

# SUSTAINABILITY CAPSTONE COURSE COMMITTEE

**Date:** September 30, 2013

**Time:** 12:00pm – 1:00pm

**Place:** BioSciences 3200A

**Attendees:** Eric Jandciu, Gary Bradfield, Holly Schmidt, Ileana Costrus, Kai Chan, Loch Brown, Jean Marcus (for Nicholas Coops), Peter Nemetz, Shona Ellis (Chair), Susan Grossman, Susan Nesbit, Tara Ivanochko

**Regrets:** Andrew Riseman, Nicholas Coops, Rob DeWreede

## AGENDA:

- (a) Overview
- (b) Project Objectives
- (c) Timeline
- (d) SCIE 220 – Eric Jandciu
- (e) Capstone Models, ENVR 400 – Tara Ivanochko
- (f) What Next?
- (g) Action Items

### (a) Overview

- Introductions
- Diverse representation, who else should we include? (First Nations representation, Education, Students)
- Focus of committee is the development of a sustainability capstone course....but will need to look at rest of curriculum
- Idea of a Biology Sustainability Pathway → Faculty of Science Concentration in Sustainability:
  - Concentration is made up of fundamentals course(s), Program Core with sustainability focus, Real World Experience, Sustainability Electives (can fulfill other program requirements), and a community building component (Sustainability Club). Students should be able to fulfill requirements of program within 120 credits and get an accreditation on transcript

CAPSTONE: SCIE/ASIC 420 Sustainability "Project"				SUSTAINABILITY CLUB
Year 3-4	<b>BIOLOGY CORE:</b> <i>Examples include:</i> <ul style="list-style-type: none"> <li>• BIOL 416 (Conservation)</li> <li>• BIOL 420 (Marine Conservation and Sustainability)</li> <li>• BIOL 4xx/ENVR 430 (Integrating Environmental Sustainability)</li> </ul>	<b>REAL WORLD ELECTIVE:</b> <b>ACTIVITY OPTIONS:</b> <ul style="list-style-type: none"> <li>•SEEDS</li> <li>•Community Service Learning (CSL)</li> <li>•Co-op</li> <li>•UBC Farm</li> <li>•BIOL 448</li> <li>•Go Global CSL</li> </ul>	<b>SUSTAINABILITY ELECTIVES:</b> <i>Includes:</i> <ul style="list-style-type: none"> <li>• Arts</li> <li>• Breadth</li> <li>• Program Requirements</li> <li>• Other faculties</li> </ul>	
Year 2	BIOL 230	<b>SCIE 220</b> Fundamentals of Sustainability		
Year 1	BIOL 140 BIOL 112 BIOL 121	<b>SCIE 120</b> Topics in Sustainability Science		

- Would like to develop a model that can be adopted as a framework for other units on campus.

## **(b) Project Objectives**

### ***Goals:***

- Collaborate with faculty from other units on campus to develop a capstone course for a sustainability pathway (concentration) to be accessible to students from across campus

### ***Primary Objectives of Course:***

- (a) Culmination, Application, Reflective Experience, Different perspectives
- (b) Contribute to Community
- (c) Skill development: team building, collaboration, leadership, communication, critical thinking, analytical.....
- (d) System thinking
- (e) Equip students to be agents of positive change
- (f) Career/Graduate School preparation

- interaction with broader community, community engagement, build network for future  
- connect with alumni  
- students tie what they have learned together and broaden understanding by sharing knowledge/experiences with peers

Student Learning Objectives:

Program level – Biol/Sustainability (combined program with concentration)  
Course level – First task of this committee

## **(c) Timeline for Sustainability Concentration (in Science....and elsewhere?)**

*2013W (potentially year 1 of Concentration):*

- SCIE 220 – first offering January 2014
- Formalize Electives, Finalize structure of pathway
- Develop framework for Capstone course
- Curriculum forms for ENVR 430/BIOL 4xx?

*2014W:*

- Pilot Capstone as 448
- Curriculum forms (Concentration, Capstone, other courses?)

*2015W:*

- SCIE/ASIC 420 – September to April?

## **(d) SCIE 220 – Eric Jandciu**

### **Introduction to Sustainability**

Sustainability examined from scientific, economic, and societal perspectives.

