Introduction to Ecological Agriculture (PSS 021)

Fall 2016, Lafayette L207, Tue/Thur 11:40-12:55 pm

### Instructor: Vic Izzo, Ph.D.

vizzo@uvm.edu; Office: Jeffords 266

Office hours by appointment: Wed. 10am-12pm, other times can be arranged

**Graduate Teaching Assistant: Serge**

Email: [Serge.Wiltshire@uvm.edu](mailto:Serge.Wiltshire@uvm.edu)

Office hours: TBD

**Course Objective:** This course provides students with an introduction to the environmental, social, political, and cultural issues surrounding the production of food. Through a combination of lectures, discussions, written reflections, events, readings, and films, we cover a broad variety of topics related to agriculture and the environment in local, national, and international contexts. The course analyzes factors driving current agricultural production systems, the problems associated with an industrial agriculture model, and a variety of approaches and practices for producing food in an ecologically sound manner.

**Learning outcomes:**

Students will leave the course able to:

1) identify and describe major **approaches** (organic, permaculture, agroecology, agroforestry), **practices** (IPM, no-till, intercropping, crop rotation, cover cropping), and **key concepts** (Farm Bill, GMOs, Climate-Smart Agriculture, Dust Bowl, Green Revolution) associated with ecological agriculture.

2) understand political and economic drivers behind current food production systems

3) evaluate and critically discuss socioeconomic issues inherent to local, national and global food production

4.)use systems thinking to examine multidisciplinary problems and consider trade-offs for the development of sustainable solutions.

**Course Schedule** (subject to change-Check Blackboard regularly)

|  |  |  |
| --- | --- | --- |
| **Date** | **Topic** | **Readings** |
|  | **MODULE 1: The History of Modern Ag** |  |
| Tue 8/30 | Course overview; What is Ecology? |  |
| Thur 9/1 | Ecological Agriculture | Future of Food |
| Tue 9/6 | The Land Ethic / Tragedy of the Commons | The Land Ethic ~Aldo Leopold |
| Thur 9/8 | Origins of Agriculture and Domestication | Vavilov Reading; 1491 Reading |
| Tue 9/13 | Green Revolution / Movie “The Dust Bowl” | Roberts and Kytle-The Dust Bowl Returns |
|  | **MODULE 2: The Agricultural System** |  |
| Thur 9/15 | Soils! | Magdoff Reading |
| Tue 9/20 | Dirt is Dead, Soil is Alive  The importance of Soil Health | Magdoff Reading cont.. |
| Thur 9/22 | Above ground interactions | **Vandemeer Chapter** |
| Tues 9/27 | Introduction entomology and IPM  Scott Lewins | **IPM chapter** |
| Thurs 9/29 | Disease identification and control:  Ann Hazelrig |  |
| Tues 10/4 | **EXAM 1** |  |
|  | **MODULE 3: Approaches to Sustainable Agriculture** |  |
| Thur 10/6 | Overview of sustainable agriculture approaches-organic, permaculture, agroecology, agroforestry | Gliessman- “Agroecosystem diversity and stability” , |
| Tues 10/11 | Organic agriculture | Rodale Institute-Farm Systems Trial |
| Thurs 10/13 | Agroecology | Altieri- “The scaling up of agroecology: spreading the hope for food sovereignty and resiliency” |
| Tues 10/18 | Permaculture/Biodynamics | *Toby Hemenway Chapter 1: Gaia’s Garden* |
| Thurs 10/20 | Agroforesty | Schoeneberger et al.- Agroforestry as a climate change mitigation and adaptation tool for agriculture |
| Tues 10/25 | Guest Lecture: Forage and Pasture Management in organic and conventional systems: Sid Bosworth |  |
| Thurs 10/27 | Push-Pull Systems and Polycultures | Kahn et al. 2008 |
| Tues 11/1 | Guest Lecture: Sustainable Apple Productions  Terry Bradshaw |  |
| Thurs 11/3 | **Exam 2** |  |
|  | **MODULE 4: The economic and social dimensions of food production.** |  |
| Tues 11/8 | The economic policy of US agriculture | TBD |
| Thurs 11/10 | Food security and the challenge of ‘feeding the world’ | Holt-Gimenez et al.- “We already grow enough food for 10 billion people…” |
| Tues 11/15 | Food and social movements Food sovereignty:  Ernesto Mendez |  |
| Thurs 11/17 | Movie: Food Chains |  |
| Tues 11/21-11/27 | Thanksgiving Break |  |
| 11/29 | Migrant Justice |  |
| Tue 12/1 | Climate Smart Agriculture: The Vermont Agricultural Resilience Project. Rachel Schattman |  |
| **Final** | **TBD** |  |

**Evaluation/Assessment**

Exam 1 20%

Exam 2 20%

Assignments 5%

Participation 5%

Infographic Assignment 15%

Vegetable fact sheet 15%

Final 20%

100%

**Infographic Assignment:**

An infographic is a visual tool that uses graphical representations to EFFECTIVELY convey complex concepts, statistics and/or phenomenon.

The infographic assignment is an opportunity for students to explore topics of ecological agriculture in a creative and engaging way. Furthermore, these infographics should provide you with a formal process to connect your own interests with ecological agriculture topics we discussed in class. This assignment also acts as a self-directed research project that will require quite a bit of planning and research time.

We will discuss the infographic in detail during the first few weeks of class and a rubric will be provided (on Blackboard) to help focus your efforts.

**Vegetable Fact Sheet:**

Students will be challenged to choose a specific vegetable and develop a fact sheet that touches upon the historical economic and regional significance of their chosen crop. Additionally, fact sheets should include a discussion regarding the current sustainable approaches utilized by grower for cultivating the crop. Specifically, fact sheets will include the following**:**

1. Why you chose this particular crop.
2. The crop’s place of origin and historical significance (if applicable)
3. The current distribution of the crop (i.e. where is it grown?)
4. The economic value of the crop both nationally and globally
5. The methods associated with its organic and conventional management
6. The primary labor force that is dedicated for its production.

Again, the rubric detailing the assessment for the assignment can be found on BB.

**Top Hat**

We will be using the Top Hat (www.tophat.com) classroom response system in class. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message.

You can visit the Top Hat Overview (https://success.tophat.com/s/article/Student-Top-Hat-Overview-and-Getting-Started-Guide) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system.

You can register by simply visiting our course website: Unique Course URL https://app.tophat.com/e/050694

Note: our Course Join Code is **050694**

Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email ( support@tophat.com), the in app support button, or by calling 1-888-663-5491.

Top Hat will require a paid subscription. There are three options to choose from:

$24 for 4 months of unlimited access

$36 for 1 year of unlimited access

$72 for 5 years of unlimited access

**Policies:**

1. All cell phones must be turned off before the start of class. The instructor will have a phone in case of emergency.
2. Students are expected to be courteous and respectful.
3. Students are expected to take notes using pen and paper. All other arrangements need to be discussed with the instructor and an explicit arrangement will be worked out.
4. Students are expected to follow the UVM Academic Integrity Code and UVM Code of Student Rights and Responsibilities. Any misconduct will result in disciplinary action.

Note: UVM policy states, “Students have the right to practice the religion of their choice. Each semester, students should submit in writing to their instructors by the end of the second class, their documented religious holiday schedule for the semester. Faculty must permit students who miss work for the purpose of religious observance to make up this work.”