

**International Crop Production  
(Global Food Systems)  
PLSC 303 - 3 credits**

**Instructor:** Kate Tully [ktully@umd.edu](mailto:ktully@umd.edu) | 2108 Plant Sciences Building | 301-405-1469  
Office Hours: Tues 3:15-4pm Thurs 3:15-4pm and by appointment

**Meeting Times:** Tues/Thurs 2-3:15pm PLS 1164

Several lectures and discussions (see syllabus) will be held jointly with PLSC125-Feeding 9 Billion by 2050, which meets Tues/Thurs 9-10:15am in Marie Mount Hall 1400. As a few students will have course conflicts, the lecture will be recorded and available online. Students not in attendance must watch the lecture and complete a short writing assignment *en lieu* of the discussion.

**Goal:** To give students a holistic understanding of the global food system. Students will integrate concepts across a variety of disciplines and be equipped to access, organize, and apply knowledge of (1) the core elements of food production systems, (2) human malnutrition, and (3) global food security and food policy.

**Course Description:**

*How do we balance the often competing objectives of producing food, preserving the environment, and promoting human well-being?*

This course begins with a tour of the types and distributions of crops across the globe, then we will focus on the core biophysical resources needed to produce that food – land, soil, nutrients, and water. We will discuss the human dimensions of the food system through an examination of nutrition and (shifting) diets. We will examine the role of big business in ensuring global and local food security. We will end the term with a series of discussions related to hot-button issues such as biotechnology, biofuels, organic agriculture, and food waste.

**Learning Outcomes**

*Scientific Literacy.* Students will gain foundational knowledge in how and why certain crops are well- or mal-adapted to geographical regions (in terms of soils, water, and nutrients). Students will learn about different types of farming systems found around the world. From this foundation, students will be able to proficiently discuss the complex balance between people, food, and nature and understand what makes a sustainable agroecological system.

*Science and Society.* Students will study and discuss the specific effects of monocultures, crop diversity, food safety and security, genetically modified crops, organic agriculture, and the carbon footprint generated by specialty crop production. The effects of agricultural trade on natural resources and the environment will also be discussed.

*Global Citizenship.* Students will gain an understanding of food security issues at home and abroad. We will discuss the causes and consequences of over- and under-nutrition in the context of the globalization of food markets.

**Required Reading/Textbooks**

Weekly reading will pair textbook chapters with papers from the scientific literature. Assigned pages and links to papers will be posted on the course [ELMS website](#) in the form of pdf files or web links. Students are responsible for printing or downloading the reading materials. Note taking during lectures is strongly recommended.

*Required text*

Standage, Tom. 2009. *An Edible History of Humanity*. Walker & Co., New York, NY.

*Recommended text*

Diamond, Jared. 1997. *Guns, Germs, and Steel*. W.W. Norton & Co., New York, NY.

### **Attendance**

Each class will involve activities and in-class work that cannot be made up. Excessive absences will therefore affect your final grade. If you must miss an exam or major assignment due date because of illness, religious observance, participation in university activities at the request of university authorities, or compelling circumstances beyond your control, request an excuse in writing and submit appropriate documentation 24 hours in advance (excepting extreme circumstances). Exams and major assignments missed for excused reasons with documentation must be made up within one week of the exam or quiz date, during office hours.

*Being present is not only physical.* If your body is in the room but your mind has wandered, you'll have to do extra work to catch up. Save time by focusing on the task at hand. Switch electronic devices off. Avoid distracting others by walking in and out of the room.

### *Religious Observances*

The University System of Maryland policy on religious observances states that students should not be penalized in any way for participation in religious observances and that, whenever feasible, they are allowed to make up academic assignments that are missed due to such absences. However, the student must personally hand the instructor a written notification of the projected absence within two weeks of the start of the semester. The request should not include travel time. Instructors should take the validity of these requests at face value. In addition, due to the inconvenience that would be caused as a result of the large number of other students who participate in particular religious observances, tests and due dates of other significant assessment *will* not be scheduled for the dates listed below.

Rosh Hashanah. Sundown, *Sunday Sept. 13, 2015* to Sundown, *Tuesday Sept. 15, 2015*

Yom Kippur. Sundown, *Tuesday Sept. 22, 2015* to Sundown, *Wednesday Sept. 23, 2015*

*It is the student's responsibility to inform* the instructor of any intended absences for religious observances *in advance* and that prior notification is especially important in connection with examinations, since failure to reschedule a examination before the conclusion of the examination period may result in loss of credits during the semester.

