Sample Courses
Electrical Engineering Degree

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	ECE 2231b	Introduction to Electronics
ECE 2205a	Electric Circuits 1	ECE 2233b	Circuits and Systems
ECE 2277a	Digital Logic Systems	ECE 2236b	Magnetic Circuits and Transmission Lines
ECE 2240a	Electrical Laboratory	ECE 2241b	Electrical Laboratory II
ES 2211F	Engineering Communications	MME 2234b	Heat Transfer and Dynamics
YEAR 3			
Term A		**Term B**	
AM 3415a	Applied Mathematics	ECE 3331b	Introduction to Signal Processing
ECE 3330a	Control Systems	ECE 3333b	Electric Power Systems I
ECE 3332a	Electric Machines	ECE 3336b	Electromagnetic Theory
ECE 3337a	Electronic Circuits	ECE 3370b	Communication Electronics I
SS 2141a	Applied Probability and Statistics for Engineers	ECE 3375b	Microprocessors and Microcomputers
One 0.5 non-technical elective taken from approved list			
YEAR 4			
Term A		**Term B**	
ECE 4416	Electrical/Computer Engineering Project	ECE 4416	Electrical/Computer Engineering Project
ECE 4437a	Communications Theory	ES 4498G	Engineering Ethics, Sustainable Development and the Law
ECE 4429a	Advanced Digital Signal Processing		
One 0.5 non-technical elective		One 0.5 non-technical elective	
Two 0.5 technical electives		Three 0.5 technical electives	

Technical Elective List			
ECE 3349a/b	Introduction of VLSI	ECE 4451a/b	Advanced Topics in Wireless Communications
ECE 3380a/b	Advanced Digital Systems	ECE 4455a/b	Biomedical Systems Analysis
ECE 4430a/b	Selected Topics in Electrical Eng. I	ECE 4456a/b	Power Systems Protection
ECE 4431a/b	Selected Topics in Electrical Eng. II	ECE 4457a/b	Power Electronics
ECE 4432a/b	Radiation and Propagation	ECE 4460a/b	Real-Time and Embedded Systems
ECE 4433a/b	Digital Communications Systems	ECE 4464a/b	Electric Power Systems II
ECE 4436a/b	Networking: Principles, Protocols and Architecture	ECE 4468a/b	Systems Optimization
ECE 4438a/b	Advanced Image Processing and Analysis	ECE 4469a/b	Applied Control Systems
ECE 4439a/b	Conventional, Renewable and Nuclear Energy	MME 4452a/b	Robotics and Manu. Automation
ECE 4445a/b	Intro to Digital Image Processing	MME 4473a/b	Computer Integrated Manufacturing
		MME 4482a/b	Fundamental of MEMS
		MME 4487a/b	Mechatronic System Design

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

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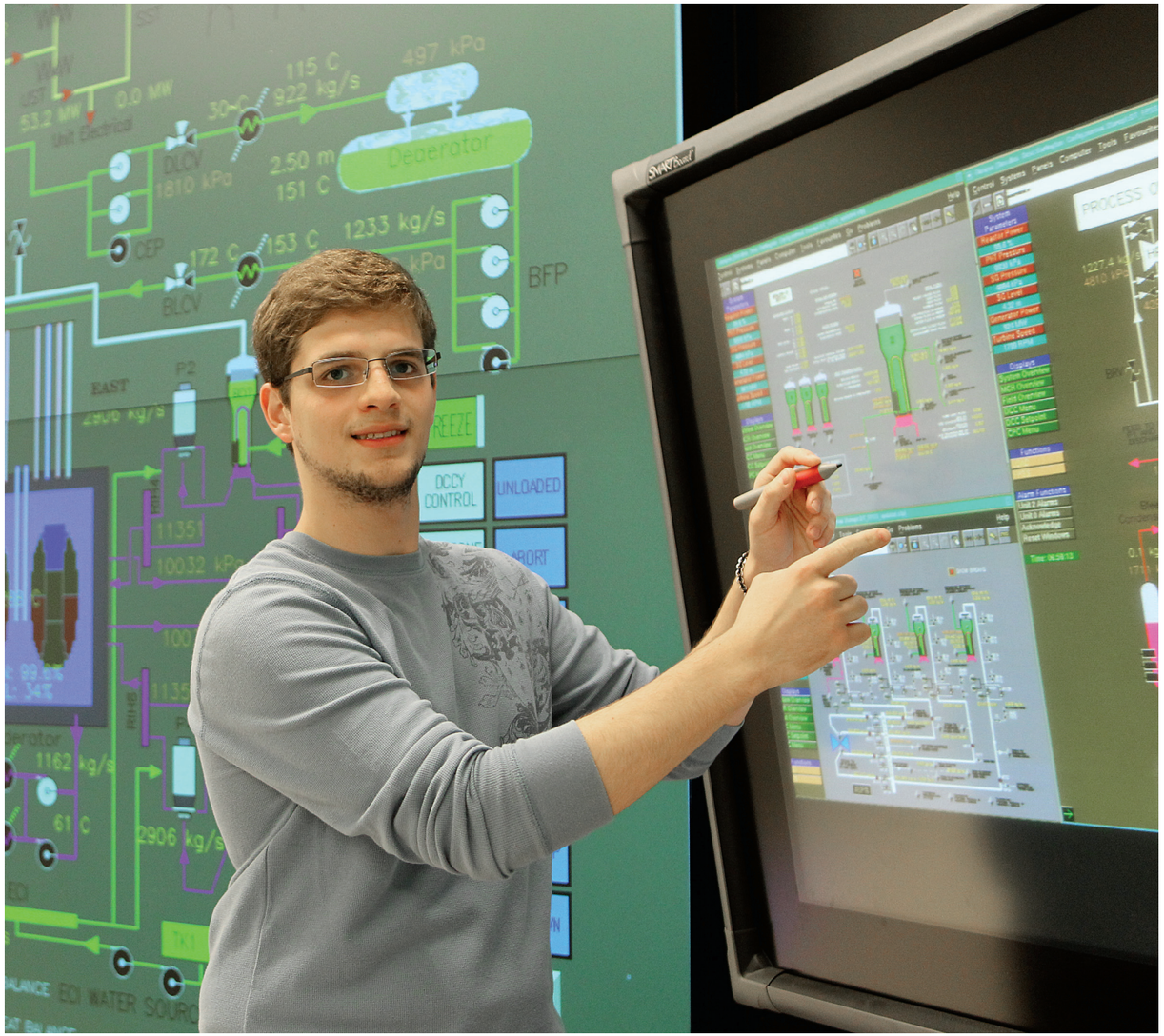
Western Engineering

