

# Software Engineering

Department of Electrical and Computer Engineering



## What is Software Engineering?

The development of software systems is now regarded among the most innovative work performed by mankind. Software engineers are trained for the specification, design, implementation, and maintenance of software systems. They apply the principles of engineering and the fundamentals of computing science in the production of large-scale software applications such as communication systems, information systems, health informatics, geographic information systems, internet applications, virtual reality environments, avionics controls, smart phones, and entertainment systems. Career opportunities for software engineers are essentially endless.

## Western's Software Engineering Undergraduate Program

Western's Software Engineering program is one of the first to be accredited by the Canadian Engineering Accreditation Board, which means our graduates are among the first generation of accredited professional software engineers in the world.

Western's Software Engineering program has a core of disciplines that covers all phases of the software life cycle. Our program offers a solid foundation in computer hardware and computer networks, while exploring the essentials of computer science. Teamwork and entrepreneurship are emphasized in our program with laboratories equipped with the latest technologies and products used by software engineers in industry.

After the common first year, students pursue the next three years in Software Engineering with an opportunity to complete an Embedded Systems Option in fourth year.

### *Embedded Systems Option*

An embedded system is a special-purpose computer software system designed to perform one or a few dedicated functions, often with real-time computing constraints. Since the embedded system is dedicated to specific tasks, software engineers can develop precise software, reducing the size and cost of the product, or increasing its reliability and performance. There is a growing demand for software engineers with knowledge of the best practices in the software engineering field and in-depth training in computer devices and computer systems.

This option expands the choices for students interested in embedded systems with three courses from Western's Computer Engineering program, giving students the needed expertise in real-time and embedded systems, microcomputers, and computer architectures.

# Software Engineering

Shape your future with Western Engineering Plus

## Combined Degrees

### *Software Engineering and Management*

After two years in Engineering, students apply to the Richard Ivey School of Business. If admitted to Ivey, students take a combination of HBA courses and Software Engineering courses for the next three years. At the end of five years, students graduate with both BESC and HBA degrees.

### *Software Engineering and Law*

After three years in Software Engineering, students apply to Western Law. Students are required to write the LSAT examinations prior to this time. For the next three years, students take a combination of Law courses and Software Engineering courses. At the end of six years, students graduate with both BESC and LLB degrees.

## Concurrent Degrees

Many students in Software Engineering enhance their education by completing concurrent degrees. Normally, a student would choose to do a concurrent degree with a major module in the Faculty of Science, Social Science or Arts and Humanities such as Environmental Science, Computer Science, Psychology, or English. Combining both programs allows students to graduate with two degrees in less time than it would take to complete each degree independently.

## Co-op Programs

Our Internship and Summer Engineering Co-op programs provide students with opportunities to gain practical experience. The 12-to 16-month internship is available to students following their third year of study. Summer co-ops provide technical work experience during the summer months and are available to qualifying students at each level of undergraduate studies. Engineering students with practical experience are usually the first to secure employment following graduation.

## Accelerated Master's Program

This program is offered to current 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 allows students to receive an MESC within one year of receiving their BESC.

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