

AGROECOLOGY III

APBI 460 – W2019 Term 1
Tuesday/Thursday 12:30-2:00 pm
Mcml 258

Course Instructor

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Course Description:

This is the third and final course in the Food & Environment core series. This capstone experience in agroecology focuses on applying your agroecological knowledge in the synthesis of meaningful solutions for real-world problems in sustainable agriculture. Students will act as consultants for an agricultural enterprise to help the client move closer to achieving their sustainability goals. The aim of the course is to further enhance your abilities to effectively use the knowledge and analytical skills you acquired in Agroecology I and II towards actually helping people, either by helping define goals more clearly, helping gather information/data to better inform decisions, or building something that moves them in a more sustainable direction.

Throughout this course, we will further refine your abilities to think critically and skills associated with critical thought. I have included an introduction to Critical Thought within this document. If developing stronger critical thought skills is of interest to you, I highly recommend visiting <http://www.criticalthinking.org/>.

APBI 460 is designed to provide students with a safe learning environment where moving beyond individual comfort zones is encouraged. The thought process underlying the intended outcome is more important than the intended outcome's success.

Students will use Canvas for discussions, assignments and announcements. To reduce costs & waste, all course materials will be made available electronically.

Learning Outcomes - Agroecology III:

Upon completion, students will be able to:

- Apply the design thinking framework (i.e., empathize, define, ideate, prototype, test) in an agroecological context;
- Synthesise novel solutions, guided by agroecological theory and practice, to problems within sustainable food systems;
- Prioritize the impacts and interrelationships between agricultural systems and associated ecosystems in terms of increasing overall sustainability;

- Prioritize agroecological principles to integrated food production systems towards maximizing ecological service provision;
- Demonstrate an ability to reflect on and connect hands-on (i.e., real life) experiences to theoretical learning towards developing problem solving, critical thinking, and leadership skills;
- Effectively and professionally communicate information, in both written and spoken English, using a variety of methods including writing, presenting, and small group discussions.

Suggested Readings:

- Agroecology: the Ecology of Sustainable Food Systems – Stephen Gliessman
- Field and Laboratory Investigations in Agroecology– Stephen Gliessman
- Agroecology: A Transdisciplinary, Participatory and Action-oriented Approach - V. Ernesto Méndez and Christopher M. Bacon
- Various primary literature sources including journal articles, conference and symposia proceedings, and other peer-reviewed publications. Topical journals include:
 - Agriculture, Ecosystems & Environment (Elsevier)
 - Agroecology and Sustainable Food Systems (Taylor & Francis)
 - Agronomy for Sustainable Development (EDP Sciences)
 - BioControl, 2001 (Springer)
 - Journal of Agricultural and Environmental Ethics (Springer)
 - Journal of Agricultural Science (Cambridge University Press)
 - Journal of Agricultural Sustainability (Taylor & Francis)
 - Journal of Applied Ecology (Wiley)
 - Journal of Crop Improvement (Taylor & Francis)
 - Mycorrhiza (Springer)
 - Science (AAAS)
- Plus many more traditionally disciplinary-focused journals as research in agroecology and applied ecology become more common.

Additional Resources:

- The Critical Thinking Community (<http://www.criticalthinking.org/>)
- The Skills You Need (<http://www.skillsyouneed.com/learn/critical-thinking.html>)

- Google Scholar (<https://scholar.google.ca/>)

Grade Profile:

Critical Thinking Assignment	10%
Pre-proposal Problem Definition and Ideation Presentation	10%
Project Proposal	20%
Final Presentation on Deliverable	20%
Deliverable	30%
Active Skilled Participation	10%
Total	100%

Critical Thinking Assignment

Topic: In your opinion, what's the most important issue in achieving 'sustainable' agriculture that you believe you can positively affect?

Each student will write an essay (<1000 words) on the above topic. It should describe the empathy you feel for the given issue (or community) and a clear definition/description of the problem you can positively affect.

