ECON 343: Population, Environment, and World Agriculture
Fall 2023
Instructor: Dr. Zoë Plakias (link to my website)
Schedule: T/Th 10-11:50 AM
Location: Environmental Sciences 072
Modality: Face-to-face

Student drop-in hours in 313 Parks Hall: F 1:30-3 PM (no RSVP needed!)
One-on-one meetings in person in 313 Parks Hall or on Zoom: By appointment (schedule at: www.calendly.com/plakiaz)

Official Course Description

Utilizes economic principles to understand the interactions among population growth, food demand, agricultural development, and natural resource utilization, degradation, and conservation.

Prerequisites: ECON 206 or HNRS 209 or HNRS 254 or HNRS 202
Credits: 4
Grade Mode: Letter
Designation: CF-E (Communications Focus-Economics)

Learning Goals

Upon completion of this course, I expect you will be able to:

- *Identify and explain* basic microeconomic concepts relevant to agricultural production and the environment;
- *Apply* these basic microeconomic concepts to analysis of agricultural production and associated environmental and natural resource issues;
- *Identify* stakeholders in the food and agricultural system, and the power differentials and inequities among stakeholders;
- *Recognize* the incentives facing these stakeholders;
- *Describe* environmental and natural resource issues associated with various agricultural production practices and food consumption patterns;
- *Identify and explain* the trade-offs associated with these patterns and practices;
- *Describe and critically analyze* major policy tools used to address environmental impacts of agricultural production;
- *Understand* how economic insights can be used for effective policy design;
- *Interpret and critically analyze* scientific research presented in academic journal articles and government reports; and
- *Communicate* effectively about course concepts orally and in writing.

Grading
Reading Log (20%)
Problem Sets (36%)
In-Class Exercises (14%)
Final Project (30%)

Grading Scale

A	93-100%	C	73-76.99%
A-	90-92.99%	C-	70-72.99%
B+	87-89.99%	D+	67-69.99%
B	83-86.99%	D	63-66.99%
B-	80-82.99%	D-	60-62.99%
C+	77-79.99%	F	0-59.99%

What to expect from this class
You can expect lots of discussion! The topics of this class are complex, challenging, cross many disciplines, and not at all settled. We have far from all of the answers. So we'll be discussing things a lot, and I expect you to be prepared for those discussions.

What not to expect from this class
Don't expect slides! I find class is more fun and lively if I don't use slides, and there's lots of evidence that you'll learn better if you take notes. We'll be in an active learning classroom, and I plan to make full use of it. I'll use the white board and screens for presenting some concepts, but I'll expect you to take notes on our discussions. If that's not something you're used to, here's a nice overview of some different ways to take notes and key things to think about. I'll also take volunteers in each class period to serve as class note taker—their notes for that class will be posted on Canvas for anyone who misses class that day. Volunteer note takers will receive extra credit points and anyone who wants to will have the opportunity to serve as a note taker and earn these points.

Course materials
There is no required textbook for this course. All readings will be available either as a PDF in Canvas or via a link to the library website.

Assignments

Reading log
This course will be heavily discussion based. To have good discussions, you will need to do the reading. Early on in class we'll read an economic paper and discuss how to make reading them a little less scary. I will assign no more than one paper per class period. To ensure enough folks have done the reading so we can have a vibrant discussion, I will ask you to keep a reading log. We'll read 12 papers in the class, and you'll have to read at least 9 for full credit for the reading log. That means you can skip 3. Why? Because we're all human and have rough weeks. There's no need to tell me when you'll skip a reading—we'll just hope not everyone chooses the same day to skip the reading and I'll count up at the end of the term to make sure you have met the requirement! I do encourage you not to use up all these "free days" in the beginning of the term, though, as you might regret it later. See details of the reading log assignment requirements in the Reading Log discussion board on Canvas.

Problem sets
I will assign three problem sets throughout the term. The purpose of these problem sets will be to help you better connect microeconomic concepts you already learned about in ECON 206 or an equivalent course to the concepts we are discussing in class. These problem sets will include a mix of graphs, math, short answer/discussion questions, basic data analysis, and data interpretation. Details of each problem set will be provided on Canvas.

