

PSS 311: Introduction to Agroecology
PSS 311

INSTRUCTOR:

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CLASS MEETING TIMES AND LOCATION

Online: July 16 to August 3

Face to Face: August 6 to August 11, at UVM, Burlington, VT

ONLINE or FACE-TO-FACE OFFICE HOURS:

- Weekly during online portion: Tuesday, Wednesday & Thursday, 1-2, by appointment. Can be by skype/zoom or Face to Face at Jeffords 225.

COURSE DESCRIPTION:

This hybrid, 4-week course presents an in-depth overview of research and applications in the field of agroecology, with a focus on principles-based approaches. The course seeks to provide students with both conceptual and practical content, covering the evolution of the field of agroecology, from its origins to the present, as it gains increasing recognition in scientific, policy, social movement and farming spaces. Students will engage in some of the debates agroecologists are now facing, as they grapple with maintaining the core characteristics of the field as it is increasingly applied by a wide diversity of actors. A special emphasis is placed in discussing the different expressions of agroecology as a science, a social movement and a practice. This embodies thinking of agroecology as transdisciplinary, integrating different knowledge systems in a search for solutions to the current challenges of our agrifood systems. In addition, we will explore the use of participatory action research (PAR) and principles, as an essential approach to agroecological research and practice. We will cover international and domestic geographic perspectives, and examine more in-depth, agroecology and PAR with 3-4 local Vermont farms that are currently collaborating with the ALC.

READING MATERIALS

Recommended text:

Méndez, V.E., C.M. Bacon, R. Cohen and S.R. Gliessman (Eds.) (2016). *Agroecology: a transdisciplinary, participatory and action-oriented approach*. Advances in Agroecology Series. CRC Press/Taylor and Francis.

**Other readings (e.g. journal articles, news excerpts, fact sheets, etc.) will be provided.*

LEARNING OBJECTIVES...*By the end of this course, students will be able to:*

1. Describe the state and evolution of the field of agroecology and engage in the debate on agroecology's dimensions as a science, a social movement and a practice;
2. Understand and apply a principles-approach to agroecology;
3. Understand opportunities and challenges of applying agroecology and PAR in 3 local Vermont farms.
4. Understand the challenges and opportunities of applying agroecology as a transdisciplinary, participatory and action-oriented approach.
5. Engage in active peer-to-peer learning with classmates and the diversity of professionals attending the face to face portion of the course.

COURSE STRUCTURE

Module 1 (Week 1): Agroecological Foundations

Learning Goals:

1. Understand the origins and evolution of agroecology, and why it is now perceived as a science, movement and practice.
2. Compare agroecological perspectives, also known as agroecologies and identify key examples.
3. Identify the challenges and opportunities of applying agroecology as a transdisciplinary, participatory and action-oriented approach.

Assignments:

1. View video lectures (2).
2. Online discussion forums, Tuesday, Wednesday and Thursday, based on readings and/or other course material. This includes 3 individual posts, and 3 replies to peers' posts.
3. *Module Essay*. Students will choose a topic of interest and develop a reflective essay that integrates the learning accomplished through the week (3-5 pages). Specific guidance and instructions will be provided.

Readings:

- Méndez, V.E., C.M. Bacon and R. Cohen (2016) *Introduction: Agroecology as a transdisciplinary, participatory and action-oriented approach*. pp. 1-22. In V.E. Méndez, C.M. Bacon, R. Cohen and S.R. Gliessman (Eds.) *Agroecology: a transdisciplinary, participatory and action-oriented approach*. CRC Press/Taylor and Francis
- Méndez, V.E., Martha Caswell, Stephen R. Gliessman and Roseann Cohen (2017) *Integrating Agroecology and Participatory Action Research (PAR): Lessons from Central America*. *Sustainability* 9: 705. doi: 10.3390/su9050705
- Rivera-Ferre, M.G. (2018) *The resignification process of Agroecology: Competing narratives from governments, civil society and intergovernmental organizations*. *Agroecology and Sustainable Food Systems* 42(6): 666-685.
- Wezel, A., S. Bellon, T. Dore, C. Francis, D. Vallod and C. David (2009) *Agroecology as a science, a movement and a practice. A review*. *Agronomy for Sustainable Development* 29(4): 503-515. 10.1051/agro/2009004

Module 2 (Week 2): Agroecological principles

Learning Goals:

1. Understand the history of the application of principles in agroecology.
2. Gain knowledge of the different agroecological principles approaches that are currently being used globally.
3. Deepen your conceptual knowledge on the principles of 'managing soil health' and 'maintaining and managing diversity'.

