AGROECOLOGY III- SYNTHESIS AND APPLICATION

APBI 460 – W2022 Term 1 Online
Synchronous Meetings Tuesday/Thursday 12:30-2:00 pm
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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.

Note: During this pandemic, the shift to online learning has greatly altered teaching and studying at UBC, including changes to health and safety considerations. Keep in mind that some UBC courses might cover topics that are censored or considered illegal by non-Canadian governments. This may include, but is not limited to, human rights, representative government, defamation, obscenity, gender or sexuality, and historical or current geopolitical controversies. If you are a student living abroad, you will be subject to the laws of your local jurisdiction, and your local authorities might limit your access to course material or take punitive action against you. UBC is strongly committed to academic freedom, but has no control over foreign authorities (please visit http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,33,86,0 for an articulation of the values of the University conveyed in the Senate Statement on Academic Freedom). Thus, we recognize that students will have legitimate reason to exercise caution in studying certain subjects. If you have concerns regarding your personal situation, consider

postponing taking a course with manifest risks, until you are back on campus or reach out to your academic advisor to find substitute courses. For further information and support, please visit: http://academic.ubc.ca/support-resources/freedom-expression.

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;
- 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%
Final 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.

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) 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?
6) 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 6**	Imagine Day (no class)
Week 1: **Sept 8**	Introductions and discussion of course plan
Week 2: **Sept 13**	Discussion: Introduction to Design Thinking Discuss Article: Empathising, defining and ideating with the farming community to develop a geotagged photo app for smart devices_ A design thinking approach.
Week 2: **Sept 15**	Introduce Critical Thinking Assignment: Topic: In your opinion, what's the most important issue in achieving 'sustainable' agriculture that you believe you can positively affect? Group Activity: Day 1 of DT Exercise, Empathy+Definition
Week 3: **Sept 20**	Group Activity: Day 2 of DT Exercise, Definition+Ideation
Week 3: **Sept 22**	Guest Speaker Rob Kim: Diplomacy in Careers Group Activity: Day 3 of DT Exercise, Prototype+Test
Week 4: **Sept 27**	Group discussion: Integrating and Applying Design Thinking Framework and Diplomacy Group check-in and updates Writing assignment due 12:00 noon, discuss in class
Week 4: **Sept 29**	Group Discussion: Critical Writing Assignment 1 Design Thinking Empathy Mapping Exercise Practice Interview Trial Client
Week 5: **Oct 4**	Group check-in and updates focused on Trial Client Empathy and Problem Definition

Week 5: **Oct 6**	Trial Client Empathy and Problem Definition
Week 6: **Oct 11**	Trial Client Empathy and Problem Definition
Week 6: **Oct 13**	Weekly updates and discussion
Week 7: **Oct 18**	Guest Speaker: Arturo Farias, Environmental Consultant
Week 7: **Oct 20**	Pre-proposal Problem Definition and Ideations Presentations
Week 8: **Oct 25**	Pre-proposal Problem Definition and Ideations Presentations
Week 8: **Oct 27**	Pre-proposal Problem Definition and Ideations Presentations
Week 9: **Nov 1**	Final Project Proposal Due
Week 9: **Nov 3**	Weekly updates and discussion
Week 10: **Nov 8**	Weekly updates and discussion
Week 10: **Nov 10**	No Class: Winter Break
Week 11: **Nov 15**	Field work
Week 11: **Nov 17**	Weekly updates and discussion
Week 12: **Nov 22**	Field work

Week 12: **Nov 24**	TBD
Week 13: **Nov 29**	Final Presentations on Deliverable
Week 13: **Dec 1**	Final Presentations on Deliverable
Week 14: **Dec 6**	Catch up Day