Final project (contributes to CF-E designation)
In this course, you will be required to do a final group project [insert groan here]. Actually, I hope this group project will be really fun! Each group will be tasked with developing a game that explores course concepts and addresses issues of trade-offs related to these concepts. Depending on class composition, this could be a computer-based game or a board game (I'll try to group people by the type of game you're interested in developing). At the end of the quarter, you'll present your game to the class, and your classmates and I will play the game! I will provide full details of the assignment in Week 2 of class and post details on Canvas at that time.

Other in-class exercises
Throughout the term I will have in-class exercises for you to complete. Many of these we'll work on together. Some will be individual. I will generally grade these for completion (whether you did or didn't do it) as opposed to whether it's correct or not. While I do not take attendance and don't believe in policing students (we're all humans

with needs and adults who can make our own decisions), you will miss out on 14% of your grade if you do not come to class. For medical situations or other necessary absences, please check in with me about any opportunities for in-class credit you may have missed so I can ensure you have an opportunity to make it up. Also, I ask you to please not take advantage of this policy, as it creates more work for me and decreases the quality of our class engagement if we have a lot of absences.

Use of ChatGPT and other AI Chatbots
Per our class discussion on the first day, use of AI chatbots, including but not limited to ChatGPT, is *allowed in this course as a study tool*. For example, looking up specific terms and concepts that you are confused about (e.g., externality or Tragedy of the Commons) or asking for a spelling and grammar review is an acceptable use of AI chatbots in this course. Use of AI chatbots, including but not limited to ChatGPT, is *not allowed in this course to solve or prepare homework answers*. For example, asking an AI chatbot to find scientific articles on a topic for an assignment, summarize an article for which you are preparing a reading log entry, answer a question on a problem set, or write parts of your final project game (or asking an AI chatbot to do one of these things and then rewording in your own words) is <u>not</u> an acceptable use of AI chatbots in this course. If you are ever in doubt about whether or not use of an AI chatbot is acceptable, please ask! Also, if you have suggestions for changes to this policy as we all figure out how AI chatbots can be used in our work, please let me know.

Course policies
I will follow all of the standard WWU policies listed at [Syllabi@WWU](). This website covers policies on COVID-19 safety; academic honesty; accommodations; ethical conduct with WWU resources; equity, equal opportunity, and civil rights; finals week; medical excuse policies; and the student code of conduct. In addition, I have adopted [Lauren's Promise](). I promise to: (1) Listen and believe you if someone is threatening you, (2) Represent a safe haven for sharing incidents of sexual assault, domestic violence, or stalking, and (3) Change campus culture that responds poorly to dating violence and stalking.

Your well-being
Your well-being is very important to me. I am in therapy and take medication for depression and anxiety, and this is something I struggled with in college. I am constantly working (it's not easy!) to get enough sleep and exercise and to eat well, and to manage my time well. COVID-19 continues to affect all of us as well, and I know that transitioning back from online has been challenging. I encourage you to reach out to me if you are struggling with coursework or other things in your life that are affecting your

ability to engage in class so that we can discuss strategies that might help and I can direct you to relevant resources at Western. The sooner you talk to me, the better!

E-mail

I will do my best to respond to e-mail in a timely manner. You can message me through Canvas or e-mail me at plakiaz@wwu.edu. You can expect an answer within 24 hours on a weekday, and usually a weekend as well (if the request is urgent—e.g., for an assignment due on Sunday). Please do not expect an immediate response to e-mails, although I will provide these occasionally if I'm online when I receive your message.

Student Drop-in Hours and One-on-One Meetings

Student drop-in hours are times I promise to be in my office (Parks Hall 313) and available for you to drop-in and chat. You do not need to RSVP or tell me you're coming. We can talk about a question related to class (takes priority), further discuss a topic from class, or chat about whatever. For those wishing to chat one-on-one (not assured for drop-in hours, since multiple people might drop-in), I am available for one-on-one chats in person or via Zoom (Wednesdays I will only be available for Zoom meetings, since I generally work from home that day). You can schedule with me at: www.calendly.com/plakiaz.

