Indigenizing the Engineering Curriculum: First Steps

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Objectives and Outcomes
This project aims to “Indigenize” the School of Engineering’s (SoE) undergraduate curriculum: to incorporate Indigenous perspectives and best practices for engagement with Indigenous communities.

Objectives
• Impact students
• Impact faculty members
• Impact other institutions
• Contribute to resource banks

Outcomes within SoE
• Prepare students for consultation with Indigenous communities
• Support SoE’s growing cohort of Indigenous students
• Improve faculty members’ intercultural competence / sensitivity

Outcomes beyond SoE
• Provide templates and resources for other programs and institutions
• Contribute to better public understanding of engineering practice / contexts

Background and Motivation
This project has four spheres of influence:

Project Phases
The project will be developed through four phases over three years:

- Phase 1: Groundwork
- Phase 2: Develop and Deliver
- Phase 3: Evaluate, Re-design, Deliver
- Phase 4: Monitor and Disseminate

Project Cycle
The project will follow an iterative cycle:

Develop

Evaluate

Deliver

Delivery Methods
We will use case studies to deliver content in a required course in each year of the program. There are well-documented benefits and limits to using case studies:

Benefits
• student-centred
• real-world
• higher motivation and interest
• bridge theory and practice
• faculty familiarity

Limits
• Depend on instructor’s comfort and management
• Risk of disconnection and tokenization

The case studies will be incorporated in already existing course outcomes, delivery methods, and assessments. For example, the 3rd-year Project Management course has two relevant outcomes (“understand the importance of stakeholder management” and “understand the theory and practice of communication in engineering projects”), and has previously included case studies and low- and high-stakes assessments. We expect the instructor will not have to restructure delivery and assessment, but may find the content challenging to manage. We will provide cultural safety training to the instructor and explore the possibility of including a knowledge-keeper in delivery and assessment.

References