### *Disability Support Services*

The University of Maryland is committed to making reasonable accommodations to individuals with disabilities that have been documented by Disability Support Services (0126 Shoemaker Hall). Any student seeking accommodations must register with Disability Support Services. If you wish to discuss academic accommodations for this class, please contact Professor Tully as soon as possible. To make meaningful accommodations this must be done prior to the first exam.

### **Exam Policies**

*Missed exams.* Missed exams cannot be made up until the end of the semester. Students who have missed Exam 1 and/or 2 will take their make-up exam during the final exam period. Students will be given an hour to complete each make-up exam after turning in their completed final.

*Exam grade disputes.* Any dispute(s) about a grade on an exam must be given *in writing, within one week of the time the exam was handed back*. The exam will be reviewed by the professor and all appropriate grading changes will be made—be they positive or negative for the total exam grade.

Discussion materials represent a major component of this course. Consequently, information in discussion will be covered in the examinations.

*Early Warning Grades* will be based on your grade on EXAM 1.

## **Assignments and Grading**

<b>Component</b>	<b>Points</b>	<b>Percentage</b>
Discussion participation	100	20
Exam 1	100	20
Exam 2	100	20
Final research paper	150	30
Final presentation	50	10
<b>Total</b>	<b>500</b>	<b>100</b>

## **Integrity, Cheating and Plagiarism**

Academic integrity is fundamental to learning and scholarship. At its simplest, this means that the work you submit must be your own unless collaboration is specifically allowed, that you express yourself in your own words unless you are quoting, and that you properly acknowledge and cite the ideas, information, and other work that you used or that contributed to your understanding. As we engage in research, we will discuss how to correctly acknowledge others' work to avoid misuse of sources. The University of Maryland Library page [Academic Integrity and You](#) contains resources on avoiding plagiarism and other pitfalls in research and writing. The [University of Maryland Code of Academic Integrity](#) provides fuller discussion of academic integrity and clear definitions of plagiarism, misuse of sources, and cheating.

**Course Schedule** (draft 19 Jul 2015)

Classes highlighted in green will be held jointly with PLSC125 – Feeding 9 Billion by 2050.

<b>Week</b>	<b>Date</b>	<b>Lecture</b>
1	1-Sep	Types and distribution of crops
	3-Sep	Agricultural Green Revolutions
2	8-Sep	Ag and Climate Change – Adaptation/Mitigation - PLSC125
	10-Sep	Ag and Climate Change – Debate/Discussion - PLSC125
3	15-Sep	Soil fertility and soil organic matter
	17-Sep	Soil processes and constraints, degradation
4	22-Sep	Nutrient Cycling - Ag Intensification
	24-Sep	Nutrient Cycling - Alterations to N and P cycles
5	29-Sep	<b>Review</b>
	1-Oct	<b>Exam 1</b>
6	6-Oct	Water quantity - PLSC125 time slot
	8-Oct	Water Resources - Quality
7	13-Oct	Farming Systems – Slash and Burn
	15-Oct	Farming Systems – Livestock/Pastoralism ← PLSC125 has lecture on mitigating crop losses due to stress Ton Bisseling
8	20-Oct	Crops and Nutrition - Under-nutrition
	22-Oct	Crops and Nutrition -Over-nutrition
9	27-Oct	Global food business - National and multi-national Ag businesses
	29-Oct	Global food business - Making Ag business work for the poor
10	3-Nov	<b>Review</b>
	5-Nov	<b>Exam 2</b>
11	10-Nov	Agrobiodiversity
	12-Nov	Organic Agriculture
12	17-Nov	Plant breeding ← USDA person?
	19-Nov	Biotech/Genomics ← Jianhua Zhu guest lecture?
13	24-Nov	Biofuels
	<b>26-Nov</b>	<b>Thanksgiving Break</b>
14	1-Dec	Food waste
	3-Dec	Sustainable Agricultural Intensification - People, food, and nature
15	8-Dec	<b>Final essays due</b> /Presentations on research topic
	10-Dec	Presentations on research topic
	<b>12-Dec</b>	<b>Reading Day</b>
	<b>19-Dec</b>	Make-up examinations