

# ENGINEERING LEADERSHIP & INNOVATION CERTIFICATE

Open to all Western Engineering students in second and third year. This certificate program (by John M. Thompson Centre for Engineering Leadership and Innovation) offers six courses that build skills and knowledge in design-driven innovation, engineering leadership, project management, risk management, venture creation and entrepreneurship. Complete four of the Certificate courses, using the non-technical electives in your BEng degree, to earn the ELI Certificate.

## ELI 3000 (required)

### MANAGING THE INNOVATION PROCESS

Targets essential aspects of building technology-based businesses and identifying technology innovation capability for use within existing businesses or new start-ups. Students analyze goals, strengths, weaknesses and opportunities leading to reasonable marketing strategies and action plans. Students learn to make decisions in the face of uncertainty.

## ELI 4100 (required)

### ENGINEERING LEADERSHIP

Provides frameworks for addressing leadership challenges unique to engineering, from organizational to philosophical to industry contexts. At the micro-level, students learn to understand themselves and others in context of organizational culture, and importance of character and vision in driving sustainable change. At the macro-level, students tackle technology impact on society with non-reductionist lens. The meso-level highlights negotiating the influences on engineering design for sound, ethical decision making.

## ELI 3100

### PLANNING & PROJECT MANAGEMENT

Develops project management best practices. The student will learn the industrially accepted techniques associated with the management of time, cost, and scope in order to achieve total project stakeholder satisfaction. The expected outcome will be to prepare students when pursuing the designation PMP.

## ELI 3200

### NEW VENTURE CREATION

Highlights new venture creation and technology innovation. Introduces entrepreneurial process as path to market that includes searching for and screening new ideas, planning development, and starting up new ventures. Ivey case method fosters learning within an active class environment.

## ELI 4200

### ENTREPRENEURIAL ENVIRONMENT

Enables students to understand economic environments and develop focused strategies to achieve success. Sustainability of initiatives will receive special attention. Ivey case method challenges students to learn by doing within an active class environment.

## ELI 4300

### RISK ASSESSMENT & MANAGEMENT

Introduces the concepts and general principles of risk analysis assessment and management in engineering systems. The course discusses the qualitative risk identification methods and the quantitative risk assessment methods and techniques. All this through the lens of different Engineering fields. This will be a case-based learning course.

Students develop knowledge and critical understanding of key concepts and skills in management, leadership and innovation. In particular, they will learn how the fields of engineering and business intersect and how principles of business and management can enhance implementation of engineering technologies.

## APPLICATION

- This certificate is open to second and third year Engineering students.
- Applicants must obtain a weighted **average of 70% in their previous year** in Engineering with no failures.
- Applicants must complete an application form.

\*Admission is not guaranteed and space is limited.

The Thompson Centre is Western's hub for engineering leadership and innovation, involving in-class experiential learning, design thinking programming, industry guest speakers, and interdisciplinary research. In partnership with the Ivey Business School, the Thompson Centre builds students' leadership voice for communicating the engineering perspective in business decisions.

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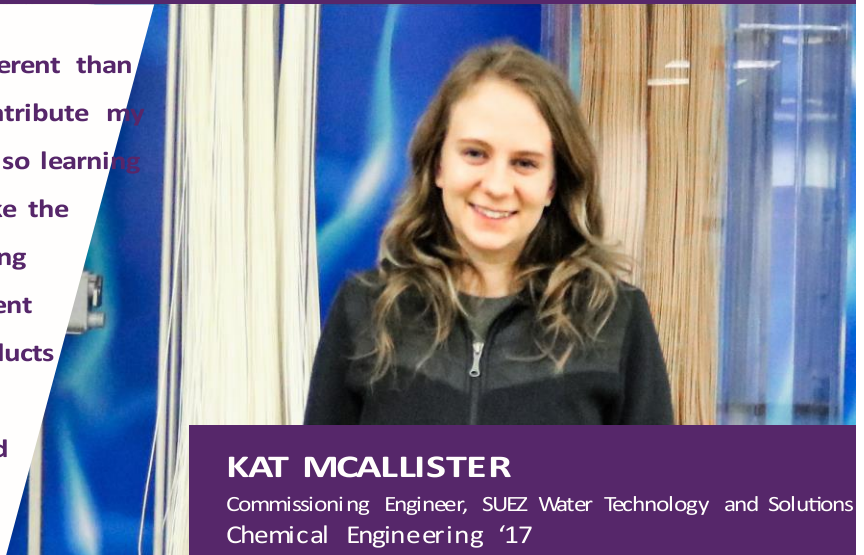


**GAMALIEL OBINYAN**

Associate Product Owner, Scotiabank  
Mechatronic Systems Engineering '19

“Being a part of the Certificate equipped me with design thinking concepts that facilitate a look beyond surface problems and instil a drive to solve for the root cause of issues keeping our customers up at night. Enrolling in the ELI Certificate was one of the best decisions I made during my undergraduate career.”

“The atmosphere in the classroom was different than most engineering courses, I was able to contribute my opinions, thoughts and knowledge, while also learning directly from my peers. The people who take the Certificate want more out of their Engineering education. They want to lead the development and optimization of thoughtful, robust products and processes. I also formed long-lasting, meaningful relationships with my peers and mentors.”



**KAT MCALLISTER**

Commissioning Engineer, SUEZ Water Technology and Solutions  
Chemical Engineering '17

“The CELI Courses teach you to think outside of the box to approach common problems in our industries. Learning from real business owners by way of guest speakers and having business leaders as teachers showed me that you may have to take risks to reach your goals. These lessons gave me the confidence to start SoilFLO.”



**KEVIN GOLDBERG**

President, SoilFLO  
Environmental Engineering '16