

CROPS / SOILS 360 [I]
WORLD AGRICULTURAL SYSTEMS
Fall 2009

WELCOME: To World Agricultural Systems, Pullman Campus Edition
M,W,F 11:10AM-12:00noon, PEB 136 (Physical Education Bldg)

INSTRUCTORS: **David Brown;** 249 Johnson Hall; 335-1859; david_brown@wsu.edu
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COURSE DESCRIPTION:

Agriculture is central to the development of modern societies around the world, yet is also responsible for a dramatic human alteration of the natural world. The goal of this course is to explore this human-environment interaction in the broadest possible historical and geographic context.

Agricultural systems fundamentally require human manipulation of the natural world. In World Agricultural Systems we will study the historical geography of agricultural systems. You will need to develop a basic understanding of plant biology (e.g. fruit vs. seed), agricultural science and practice (e.g. nutrient management and crop breeding) and physical geography (e.g. global climate patterns). However, the focus of this course is on the [I] GER designation: *the intercultural dimensions of agriculture*.

We require no prior training in the practice or science of agriculture. If World Ag Systems is likely to be your first and last course on agriculture at WSU, we have designed the course for you. Should we mistakenly assume prior knowledge, please correct us either in class or via private communication. For those who bring a substantive understanding of agricultural science and/or practice, we welcome your help in getting others up to speed. Trust that you will be sufficiently challenged by the historical and geographic dimensions of this course.

Key Questions:

- How diverse is the world's agriculture, that is the plants and animals produced by humans and the methods to produce them?
- What are the most important crops and livestock in the world? How and where are they produced?
- What do all agricultural systems have in common? How do agricultural systems differ across cultures and environments?
- When, where and why did agriculture begin? How have agricultural systems evolved over the past 10,000+ years?

Major Topics: Each unit in this course has a number of specific content-based facts, concepts, or theories. Some of the more important of these include:

- 1) Population growth and agricultural development have been tightly interwoven throughout history and across the globe. However, the connections between population and agriculture are more complex than is commonly understood.
- 2) Different populations around the world went through essentially the same stages in developing agriculture from ancient to modern times. In other words, even though the locations and types of foods varied dramatically between these places, the same sets of agricultural development principles apply.
- 3) Nature and the natural world (climate, soils, native vegetation, etc.) significantly influence agricultural systems, in many cases providing nearly endless potential, in others providing severe limitations.
- 4) Technological and scientific advances of many kinds over the past 200-300 years have dramatically affected our world - including agriculture, yet we don't have to look too far to observe agricultural practices that have been used for thousands of years.
- 5) The history and geography of human civilizations are extremely rich, which is especially apparent when we explore civilizations from different places and times. (History and geography are more than a series of endless dates and place names.)

Many regional, national, and international current events pertain to agriculture. Having an informed historical and geographic perspective can give us the background to help us understand agriculture today and find solutions to current and future problems.

Structure and Grading:

Knowledge retention requires active learning or *engagement*. Engagement is central to the structure of World Ag Systems. We encourage regular attendance and participation in lecture-discussions with 1-minute notecard quizzes at the start of each class. To maintain engagement outside of class, we ask that you actively participate in a weekly on-line class discussion. Over the course of the semester, you will have the opportunity to study *in depth* the history and geography of agriculture for one selected country—culminating in a detailed written report.

Description	points
Exams (3 total)	300
Final Exam	200
Country Report (including intermediate submissions)	300
On-line discussion	110
Notecard quizzes (best 30 of 36+, 3 pts each)	90
Total	1000

Final Grades: Final grades will be *approximately* assigned as follows: A (>900), B (800-900), etc... *The exams are designed to be challenging.* You are therefore encouraged to gain all points possible on the other 50% of graded material.

Late Policy: All assignments must be submitted online via the *Angel Learning* course management system. Late submissions will be penalized on a continuous scale at a rate of 10%/day (or .043%/hour, 0.007%/minute), rounded up to the nearest whole point. For example, let's look at a 50 point assignment submitted online 90 minutes late:

$$PENALTY = 50pts \times 90 \text{ min} \times \frac{1 \text{ day}}{1440 \text{ min}} \times 0.1 = 0.3212 \Rightarrow 1 \text{ pt}$$

Should you have a legitimate reason for late submission, please contact one of the instructors for approval *in advance* to avoid penalties.

ON-LINE SMALL GROUP DISCUSSIONS (110 PTS):

On-line discussions will be used primarily to help students with their country reports. The class will be broken into small groups by the geographic regions of selected countries, and the discussions will center on questions relating to (1) the defining characteristics of agriculture in your region; and (2) what is special or unique about your country relative to others in the region. In answering the discussion questions as a group, you will have a good start on writing the components of the country report. It is essential that all participants approach these discussions with a spirit of mutual respect and constructive criticism. A total of 10 points will be available for each week's discussion. For full credit you must make at least one post and one response to another student's contribution.

NOTE CARD QUIZZES (90 PTS):

Students must bring a blank 3 x 5 inch notecard to each class. At exactly 11:10AM we will post a single, simple question relating to material from the previous class. You will have 1 minute to answer this question with a word or phrase. We anticipate giving approximately 36 such quizzes over the semester, and your 30 top scores will count. On the BACK of the notecards, we ask you to provide a quick evaluation of the previous class with a 3 pt maximum score (3 = great, 0 = terrible).

EXAMS (500 PTS):

We will regularly post examples of potential exam questions on the Angle Learning website to help you prepare for the exams. These exams will be comprised of multiple-choice, fill in the blank, matching, and short answer questions. Often we will provide a map and ask you to identify important countries, regions, climate zones, etc... At times you might be asked to illustrate your answer graphically (e.g. what does a moldboard plow look like), or label a provided illustration (e.g. name the key components of a moldboard plow and explain their function).

