Sample Courses
Computer Engineering
Electronic Devices for Ubiquitous Computing Option

YEAR 2	
Term A	**Term B**
AM 2270a Applied Mathematics for Engineering II	AM 2276b Applied Mathematics for Electrical and Mechanical Engineering III
CS 1037a Computer Science Fundamentals II	ECE 2231b Introduction to Electronics
ECE 2205a Electric Circuits I	ECE 2233b Circuits and Systems
ECE 2240a Electrical Laboratory	ECE 2241b Electrical Laboratory II
ECE 2277a Digital Logic Systems	ECE 3375b Microprocessors and Microcomputers
ES 2211F Engineering Communications	ECE 3380b Advanced Digital Systems
YEAR 3	
Term A	**Term B**
Math 2151a Discrete Structures for Engineering	CS 2210b Data Structures and Algorithms
ECE 3330a Control Systems	ECE 3331b Introduction to Signal Processing
ECE 3349a Introduction of VLSI	ECE 2236b Magnetic Circuits and Transmission Lines
ECE 3389a Computer System Design	ECE 3390b Hardware/Software Co-Design
CS 2211a Software Tools and Systems Programming	SS 2141b Applied Probability and Statistics
SE 2203a Software Design	One 0.5 non-technical elective from approved list
YEAR 4	
Term A	**Term B**
ECE 4415 Computer Engineering Design Project	ECE 4415 Computer Engineering Design Project
ECE 4436a Networking: Principles, Protocols, and Architecture	ECE 4460b Real-Time and Embedded Systems
ECE 4437 Communication Theory	ES 4498G Engineering Ethics, Sustainable Development, and the Law
SE 3313a Operating Systems for Software Engineering	SE 3314b Computer Network Applications
One 0.5 technical elective	One 0.5 technical elective
One 0.5 non-technical elective	One 0.5 non-technical elective

Technical Elective List	
ECE 3332a/b Electric Machines	ECE 4455a/b Biomedical Systems Analysis
ECE 3333a/b Electric Power Systems I	ECE 4469a/b Applied Control Systems
ECE 3337a/b Electronic Circuits	Maximum one 0.5 course from:
ECE 3370a/b Communication Electronics I	CS 3319a/b Databases I
ECE 4429a/b Advanced Digital Signal Processing	CS 3340a/b Analysis of Algorithms I
ECE 4445a/b Introduction to Digital Image Processing	CS 3346a/b Artificial Intelligence
ECE 4438a/b Advanced Image Processing and Analysis	Maximum of one Computer Science 0.5 course from the following: Computer Science 3319a/b, 3340a/b, 3346a/b.

NOTE: Not all technical electives may be offered each year.

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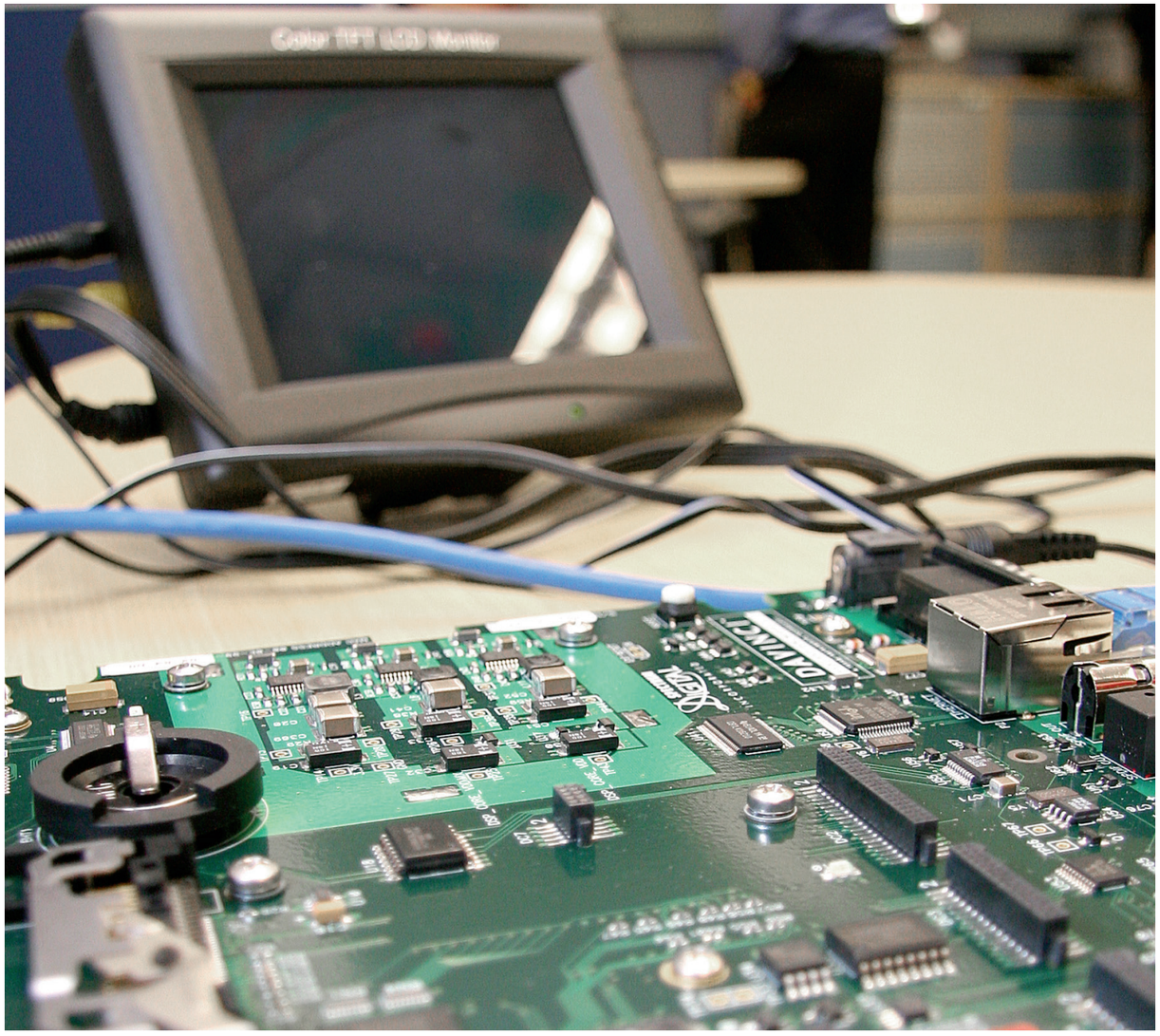
Western Engineering