Assignments:

1. View video lecture (1-2).
2. Online discussion forums, Tuesday, Wednesday and Thursday, based on readings and/or other course material. This includes 3 individual posts, and 3 replies to peers' posts.
3. View and comment on video.
4. *Assignment*. Students will choose a topic of *burning* interest covered in the first 2 weeks of class and develop and upload a powerpoint or other format that you would use to teach the topic to your peers. Minimum of 10 slides. Options to powerpoint might be acceptable, but please check with instructor.
5. Instructor will assign farm groups.

Readings:

- CIDSE (2018) *The principles of agroecology: towards just, resilient and sustainable food systems*. CIDSE: Belgium.
- Food and Agriculture Organization of the United Nations (FAO) (n.d.) *The 10 elements of agroecology: guiding the transition to sustainable food and agricultural systems*. FAO: Rome.

IPES-Food. (2016) *From uniformity to diversity: a paradigm shift from industrial agriculture to diversified agroecological systems*. Website: www.ipes-food.org

Required pages: 31-40; **Optional:** the entire report.

Nicholls, C.I., M.A. Altieri and L. Vazquez (2016) Agroecology: Principles for the Conversion and Redesign of Farming Systems. *J Ecosys Ecograph* S5: 010. 10.4172/2157-7625.S5-010

Stott, D.E. and B.N. Moebius-Clune (2017) Soil Health: Challenges and Opportunities. pp. In D.J. Field, C.L.S. Morgan and A.B. McBratney (Eds.) *Global Soil Security*. Springer: Cham.

Module 3: Participatory Action Research and Co-creation of Knowledge on Agroecology Principles in Vermont

Learning Goals:

1. Expand and deepen knowledge of PAR, as practiced by the ALC.
2. Expand understanding of co-creation of knowledge in agroecology
3. Learn about the farm partners and PAR process.
4. Establish farm teams.

Assignments:

1. View video lecture.
2. Online discussion forums, Tuesday, Wednesday and Thursday, based on readings and/or other course material. This includes 3 individual posts, and 3 replies to peers' posts.
3. Examining Vermont's Dairy:
 - a. Listen to dairy farm audio
 - b. Reading (Free press, Seven Days)
4. *Agroecology on Diversified Farms*.
 - a. View 3 farm partner videos (everyone)
 - b. **Group work:** Each group will answer assigned prompts for their assigned farm based on farm profiles, farm videos, and internet research done by the group.

Readings:

Méndez, V. E., Caswell, M., Gliessman, S. R., & Cohen, R. (2017) *Integrating Agroecology and Participatory Action Research (PAR): Lessons from Central America*. *Sustainability*, 9(5), 705. doi:10.3390/su9050705

Milgroom, J., Bruil, J., & Leeuwis, C. (2016) *Co-creation in the practice, science and movement of agroecology*. *Farming Matters*, 32(1), 6-9.

Carlisle, L. (2016) *Factors influencing farmer adoption of soil health practices in the United States: a narrative review*. *Agroecology and Sustainable Food Systems* 40(6): 583-613. 10.1080/21683565.2016.1156596

Module 4: Face to Face Week: Engage your Cohort and the Case Study of PAR in Vermont (in progress)

Learning Goals:

1. Expand and deepen the material learned in the online portion of the course by engaging with farmer partners.
2. Connect conceptual notions of agroecological principles as applied in 3 VT farms.
3. Engage in active peer to peer learning with classmates and the diversity of professionals attending the face to face portion of the course.

