GEOG 432/532 - Syllabus
Geography of Food and Agriculture

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Office Hrs: To be determined; and by appt.
Credits 3

Catalog course description. GEOGRAPHY OF FOOD AND AGRICULTURE (3). Overview of food and agriculture in relation to production and consumption regions as a basis for distinguishing different types of food and agricultural systems. Local and global examination of the geographic aspects of breeding, location in agricultural systems, and adaptation in agro-ecosystems using field study, exploration of literature, and lecture. Lec/lab. (Bacc Core Course)

The word “agriculture” comes from the Latin agri ‘field’ and cultura ‘till, care for’, while “geography” refers to the study of the earth. A geography of food and agriculture is thus the study of the cultivated areas of the earth with an emphasis on food systems. This field includes the natural, economic, and social interrelationships associated with the transformation of the earth for plant cultivation and animal husbandry with particular emphasis on their spatial characteristics. Materials and concepts used in this course will draw from the disciplines of geography, economics, sociology, anthropology, biology, nutrition, and agronomy. The course meets three times per week—twice for a 50-minute classroom lecture and once as a 2-hour lab/field trip.

Course objectives:

- Understand the basic characteristics of physical environments for agriculture in tropical and temperate zones.
- Recognize the relationship between physical environments, culture, and political economy in the historic development of food and agricultural systems.
- Identify the basic components of farming systems and understand their interrelatedness.
- Explore linkages between local and global agricultural change in the world’s food system.
- Investigate current issues related to food and agricultural geography.

Readings:

There are assigned readings for each topic, and students are expected to complete them by the date indicated on the course outline. All readings will be available on reserve at the Valley Library or available online. No purchases are necessary. A potential reading list is at the end of this syllabus.
Primary source:

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Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at (541) 737-4098.

COURSE OUTLINE

I. Locating Food and Agriculture Systems: Biophysical Determinants

This section investigates the biophysical determinants (i.e. light, water, etc.) of the spatial distribution of agriculture. What are the biophysical parameters for agriculture? What types of agriculture are associated with world biophysical regions?

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading</th>
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<tbody>
<tr>
<td>Week 1.i</td>
<td>Introduction</td>
<td>Niles &amp; Roff, “Shifting Agrifood Systems”</td>
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<tr>
<td>1.ii</td>
<td>Climate &amp; Soils</td>
<td>Grigg, An Intro. to Ag. Geography, 1-58</td>
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<tr>
<td>1.iii field</td>
<td>Greenhouse—Control environment</td>
<td>Pringle, “The Slow Birth…”</td>
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<td></td>
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<td>Diamond, “Worst Mistake…”</td>
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<td></td>
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<td>Sauer, Agricultural Origins and…</td>
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Week 2.i   Vavilov’s Geographical Centers       Mazoyer & Roudart, 19-99
2.ii       Agricultural Landscape Modification  Fuller, “Ag. Origins in So. Asia”
            [Assignment 1 due—field trip notes]  Abbo et al, “Ag. Origins...Near East”
2.iii field Greenhouse--Commercial              Colledge et al., “Archaeological...”

II. Locating Food and Agriculture Systems: Socioeconomic Determinants

An agricultural system can only exist within the context of culture and political economy. What are the socioeconomic parameters for agriculture? How is the distribution of agricultural systems related to culture, economic, and political systems at different spatial scales?

Week 3.i   Food, Culture, and Location       Pottier,...Social Dynamics of Food Security
III. Tropical Farming Systems

Since von Thünen’s early 19th century theory explaining why certain agricultural systems are found at distances from towns, assumptions have been made about agriculture’s location relative to markets. Recent changes in the relations between capital, markets, labor, and land have sparked a rethinking of agricultural location. How do local farming practices adapt to environments and converge with economic conditions to make different food and agricultural systems? How do both smaller-holder peasant farms and large-scale plantations in the Global South respond to local conditions and global markets?

Week 5.i  Swidden—SE Asia  Mazoyer & Roudart, 101-142
5.ii  Ahupua'a—Pacific Islands  Jensen, “Productivity and...”
5.iii field  Farm-to-Processor/Packer  Bayliss-Smith, “…New Guinea”
Ziegler et al., “Recognizing...Swidden...”

