

**The Ecological Foundations of Agroecology  
PSS 6120**

**INSTRUCTOR:**

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**CLASS MEETING TIMES AND LOCATION:**

Mondays, 12:00-1:30pm EST on Zoom

<https://uvm-edu.zoom.us/j/85371861029>

**OFFICE HOURS:**

By appointment – email me any time! Messaging via WhatsApp is also a valid form of communication for more time sensitive inquiries or requests: +16467342823

**COURSE DESCRIPTION:**

This introductory graduate level course examines the ecological foundations of agroecology. Over the course of three sequential modules, students will explore fundamental principles of ecology and their application to agricultural systems and landscapes. Students will be challenged to consider agricultural systems from an ecological perspective. Students will identify and understand how to apply management strategies for promoting ecologically resilient agricultural systems. Additionally, because ecology is inherently relational, students will be encouraged to consider how social forces mediate ecological processes and management of agroecosystems by considering ecological principles and theories across diverse contexts. Throughout the course, we consider how the illusion of a human-nature divide informs ecology and food production practices.

**READINGS /CONTENT:**

I will provide select readings from multiple texts and journals. Pre-recorded lectures, online videos and audio contributions will also be assigned. I strive to provide a diversity of content to speak to diverse types of learning that are present in every classroom. Often, I'll provide one or two required readings, videos or podcasts and then allow students to self select a final piece of assigned content that suits your interests or speaks to your preferred learning style.

I always welcome feedback on assigned content and suggestions for how to do continue providing more diverse content.

Content will be made available on Blackboard one week prior to class (e.g., content that you are expected to complete for class on 1/30 will be made available on 1/23).

**Useful Background Texts (optional):**

Magdoff, F. & van Es, H. (2021). Building Better Soils for Better Crops. Northeast SARE. Free PDF online or Book: <https://www.sare.org/resources/building-soils-for-better-crops/>

Perfecto, I., Vandermeer, J., & Wright, A. (2019). Nature's matrix: linking agriculture, biodiversity conservation and food sovereignty. Routledge. *A PDF is provided on the course website.*

**LEARNING OBJECTIVES...by the end of this course students will:**

1. Develop a baseline understanding of ecology and its application to studying and managing agroecosystems
2. Understand the relationships of agroecosystems with their surrounding ecosystems
3. Establish an ecological framework for evaluating and managing food production practices
4. Be familiar with some of the current agroecological practices for managing agroecosystems
5. Understand how social factors (including history, power, and systems of oppression) mediate ecosystem functions

## COURSE SCHEDULE

Class Date	Week	Theme	Topic	Assessments
<b>MODULE 1: Ecology &amp; Evolution Basics</b>				
1/15	Week1	Setting the Stage	Principles of Ecology & Evolution	-
1/22	Week 2	Setting the Stage	Principles of Ecology & Evolution + Course Norms	Reflection (by 1/21)
1/29	Week 3	Setting the Stage	Social Ecologies	Reflection (by 1/28)
2/5	Week 4	Evolutionary Ecology	Domestication	Reflection (by 2/4)
2/12	Week 5	Ecology	Population Ecology + Ecological Complexity	Reflection (by 2/11)
2/19	Week 6	PRESIDENT'S DAY	NO CLASS	-
2/26	Week 7	Ecology	Species Interactions (student-led)	TBD
3/4	Week 8	Ecosystem Ecology	Ecological Relationships	TBD
3/11	Week 9	SPRING BREAK	NO CLASS	Module 1 Assignment Due 3/8 <b>OR</b> 3/20 (by 11:59pm EST)
3/18	Week 10	Ecosystem Ecology	Landscape Ecology	Optional reflection (by 3/17)
<b>MODULE 2: Soils – The Foundations of Agroecosystems</b>				
3/25	Week 11	Soil Ecology	Principles of Soil Health	Reflection (by 3/24)
4/1	Week 12	Soil Ecology	Managing & Assessing Soils (student-led)	TBD
<b>MODULE 3: Ecology and Management</b>				
4/8	Week 13	Plant Community Ecology	Ecological Weed Management	Reflection (by 3/31)
4/15	Week 14	Plant Community Ecology	Insect Ecology and Management	Reflection (by 4/14)
4/22	Week 15	Agroforestry	Principles & Practices (student-led)	TBD
4/29	Week 16	Student Presentations in Class		
5/6	Week 17	Final Visioning Assignment Due 5/6 by 11:59pm EST		

