ENVIRONMENT AND RESOURCE STUDIES 402

Winter 2020

Senior Research Seminar

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Meeting Time/Location: Mondays, 2:30-5:20pm, RCH 308

Overview:

This course represents an opportunity for SERS students to integrate and synthesize their understandings of the social-ecological problems we face as a species and to apply their trans-disciplinary training to a problem-area or real-world case. In this course we will draw on systems and complexity thinking to understand how successful social innovations or system transformations, challenge and, are integrated into the broader social-ecological system. Innovation and transformation arise not so much in the individual elements (ideas, technologies, programs, processes) as in the relationship between the elements. Social innovation has been defined as, any initiative (product, process, program, project, policy or platform) that challenges and, over time, contributes to changing the defining routines, resource and authority flows or beliefs of the broader social system in which it is introduced. Successful social innovations reduce vulnerability and enhance resilience. They have durability, scale and transformative impact (SiG Knowledge Hub, 2019). Similarly, transformation can be defined as a fundamental change, which in the context of sustainability, requires systemic shifts in values and beliefs, patterns of social behavior, and multi-level governance and management regimes (Olsson et al. 2004, Olsson et al. 2014). Innovation and transformation represent approaches that respond to the complexity of sustainability-oriented issues in social-ecological systems.

In his book *Systems Thinking for Social Change*, David Peter Stroh notes that, "for any complex problem to be solved, the individual players all need to recognize how they unwittingly contribute to it. Once they understand their own responsibility for a problem, they can begin by changing the part of the system over which they have the greatest control: themselves … systems thinking can help people tell a new and more productive story. It honours their individual efforts and surfaces the limitations of these efforts … seeing the big picture and their role in it, people are more motivated and able to work together to redesign the whole". In this way, systems-based approaches to systems change not only require an understanding of the complexity of social-ecological systems but also of our individual psyches and how these social-ecological-knowledge systems interact.

This course provides an opportunity to apply systems-based tools to systems change in the context of a problem-area or case-based study defined by students in cooperation with the teaching-team. Students are provided with an introduction to the conceptual tools of systems thinking and resilience that help understand the dynamics of social change and social innovation. These conceptual tools will then be applied by students to develop a richer understanding of a case study of fostering social innovation or transformative systems change.

Course Objectives:

1) Through readings and weekly discussions, as well as a collaboratively-designed group research project, this course is intended to allow senior undergraduate students to:

(i) explore theories and tools of social innovation and transformation for fostering systemic-change, and;

(ii) how these can be applied to issues of resilience and sustainability in linked social and ecological systems.

2) Apply these tools of systems change to better understand a problem-domain or case study of a system of interest.

Course Structure:

The course will be structured to provide some introductory lectures and reading to provide a conceptual basis for students to then frame a collaboratively-designed group project. These introductory lectures will be followed by a series of student-led seminars based, and to encourage progress, on group projects to other groups for constructive, critical feedback, potential synergies and discussion purposes.

Resources:

READINGS:
Weekly readings will be posted to LEARN.

LEARN:
All course communications and course materials (lecture notes, weekly readings) will be provided through LEARN. Please sign in to LEARN as soon as possible and ensure you are on the course roster and that your e-mail address is correct.

Course schedule and **weekly readings** will be provided through **LEARN** under "Readings" as pdfs, videos, links or specific references are provided and students are expected to find these using the University of Waterloo's E-Journals Collection available at: (http://sfx.scholarsportal.info/waterloo/az).

Please allow at least **24 hours** for responses to e-mail inquiries from the teaching team and do not expect e-mail responses from the teaching team over the weekend.

Course Requirements:

Student-led Project Discussions: 25%

- In projects groups, students will present a brief summary of their project work to date beginning with their proposal and including work to date. Groups will have approximately 30 minutes at the beginning of class to prepare a 1-page update on their progress (to be posted on discussion boards on LEARN), this will be followed by paired-group discussions on the group updates, including opportunities for written feedback from the paired-groups via discussions boards on LEARN.

Participation: 25%

- Participation is essential in this course due to the inherently discursive nature of this seminar, project-based course. Students are required to attend **all** classes and actively engage in discussion (even when not presenting/facilitating). Respectful debate and active listening are encouraged. Active and constructive contribution in

your group project will also be considered as part of your participation grade. Project groups will also provide regular updates to the class for feedback, cross-fertilization and discussion purposes in the second-half of the class.

Project Proposal: 10%

- Developed in collaboration with Dan, provide a 3-page single spaced outline for the Group Project (more detail below) and include relevant references on a separate page;
- **Due Date: February 10th, 2020 (submitted on LEARN by midnight)**

Systems Change Description: 40%

- Develop a systems-based description of a collaboratively designed, transdisciplinary research problem to: refine your understanding of the case study; describe how you propose to change the system of interest to make it more resilient or sustainable; and, help students reflect critically on, and understand, how their individual perspective influences their understanding of the system and systems change processes. The system description is to be comprised of the following:
  - A description of the structure and/or dynamics of the current state of the system of interest
  - A description of the emerging pattern that will be the long-term successor to the current system state
  - A description of the turbulent domain of transitional activities and innovations that people are trying out in response to the changing landscape between the current system state and the long-term emerging system pattern
  - A description of your individual/group perspective, biases, assumptions on the system of interest and how they evolved
- No more than 20 double-spaced pages (excluding title page, figures and references)
- A **Grading Guide** has been posted on LEARN, please refer to it for details as the teaching team will be utilizing this to grade the submissions
- **Due Date: April 3rd, 2020 (submitted on LEARN by midnight)**

Late Policy:

Late assignments will be accepted up to **one week after the due date** with a penalty of one full grade (i.e., 80% becomes 70%) except for unusual mitigating circumstances that should, of course, be communicated as soon as possible. Any requests for extension without penalty or for more than one week must be made in writing in advance of the assignment due date.

