McGill

TISED Trottier Institute for Sustainability in Engineering and Design

Student experience: Integrating sustainability content and concepts in course(s)

Student Participant:
Meghan Marshall

My background / the 'hat' I'm wearing during my presentation

- Chem EngBASC (Queen's, 2006) MASc (McMaster, 2009)
- I did not learn about sustainability in my education
- Worked for 4 years in industry
  - ENDETEC- Veolia Subsidiary (Water and Environment Sector
  - WESA- Environmental Consultant
  - Monteco – Storm Water

My Opinion and a Business case for Sustainability

-Sustainability needs to:

- Become part of culture
- Be established in education
- Become the norm

-We need more people with sustainable foundations to infiltrate industry

-Business case for sustainability

- Why should you care? “What’s in it for me?” (WIIFM)

Positive Experiences

-McGill is pushing and making changes

-In water-related research, people want to change

-The world is ahead of Canada re: energy investments

Limitations

Disclaimer! *My experience is limited in terms of years and companies

-In my working experiences, sustainability was limited or all together missed

-People and industries sometimes have reactive and short-term thinking. It is hard for people to imagine what happens past 100 years – e.g. building a nuclear reactor

Constructive ideas for curriculum change

In any engineering class (Theoretical/first principles and Design)

-Environmental, social, economical and political impacts

- Why should I care? What's In it for me? (Book: The Power To Connect)

-Engage student thinking FOR REAL: Give real life examples. Make it personal (or not!).

-Be creative, be crazy!

-Share how projects can fail due to lack of sustainability.

-Invite guest speakers from different disciplines come in and give there perspective on a topic or input on a design

-Teach how to access appropriate knowledge from the right people/sources if information is missing or it is not the student's area of expertise.

Constructive Ideas for Curriculum Change (cont'd)

-**Engineering Design**

-Teach Life Cycle Assessment

- When product dies what happens? Where does your material come from?

-**Encourage** interdisciplinary activities

- Intra-faculty design project- this is as close to real life is it gets

-Build and use Sustainable problem solving guideline process

- A design questions list made in collaboration with any relevant disciplines

-Create a marking rubric incorporating sustainable design; add environmental and social impacts and lifecycle analysis