Assignments:

1. Participation in face to face activities.
2. *On-farm Agroecological Experience Assignment.*
- 3.

Face to Face Schedule for PSS 311 - 2018

Face to Face Schedule for PSS 311 - 2018													
5-Aug		6-Aug		7-Aug		7-Aug		8-Aug		9-Aug		10-Aug	
Sunday		Monday		Tuesday		Wednesday		Thursday		Friday		Saturday	
		DAY 1:		DAY 2:		DAY 3:		DAY 4:		DAY 5:		DAY 6:	
Theme		Recap of Key Concepts and Creating a Cohort		Soil Health and Collaborative Enterprises		Diversity and Perennial Production Systems		Farm Models and Annual Production Systems and Resilience		Influence of Markets and Movements		Synthesis and Celebration	
Location		UVM/Catamount		UVM/Bread and Butter		UVM/Farm Between		UVM/Intervale Center/Food Hub/Diggers		Dairy Farm		UVM/Farmers Market/Ernesto's house	
8am	Breakfast	8am	Breakfast	8am	Breakfast	8am	Breakfast	8am	Breakfast	8am	Breakfast	8am	Breakfast
9am		9am	Speed dating (M)	9am	Recap of day 1 - ALC team	9am	Recap of day 2 - BB farm team	9am	Recap of day 3 - FB farm team	9am	Recap of day 4 - DM farm team	9am	Synthesis and closing
		9:30	Norms (M) schedule (E) expectations (V)		Ernesto unifying talk								
10am		10am		10am		10am	Travel to farm	10am	Travel to farm	10am	Dairy farm visit	10am	
		10:30	15 min break		Becky nutrient management				Intro/tour				
11am		10:45	Content discussion in teams (E)	11am		11am	Intro/tour	11am	Work	11am		11am	
		11:45	share out		Travel to farm		Work						Leave for Farmers Market
Noon		Noon	Packed Lunch	Noon	Blossom Catering?	Noon		Noon		Noon	Packed Lunch	Noon	
									Packed Lunch				
1pm		1pm	visits (incl research methods & expectations)	1pm	Intro/tour	1pm	Packed Lunch	1pm		1pm	Migrant Justice	1pm	
									Farmer interview				
2pm		2pm	Farm tour (Rachel & Vic)	2pm	Farmer interview	2pm	Farmer interview	2pm		2pm		2pm	
													Meet at Ernesto's House
3pm		3pm	Teams work on prep for farm visits (all)	3pm	Work	3pm	Conversation/reflection	3pm	Hub tour/explanation?	3pm		3pm	
4pm		4pm	Team work reflection (M)	4pm		4pm		4pm	Food chains screening?	4pm		4pm	
							Leave						
5pm		5pm		5pm	Conversation/reflection	5pm		5pm	Conversation/reflection	5pm		5pm	
6pm		6pm	Pizza Barrio?	6pm	Burger Night	6pm	Railyard + Ethiopian Food?	6pm	Summervale	6pm	Food trucks/on the town in Burlington	6pm	
7pm		7pm		7pm		7pm		7pm		7pm		7pm	
Homework							Personal assessment: my skills and strengths (use				Final Assignment Prep: pick 2 resilience		

STUDENT ASSESSMENTS

1. Online Discussion

The discussion board will engage students in written dialogue about the readings and other materials. Prompts will be provided for each of the week's discussion topics, which can be readings, lectures or others. Students will use the online, Blackboard Discussion Board to share their responses to the prompts and each other's commentary, as follows: 1) a response to **at least one of** the prompts provided by the instructor for each reading [5 points]; and 2) an additional posting responding or commenting on another student's comment [5 points]. Students will do 3 responses and 3 replies per week. Comments and responses need to be done in a professional and respectful manner. We will not tolerate the use of rude language or personal attacks on classmates. Students who fail to follow this rule will lose the remaining commentary and response points for the semester.

2. Module Essays

After completion of each module, students will be required to prepare a reflective essay on the content of the module that also integrates their previous knowledge and experience. Guidance will be provided on how to work on these essays.

GRADING SCHEME

The course evaluation will be based on a total of 200 points, separated into the following:

1. Discussion board commentary & reply (30 pts X 3 weeks)	90 points
2. Reflective Essay (25 points)	25 points
3. Powerpoint (25 points)	25 points
4. On-farm assignment	25 points
5. Overall course participation (includes participation, quality of engagement, attendance, enthusiasm, etc.)	20 points

Total 185 points

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.

