SSM1050: Ecosystem Science

Damian Maddalena

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1   Course Description

Ecosystem science provides the concepts and mode of thinking to support the sustainable management of diverse systems at a range of scales. An understanding of the interactions within and between ecosystems is a critical component of the design and implementation of sustainable management practices. This course provides the foundational concepts of ecosystem science for the understanding, assessment, and design of sustainable management regimes.

2   Course Outcomes

1. Understanding of the major concepts of ecosystem science.

2. Ability to evaluate materials and programs from various sources using concepts and principals from ecosystem science.

3. Effective science communication to a wide range of audiences.

3 Course Structure

This is project-based, seminar course. Each week, the instructor and/or your classmates will present material to the class. Active participation by all members of the class is expected. During the first few weeks of class, it will primarily be your instructors leading the discussion. After that, a group of students will take that role each week. Using an ecosystem science lens, each group will research a topic of their choosing relating to sustainability. (Topics must be approved by your instructors.) See Section 3.3 on page 3 for further information on projects and assignments.

3.1 Course Delivery

The course is scheduled to be in person. Should we need to move online, we will meet synchronously, online using tools such as Quercus, Zoom, Microsoft Office 365, and others. All decisions about course delivery will be made by UTM administration and the province on Ontario.

All resources should be accessed using your University of Toronto credentials unless otherwise noted by your instructors.

3.1.1 Course Communication

All communications for this course will be through University of Toronto email, Microsoft Teams, and Quercus. Please verify that your UTORid is working and you are able to access these resources.

For more information on managing your UTORid, please see: https://www.utorid.utoronto.ca/.

Quercus Classwork, major assignments, weekly class meetings, and due dates are all included in weekly course modules on Quercus. Class announcements are also archived on Quercus in addition to being automatically delivered through your U of T email.

Microsoft Teams Microsoft Teams will be used for communication and discussions in this course. You have access to Teams through your University of Toronto Microsoft Office account. All matters regarding course material, logistics, etc should be discussed publicly on Teams. Any emails regarding public matters will be replied to simply as: "Please post on Teams."

Use this link to request to join the course Team: https://teams.microsoft.com/l/team/19%3ansMuYOlb97ijnek6nHZrmcB94CkNTnfDLxq4p1lMZ-w1%40thread.tacv2/conversations?groupId=45de036e-b65b-449a-8d96-e7afc6cec338&tenantId=78aac226-2f03-4b4d-9037-b46d56c55210

Email It is your responsibility to read your U of T email on a regular basis. This will ensure that you receive important information from your instructors and the university. When emailing your instructors, please include the course code in the subject line. This ensures your instructors will see your email and give it the importance it deserves. For example, if you were emailing your instructor with a question about missing class, your subject should be "SSM1050: Absence," not "Yo Prof, I'm out!"

Please reserve email for private matters. All questions about course content, logistics, etc should be posted on the course Team.

3.2   Course Materials

3.2.1   Required

chapin2011principles

Full text available online **for free** through the library. See link above.

goldfarb2018eager

The book is available in the bookstore and wherever books are sold (online and otherwise). Please secure a copy by October 1.

If you prefer digital, click here.

3.2.2   Recommended

The following optional text may be included in your weekly reading list for reference and further study. It is not recommended that you purchase it at this time. Online access is **available free through the University of Toronto library**.

weathers2012fundamentals

3.3   Assessment

Table 1: Assessment components and due dates.

Component	Due Date	% Grade
Reading Responses	weekly	40
Proposal	10/05	10
White Paper	11/23	20
Presentation	scheduled	10
Final Exam (Take Home)	12/07	20

3.3.1   Writing Responses

Each week you will submit a short reading response before our class meeting. These will be due at 11:59 the day before our class meeting so that your instructors have time to review them before class. These should be no more than 1 page in length, single-spaced, 12-point font. A successful reading response paper succinctly summarizes the major issue(s) from the week's reading and incorporates your unique perspective by posing questions, including examples, and citing a related paper. Full citations are expected when including additional sources.

3.3.2   Proposal

You will turn in a project proposal as the first phase of your group project. This will be one work product for the group, with each student receiving an individual grade based both the deliverable and the group's assessment of your contributions, as will the other group deliverables. Further details will be provided on Quercus and during class instruction.

3.3.3   Presentation

Each group will give a seminar on a topic of their choosing. The group will provide the reading list one week prior to their session, which will be made available on Quercus by your instructors. Students will be expected to familiarize themselves with this material in the same manner as those provided by your instructors. Topics will be arranged with each group as part of your major project outline.

3.3.4   White Paper

The final product of your semester-long group project will be a white paper. Your group will examine a specific ecosystem issue and the ways in which humans have affected the form and function of that system. This paper will be written for a scientific audience with accompanying executive summary materials for a general audience. Your work can focus on one of the following:

- policy options open to government for mitigation or prevention of negative impacts on the system by human activity (science, policy, legislation etc.).

- business options for mitigating impact and/or promoting sustainability

- some combination of the above or an alternative approved by your instructors.

Further details will be provided on Quercus and during instructional time.

3.3.5   Final Exam

You will sit for your final exam during the last class meeting. The questions will be released to you at the start of class. You will be given a defined period with which to work on them. Further details will be available on Quercus and during instructional time.

3.4   Missed Exams and Assignments

Please consult the Office of the Registrar for more information:
https://www.utm.utoronto.ca/registrar/current-students/exams.

3.5   Participation

Though not formally a part of your final grade, class participation is an important component of your experience this semester and to your future success professionally. Consider these two components during the semester and in your future professional endeavours.

Attendance: Show up. You are required to attend each class meeting. Please speak to your instructors if you anticipate missing class so that arrangements can be made. If an emergency arises please communicate with your instructors as soon as possible.

