



Bringing Skills to Life

Computer Engineering combines computer science and electrical engineering to develop systems and solutions for a variety of industries. Our program focuses on the science and tools behind designing, constructing, implementing and maintaining software and hardware components of computing systems. By emphasizing algorithmic, electronic, and digital design principles, students are prepared to develop effective and innovative technological systems and solutions.

Computer Engineering students can specialize in the following areas:

- Artificial Intelligence and Robotics
- Software Design
- Microsystems
- Electronic Design Automation

University of Guelph Advantage

- Students begin their first work term after completing two years of their academic program and mastering the core skills needed to integrate into the workplace
- Co-op students complete a full semester course focused on job search skills and professionalism in the workplace
- Students are available for four or eight-month work terms
- Recruitment timelines are flexible, and employers can find the right student through our efficient, streamlined employment process

Student Strengths

- Participation in interdisciplinary design groups focused on developing effective problem solving, communication and teamwork skills
- By their first work term students have completed or at least four programming courses, using multiple languages as well as a Digital Design course and Computer Organization and Design by their first work term
- Ability to design, document, implement and manage large-scale software projects
- Solid knowledge of structure and application of computing systems, from algorithms and chip-level design, to systems interfacing and data structures

Computer Engineering Course Sequencing

YEAR	FALL (SEPT-DEC)	WINTER (JAN-APRIL)	SUMMER (MAY-AUG)
ONE	<ul style="list-style-type: none"> • GENERAL CHEMISTRY I • ENGINEERING AND DESIGN I • CALCULUS I • PHYSICS WITH APPLICATIONS • INTRODUCTORY PROGRAMMING FOR ENGINEERS 	<ul style="list-style-type: none"> • OBJECT-ORIENTED PROGRAMMING FOR ENGINEERS • ENGINEERING ANALYSIS • CALCULUS II • INTRODUCTORY ELECTRICITY AND MAGNETISM • ENGINEERING MECHANICS I 	OFF
TWO	<ul style="list-style-type: none"> • DATA STRUCTURES • ENGINEERING SYSTEMS ANALYSIS • DIGITAL SYSTEMS DESIGN USING DESCRIPTIVE LANGUAGES • PROBABILITY AND STATISTICS FOR ENGINEERS • INTRODUCTION TO CO-OPERATIVE EDUCATION • APPLIED DIFFERENTIAL EQUATIONS • 1 RESTRICTED ELECTIVE 	<ul style="list-style-type: none"> • COMPUTER ORGANIZATION AND DESIGN • ELECTRIC CIRCUITS • NUMERICAL METHODS • ENGINEERING AND DESIGN II • DISCRETE STRUCTURES IN COMPUTING II • 1 RESTRICTED ELECTIVE 	WORK TERM ONE
THREE	<ul style="list-style-type: none"> • LARGE-SCALE SOFTWARE ARCHITECTURE ENGINEERING • SCIENCE AND TECHNOLOGY IN A GLOBAL CONTEXT • ELECTRONIC DEVICES • MICROCOMPUTER INTERFACING • SIGNAL PROCESSING • 1 RESTRICTED ELECTIVE 	WORK TERM TWO	WORK TERM THREE
FOUR	<ul style="list-style-type: none"> • REAL-TIME SYSTEMS DESIGN • ENGINEERING ECONOMICS • EMBEDDED RECONFIGURABLE COMPUTING SYSTEMS • 2 RESTRICTED ELECTIVES 	<ul style="list-style-type: none"> • OPERATING SYSTEMS I • ENGINEERING AND DESIGN III • SYSTEMS AND CONTROL THEORY • THE ANALYSIS AND DESIGN OF COMPUTER ALGORITHMS • COMMUNICATION SYSTEMS • 1 RESTRICTED ELECTIVE 	WORK TERM FOUR
FIVE	WORK TERM FIVE	<ul style="list-style-type: none"> • COMPUTER ENGINEERING DESIGN IV • ADVANCED COMPUTER ARCHITECTURE • VLSI DIGITAL DESIGN • 2 ELECTIVES 	

BASED ON THE 2022/23 UNDERGRADUATE CALENDAR

PLEASE SEE THE CURRENT UNDERGRADUATE CALENDAR FOR MORE INFORMATION