Electrical Engineering



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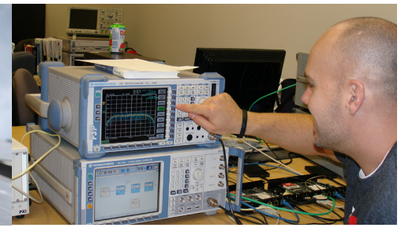


What is Electrical Engineering?

Electrical engineering generally deals with the study and application of electricity, electronics, and electromagnetism. It covers a wide range of subfields including electronics, digital computers, power engineering, telecommunications, control systems, and signal processing.

Western's Electrical 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.

Wireless Communication Option

Wireless Communication is one of the most dynamic areas of industrial development and research. Our program allows students to explore the operation and design of communication systems. Courses in theory and design of Communications Systems, Antennas, Data Networks and Digital Signal Processing form the core of this option.

Power Systems Engineering Option

The world is looking to develop sustainable, environmentally friendly and diversified sources of electrical energy. There is also a significant demand in the power generation and distribution industry for renewal and expansion of technical personnel. This option offers students a solid background in design and the operation of conventional power systems, as well as insight into modern and alternative sources of electric power generation.

Biomedical Signals and Systems Option

As society continues to age there is a higher demand for intensive upgrades and modernization of medical equipment, resulting in a greater need for engineers specializing in design, manufacturing and servicing of such devices. This option offers students a solid background in the fields of signal processing, imaging and biomedical systems.

Career Opportunities

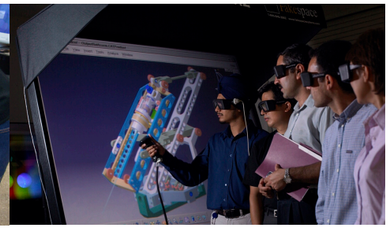
Sample Careers

- Instrumentation and Control Engineer
- Electrical Engineer
- Avionics Engineer
- Communications Engineer
- Electronics Test Engineer

Types of Employment Sectors

- Aerospace
- Bioengineering
- Consumer Electronics
- Education and Research
- Energy and Electric Power
- Manufacturing
- Telecommunications





Individualize Your Electrical 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 the following dual degrees with our Electrical Engineering program:

Electrical Engineering and Business

After two years in Engineering, you can apply to the Ivey Business School. If admitted to Ivey, you will take a combination of HBA courses and Electrical Engineering courses for the next three years. At the end of five years, you will graduate with both BESc and HBA degrees.

Electrical Engineering and Law

After three years in Engineering, you can apply to Western Law after writing the LSAT examinations. For the next three years, you will take a combination of Law courses and Electrical Engineering courses. At the end of six years, you will graduate with both BESc and LLB degrees.

Dual Degrees with Other Faculties

We also offer more than 50 other dual degrees involving a major module in faculties such as: Science, Music, Social Science or Arts & Humanities.

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 research master's degree within one year of receiving your bachelor's degree.