Computer Engineering



Western Engineering

What is Computer Engineering?

Computer engineers integrate principles and methods from electrical engineering and software engineering to design and implement digital electronic systems. Computer engineers develop both integrated circuit hardware and the software that controls the hardware. Digital electronic systems are essential components of technologies as diverse as smart phones and other mobile communication devices, automotive, aerospace, and robotic systems, and medical devices.

Western's Computer Engineering Program

Common First Year

All first-year students complete a common first year. Courses include: Applied Mathematics — Calculus, Applied Mathematics — Linear Algebra, Business for Engineers, Chemistry, Computer Programming Fundamentals, Introductory Engineering Design and Innovation Studio, Physics, Properties of Materials and Statics.

Electronic Devices for Ubiquitous Computing Option

Students in this option focus on the design of electronic hardware systems with an emphasis on applications such as mobile communications. This option provides students with a systems-level perspective on digital electronics, including fundamental principles of computer architecture, integration of hardware and software design considerations, and opportunities to specialize in applications such as microelectronic devices, artificial intelligence, digital control systems, and digital signal and image processing.

Software Systems for Ubiquitous Computing Option

This option is intended for students who wish to specialize in the development of low-level software (i.e., software that interacts directly with its hardware platform), particularly the operating software for smart phones and similar mobile networked devices. This option provides students with a systems-level perspective on embedded software systems, emphasizing software engineering fundamentals, integration of hardware and software design considerations, and opportunities to specialize in applications such as information security, digital control systems, and digital signal and image processing.

To view course listings for these options, please visit: eng.uwo.ca/undergraduate/programs/computer.html

Career Opportunities

Sample Careers

- Application Specific Integrated Circuit (ASIC) Design Engineer
- Computer Hardware Engineer
- Fibre-Optic Network Designer
- Network Systems Engineer
- Systems Designer - Hardware
- Wireless Communications Network Engineer

Types of Employers

- Telecommunications Companies
- Electric Power Companies
- Computer Manufacturers
- Electronic Equipment Manufacturers
- Engineering Consulting and other Scientific Companies

Individualize Your Computer Engineering Degree

Dual Degrees

A dual degree allows you to gain a competitive edge towards a rewarding career. You will have the engineering skills and knowledge to become a successful problem solver, prepared to address and find solutions to current and future problems around the world in a traditional engineering career or a profession of your choice.

We offer more than 50 dual degrees involving a major module in faculties such as: Science, Business, Music, Social Science or Arts & Humanities to complement your Computer Engineering degree.

Internship and Co-op Programs

Our optional Internship and Summer Engineering Co-op Program provides you with opportunities to gain practical experience while earning a salary. The 12 to 16-month internship is available following your third year of study. Summer co-ops provide technical work experience during the summer months (May-August). You can complete a co-op every year or choose to complete just one during your time at Western.

Accelerated Master's Program

This program is offered to third-year Western Engineering students. Applicants must have an average grade of 80 per cent or higher (based on their second and third-year courses). The Accelerated Master's Program provides you with the opportunity to receive a master's degree within one year of receiving your bachelor's degree.

Did You Know?

Applications of computer technology range from systems traditionally considered "computers," such as high-performance parallel supercomputers and special servers that operate computer networks to embedded intelligence in systems most people do not view as computers at all, including: cell phones and PDAs, medical equipment like ultrasound and MRI, automotive control systems and video game consoles. All of these applications share the common principles of computer design taught in a computer engineering curriculum.