## STUDENT ASSESSMENTS:

1. **Weekly reflections** – Students will provide short and informal reflections on the week’s readings. Reflections should include at least two questions related to the week’s assigned content or topic to be discussed in class. Reflections should not exceed 250 words and must be uploaded to Brightspace by **11:59pm EST on the Sunday before class**. Students leading the student-led seminars may choose to assign reflections for those weeks as well; this will be communicated by the student facilitators at least 1 week prior to the class.

As this is a graduate level course, I will not be grading reflection posts. However, I will assess both the timeliness and effort of these posts. This will help me assess participation. Participation will also include attendance of weekly online meetings and engagement during class discussions.

2. **Student-Led Seminars** – Students will work in teams of 2-3 and, with support from the main instructor, design the content and format for a given week. This includes assigning materials, informing students of any other pre-class work (e.g., will you ask your peers to submit brief reflections and questions about the content you assign prior to class?), and facilitating in-class discussion. These weeks are designed to ensure that course content aligns with students’ interests and experiences.
3. **Module 1 Reflection** – Students will submit a reflective piece on the role of ecology and evolution within agroecosystems. This is an opportunity to integrate learning from the first module into students’ past professional experiences, current interests or research, and future plans. Students are expected to submit a 1,000-word essay or a 5-minute video or audio submission. Video and voice recordings should be clear, organized, and well edited.
4. **Final assignment** – you will be designing an agroecosystem and providing explanations for all of the decisions you make in the design process, requiring you to draw on course content. Further description and instructions forthcoming. **Due 5/6 by 11:59pm**
5. **Final Presentations** – Students will present drafts of their final assignment to the class. This is an opportunity to practice communicating ecological concepts and applying them to diverse contexts. Presentations will also provide an avenue for receiving feedback from peers prior to submitting your final assignment. Presentations should be 5-10 minutes long.

## **WEEKLY WORK FLOW**

*Each week, coursework begins on TUESDAY and runs until the end of class on MONDAY.*

*Each week you will be provided:*

- Readings, podcasts, or videos associated with a particular topic. Readings may be peer-reviewed papers, textbook chapters, or popular pieces for a general audience. Generally, readings at the beginning of a module will present foundational theories or principles. We will then move into various applications of these theories or principles. However, I will try to integrate applications of principles throughout each module. This will happen through discussions with guest speakers and student-led seminars. The intention is to provide you with diverse pedagogical opportunities to process the concepts and understand how those concepts can be applied to diverse agroecosystems.

- Pre-recorded lectures will provide supplementary material to help explain complex theories and concepts. These are usually optional, but they are valuable resources that can help you navigate some of the more dense, theoretical readings.
- As a diverse community of learners, we will attempt to engage with course content in multiple ways. Suggestions for additional ways to create an inclusive learning environment are **always** welcome!

*Each week you will be expected to:*

- Attend the online class meeting.
- Engage with all assigned material before class.
- Engage in in-class discussions about assigned content.

*Most weeks you will be asked to submit:*

- A short reflection and discussion questions based on the week's readings.

**GRADING SCHEME:**

Student-Led Seminar	20%
Module 1 Reflection	20%
Final Presentation	10%
Final Assignment	10%
Participation	40%
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Total	100%

**If you have questions at any time, please don't hesitate to reach out!**

**ACADEMIC HONESTY**

Academic honesty is expected of all students. The University of Vermont has a very strict policy concerning academic honesty and plagiarism. Please see the statement on academic honesty <http://www.uvm.edu/~uvmppg/ppg/student/acadintegrity.pdf> .

**PLAGIARISM**

Plagiarism constitutes a violation of Academic Honesty and warrants failure on an assignment and/or failure in the course. Plagiarism of ANY sort - e.g., copying part or all of a fellow student's report, copying from original references, texts, or websites - will NOT be tolerated. The consequences of plagiarism or cheating range from a score of zero on the assignment or exam, to filing a complaint with the University's Coordinator for Academic Honesty which can result in expulsion from UVM.

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