

Decolonizing Engineering Curriculum: A Pilot Project

Co-PIs: Pamela Wolf and Sheryl Staub-French. This is a large collaboration co-created with partner community members and implemented by student collaborators. Special recognition goes to D. Saha for extraordinary contributions in implementation

Reconciliation + Design Curriculum

Collaborating to transform existing engineering curriculum

This project takes a humble socio constructivist approach to synthesize decolonization and Indigenization into existing engineering courses.

When faculty implement reconciliation in their classrooms, they typically run into the following three problems. First, they need funding for Indigenous speakers. Then, after they secure funding, they need relationships with Indigenous leaders in order to invite them to speak. After they have the relationship and invite to them to speak, faculty then realize that, due to the number of faculty who are inviting Indigenous thought leaders to speak, accepting all the invitations is actually doing harm to Indigenous communities by taking so much time from Indigenous thought leaders, cutting into the time they have to work within their own communities. Finally, faculty realize that while the above implements Indigenization, the curricula are still not decolonized and reconciliation needs both Indigenization *and* decolonization. In order to reduce harm to communities, this project aims to implement scalable solutions with both a decolonization and an Indigenization component.

Project Overview

We are decolonizing curricula by providing three modules of lecture slides, assignments, marking rubrics, and coaching for faculty in UBC Engineering.

Level	Competency	Topics	Corresponding Assignment
Module 1	Dialogue and Engagement including listening	Starting Dialogue and Systems Thinking	Starting Dialogue with K'omoks Nation - Insulating glass project
Module 2	Recognizing Social Context Including Understanding Indigenous Values, Ways of Conducting Business and Governance Styles	Addressing and Synthesizing different "Ways of Knowing"	Synthesizing Ways of Knowing - Wet'suwet'en Pipeline case study
Module 3	Designing for Communities	Guiding Engineering Work with Social Context	Developing Stakeholder/Rightsholder Engagement Plan

With our coaching, faculty have modified and implemented the three modules above in the following courses. More courses will be added in the next four months.

Department	Course
Materials Engineering	MTRL 280: Materials in Design MTRL 466/467: Engineering Project I
Mechanical Engineering	MECH 2
Civil Engineering	CIVL 203: Technical Communication CIVL 201: Introduction to Civil Engineering Design CIVL 300: Construction Engineering and Management CIVL 320: Civil Engineering Materials CIVL 204: Fundamentals of Environmental Engineering
Manufacturing Engineering	MANU 378: Engineering Materials II MANU 430: Manufacturing Design Capstone
Environmental Engineering	ENVE 201: Technical Communication ENVE 301: Environmental Engineering Intermediate Design Project
Biomedical Engineering	BMEG 357: Biomedical Engineering Design II BMEG 457: Biomedical Engineering Design Project BMEG 455: Professionalism and Ethics in Biomedical Engineering

Reconciliation + Design Dialogue

These dialogues are a scaled Indigenization component to the decolonization curriculum. We invite anyone who reflects on reconciling their design processes to join the conversation. This is an interdisciplinary conversation on reconciliation and design. The speakers are indigenous leaders and change-makers. We amplify their voices and listen to understand.

Students and faculty practice authentic, experiential learning in dialogue circles, learning to weave together these Indigenous perspectives, ways of knowing, and ways of being, with our own as designers.

Impact and Progress

Dialogue and curriculum are gifts, on the path to the real impact and outcomes, which are relationships, and transformation. The collaborative nature of this project creates a safe space to really reflect on one's positionality and role in truth and reconciliation.



Partners

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