

# School of Computer Science 2016



# Bachelor of Computing

## Computer Science Major

Help explore problems, build innovative computing solutions and contribute to the evolution of technology. This major will provide you with a theoretical foundation in computer science, as well as practical experience in software development and an introduction to hardware. You will explore pressing computer science issues, from large system software development to emerging technologies. This major will focus on programming and the theory of computation, with plenty of flexibility in selecting computer science electives to fit your interests, such as Computational Intelligence, Computer Security, Game Programming and Human Computer Interaction.

### YOUR FIRST YEAR IN THE COMPUTER SCIENCE MAJOR

- Semester 1**
- Introduction to Programming
  - Calculus I
  - 3 electives which may include courses in your Area of Application

- Semester 2**
- Discrete Structures in Computing I
  - Intermediate Programming
  - 3 electives which may include courses in your Area of Application

## Software Engineering Major

Contribute to innovative and cutting-edge software design. Providing a foundation in computer science concepts, this program focuses on team-based software development and professional standards. This major provides an excellent background in design and development, as well as the implementation and the evolution of software. Students' soft skills such as communication and teamwork will be enhanced and strengthened. You will have a unique opportunity to take courses on different aspects of software engineering, including design methods, team interactions, communications and managing real-world software engineering projects.

### YOUR FIRST YEAR IN THE SOFTWARE ENGINEERING MAJOR

- Semester 1**
- Software Design I
  - Introduction to Programming
  - 3 electives which may include courses in your Area of Application

- Semester 2**
- Software Design II
  - Discrete Structures in Computing I
  - Intermediate Programming
  - 2 electives which may include courses in your Area of Application

Curious about courses in your second, third or fourth year? Check out the Academic Calendar. Go to [admission.uoguelph.ca/degrees](http://admission.uoguelph.ca/degrees) and follow the link.

## ONTARIO ADMISSION REQUIREMENTS

- Required Courses**
- English
  - Calculus and Vectors
  - 4 additional courses

- Ontario High School Requirements**
- ENG4U
  - MCV4U
  - 4 additional 4U or 4M courses

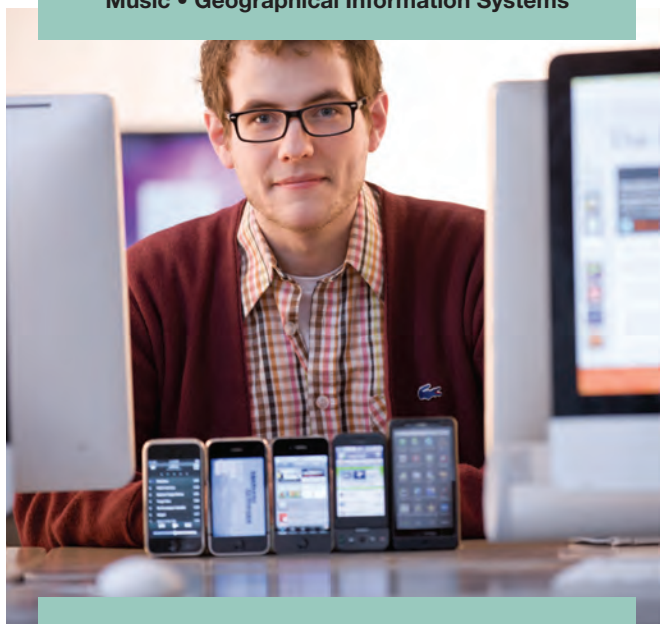
- Note**
- Computing and Data Management courses are recommended

## Make Your Degree Your Own

Computing intersects with many different fields and industries. You will have the opportunity to broaden your skills and knowledge by studying a secondary area that is of interest to you.

This Area of Application is a set of 8 courses from another discipline. There are over 40 different disciplines to choose from, some of which are:

**Physics • Mathematics • History • Economics  
Music • Geographical Information Systems**



## AREA OF APPLICATION EXAMPLES

### Computing + Psychology

- Apply principles of human psychology to computing by studying usability of systems, investigating the effects of computers on people and developing more user-friendly interfaces that meet the needs of users.

### Computing + Business Administration

- Develop business applications, analyze business systems and implement economic models with a firm background in both computing and business.

### Computing + Physics

- Utilize knowledge of various topics in computing to aid contemporary physics research, such as astrophysical modeling, particle physics research or quantum computing.