COURSE CONTENT IS THE PROPERTY OF THE INSTRUCTOR

Consistent with the University's policy on intellectual property rights, all teaching and curricular materials (including but not limited to classroom lectures, class notes, exams, handouts, and presentations) are the property of the instructor. Therefore, electronic recording and/or transmission of classes or class notes is prohibited without the express written permission of the instructor. Such permission is to be considered unique to the needs of an individual student (e.g. ADA compliance), and not a license for permanent retention or electronic dissemination to others. For more information, please see the UVM policy on Intellectual Property, sections 2.1.3 and 2.4.1 C

Module 1 (Week 1): Agroecological Foundations

Learning Goals:

1. Understand the origins and evolution of agroecology, and why it is now perceived as a science, movement and practice.
2. Compare agroecological perspectives, also known as agroecologies and identify key examples.
3. Identify the challenges and opportunities of applying agroecology as a transdisciplinary, participatory and action-oriented approach.

Other Goals:

- Students get to know each other and the instructor.

Assignments:

1. View video lecture.
2. Online discussion forums: Monday, Tuesday, Wednesday and Thursday, based on readings and/or other course material. This includes 4 individual posts, and 4 replies to peers' posts.
3. *Reflective Essay*. Students will choose a topic of interest and develop a reflective essay that integrates the learning accomplished through the week (3-5 pages). Specific guidance and instructions will be provided.

Readings:

Set 1: Introduction to Agroecology

Wezel, A., S. Bellon, T. Dore, C. Francis, D. Vallod and C. David (2009) *Agroecology as a science, a movement and a practice. A review*. *Agronomy for Sustainable Development* 29(4): 503-515. doi: 10.1051/agro/2009004

Méndez, V.E., C.M. Bacon and R. Cohen (2016) *Introduction: Agroecology as a transdisciplinary, participatory and action-oriented approach*. pp. 1-22. In V.E. Méndez, C.M. Bacon, R. Cohen and S.R. Gliessman (Eds.) *Agroecology: a transdisciplinary, participatory and action-oriented approach*. CRC Press/Taylor and Francis

Prompts:

- What are the advantages and disadvantages of agroecology having dimensions as science, movement and practice.
- In your own words discuss what transdisciplinarity is and why you believe it is important (or not) for agroecological approaches.

Set 2: Agroecology and Participatory Action Research (PAR)

Méndez, V.E., M. Caswell, S.R. Gliessman and R. Cohen (2017) *Integrating Agroecology and Participatory Action Research (PAR): Lessons from Central America*. Sustainability 9(5): 705. doi: 10.3390/su9050705

Prompts:

- What strikes you as the most important difference between PAR and other types of research (i.e., basic, applied, etc.)?
- What is the main challenge that you see in applying PAR in agroecology ?
- What is the biggest opportunity that you see in applying PAR in agroecology?

Set 3: Agroecology Narratives

Rivera-Ferre, M.G. (2018) *The resignification process of Agroecology: Competing narratives from governments, civil society and intergovernmental organizations*. Agroecology and Sustainable Food Systems 42(6): 666-685.

Prompt:

- The author adds a layer of complexity to the science-practice-movement proposition in agroecology. How is this relevant (or not) in a policy context?

Module 2 (Week 2): Agroecological Principles

Learning Goals:

1. Understand the history of the application of principles in agroecology.
2. Gain knowledge of the different agroecological principles approaches that are currently being used globally.
3. Identify ways in which agroecology can serve as a tool for agricultural and livelihood resilience. Deepen your conceptual knowledge on the principles of 'managing soil health' and 'maintaining and managing diversity'.

Assignments:

1. View video lecture (1-2).
2. Online discussion forums, Tuesday, Wednesday and Thursday, based on readings and/or other course material. This includes 3 individual posts, and 3 replies to peers' posts.
3. Assignment. Students will choose a topic of burning interest covered in the first 2 weeks of class and develop and upload a powerpoint or other format that you would use to teach the topic to your peers. Minimum of 10 slides. Options to powerpoint might be acceptable, but please check with instructor.

Readings:

Set 1: Introduction to Agroecological Principles

Nicholls, C. I., Altieri, M. A., & Vazquez, L. (2016). Agroecology: Principles for the Conversion and Redesign of Farming Systems. *J Ecosys Ecograph*, S5, 010. doi:10.4172/2157-7625.S5-010

Bell, M. M., & Bellon, S. (2018). Generalization without universalization: Towards an agroecology theory. *Agroecology and Sustainable Food Systems*, 1-7. doi:10.1080/21683565.2018.1432003

Prompts:

- What is the difference between a principle and an indicator, variable or practice?
- What is the contrast, in terms of transdisciplinary thinking and in relation to principles, between the two readings?
- In your own words, define what a principles means

Set 2: Recent Agroecological Principle propositions

CIDSE. (2018). The principles of agroecology: towards just, resilient and sustainable food systems Belgium: CIDSE.

