

University of Waterloo
School of Environment, Enterprise and Development

**SUSM 601 – Foundations of Sustainability Management
Fall Term 2019**

Course Syllabus

Course Director: Jason Thistlethwaite (j2thistl@uwaterloo.ca)
EV3 4267

Course Instructors: Jason Thistlethwaite
Jennifer Lynes
Paul Parker
Simron Singh

Office Hours: T: 12pm-1:30pm; Th: 12pm-1:30pm
I'm usually in my office, so stop by!

Location: Evolv1 room 1012, 420 Wes Graham Way

Time: Thursday, September 5th: 9am-12pm
Friday, September 6th: 9am-12pm
Monday, September 9th: 9am-12pm
Tuesday, September 10th: 9am-12:00pm
Wednesday, September 11th: 9am-12pm
Thursday, September 12th: 9am-12pm

Course Description

The course is intended to provide students with a conceptual understanding of some of the key questions that underlie research on sustainability management. Sustainability management is explored by defining and drawing together some of the basic ecological concepts, including the concepts of scale, limits and boundaries, with economic and social requirements. How these requirements are integrated with one another and the tensions created between them lies at the heart of sustainability management. The course is not intended to be a comprehensive overview of sustainability, but rather seeks to raise a number of fundamental questions respecting how we approach the management of economic activities in the context of competing environmental, political, and social demands.

The material covered within the course has general application but focusses on some of the major issues within the field including energy systems, measurement, management, governance, marketing, environmental and ecological economics, and stakeholder engagement. In addition, the class will participate in a negotiation simulation role-play to assess the potential of oil pipelines as a means of sustainable resource extraction. The class will be divided into groups to represent the interests of different stakeholders early in the second week of class. Each group will be responsible for learning about each stakeholder's perspective on the Northern Gateway Pipeline based on readings provided. Our intention is that by investigating these issue areas, students will begin to see how the concepts and tools associated with sustainability management can enable practitioners and scholars to assess and apply evidence in support of sustainable practices.

To help familiarize students with the research and writing expectations at the graduate school level, the course requires that students complete a research grant proposal for the final assignment. The ability to translate research and knowledge into a proposal with the intent of securing funding is critical in both academic and corporate settings. Proposals must demonstrate a clear depth of familiarity with sustainability management research so they are perceived credibly. The identification of a clear puzzle or problem that remains a gap in existing research is the most effective way of securing this credibility. At the same time, writing must be clear and avoid unnecessary jargon so any "non-expert" reviewing the proposal can understand its intent and design. Lastly, proposals need to be feasible with a clear plan for how the research will be conducted.

The key learning objectives of the course are as follows:

- Introduce to students the conceptualizations of sustainability and sustainability management;
- Learn how to employ major sustainability issues and concepts in developing research questions, objectives and methodologies.
- Improve and develop graduate writing and research skills.
- Provide foundational knowledge of ecological, energy and climate systems, and the relationship of human activities to global environmental change within these systems, and different approaches towards their governance;
- Ensure a foundational understanding of the application of economic principles to sustainability management;
- Consider the responsibility of stakeholders (principally business corporations), government, First Nations, and citizens to address sustainability and the factors that influence (positively and negatively) these actors' abilities and motivations to address sustainability issues.

Course Structure

The structure of this class is an intensive six-day program. It will require considerable focus over this period, including assignments. Students should come to the program

prepared to devote their energies to this class during this period. Students will be required to complete further course work beyond the initial seven-day period.

The course will be team taught, with different instructors leading different discussions in different parts of the course.

The class structure will include a mixture of instructor lead discussions, student lead discussions and group work.

Date	Topic	Instructors	Time
Day 1: Sept 5 th	Introduction; Sustainability; Graduate writing and research;	Thistlethwaite;	9:00-12:00pm
Day 2: Sept 6 th	Corporate sustainability; Graduate writing and research; Assignment #1	Thistlethwaite;	9:00-12:00pm
Day 3: Sept 9 th	Energy: Intro to research and grant writing	Parker; Thistlethwaite;	9:00-12:00pm
Day 4: Sept 10 th	Economics and Sustainability	Thistlethwaite; Singh	9:00-12:00pm
Day 5: Sept 11 th	Psychology and marketing for sustainability; Conclusion research and grant writing	Thistlethwaite; Lynes	9:00-12:00pm
Day 6: Sept 12 th	Stakeholder engagement; Negotiation simulation	Thistlethwaite;	9:00-12:00pm

Course Materials

All of the course materials will be provided online through the UW LEARN site or have identified URLs on the course outline.