Contribution to Class Discussion: Be engaged. Participation in class discussion is a requirement of this class. It facilitates your learning and makes it more interesting for everyone. Quality participation:

1. understands and incorporates assigned readings;

2. is respectful of the thoughts, ideas, and lived experiences of your fellow classmates; and

3. incorporates ideas and materials from your personal/professional interests, other courses, and previous training.

3.6 Late Penalties

You are expected to complete assignments on time. There will be a penalty for lateness of 10% deducted per day, and work that is not handed in one week after the due date will not be accepted. If you anticipate being late on the submission of an assignment, it is recommended you communicate with your instructor before the submission deadline.

3.7 Tech Requirements

Please refer to the following link for University of Toronto tech requirements of online learning: https://www.viceprovoststudents.utoronto.ca/covid-19/tech-requirements-online-learning/.

3.8 Tentative Schedule

Table 2: Tentative schedule. I reserve the right to modify as needed.

Date	Topic	Notes
09/14	Ecosystem Science Intro	
09/21	System Earth	List of three potential topics due
09/28	Mechanisms	
10/05	Mechanisms and Patterns	Proposals due
10/12	Reading Week	No class
10/19	Patterns	
10/26	Dynamics	
11/02	Anthropogenic Change	
11/09	Managing with Ecosystems in Mind	
11/16	Writing Workshop	Writing peer review
11/23	Catch up	White papers due
11/30	Wrap up	
12/07	Final Exam	

4 UTM Library Learn Anywhere Resources

The UTM Library has a collection of resources for online learning aggregated here: https://utm.library.utoronto.ca/students/quercus/learn-anywhere.

5 Privacy Statement

5.1 Notice of Video Recording and Sharing

Portions of this course, including your participation, may be recorded on video and will be available to students in the course for viewing remotely. Course videos and materials belong to your instructor, the University, and/or other source depending on the specific facts of each situation, and are protected by copyright. In this course, you are permitted to download any recorded session

videos and materials for your own academic use, but you should not copy, share, or use them for any other purpose without the explicit permission of the instructor. For questions about recording and use of videos in which you appear please contact your instructor.

6 Academic Integrity

Students will be required to submit their course essays to the University's plagiarism detection tool for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation web site (https://uoft.me/pdt-faq).

UTM wishes to remind students that they are expected to adhere to the Code of Behaviour on Academic Matters regardless of the course delivery method. By offering students the opportunity to learn remotely, UTM expects that students will maintain the same academic honesty and integrity that they would in a classroom setting. Potential academic offences in a digital context include, but are not limited to:

- Accessing unauthorized resources (search engines, chat rooms, Reddit, etc.) for assessments.
- Using technological aids (e.g. software) beyond what is listed as permitted in an assessment.
- Posting test, essay, or exam questions to message boards or social media.
- Creating, accessing, and sharing assessment questions and answers in virtual "course groups."
- Working collaboratively, in-person or online, with others on assessments that are expected to be completed individually.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources.

7 Equity Statement

The University of Toronto is committed to equity, human rights and respect for diversity. All members of the learning environment in this course should strive to create an atmosphere of mutual respect where all members of our community can express themselves, engage with each other, and respect one another's differences. U of T does not condone discrimination or harassment against any persons or communities. As a course instructor, I will neither condone nor tolerate behaviour that undermines the dignity or self-esteem of any individual in this course and wish to be alerted to any attempt to create an intimidating or hostile environment. It is our collective responsibility to create a space that is inclusive and welcomes discussion. Discrimination, harassment and hate speech will not be tolerated. If you have any questions, comments, or concerns you may contact the UTM Equity and Diversity officer at edo.utm@utoronto.ca or the University of Toronto Mississauga Students' Union Vice President of Equity at vpequity@utmsu.ca.

Further information can be found at the Equity, Diversity, & Inclusion Office's webpage: http://www.utm.utoronto.ca/equity-diversity/.

8 Accessibility of Course Materials

8.1 University of Toronto Information

The University provides academic accommodations for students with disabilities in accordance with the terms of the Ontario Human Rights Code, including those who have a physical, sensory, or learning disability, mental health condition, acquired brain injury, or chronic health condition, be it visible or hidden. If you have a disability or health consideration that may require accommodations, please approach the Accessibility Services as soon as possible. The Accessibility Services staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. To register with Accessibility Services, please call the centre at 905-569-4699 or e-mail access.utm@utoronto.ca.

Further information can be found at the Equity, Diversity, & Inclusion Office's webpage: http://www.utm.utoronto.ca/access/.

8.2 Assistive Technologies

Course materials are designed specifically to be accessible using assistive technologies such as a screen reader. Please inform the instructor if any materials do not function properly with this or similar technologies so that issues can be rectified.

9 Remote Access

If you are a citizen of another country, and/or accessing your courses at the University of Toronto from a jurisdiction outside of Canada, please note that you may be subject to the laws of the country in which you are residing, or any country of which you have citizenship. The University of Toronto has a long-established commitment to freedom of expression, with this right enabled by an environment valuing respect, diversity, and inclusion. In your classes, you may be assigned readings, or discuss topics that are against the law in other jurisdictions. I encourage you to become familiar with any local laws that may apply to you and any potential impact on you if course content and information could be considered illegal, controversial, or politically sensitive. If you have any concerns about these issues, please contact your instructor directly to discuss with them.

10 Dropping Fall Courses

This is a required course in the MScSM program. Please see your instructors early on if difficulties arise. Additionally, please consult with the Program Coordinator and the Program Director to discuss. November 16, 2022 is the final date to drop Fall session courses without academic penalty.