### Computing + Biology

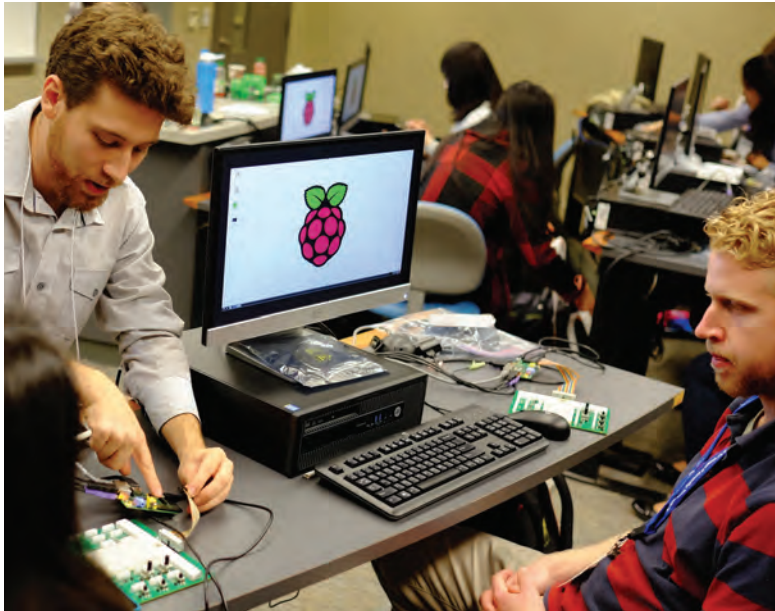
- Explore the growing field of bioinformatics and engage in fine-tuned software development for a wide array of complex biological problems.

# Co-op Opportunities

## Gaining Work Experience

While receiving hands-on experience in your courses, you may want to apply your skills and gain work experience before you graduate. We offer co-op with both of our majors. All co-op work terms are full-time, paid positions relevant to your field where you can experience different work environments and develop networks.

Co-op terms are organized into four and eight-month blocks. During the eight-month co-op terms, you can choose to have two jobs at different companies for four months each, or one eight month job at one company.



## PREVIOUS POSITIONS

Software Development Engineer — **Amazon**  
Test Application Developer — **Blackberry**  
Web Developer — **Sandbox Solutions**  
Development Student — **Bruce Power**  
Software Developer — **IBM**  
IT Analyst — **Federal Economic Development Agency**  
Software Development Engineer — **Microsoft**  
Crypto Material Systems Analyst — **Government of Canada**

## CO-OP SCHEDULE

|        | Fall          | Winter        | Summer |
|--------|---------------|---------------|--------|
| Year 1 | Regular Study | Regular Study | —      |
| Year 2 | Regular Study | Regular Study | Co-op  |
| Year 3 | Co-op         | Regular Study | Co-op  |
| Year 4 | Regular Study | Co-op         | Co-op  |
| Year 5 | Regular Study | Regular Study | —      |

When choosing co-op, you will be adding 12 months to your degree

## The Centre for Business and Social Enterprise

### Beyond The Code

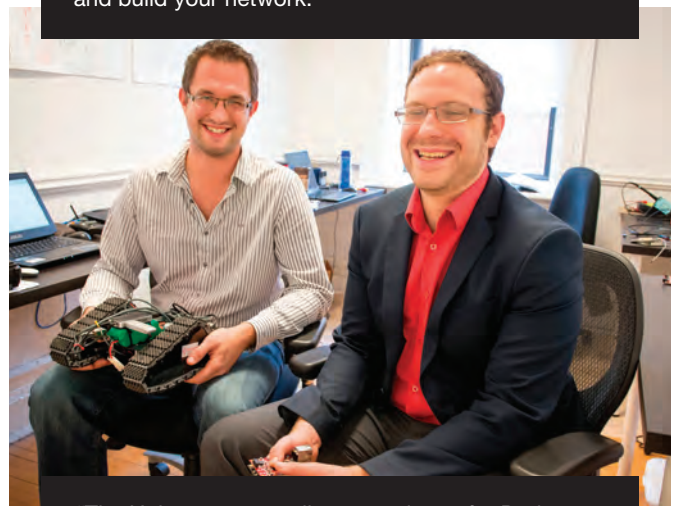
The Centre for Business and Student Enterprise (CBaSE), housed within the College of Business and Economics, connects young leaders with opportunities for growth. We offer course credits, startup incubation, entrepreneurship support and experiential learning opportunities.

Please visit: <http://www.uoguelph.ca/cbase/>

### The Hub Incubator Program

Whether for-profit or not-for-profit, you can receive the support to grow or begin your startup. The Hub offers dedicated space to grow your business. We focus on helping startups develop a strong business model that can be rigorously tested and intelligently scaled. Take your startup to the next level by applying to The Hub.

The Hub galvanizes ideas and helps develop them into high potential opportunities. The program is available to University of Guelph students and alumni working on innovative projects. The Hub offers funding, access to experienced entrepreneurs, office space, business services, resources and entrepreneurial workshops to help expedite growth and build your network.