Students will be expected to research supplementary materials in order to complete assignments.

In addition to readings useful to the course, there are several key resources listed below that are useful to inform graduate writing and research skills. It is recommended that you

consult these resources to guide your responses to assignments in this class and others. These resources will also serve to support your thesis writing.

Graduate Writing and Research Guidance

1. Academic writing. 2018. <http://writeonline.ca/> (provides style guides for writing case study reports, lab reports, literature reviews and reflective writing).
2. Writing and Communication Centre. University of Waterloo. <https://uwaterloo.ca/writing-and-communication-centre/current-graduate-students>

Course Readings

The course readings consist of some general readings on the research topic for that day. The main readings for each should be read thoroughly before the class in which they will be discussed. There are small readings that provide important context on some of the issues we will be discussing in class. *You do not need to read all of these from start to finish, but you should read the salient sections of the reports in order to become familiar with the principle sustainability concerns.* These readings, in addition to your own research, are intended to inform your work on the assignments in the course.

Day 1 – Conceptualizing Sustainability

Readings:

1. Kates R.W., Parris, T.M., & Leiserowitz, A. A. (2005). What is Sustainable Development? Goals, Indicators, Values, and Practice. *Environment: Science and Policy for Sustainable Development*, 47(3), 8-21.
2. Blythe, J. Silver, J., Evans, L., Armitage, D., Bennett, N. J. (2018) The Dark Side of Transformation: Latent Risks in Contemporary Sustainability Discourse. *Antipode*. 50(5). 1206-1223.
3. Rockström, J et al. (2009). A safe operating space for humanity. *Nature* 461: 472-475
4. Hegler, M. A. (2019) I work in the environmental movement. I don't care if you recycle. *Vox* <https://www.vox.com/the-highlight/2019/5/28/18629833/climate-change-2019-green-new-deal>

Graduate writing and reading:

5. Mensh B, Kording K (2017) Ten simple rules for structuring papers. PLoS Comput Biol 13(9): e1005619. <https://doi.org/10.1371/journal.pcbi.1005619>
6. How to construct a Nature summary paragraph. 2005. Nature 435, 114-118.
7. Edwards, P. How to read a book v.5. University of Michigan, School of Information.

Day 2 - Corporate sustainability

Readings should be read in order to prepare for a case discussion on corporate sustainability.

1. Webster, A. J. and R. H. Clarke. 2017. 'Insurance companies should collect a carbon levy', Nature 549, pp. 152–154.
2. Slawinski, N. J. Pinkse, T. Busch, and S. B. Banerjee. 2017. The Role of Short-termism and Uncertainty Avoidance in Organizational Inaction on Climate Change: A Multi-level Framework. Business & Society. 56 (2): 253-282.
3. Resiliency Insurance Case Study: Case Scenario.

Day 3 – Energy and Introduction to Grant Writing

1. Norde, W. (1997). Energy and entropy: a thermodynamic approach to sustainability. *The Environmentalist*, 17, 57-62.
2. Vaclav Smil, (2000). Energy in the Twentieth Century: Resources, Conversions, Costs, Uses and Consequences, Ann. Rev. Energy & Env. 25:21-51
3. Jacobson, M. & Delucchi, M. A. (2009, October 26). A plan to power 100 percent of the planet with renewables. *Scientific American*.
4. Inman, M. & , (2013, April 11). The true cost of fossil fuel. *Scientific American*.

Grant writing:

1. Review instructions for Canada Graduate Scholarship http://www.nserc-crsng.gc.ca/ResearchPortal-PortailDeRecherche/Instructions-Instructions/CGS_M-BESC_M_eng.asp and Ontario Graduate Scholarship <https://uwaterloo.ca/graduate-studies-postdoctoral-affairs/current-students/external-awards/ontario-graduate-scholarship-ogs-and-queen-elizabeth-ii>

Day 4 – Environmental and Ecological Economics

1. Fullerton, D., & Stavins, R. (1998). How economists see the environment. *Nature*, 395(6701), 433-434.
2. Goulder, L. H., & Stavins, R. N. (2002). Discounting: an eye on the future. *Nature*, 419(6908), 673-674.
3. De Groot, R., Brander, L., van der Ploeg, S., Costanza, R., Bernard, F., Braat, L., Christie, M., Crossman, N., Ghermandi, A., Hein, L., Hussain, S., Kumar, P., McVittie, A., Portela, R., Rodriguez, L., ten Brink, P., and van Beukering, P. 2012. Global estimates of the value of ecosystems and their services in monetary units. *Ecosystem Services*. 1: 50-61.
4. Daily, G. C., Söderqvist, T., Aniyar, S., Arrow, K., Dasgupta, P., Ehrlich, P. R., ... & Walker, B. (2000). The value of nature and the nature of value. *Science (Washington)*, 289(5478), 395-396.