- Will be taught in January 2014 by from IRES (Milind Kandlikar). IRES will likely teach it for two years followed by Fisheries. There are currently 50 students enrolled and there is a mix of Science (23), Arts (10), Comm (10), and App Sci, LFS (1) students.  
- 3 credits, twice a week (2 x 1.5hr lecture slots), active learning approach to classes

## **(e) Capstone Courses – what are other universities doing?**

Summary of other examples:

- most are project based, although there are some that are similar to COOP, Community Service Learning Activities
- some are targeted for minors others for majors
- Maryland – combination of lecture and project (teamwork)
- Portland – instead of having one course with numerous projects has many one-project courses; faculty and student capstone handbooks
- Melbourne – Developing capstone experiences (nice template that could be adapted)

### **ENVR 400 – a model? – Tara Ivanochko**

- ENVR 400 in its 5th year. Students work in groups of four on Environment Science projects. In previous offerings students were responsible for setting up their own community collaborations (some did not have a community partner). The course has grown and it was becoming challenging to generate more and more project ourselves, and obvious that the most successful projects had community involvement / stakeholders.

- This year Tara worked with Holly Schmidt and Jay Penner (later Kari Grain) (Community Learning Initiative) to develop a curriculum framework to support community based research projects with local partners, reflective practice, and community engagement; develop business process timeline for working with community partners on a long term basis; and develop a research and evaluation plan to be conducted by GRA.

- Partnerships were established with Metro Vancouver, Suzuki Foundation, SEEDS, Village Vancouver, False Creek Residence, SPEC, FEDAP....). These organizations then came to the class and pitched their projects. 12 projects were pitched, 10 were chosen by the class (38 students). Students selected top 3 choices and justified their choices. Course instructors allocated students to projects based on preferences- all student got their first or second choice.

The course transformation could not have happened if it hadn't been for CLI office! They have also provided the documentation and support structure to allow the course to run independently next year. However, for this to happen the faculty need to be engaged with the course well before July.

- In addition to group work on projects, activities also include personal reflections that involve photograph with caption and then reflective piece.

- There is a conference open to the university and the community at the end of year to showcase the students' work.

- The course is co-taught (Tara and Sara Harris), 3 credits over two terms. Committee feels that the capstone should be 6 credits.

- The course is the end of a series: ENVR 200, 300, 400 so the capstone is supported by activities of the previous two courses. (E.g. In ENVR 300 students work with data and modeling. They have options between field and computer based (GIS, MAT lab) activities

- The capstone brings together the 200 level focus on environmental issues and the 300 level focus on research methods in a research project defined in collaboration with a community partner. Part of the evaluation this year will focus on how the students could be better prepared for their capstone experience at the 200 and 300 level. Both Tara and Sara are already finding ways to integrate the voices of community partners into the 200 and 300 level to begin scaffolding student work with community.

ENVR 200: An introduction, in seminars and field trips, to the major global, regional, and local environmental issues facing human societies.

ENVR 300: An introduction to environmental research. Students investigate research methodologies and reporting in a range of scientific disciplines and fields.

ENVR 400: Students complete an original research project in environmental science undertaken in interdisciplinary groups in collaboration with community.

- Syllabus will be posted on blog

### **(f) Support for Capstone and Considerations**

*Fundamentals and electives* – first, second and third year

*Real World Elective* –

A number of different activities can apply to the real world experience (SEEDS, directed studies, COOP, etc), and could be scaffolded in a sustainability framework to help students put their experiences in a wider context.

- This could include journaling and final report/project, developing an e-portfolio, participating in the Sustainability Club (could have online component)
- One thing I would like to do is to generate a system where students can get CSL credit for community service activities that do not fall under the other types of activities
- CLI is generously providing funds (**\$10,000**) for help with the development of the Real World Elective and Capstone
- These funds will get us started and see if we can get additional funding through the TLEF.

### **Questions to Ponder:**

What background will students have coming into the course?

What other activities/courses support the capstone? Which of those exist and which would require further development?

What support/resources do we need for course development and presentation?

Who will teach the course?

What challenges do we face?

### **(g) Action Items**

**Shona:**

1. Share blog (include examples of capstone courses at other universities, syllabi of foundational courses, Biology/Sustainability Learning Objectives).
2. Start TLEF for course development.
3. Provide course syllabi for fundamentals courses.

### **First Steps:**

1. How could course fit into curricula in faculties outside of Science? Is there interest in collaboration on the Sustainability Concentration?
2. Draft Capstone Aims/Student Learning Objectives – subgroup develop draft and share with rest of the group prior to the next meeting

### **Next Meeting:**

1. Report back on possible collaborations (capstone/concentration) with Faculties other than Science.
2. Discuss Capstone Aims/Student Learning Objectives.
3. Discuss the type of capstone experience that would be the most effective learning approach?
4. Expectation of background of students taking course.
3. Suggestions for how to use CSL funds