“Food touches everything. Food is the foundation of every economy. It is a central pawn in political strategies of states and households. Food marks social differences, boundaries, bonds, and contradictions. Eating is an endlessly evolving enactment of gender, family, and community relationships. ...Food is life, and life can be studied and understood through food.”

Counihan and Van Esterik, 1997
GENERAL INFORMATION
ENR 5600

Instructor: Ryan D. Hottle
Email: Hottle.7@osu.edu
Office Location & Hours: Ag Admin Rm#113, M 5-6

Time and Date
Tuesdays & Thursdays, 9:35-10:55
Kottman Hall, Room 382

Course Description
More than 850 million people in the world (15% of the global population) remain without enough to eat and roughly 2 billion suffer from nutrient deficiencies. This occurs in spite of the fact that there is an excess of food in the world. This suggests that in order to understand why people go hungry—and perhaps more importantly, what can be done to most effectively intervene—that we must understand the food in a systemic way, not simply focusing on production alone.

In this course, we will examine the social, economic and environmental dimensions of agriculture, the emerging global challenges revolving climate change, resource depletion, and various movements within agriculture including the Green Revolution, integrated crop management, conservation agriculture, organic, sustainable, regenerative, permaculture, and “climate smart” agriculture.

We will explore the concept of food security in all of its dimensions including production, storage, distribution, access and stability. We will place special emphasis on challenges to global food security, constraints on the modern “conventional” farming system, and sustainable strategies to increase global food production. Topics such as the genesis of food production, economics as a shaper of food production systems, population growth, food production in developing countries, and novel strategies to address food security. A special focus of the course will be on the emerging questions related to the recent/current “Global Food Crisis.”

Objectives

1. Be able to define the terms “sustainable agriculture” and “food security” from multiple perspectives
2. Differentiate types of sustainable agriculture systems (e.g. conservation agriculture, organic, biodynamic, permaculture, climate smart agriculture, etc.) their origins, and advantages and disadvantages
3. Be able to succinctly summarize why sustainable agriculture is not merely desirable, but necessary in order to meet coming global challenges
4. Synthesize this knowledge and the costs and benefits of the perspectives explored using both oral and written language

Expectations and Goals

The expectations and goals for this course are as follows:

1. Develop effective communication skills — Written, oral, interpersonal, group.
2. Develop higher cognitive skills — Critical thinking, creativity, analytical ability.
3. Cultivate the virtues — Ethics, responsibility, honor, tolerance, respect for others, empathy.
4. Develop focus and depth in one or more disciplines.
5. Develop leadership skills — Ability to stimulate and direct collaborative learning and collaborative action.
6. Develop a global perspective — Broad intellectual and cultural experience through active
7. Engagement, an understanding of the interactions among the individual, society, and the natural world.
8. Prepare for lifelong learning — Independent thinking and learning, learning to find information, asking the right questions.
COURSE REQUIREMENTS

ENR 5600

Required Reading

The Coming Famine
Julian Cribb
2010, University of California Press
Ordered through OSU Bookstore (Barnes and Noble)

Course Requirements and Grading

Classroom time will primarily focus on discussion of the course readings, with supplemental content provided through lectures or guest presentations. Assignments to be completed outside of class will facilitate in-class work. Grades will be assessed according to student performance on several different assignments. The breakdown of each assignment’s weight as a part of the final grade is as follows. There are a couple assignments unique to graduate students in the course and unique assignments for undergraduate students as well:

Quizzes (20%)
Each week there will be a quiz at the beginning of class. Material on quizzes will be from required readings for that week (see Weekly Schedule below).

Class Participation (20%)
Active listening and participation are very important to engaging with the course, the intellectual content, and the classroom community. Classroom participation will be judged according to: (1) activeness in the classroom as well as (2) consistency of classroom participation and attendance and (3) quality of classroom participation.

