Changing an Entire Educational Program to Incorporate Sustainability Across the Curricula

By

Olga Petrov, M.Sc.

BCIT, School of Construction and The Environment
Overview

• Environmental Engineering Program Transformation
• Teaching Sustainability vs Teaching about Sustainability
• Examples of Selected Courses
• Questions and Discussion
Environmental Engineering Technology Program

BEE™ Tech (B. Tech) Team:

Lorne Sampson     Barbara Dabrowski
Olga Petrov       Jennie Moore

BCIT
Embedding sustainability

- **EENG 7200 Principles of Sustainability**
- **EENG 7220 Industrial Ecology**
- **EENG 8282 Sustainability Management Systems**

- Air and Energy Stream
- Integrated Management (eg. solid waste)

- Throughout the program – systems approach through topics, projects, integrated assignments with other schools
Teaching Sustainability
vs.
Teaching ABOUT Sustainability

• Create an experiential and interactive learning environment
• Enhance students’ critical thinking skills and creativity
• Empower instructors to take different leadership roles, from coaching and instructions to delegating and supporting, depending on a given situation and persons involved
• Develop Trust, collaboration, respect
Midterm exam done in teams
EENG 7200 Principles of Sustainability

- Students self-organized in teams for projects and class work
- Stakeholder role play
- Debate on population theory
- Population modeling
- Food degustation
- Chief Ian - First Nations
- Design charrette
- Ecological footprint calculations
Team Gang Green:

The Current State of Canadian Cultural and Amenity Services
ABOUT EENG 8300: APPLIED RESEARCH SKILLS

This course is a compilation of the material presented in the EENG 8901: Project Proposal course taught to the first generation of the Environmental Engineering program at BCIT, as well as additional material developed by instructor Olga Petrov.

The main additions to the material aim to incorporate sustainability into your research projects by considering economic and social aspects along with environmental ones within the scope of engineering projects. To this regard, modules were designed to emphasize the relevant components needed to prepare a research proposal through class discussions to sharpen critical thinking and writing skills while utilizing emerging collective knowledge.
EENG 8290 Air Quality Management

- From local to global
- Natural & anthropogenic
- Adaptive management; policy options
Summary

• The revised, second generation EET program has been inspired by nature, with courses being organized in a BEE©-like structure and pattern of relationships to reflect interconnections and interdependence among atmosphere, hydrosphere, lithosphere, and energy choices in light of environmental, social, economic and management aspects.
Questions and Discussion

Contact:
Olga_Petrov@bcit.ca
Tel: 604-456-8017