SCHOOL OF ENGINEERING GRADUATE PROGRAMS

Focus on research at one of Canada's leading project-based engineering schools. Individualized attention and industry connections enable your success while you undertake your graduate studies featuring integrated and advanced project learning and interdisciplinary thinking in Civil, Electrical, and Mechanical Engineering disciplines.

Choose your path, and open the door to exploring cutting-edge research in world-class facilities on the Okanagan campus of the University of British Columbia.

Components
Coursework and thesis
Coursework
Dissertation

Expected Duration 18 to 24 months 12-24 months 36-48 months

MASTERS OF APPLIED SCIENCE (MASC)

The MASc is increasingly viewed as an entry-level degree with many engineering consulting firms due to the specialized nature of many engineering projects. It is also a prerequisite to a PhD. Students select courses in consultation with their supervisor to suit research or career interests.

Students admitted to the MASc degree will normally possess a bachelor's degree in engineering or a related area, with a minimum GPA of B+ (76–79%). Program duration: 18 – 24months

Application requirements:

- Please touch base with a faculty supervisor before you start the application process.
- Statement of intent or purpose
- Online application and application fee
- Unofficial transcripts for all post-secondary institutions attended are required for the application package. However, if admitted, the student must submit official transcripts to the College of Graduate Studies
- English language test (for non-native speakers of English)
- CV or resumé
- Three reference forms or letters

MASTERS OF ENGINEERING (MENG)

The course-based MEng program is designed for engineering graduates who want to advance their careers with further education. In addition to courses in specific technical areas, students take a variety of courses such as technical communications, ethics, and entrepreneurship.

Two streams are available for the MEng program. Both options are open to all students.

- 12 Months, courses only
- 16 24 Months with Internship

Students admitted to the MEng degree will normally possess a bachelor's degree in engineering or a related area with a minimum GPA of B+ (76-79%).



		Civil	Mechanical				Electrical	
	ENGR 523	Seismic Design of Buildings - Term 1	ENGR 581	Mechatronics – Term 1		ENGR 512	Signals, Systems, and Inference – Term 1	
Year 1 Winter	ENGR 533	Construction Engineering and Management - Term 1	ENGR 586	Robot Modelling and Control – Term 1		ENGR 553	Signal Estimation Theory – Term 1	
	ENGR 518	Applied Machine Learning for Engineers – Term 1	ENGR 518	Applied Machine Learning for Engineers – Term 1		ENGR 518	Applied Machine Learning for Engineers – Term 1	
	ENGR 522	Advanced Design of Steel Structures - Term 2	ENGR 508	Specialty alloys – Term 2		ENGR 501	Deep and Reinforcement Learning for Engineers – Term 2	
	ENGR 529	Rehabilitation of Concrete Structures - Term 2	ENGR 513	Nanomaterials and Nano Manufacturing – Term 2		ENGR 509	Intelligent Wireless Robotics – Term 2	
	ENGR 532	Project Planning and Control - Term 2	ENGR 532	Project F Term 2	roject Planning and Control - erm 2			Project Planning and Control - Term 2
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	16-24 Month Program with Internship			1	12 Months Program without Internship			
	ENGR 598	8 Engineering Communication & Prof Skills for MEng			ENGR 598	Engineering Communication & Prof Skills for MEng		
Year 1	MGMT 5xx* Enterprise and Innovation		MGMT 5xx*	Enterpris	Enterprise and Innovation			
Summer	Training workshops administered by the CO-Op Office:			ENGR 589	Multicriteria Optimization and Design of Experiments			
	Succeeding in Interviews and the Canadian Work Place			ENGR 413	Law and Ethics for Engineers			
Year 2 Duration 4-12	ENGR 597 Industrial or Research Internship							

MEng Structure

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- Online application and application fee
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- CV or resumé
- Three reference forms or letters

DOCTOR OF PHILOSOPHY (PHD)

The PhD program is designed for engineering graduates who want to magnify their knowledge and skills through rigorous research practices related to civil, mechanical or electrical engineering. The PhD program requires the completion of required coursework, a qualifying examination, the development and defence of a research thesis proposal, and the completion of a research thesis.

Admission to the PhD program requires the completion of a thesis-based master's degree in Engineering or a related field. Students are also required to meet the minimum standards specified for admission by the UBC

Application requirements:

- Please touch base with a faculty supervisor before you start the application process.
- Statement of intent or purpose
- Online application and application fee
- Unofficial transcripts for all post-secondary institutions attended are required for the application package. However, if admitted, the student must submit official transcripts to the College of Graduate Studies
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RESEARCH AREAS

Graduate students (MASc and PhD) and postdoctoral fellows can pursue many research and teaching interests (please note that students wishing to undertake research in Manufacturing Engineering can register in Mechanical Engineering or Electrical Engineering):

CIVIL ENGINEERING - Applied Microbiology, Biological Treatment of Water and Waste Water, Drinking Water Treatment and Distribution, Construction Materials, Geohazards Assessment and Mitigation, Life Cycle Management in Construction, Solid Waste Management, Structural Design and Strengthening, Sustainable Transportation, and Sustainable Urban Development

ELECTRICAL ENGINEERING - Digital Systems, Electromagnetics, Materials, Microfabrication, Photonics, Power Electronics, Power Systems, Radio Frequency (RF) Systems, Sensors, and Wireless Communications

MANUFACTURING ENGINEERING - Additive Manufacturing, Advanced Materials, Adaptive Robotics, Artificial Intelligence, Autonomous Systems, Digitalization, Factory Planning, and Product Management

MECHANICAL ENGINEERING - Biomechanics, Biomedical Engineering, Computational Mechanics, Design and Optimization, Dynamics and Vibration, Mechatronics and Controls, MEMs/NEMs, and Thermofluidics

RESEARCH FACILITIES

The School of Engineering has world-class, state-of-the-art laboratory facilities:

- Advanced Control & Intelligent Systems Laboratory
 Advanced Materials for Energy Storage Lab
- Applied Laboratory for Advanced Materials & Structures Applied Micro & Nanosystem Facility
- Bioreactor Technology Group Laboratory
- Centre for Transportation & Land Use Research
- Chau Research Group
- Combustion Propulsion & Power Laboratory Communication Theory Lab
- Composites Research Network Okanagan Laboratory
- Computational Fluid Dynamics Laboratory
- Energy Systems & Power Electronics Laboratory
- Heart Valve Performance Laboratory
- Integrated Optics Laboratory, Intelligent Sensing
- Diagnostic & Prognostic Research Lab
- Laboratory for Solar Energy & Fuels
- Life Cycle Management Laboratory
- Micro-Electronics & Advanced Sensors Laboratory Nanomaterials & Polymer Nanocomposites Laboratory
- Natural Gas Fuel System Laboratory

- Okanagan Polymer Engineering Research & Applications Lab
- Okanagan Laboratory for Control Systems Research
- Research in the Advanced Thermo-Fluidic Laboratory
- RF & Microwave Technology Research Lab
- Sustainable Transport Safety Research Laboratory
- Tesfamariam Research group
- Thermal Management & Multi-Phase Flows Lab