Discussion Leader (20%)
Each student will be responsible for serving as a class discussion leader twice during the quarter. Assignment of class leader responsibilities will occur during the first class session. Discussion leadership will entail two parts, 1) A brief opening oral presentation (including a set of between 4 and 7 slides) highlighting the most important two or three points of the chapters/articles under consideration. Please note that all readings in a particular session are thematically related so the opening oral presentation should seek to succinctly synthesize some of the material. Creativity in presenting/augmenting the material is encouraged. 2) Development of two or three questions intended to stimulate class discussion after the brief opening oral presentation.

“It could plausibly be argued that changes in diet are more important than changes of dynasty or even of religion.”
— George Orwell, 1937
Midterm (20%)
A midterm exam will be conducted to test the student’s ability to acquire the information, critical thinking skills, and integration of concepts. Students will be asked to answer a series of short answer, essay and/or multiple choice questions concerning course materials.

Final Exam (20%)
A final exam will be conducted to test the student’s ability to acquire the information, critical thinking skills, and integration of concepts. Students will be asked to answer a series of short answer, essay and/or multiple choice questions concerning course materials covered up to the day of the exam.

*Book Report (16.6%) *Graduate Students only
Graduate students in the course are to identify an appropriate scholarly book (single authored or edited volume) related to the Sociology of Agriculture and Food Systems. You can consult with me for ideas, do your own literature review, or check out resources such as the database maintained by Phil Howard to identify possible books to review (see https://www.msu.edu/~howardp/booksfilms.html) Once you have selected a book, you need to let me know by October 9th the author and title of the book. Book reviews are to be submitted to the instructor no later than November 20th. Reviews should be between 800 to 1,200 words. Double spaced, printed copies of your review should be submitted by the due date.

Guidance for the contents of a book review: A book review should indicate both the substance and the value of the book for its intended audience. The review should include a brief overview of the contents of the book and your final evaluation. You may find the following questions useful in preparing the review:

1. Does the book have a clear and significant thesis and methodology?
2. Is it timely or path breaking?; What is its significance to your field (e.g. sociology, forestry, horticulture and crop sciences, etc.)?
3. What is the quality of the author’s research and sources?
4. Is it well written and clearly organized?
5. What is the overall significance of this book in relation to themes covered in this course and/or themes that are appropriate to your research areas?

Academic Misconduct
Academic misconduct of any kind will not be tolerated. Examples of academic misconduct include, but are not limited to, cases of plagiarism and dishonest practices in connection with examinations and laboratory exercises. See Code of Student Conduct: Rule 3335-31-02. This and other rules can be found in the Resource Guide for Students or in the back of the Student Telephone Directory. Individual effort is expected on all assignments. If you have a question about approaches and procedures that might constitute academic misconduct, see the instructor.

Statement about the availability of accommodations
If an accommodation based on the impact of a disability is needed, students should contact the instructor to arrange an appointment as soon as possible. At the appointment the course format can be discussed and any needs and potential accommodations can be anticipated. This class relies on the Office For Disability Services for assistance in verifying the need for accommodations and developing accommodation strategies. If students have not previously contacted the Office for Disability Services, they are encouraged to do so if appropriate to their needs.
WEEKLY SCHEDULE
ENR 5600

Quiz will be taken at beginning of class on material due for week.
Midterm (October 15th)

Week 1: Global Change and Sustainable Agriculture
The food-climate-energy-water-poverty nexus

Tuesday August 27th*, Thursday August 29th
Julian Cribb, The Coming Famine, Pages: xi-29

Week 2: What is Food Security?
Defining and measuring food security and insecurity

Tuesday September 3rd*, Thursday September 5th
Julian Cribb, The Coming Famine, pg. 14-29
Lester Brown, “The New Geopolitics of Food” 2011
Christopher Barrett, “Measuring Food Security” 2010

Week 3: Culture and Agriculture in the World
Political, social and economic opportunities and constraints

Tuesday September 10th*, Thursday September 12th
TBD

Week 4: The Climate Connection
How climate change impacts food production and how food production impacts climate change