The final exam (200 pts) will be comprehensive, with a focus on integrating the different dimensions of the course.

WEEKLY TOPICS AND READING ASSIGNMENTS 2009:

VERSION 07/27/09

Date	Topic	Reading Assignment
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Text, pages

Origins of Agriculture

Week 1

08/24	What are agricultural systems?	Grigg, 2-3
08/26	What was wrong with hunting & gathering?	Evans, 7-17
08/28	Why did humans begin farming?	Evans, 18-26
	** Assign. 1: Select country for report by 5pm	

Week 2

08/31	Was the Fertile Crescent the cradle of agriculture?	Evans, 26-29
09/02	How do we identify domesticated wheat ?	Evans, 29-31
09/04	Why did different ag systems develop in China ?	Evans, 31-33
	** Assign. 2: Bibliography on history of ag for your country	

Week 3

09/07	Labor Day Holiday (No Class)	
09/09	Why is rice so adaptable?	Evans, 33-35
09/11	When & where did ag start in the Americas ?	Evans, 36-38
	** Assign. 3: Draft history of ag for your country (<u>write up</u>)	

Week 4

09/14	Why was the domestication of maize so unlikely?	Evans, 38-40
09/16	Were their centers of origin in Africa?	Evans, 40-43
09/18	Exam 1 - Origins of Agriculture	

Agricultural Geography

Week 5

09/21	<u>Sri Lanka</u> : historical geography of agriculture	
09/23	What factors influence agricultural geography?	Grigg, 1-8
09/25	What drives global climate patterns?	
	** Assign. 4: Bibliography on geography for your country	

Week 6

09/28	Which climatic factors most influence ag geography?	Grigg, 19-39
09/30	What the climate zones for major world crops?	Grigg, 19-39
10/02	What soil properties are important for agriculture?	
	** Assign. 5: Physical, social, agricultural maps of your country	

Week 7

- 10/05 What are the key controls on soil geography?
10/07 Is there an edaphic (soil) optimum for crops? Grigg, 40-50
10/09 Why is agriculture challenging in the **mountains**? Grigg, 51-58
*** Assign. 6: Geography of ag. for your country (write up)*

Week 8

- 10/12 Supply, demand and agricultural geography? Grigg, 59-83
10/14 How do transport costs shape agricultural geography? Grigg, 113-159
10/16 **Exam 2 - Agricultural Geography**

Development of contemporary agriculture

Week 9

- 10/19 United Kingdom: history and geography of agriculture
10/21 Who invented the plow? Grigg, ch. 8; Evans, 54-57; 155-158
10/23 What caused the "Dust Bowl"?
Grigg, ch. 16; Evans, 57-62;64-67; 124-125; 141-143; 172-175
*** Assign. 7: FAO graphs of ag production & exports for your country*

Week 10

- 10/26 What do plants eat? Evans, 90-98; 105-107; 119-121; 176-168
10/28 How can pests be controlled?
Evans, 99-100;107-110;126-129;160-162; 168-169
10/30 Was agriculture responsible for a "silent spring?"
*** Assign. 8: Food consumption & imports for your country*

Week 11

- 11/02 How has mechanization affected ag? Evans, 117-119; 169-170
11/04 Is irrigated agriculture ever sustainable?
11/06 How has agricultural genetic manipulation changed over history?
Grigg, ch. 14; Evans, 101-105; 121-124; 158-160; 209-211
*** Assign. 9: Major ag & food imports/exports (write up)*

Week 12

- 11/09 Are transgenic crops and livestock essential to our future?
11/11 **Veteran's Day Holiday (No Class)**
11/13 **Exam 3 - The Development of Modern Agriculture**

Agricultural Systems

Week 13

- 11/16 Was the green revolution successful? Evans, 146-147; 204-207; 214-217
11/18 What do cropping systems have in common? Grigg, 9-12
11/20 What do livestock & mixed systems have in common? Grigg, 13-17
*** Assign. 10: References and data on Ag systems for your country*

Week off

11/23-11/27 **Thanksgiving Break**

Week 14

- 11/30 How can we classify agricultural systems?
12/02 Uganda: History and geography of agriculture
12/04 Development in the tropics: plantations or subsistence ag?
*** Assign. 11: Agricultural systems in your country (write up)*

Week 15

- 12/07 What are the alternatives to concentrated animal operations?
12/09 What are the limits to mechanization?
12/11 Peru: History and geography of agriculture
*** Assign. 12: Final country report due by 5pm. (revised write up)*

Finals Week

12/14 **Comprehensive Final Exam** (3:10pm - 5:10pm)

NOTE: We may adjust the lecture schedule as necessary during the course of the semester. However, we do not anticipate changes to the basic course structure (history, geography, modern ag, ag systems), the exam schedule or the schedule of assignments for the country report.

STANDARD POLICIES:

STUDENTS WITH DISABILITIES: Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, please visit the Disability Resource Center (DRC). All accommodations **MUST** be approved through the DRC (Admin Annex Bldg, Room 205). Please stop by or call 509-335-3417 to make an appointment with a disability specialist.

ACADEMIC DISHONESTY: Academic dishonesty includes cheating, plagiarism, and fabrication in the process of completing academic work. Academic dishonesty will not be tolerated in Crops/Soils 360. All students are reminded of the procedures for academic dishonesty as outlined in the Washington State University Student Handbook. Students may consult with each other on lecture notes, preparing for tests, and discussion section exercises, but tests, papers and exercises themselves must be individual efforts.