to ensure that the student has the necessary computational skills to successfully perform the proposed research.

Thesis Defence

Arrangements for the PhD thesis defence should be made 8 weeks prior to the anticipated date of the defence, and the student must submit his/her PhD thesis to the Examination Committee at least 4 weeks prior to the defence. The thesis is expected to contribute significantly to knowledge in the interdisciplinary disciplines, and the candidate must explain this contribution. The thesis must demonstrate mature scholarship and critical judgment, and be sufficiently novel and meritorious to warrant publication in reputable scholarly journals and conferences. The examination consists of an oral presentation by the student followed by questions from the Examination Committee.

Courses

CIS*6890 Technical Communication and Research Methodology U [0.50]

This course aims to develop students' ability in technical communication and general research methodology. Each student is expected to present a short talk, give a mini lecture, review a conference paper, write a literature survey and critique fellow students' talks and lectures.

Department(s):   School of Computer Science