Day 5 – Psychology and marketing for sustainability, grant writing continued

1. Kolbert, Elizabeth. 2017. Why Facts Don't Change Our Minds. *The New Yorker*. <https://www.newyorker.com/magazine/2017/02/27/why-facts-dont-change-our-minds>
2. Lynes, Jennifer. 2018. Dealerships are a tipping point. *Nature Energy*. (3): 457-458.
3. Lynes, Jennifer and Sarah Wolfe. 2017. "It's time to rethink our messaging about environmental change". *The Globe and Mail*. <https://www.theglobeandmail.com/report-on-business/rob-commentary/its-time-to-rethink-our-messaging-about-environmental-change/article34914924/>
4. International Energy Agency. Global EV Outlook 2018: Towards cross-modal electrification. Read Executive Summary (Pg. 9-15). Available on LEARN.

Day 6 – Stakeholder engagement and negotiation role-play

****following the role-play there will be an opportunity to address questions on the research proposal****

1. Wood, M. and Jason Thistlethwaite. To Grant, or Not to Grant a Social License to Operate: Enbridge and the Northern Gateway Pipeline. Available on LEARN.
2. Thistlethwaite, J., Wood, M., Carter, A. and Dordi, T. The Northern Gateway Pipeline: Seeking Consensus is a Slippery Business. Case Study. Available on LEARN.
3. Review your stakeholder scoresheet and instructions received via e-mail.

Course Evaluation

Assignment	Value (%)	Due Date and Time
Assignment 1	20	September 9 th (11:59 pm)
Research proposal background	30	September 16 th (11:59 pm)
Final proposal	30	September 30 th (11:59pm)
Class Participation	20	

Assignment # 1

The first assignment will involve a number of specific questions that will require you to reflect and think critical about some of the reading material discussed in class. This assignment focusses on the ways in which sustainability can be measured, particularly in a quantitative manner. The assignment will also ask about some of the emerging criticisms of sustainability transformations. The assignment will be handed out on September 5th in class and due at the end of the day on September 9th. We do not anticipate that the assignment should take more than a few hours to complete. Read over the questions after the first class. There will be time on Friday September 6th class to address any questions.

Research proposal development

The second assignment will require students to complete a rough draft of their grant proposal statement of interest. Students will be required to develop several tentative objectives, research questions, preliminary thinking on research gaps, research methods and ideas on impacts. The assignment will be available September 5th and is due September 16th. We will be spending time throughout the course to support this assignment in addition to working through sample proposals.

Final proposal

Students are required to submit a draft research proposal designed to be submitted for consideration in a grant competition. The proposal should synthesize the material generated from the research proposal development and establish a clear logical flow between the required sections. More information on this and the proposal development is available on LEARN.

Class Participation

Students are required to attend each class. They should come prepared to participate in class discussions and in class exercises. Participation will not be marked based on the quantity of engagement, rather the quality. In particular, references to specific readings used as evidence or starting points for discussion will be rewarded.

Expectations

90+	<ul style="list-style-type: none"> - able to initiate and facilitate the development of ideas - comments are consistently insightful and raise questions or ideas that stimulate the learning of others - demonstrates critical reflection on readings - brings relevant and interesting resources (media, cases, articles) to the attention of others
70-80	<ul style="list-style-type: none"> - comments and questions demonstrate some critical analysis - consistently shares ideas - effort made to build on ideas of others
60-70	<ul style="list-style-type: none"> - raises occasional clarifying questions and comments - comments often not of a critical nature and do not demonstrate integration of material
Below 60	<ul style="list-style-type: none"> - no consistent contribution - little evidence of integrated learning - absent from class

Course Communication

Communication by the instructor to students will be sent to students 'uwaterloo' email through LEARN or through postings to course LEARN site. Students are responsible for ensuring prompt retrieval of course messages.

University and Faculty Requirements and Notices

- ◆ **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) www.adm.uwaterloo.ca/infosec/Policies/policy72.htm