This assignment is designed to assess your critical thinking, problem solving, and communication skills. Your submissions will be judged on clarity, relevance, coherence, logic, depth, consistency, and fairness. More specifically, the reader will be asking the following questions:

- Is the question at issue well stated? Is it clear and unbiased? Does the expression of the question do justice to the complexity of the matter at issue?
- Does the writer cite relevant evidence, experiences, and/or information essential to the issue?
- Does the writer clarify key concepts when necessary?
- Does the writer show a sensitivity to what they are assuming or taking for granted? (Insofar as those assumptions might reasonably be questioned)?
- Does the writer develop a definite line of reasoning, explaining well how they are arriving at their conclusions?
- Is the writer's reasoning well-supported?
- Does the writer show sensitivity to alternative points of view or lines of reasoning? Does he or she consider and respond to objections framed from other points of view?

- Does the writer show sensitivity to the implications and consequences of the position he or she has taken?

Pre-proposal Problem Definition and Ideation Presentation

The pre-proposal summary presentation is intended to provide an opportunity for you to share your thoughts to date on your project. It is meant to be a concise summary of your thoughts, not a complete download of your knowledge. It should have the following components:

- 1) Introduction with empathy connection (i.e., context)
- 2) Problem definition and justification (i.e., why this problem now)
- 3) Literature review (i.e., what information is available on other solutions?)
- 4) Ideations (i.e., your proposed solutions to the problem)
- 5) Gaps in knowledge (i.e., what assumptions have you made in your solutions that are not addressed by the literature?)
- 6) Next steps (i.e., what do you plan to do next?)

Project Proposal:

Each student will prepare a proposal that describes their project. The project should address the problem you defined and should demonstrate your understanding and use of agroecological knowledge. It should be both creative and realistic. The proposal should demonstrate your mastery of the intended learning outcomes. You may assume the reader is familiar with the subject.

Structural Sections:

- 1) Summary or abstract (<300 words) (10%)
- 2) Introduction (i.e., context, problem statement) (10%)
- 3) Literature Review on State of the Art in the relevant area to your problem (i.e., literature that supports your decisions) (20%)
- 4) Proposed Solution (30%)
 - a. General description of approach and deliverable
 - b. Description of requirements needed to implement your solution
 - c. Proposed timeline and key milestones

- 5) Connection to Class-developed Sustainability Framework (10%)
- 6) Key Assumptions (10%)
 - a. What key assumptions have I relied on for my solution?
 - b. What are the implications for these assumptions if found incorrect?
- 7) Next steps (i.e., what needs to be done to move forward?) (10%)

Final Presentation of Deliverable

The Final Presentation will describe your completed deliverable. In this presentation, you should concentrate on the integrative aspects of the project and how it addresses the class goals set forth. The presentation should include a description or demonstration of the deliverable.

Final Deliverable:

To be negotiated.

COURSE SCHEDULE:

The course schedule is subject to changes throughout the term.

	Topic
Week 1: Sept 3	Imagine Day (no class)
Week 1: Sept 5	Introductions and discussion of course plan
Week 2: Sept 10	Discussion: Linking problems and solutions to the Sustainability Framework UBC Farm Tour
Week 2: Sept 12	Design Your Life Framework Exercise Critical Thinking Assignment: <u>Topic</u> : In your opinion, what's the most important issue in achieving 'sustainable' agriculture that you believe you can positively affect? Due Sept 19
Week 3: Sept 17	Design Your Life Framework Exercise (continued) DYL Empathy Exercise
Week 3: Sept 19	Discussion: Assignment #1 What you can positively affect? Review perspectives and problem definitions Group check-in and updates
Week 4: Sept 24	Discussion: Problem Definition and Ideation
Week 4: Sept 26	Discussion: Problem Definition and Ideation
Week 5: Oct 1	Pre-proposal Problem Definition and Ideations Presentations
Week 5: Oct 3	Pre-proposal Problem Definition and Ideations Presentations
Week 6: Oct 8	Project Proposal Due
Week 6: Oct 10	
Week 7: Oct 15	
Week 7: Oct 17	

Week 8: Oct 22	
Week 8: Oct 24	
Week 9: Oct 29	
Week 9: Oct 31	
Week 10: Nov 5	
Week 10: Nov 7	
Week 11: Nov 12	
Week 11: Nov 14	
Week 12: Nov 19	
Week 12: Nov 21	
Week 13: Nov 26	Final Presentations on Deliverable
Week 13: Nov 28	Final Presentations on Deliverable
Week 14:	Final Delivery Due