



ENGINEERING  
W Booth School of  
Engineering Practice  
and Technology

# Sustainable Infrastructure: Design & Engineering

Circular Economy & Climate Change  
Certificate of Completion Program

# Course Overview

📶 Online

📅 November 7-9, 2023

Infrastructure refers to the broad set of systems that support our daily lives — from accessing reliable energy to accessing reliable communication; managing natural spaces to managing waste; moving people and goods to moving water — all of these systems support our society’s progress.

This immersive, 3-day conference-style Sustainable Infrastructure: Design & Engineering Course program teaches the emerging approach to infrastructure that considers both sustainability and climate resilience at every stage of design, construction, operation, and maintenance of the integrated systems that support society. The course focuses on every aspect of infrastructure including best practices in building materials, energy, water management, waste management, stakeholder engagement and restorative design. You will learn the concepts, applications, and best engineering practices to create sustainable, climate resilient infrastructure solutions that enhance the social, environmental, and economic well-being of the communities they serve.

**COURSE STRUCTURE**

**20 HOURS**

**3 DAYS**

## Learning Outcomes

- Understanding need to focus on engineered green infrastructure and the role of low-impact development in a changing climate
- How to apply best practices and practical techniques in designing, constructing, and effectively managing engineered green infrastructure
- Utilize industry-leading tools to evaluate the environmental and lifecycle cost performance of engineered green infrastructure
- Best practices, case studies, and emerging technologies for effective implementation of sustainable, climate-resilient engineered green infrastructure



### Module 1

Introduction to sustainable infrastructure — key pressures, conditions, and metrics for sustainability.

### Module 2

Resource allocation in the built environment — enabling the adoption of circular economy, quantifying embodied resources and minimizing impact with lifecycle assessment.

### Module 3

Natural infrastructure, ecosystem services, and regenerative design.

### Module 4

Climate resilience, adaptation, and solutions through infrastructure design.

### Module 5

Purposeful, people-centric infrastructure through meaningful stakeholder engagement.

## What You Are Earning

A **dual-credential**: once the training course is completed, participants will be eligible to take the Envision exam at no extra cost. Individuals will be awarded the Envision® Sustainability Professional (ENV SP) credential after they succeed in the exam. The course will be delivered in collaboration with the ISI (Institute for Sustainable Infrastructure), the leader in the development, management and administration of Envision® —a holistic framework and rating system that enables a thorough examination of civil infrastructure's sustainability and resilience.

# Admission & Tuition

Participants must hold or be completing a degree or diploma from a recognized university or college, hold a relevant certificate in sustainability from a recognized university, or have equivalent professional experience.

SUBSIDIZED  
Tuition Fees

**\$750**

CAD +HST

FULL PRICE

CAD \$1500 +HST

Course fees are subsidized for Canadian professionals, students, and individuals studying at Canadian educational institutions



"Attending the Sustainable Infrastructure: Design and Engineering course equipped me with the knowledge of quantifying sustainability level of infrastructure projects through application of Envision standard framework by obtaining the ENV SP credentials from the ISI (Institute for Sustainable Infrastructure). I learned to look at the projects that I design through the lens of Circular Economy and realized how and where to apply the concept. The course was also very enlightening to be more cognizant of the Embodied Carbon associated with materials and equipment involved in implementation of a project. McMaster had designed a very smooth sequence in course syllabus by combination of an online interactive delivery method, lectures by professional guest speakers and up-to-date course material. I am confident that taking this course gives a noticeable edge to professionals in the field of infrastructure."

Fariba Gohari | Linear Infrastructure Designer EIT, WSP Canada

## Past Speakers



**MELISSA PENEYCAD**

Sr. Sustainability Executive at Architecture, Engineering & Construction Industry



**KYLE VANDER LINDEN**

Senior Advisor, Guidance, Policy & Strategic Partnerships at Credit Valley Conservation



**PRABH K. BANGA**

Vice-President, Sustainability at Aecon Group Inc.



**PETER CALCETAS**

Executive Vice President at BEST Consultants



**ALEXIS LAUTARD**

Sustainable Development Advisor at Société de transport de Montréal

### In partnership with

Canadian Society for  
Civil Engineering



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de génie civil



Institute for  
Sustainable  
Infrastructure



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