Plan for the Term (subject to change)

Topic 1: Course introduction

Thursday, September 28
Topics: Introductions, syllabus discussion and questions (part 1), introduction to the class, reading academic journal articles
Readings: None

Assignment (due Sunday, October 1 at 11:59 PM): Getting to know you survey!
Complete the short survey in Canvas to help me learn a little bit about you. Credit (for completion—there are no "right" answers to this quiz) will go toward your in-class exercise grade.

Topic 2: Population and human well-being

Tuesday, October 3

Topics: Syllabus discussion and questions (part 2), final project introduction, economic history and human well-being, sustainable development goals
Reading: [Rose (2020)](#)

Thursday, October 5
Topics: Population, demographic transition, future population growth, future food demand
Reading: [Becker and Fanzo (2023)](#)

Topic 3: Food demand, diets, and decision-making

Tuesday, October 10
Topics: How people decide what foods to purchase and consume, food demand
Reading: None

Thursday, October 12
Topics: Food security, food sovereignty, measuring food
Reading: [In Brief to The State of Food Security and Nutrition in the World 2023](#)

Assignment (due Tuesday, October 17 at 10:00 AM): Problem Set 1 due on Canvas

Topic 4: Farming around the world

Tuesday, October 17
Topics: How food is produced, how farming works, farmer optimization, risk, agricultural household model, subsistence agriculture, farm labor
Reading: None

Thursday, October 19
Topics: Who produces food, how food production looks different around the world, international trade, final project group work time
Reading: [Oteros-Rozas et al. (2019)](#)

Assignment (due Sunday, November October 22 at 11:59 PM): Game plan (submit as group)

Tuesday, October 24
Topics: How farmers decide what to grow, farm scale, property rights, food supply + prices

Reading: [Herrero et al. (2017)](#)

Topic 5: Impacts of food production on the environment

Thursday, October 26
Topics: Measuring the impacts of food production on the environment, water and soil, externalities, farmer incentives
Reading: [Environmental Effects of the U.S. Food System (2015)](#)

Assignment (due Tuesday, October 31 at 10 AM): Problem Set 2 due in-class or on Canvas

Tuesday, October 31
Topics: Biodiversity and land use change, ecosystem services, farmer incentives, guest speaker Francisco Laso (tentative)
Reading: [Albert et al. (2023)](#)

Thursday, November 2
Topics: Climate change and agriculture, public goods, group work time
Reading: [IPCC Special Report on Climate Change and Land: Summary for Policymakers (2019)](#)

Topic 6: Global supply chain elements

Tuesday, November 7
Topics: Food processing and retailing, food power, international trade revisited, group work time
Reading: [Barrett et al. (2022)](#)

Thursday, November 9
Topics: Food aid and international development, guest speaker Brittany Smith (tentative)
Reading: None

Assignment (due Sunday, November 12 at 11:59 PM): Game outline/first draft (submit as group)

Topic 7: Addressing environmental impacts of food production

Tuesday, November 14

Topics: Changing diets and consumer practices (plant based diets, food waste, relevant policies), group work time
Readings: [Hasegawa et al. (2019)](#)

Thursday, November 16
Topics: Changing production practices (regenerative and organic agriculture, carbon markets, relevant policies)
Readings: [Ramankutty et al. (2019)](#)

Assignment (due Tuesday, November 21 at 10 AM): Problem Set 3 due in-class or on Canvas

Tuesday, November 21
Topics: Changing agricultural inputs (genetic engineering, conventional breeding, energy use, relevant policies), guest speaker from Semilla Nueva (tentative)
Readings: [Gbashi et al. (2021)](#)

Tuesday, November 28
Topics: Changing supply chain and marketing practices (food packaging, transportation, short supply chains), class wrap up + reflection, group work time
Readings: None

Topic 8: Final projects + wrap-up!

Thursday, November 30
Group 1 game presentation, game play, and follow-up discussion
Readings: None

Tuesday, December 5
Group 2 game presentation, game play, and follow-up discussion
Readings: None

Thursday, December 7
Group 3 game presentation, game play, and follow-up discussion
Readings: None

Tuesday, December 12 (8-10 AM, our assigned final exam period)
Group 4 game presentation, game play, and follow-up discussion
Readings: None

Assignment (due Wednesday, December 13 at 11:59 PM): Final project self-assessment and peer evaluation (submit as individual)