Tuesday September 24th*, Thursday September 26th
Julian Cribb, The Coming Famine, pg. 135-153
James Hansen, “Target CO2: A Safe Operating Space for Humanity”
Sonja Vermuelen, “Climate Change and Food Security”
Week 5: Land and Soil, The Crucible of Terrestrial Life
Understanding the foundation of life on terrestrial surfaces

Tuesday October 1st*, Thursday September 3rd
Julian Cribb, The Coming Famine, pg. 48-68
Pedro Sanchez, “Hunger in Africa: The Connection between Unhealthy People and Unhealthy Soils” 2005

Week 6: Water: The Indispensable Resource
Water quality, quantity, and efficient use in agroecosystems

Tuesday October 8th*, Thursday October 10th
Julian Cribb, The Coming Famine, pg. 30-47
Munir Hanjra, “Global Water Crisis and Food Security in an Era of Climate Change,” 2010

Week 7: Fertilizers and fertility
Costs, benefits, and future scarcity of inorganic fertilizers

Tuesday October 15th*, Thursday October 17th
Julian Cribb, The Coming Famine, pg. 69-85
G. Denning, “Input Subsidies to Improve Smallholder Maize Productivity in Malawi,” 2009
Dana Cordell, “The Story of Phosphorus: Global Food Security and Food for Thought” 2009

Week 8: Livestock Systems
Livestock production systems, CAFOs, husbandry, and growing demand for animal products

Tuesday October 22nd*, Thursday October 24th
Anthony McMichael, “Food, livestock production, energy, climate change, and health” 2007
Food and Agriculture Organization, Livestock’s Long Shadow, 2006 (read Executive Summary only)
M. Herrero, “Smart Investments in Sustainable Food Production: Revisiting Mixed Crop-Livestock Systems” 2010

Week 9: Global Population Growth
The challenge of feeding 9.6 billion people by 2050

Tuesday October 29th*, Thursday October 31st
Julian Cribb, The Coming Famine, pg. 154-167
Paul and Anne Ehrlich, “Can a Collapse of Global Civilization be Avoided?”, 2013
J. Bongaarts, “Human Population Growth and the Demographic Transition”
**Week 10: Energy and Agriculture**
Use, efficiency, and dependency of energy sources in agroecosystems

**Tuesday November 5th, Thursday November 7th**
Julian Cribb, *The Coming Famine*, pg. 119-134
Lester Brown, “Dwindling Fossil Fuels and Our Food System” 2010

**Week 11: Emerging Issues in Food Systems**
Biotechnology, biofuels, labeling, food movements, and other emerging issues in agriculture

**Tuesday November 12th, Thursday November 14th**
David Tilman, “Beneficial Biofuels—The Food, Energy, and Environment Trillema”
Pamela Ronald, “Plant Genetics, Sustainable Agriculture and Global Food Security” 2011

**Week 12: Student Presentations + Sustainable Strategies I**
Soil, fertility and water management to sustainably intensify production

**Tuesday November 19th, Thursday November 21st**
Julian Cribb, *The Coming Famine*, pg. 168-203
NV Fedoroff, “Radically Rethinking Agriculture” 2010

**Week 13: Student Presentations + Sustainable Strategies II**
Novel crop production systems

**Tuesday November 26th, Tuesday December 3rd**
G. Langergraber, “Ecological Sanitation—a way to solve global sanitation problems?” 2005
Jerry Glover, “Plant Perennials to Save Africa’s Soils” 2012
Dennis Garrity, “Evergreen Agriculture: A Robust Approach to Food Security in Africa”
“Eating with the fullest pleasure — pleasure, that is, that does not depend on ignorance — is perhaps the profoundest enactment of our connection with the world. In this pleasure we experience our dependence and our gratitude, for we are living in a mystery, from creatures we did not make and powers we cannot comprehend.”

–Wendell Berry