Becker & Yoboue, “Rice...”
[Assignment 3 due. Farm characterization, brief presentation]

6.iii field  Groups meet

7.i  Tropical Fruit & Flower Exports  Galt, Food Systems in an Unequal...
7.ii  Plantation Oil Palm  Korovkin & Sanmiguel-Valderrama
[Assignment 4 due. Farm strategy]  Bissonnette, “…Large-Scale Oil Palm...”
7.iii field  Wheat/Grass seed producer

IV. Temperate Zone Farming Systems

8.i  Agribusiness Produce by Latitude  Mazoyer & Roudart, 313-353
8.ii  Dairy: Location, Location, Location
8.iii lab  Tbd

9.i  Beef Commodity Chain  Mazoyer & Roudart, 355-440
9.ii  Poultry  Gouveia, “Global Strategies”
“The backbone of any agricultural revolution is access of farmers to modern agricultural inputs, especially fertilizers and seeds. The old system of government buying and distributing fertilizers was very corrupt as only 11 percent of farmers got the fertilizers. Rich and powerful political elites siphoned off the fertilizers belonging to poor farmers….It took us 90 days to end that corruption….We launched the Growth Enhancement Scheme (ENS) to provide subsidized inputs to farmers. To reach them directly with seeds and fertilizers, we developed the e-wallet system which allows farmers to receive subsidized electronic vouchers for their seeds and fertilizers on their mobile phones.”

Akin Adesina, Minister of Agriculture and Rural Development, Nigeria (quoted 7 October 2013 in The Vanguard)

“We want to tell the government that we’re fed up with their compromises on our food sovereignty. It’s a serious problem that our food self-sufficiency has dropped to 33 percent now.”

Tsai Pei-hui, Taiwan Rural Front (quoted 4 February 2013 in the Taipei Times)

“As the world’s population grows, so does demand for quality foods, feed ingredients for livestock, alternative fuels, and environmentally friendly alternatives to traditional chemicals. Today, many of the world’s largest and best-known manufacturers of grocery staples, packaged foods, prepared meals and specialty foods rely on ADM for hundreds of essential ingredients. From the vast range of flours, shortenings, sweeteners, proteins, chocolate, cooking oils and other ingredients we provide, our customers create products that are enjoyed by billions of consumers every day.”

Archer Daniels Midland webpage brochure, “Food: It’s the Heart of Our Business,” November 2013
COURSE ORGANIZATION

1. MEETINGS  Twice weekly 50-minute lectures and discussion, plus two-hour lab/field trip each week.

2. READING  Required for each topic and discussion.  See outline.

3. GRADING  Based on 1000 points.
   Assignments  600 pts
   Mid-term examination  150 pts
   Final examination  250 pts

ASSIGNMENTS

Asn 1  Field trip notes/reflections.  **Due each Monday after fieldtrip** (7 x 20 pts +10)  150 pts
Asn 2  CGIAR internet research report.  **Due Wednesday, Week 3**  50 pts
Asn 3  Characterization of a farming system.  **Due Wednesday, Week 6**  100 pts
   Definition of the key bio-physical and socio-economic factors of a farming system, and the farming objectives.  Includes a brief oral presentation.
Asn 4  Farm strategy.  **Due Wednesday, Week 7**  50 pts
   Your response to a given situation in your farming system.  Develop a strategy for the farming system to handle the changes in order to meet the farming objectives.
Asn 5  Farm report.  **Due Wednesday, Week 10**  250 pts
   Analysis of the farming system.  Analyze your farming system’s constraints and capabilities.  Write a farming system report that incorporates the information from Assignments 3 and 4 and assesses the system’s ability to meet the farming objectives.  Includes a brief oral report on the farming system.

Reading (tentative):


Bissonnette, Jean-Francois. 2013. Development through Large-Scale Oil Palm Agribusiness Schemes:


Mazoyer, Marcel and Laurence Roudart. 2006. *A History of World Agriculture: From the Neolithic...


Websites of interest:

Cargill www.cargill.com
Center for Rural Affairs www.cfra.org
Consultative Group on International Agricultural Research (CGIAR) www.cgiar.org
International Rice Research Institute (IRRI) www.irri.org
Food and Agriculture Organization (FAO) www.fao.org
Monsanto www.monsanto.com
Oregon Department of Agriculture http://www.oregon.gov/ODA/Pages/index.aspx
Rodale Institute www.rodaleinstitute.org
United States Department of Agriculture (USDA) www.usda.gov
La Via Campesina http://viacampesina.org/en/

Course Learning Outcomes:
With successful completion of the course, students should be able to...

1. Locate world food production and consumption regions.
In terms of the relationship between environmental, cultural, and political economy factors, students will explain the location of production and consumption areas for 15 food crops and livestock (Cattle, sheep, chicken, banana, oil palm, pineapple, mango, rice, wheat, maize, sorghum, grape, apple, blueberry, hazelnut). **Expectation for 400-level course:** Learning will be assessed by examination using maps and written explanation (midterm and final examinations).
Expectation for 500-level course: Learning will be assessed by graduate students explaining how farmers respond to location-specific changes and risks and the consequences for food consumption (Asn. 4).