*"The Hub was an excellent experience for Redtree Robotics. Once we entered the Hub, the backing of the program caused more people to pay attention to us. They kept us motivated and on track by helping to set our goals and shifting our thinking during each meeting. The \$8,000 was helpful since it helped us build the initial prototype and ultimately, connected us to Funderfuel. This led to follow-on investment of over \$300,000 which has led us to three more prototypes and commercialization."*

**Jason Ernst, Ph.D. Graduate Computer Science, Redtree Robotics Co-founder**

# Our Scholarships

## Scholarships for Canada's Best and Brightest Future Leaders!

In 2015-2016, we awarded \$18.9 million to 10,400 undergraduate students, and more than \$9.97 million needs-based awards to 7,900 students

Top Scholarships are \$8,000 annually for four years of study, plus one \$8,000 stipend for a summer research assistantship position after first year.

### President's Scholarships

We have eight President's Scholarships that recognize students entering with a minimum 90% admission average who have made significant leadership contributions to their schools and communities.

### Chancellors' Scholarships

Two scholarships every year recognize students entering with a minimum 90% admission average who have made significant leadership contributions to their schools and communities, and have demonstrated an interest in arts and culture, or international relations and development.

### The Lincoln Alexander Scholarships

Two of these scholarships are given each year to recognize students entering with a minimum 90% admission average who have made significant leadership contributions to their school and communities. In addition, students must be Aboriginal; or a person with a disability; or a member of a racial minority.

### University of Guelph Entrance Scholarships

- Students with an admission average of 85.0%-89.9% are guaranteed \$2,000
- Students with an admission average of more than 90% are guaranteed \$3,000
- Application not required, you will be considered automatically based on your admission average

### Board of Governors' Scholarships

- 25 awards of \$20,000 payable over four years
- Recognizing students with outstanding academic excellence
- Application not required

### Accessibility Bursaries

- 200 awards of \$14,000 payable over four years of study are given to students with demonstrated financial need
- \$5,000 in year one and \$3,000 per year in years two, three and four

### Registrar's Entrance Bursaries

- 500 awards of \$4,000
- For students with demonstrated financial need

**Find the scholarship that's right for you!**

**Search [www.uoguelph.ca/registrar/studentfinance](http://www.uoguelph.ca/registrar/studentfinance)**

## Upcoming Events

### Fall Preview Day

November 6, 2016

### Science and Engineering Sunday

November 13, 2016

### Campus Day

March 26, 2017

### Interaction Days

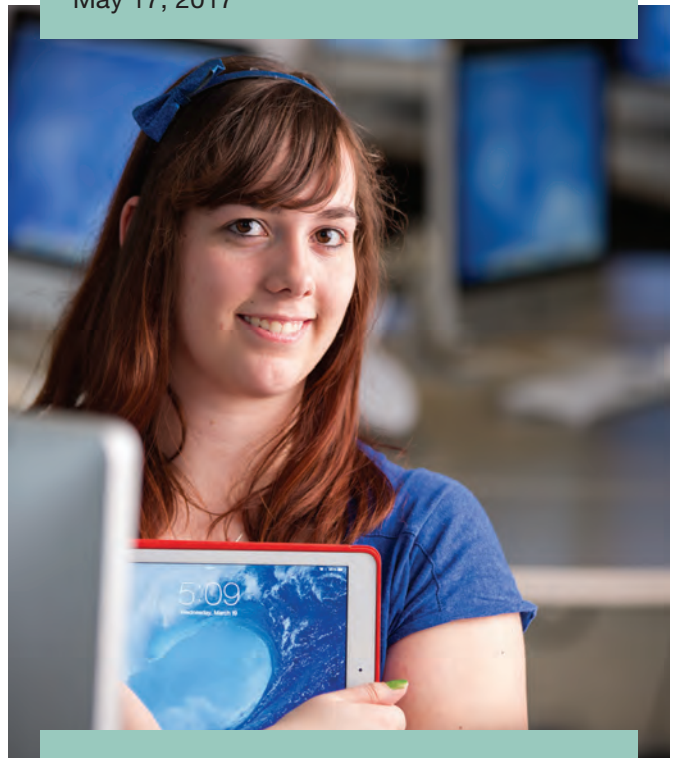
April 26 and 27, 2017

### Science Olympics

May 11, 2017

### Spring Academic Open House

May 17, 2017



## Contact Us

### Recruitment Officer

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### University of Guelph

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[www.socs.uoguelph.ca](http://www.socs.uoguelph.ca)

### COME FOR A VISIT

<https://admission.uoguelph.ca/>

If you are eligible for scholarships and/or entrance awards you will know the total amount of your award(s) before the deadline to accept your offer of admission – another way we make it easy to choose Guelph!



**School of Comp Sci @SOCS\_Tweets: Just an hour left in hacking time for the 24-hr #NetZero hackathon!**