FAO. (2018). The 10 elements of agroecology: guiding the transition to sustainable food and agricultural systems: Food and Agriculture Organization of the United Nations (FAO).

Prompts:

- The principles proposed by FAO and CIDSE have an academic basis, but what are the implications of them being put forth by an international institution and an international NGO consortium? How does this affect who uses them? How does this resist or promote the cooptation of agroecology?
- Name at least one advantage and one limitation that you see in either the CIDSE or FAO proposals.

Set 3: Grounding the principles: Soil Health and Diversity

IPES-Food (2016) *From uniformity to diversity: a paradigm shift from industrial agriculture to diversified agroecological systems*. Website: <https://www.ipes-food.org> **Required pages:** 31-40.

Stott, D. E., & Moebius-Clune, B. N. (2017). Soil Health: Challenges and Opportunities. In D. J. Field, C. L. S. Morgan, & A. B. McBratney (Eds.), *Global Soil Security*. Cham: Springer.

Prompts:

- Soil health and diversity are two long-standing agroecological principles.
- How can these principles be used to support agroecological management across contexts, such as a temperate vs a tropical region? What would change in order to apply the principle?
- Do you think principles can be used to track agroecological performance across contexts? why or why not?

Module 3: Knowledge co-creation and meeting our Vermont farm partners

Learning Objectives for this Module:

1. Expand and deepen knowledge of PAR through an examination of cases in Vermont and beyond.
2. Expand understanding of the notion of knowledge co-creation in agroecology.
3. Learn about the ALC farm partners in an ongoing PAR process.

Required Readings:

Set 1: Agroecology, PAR and Knowledge Co-creation

Méndez, V.E., M. Caswell, S.R. Gliessman and R. Cohen (2017) *Integrating Agroecology and Participatory Action Research (PAR): Lessons from Central America*. Sustainability 9(5): 705. doi: 10.3390/su9050705

Milgroom, J., Bruil, J., & Leeuwis, C. (2016) *Co-creation in the practice, science and movement of agroecology*. Farming Matters, 32(1), 6-9.

Šūmane, S., Kunda, I., Knickel, K., Strauss, A., Tisenkopfs, T., Rios, I. d. I., . . . Ashkenazy, A. (2018). Local and farmers' knowledge matters! How integrating informal and formal knowledge enhances sustainable and resilient agriculture. *Journal of Rural Studies*, 59, 232-241.

Prompts:

- Although knowledge co-creation is increasingly seen as necessary to resolve some of the challenges we face in agriculture and food systems, it faces a lot of challenges. Discuss one of the main challenges that you see for knowledge co-creation to occur, and some ideas on how to overcome it.
- How do power dynamics play out in what sociologists Long and Long termed 'Battlefields of knowledge' (title of their 1992 book)? How does this connect to issues of food justice and sovereignty?

Set 2: Videos from different voices in agroecology (find these in the folder 'Video and audio lectures', in a folder titled Week 3 required videos)

Video 1: Agroecology: Voices from social movements.

Video 2: Cultivating the future: women farmers in Ghana by Groundswell International

Prompts:

- Discuss how does farmer knowledge and knowledge co-creation comes into international agroecology movements? Does this issue relate to these movements embracing agroecology ?
- How does the movement discourse around knowledge affect interactions and the possibility of knowledge co-creation among movement advocate, farmers scientists, development workers, etc.?

Set 3: Farmer partner profiles and videos

3 farm profiles (fin these in the folder of required readings)

3 farm videos (forthcoming in the folder 'Video and audio lectures', in a folder titled Week 3 required videos)

Prompts:

- Do you see these farms as applying agroecology or agroecological principles, as we have discussed them in the last 3 weeks?
- What differences do you see among them?
- What similarities do you see among them?

Assignments:

1. Create farm teams.
2. Teams start working on prompts for next week's meetings with farmers.