Course Schedule:

NOTE: Please refer to **LEARN 402 site** regularly for changes to this tentative **Schedule** and for **Weekly Readings**

Week #1 – January 6th – Introduction to the course – course structure, potential projects etc.

Week #2 – January 13th – Overview of systems thinking, critical systems and complexity capabilities
Readings: Readings posted on LEARN

Week #3 – January 20th – Social Innovation theories and practice
Readings: Readings posted on LEARN

Week #4 – January 27th – Systems Transformation
Readings: Readings posted on LEARN

Week #5 – February 3rd – Three-Horizons Approach
Readings: Readings posted on LEARN

Week #6 – February 10th – Applying Social Innovation and Transformation
Summaries as well as critical reviews to be posted on discussion boards on LEARN

PROPOSAL ASSIGNMENT DUE: February 10th, 2020 (submitted on LEARN by midnight)

February 17th – **NO CLASS DUE TO READING BREAK**

Week #7 – February 24th – Group Project Check-ins / Presentations
Summaries as well as critical reviews to be posted on discussion boards on LEARN

Week #8 – March 2nd – Group Project Check-ins / Presentations
Summaries as well as critical reviews to be posted on discussion boards on LEARN

Week #9 – March 9th– Group Project Check-ins / Presentations
Summaries as well as critical reviews to be posted on discussion boards on LEARN

Week #10 – March 16th – Group Project Check-ins / Presentations
Summaries as well as critical reviews to be posted on discussion boards on LEARN

Week #11 – March 23rd – Group Project Check-ins / Presentations
Summaries as well as critical reviews to be posted on discussion boards on LEARN

Week #12 – March 30th – Wrap-up Discussion / Synthesis
Readings: Readings posted on LEARN

SYSTEMS CHANGE DESCRIPTION ASSIGNMENT DUE: April 3rd, 2020 (submitted on LEARN by midnight)

Academic Integrity:

Academic Integrity: In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. www.uwaterloo.ca/academicintegrity/. Students who are unsure what constitutes an academic offence are requested to visit the on-line tutorial at: http://www.lib.uwaterloo.ca/ait/

Research Ethics: Please also note that the University of Waterloo requires all research conducted by its students, staff, and faculty which involves humans as participants to undergo prior ethics review and clearance through the Director, Office of Human Research and Animal Care (Office). The ethics review and clearance processes are intended to ensure that projects comply with the Office's Guidelines for Research with Human Participants (Guidelines) as well as those of provincial and federal agencies, and that the safety, rights and welfare of participants are adequately protected. The Guidelines inform researchers about ethical issues and procedures which are of concern when conducting research with humans (e.g. confidentiality, risks and benefits, informed consent process, etc.).
If the development of your research proposal consists of research that involves humans as participants, the please contact the course instructor for guidance and see:
www.research.uwaterloo.ca/ethics/human/

Note for students with disabilities: The Office for Persons with Disabilities (OPD), located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.

Religious Observances: Please inform the instructor at the beginning of term if special accommodation needs to be made for religious observances that are not otherwise accounted for in the scheduling of classes and assignments.

Grievance: A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70 - Student Petitions and Grievances, Section 4, www.adm.uwaterloo.ca/infosec/Policies/policy70.htm. When in doubt, please contact your Undergraduate Advisor for details.

Discipline*:* A student is expected to know what constitutes academic integrity, to avoid committing academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offense, or who needs help in learning how to avoid offenses (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline, www.adm.uwaterloo.ca/infosec/Policies/policy71.htm. For typical penalties, check Guidelines for Assessment of Penalties, www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines.htm

Appeals: A decision made or penalty imposed under Policy 70 - Student Petitions and Grievances (other than a petition) or Policy 71 – (Student Discipline) may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 (Student Appeals). See: www.adm.uwaterloo.ca/infosec/Policies/policy72.htm

Consequences of Academic Offences:
ENV students are strongly encouraged to review the material provided by the university's Academic Integrity office (see: http://uwaterloo.ca/academicintegrity/Students/index.html).

Turnitin:
Plagiarism detection software (Turnitin) will be used to screen assignments on this course. This is being done to verify use of all material and sources in assignments is documented. In the first lecture of the Term, details will be provided about the arrangements for the use of Turnitin. **NOTE:** Students may request an alternative to Turnitin, which is to prepare an annotated bibliography for each assignment. For advice on how to prepare an annotated bibliography, see: http://www.lib.sfu.ca/help/writing/annotated-bibliography