2. Describe the landscape modification resulting from different agricultural systems. **Expectation for 400-level course:** Learning will be assessed by examination using maps and written explanation (midterm and final examinations), and in written and oral form for selected agricultural systems (Asn. 3-5). **Expectation for 500-level course:** Learning will be assessed by examination in which students use the cultural and political ecology concepts of agricultural geography, drawing from the work of Sauer, Parsons, Turner, Kates, Watts, Bassett, Carney, Zimmerer, and Guthman. It will also be assessed through writing and oral presentations in Assignments 3-5.

3. Articulate critical perspectives on the role of environment, culture, and political economy on: (a) yield versus diversity in breeding programs (modifying the genetic potential), and (b) agricultural land-use (modifying the environment). **Expectation for 400-level course:** Provide written arguments based on instructor-selected peer-reviewed literature of research to, on the one hand, (a) increase yield, maintain diversity, and evaluate risks associated with such an approach, and on the other hand, (b) create an agricultural space. Describe in written form on exams and apply in written and oral form for a selected food crop or animal in an agricultural system (Asn. 5). **Expectation for 500-level course:** Same as above but students will draw their argument from at least 5 peer-reviewed sources that they identify independent of the instructor.

4. Interpret the relationship between agricultural location and markets to characterize different agricultural systems. **Expectation for 400-level course:** Describe in written form on exams making reference to von Thunen’s theory and apply in written and oral form for a specific farming system (Assignments 3, 4, and 5). **Expectation for 500-level course:** Describe in essay form on exams and for a specific farming system (Asn. 3, 4, 5) drawing from the theory of von Thunen and contemporary adaptations and critiques of von Thunen.

5. Analyze how specific crops and domestic animals are adapted to biophysical and socioeconomic systems. For one crop or domestic animal that is part of the farming system on which the student is focusing, each student must explain why it is grown/raised in a specific location (Asns. 3-5) Students will reflect on observations made in field observations and Internet research (Assignments 1 and 2). **Expectation for 400-level course:** The farming system assignment will have at least one map, one graph or table, and use at least three peer-reviewed sources from the course reading list. **Expectation for 500-level course:** The farming system assignment will have at least one map and graph or table using data collected and presented in a new manner (by the student, not as presented by another author), and include at least five peer-reviewed sources found by the student not on the course reading list.

Link to [Statement of Expectations for Student Conduct](http://oregonstate.edu/studentconduct/regulations/index.php), i.e., cheating policies.
Baccalaureate Core Learning Outcomes: Synthesis

Science, Technology, and Society

1. Analyze relationships among science, technology, and society using critical perspectives or examples from historical, political, or economic disciplines.

Geographies of food and agriculture result from the intersection of science, technology, and society. Agricultural geography is the study of the cultivated areas of the Earth, and food geography examines food in relation to bio-physical and socio-economic environments. From the earliest domestication of crops that gradually involved observation and experimentation, elaboration of specific knowledge and tool sets, and social organization, agriculture requires and creates relationships between science, technology, and society. The course will develop two central strands in the science-technology-society relationship:
   i. the development of modern food crops and animal food sources through science-based breeding to meet society’s food needs; and
   ii. the location of food production relative to sites of food consumption.

To achieve the first, students will explore the origins of ideas that construct contemporary thinking on the geographic basis for genetic diversity and its relationship to environmental adaptation and human manipulation.

To achieve the second, students will critically examine ideas of agricultural proximity to markets from von Thunen to global trade in fresh produce, as well as theory linking agricultural intensification to population growth and ultimately unequal food distribution. Assessment will be by examination and the written and oral presentation of a farming system (Assignments 3, 4, and 5).

2. Analyze the role of science and technology in shaping diverse fields of study over time.

Students will learn how early thinkers understood the relationships between science, technology, and society in the geography of food and agriculture. With case studies, the course will show how ideas about agriculture have evolved over time. Students will learn how ideas in food and agriculture can lead to divergent conceptual frameworks—breeding for yield versus for sustainability—or assumptions of resource scarcity as opposed to unequal access to food and land for agriculture. Assessment will be by examination essay.

3. Articulate in writing a critical perspective on issues involving science, technology, and society using evidence as support.

Through a 7-week farming system project, students will develop and articulate a critical perspective on issues involving science, technology, and society. Using field study and written sources (primarily peer-reviewed), students will: (1) Describe a farming system that responds to
a scenario requiring knowledge and application of critically reviewed science and technology in a real social and economic setting; and (2) For a food crop or domesticated animal in the same farming system, critically analyze its location, production, associated commodity chains, and selected food and agricultural issues, e.g. environmental degradation, labor conditions, nutrition, land-use, market access, animal rights, or certification/labeling. Assessment will be by written and oral presentation of a farming system (Assignments 3, 4, 5).