

AEDECON 3000

Quantitative Methods in Agribusiness and Applied Economics

Spring 2024

Course Description

This course carries 3 semester hours. It provides an introduction to quantitative methods and tools that are used to assist economic analysis in applications related to agribusiness and applied economics. Classroom examples and computer tutorials are provided to give practice in applying these tools to practical problems.

Lecture Format

Lectures: Tuesdays & Thursdays, 9:30-10:55am

Course completed 100% in person at Agricultural Administration Building 108, Columbus January 8 – April 22, 2024, exclusive of holidays (first day for *this* course is January 9)

Instructor

Wuyang Hu hu.1851@osu.edu Phone: 614.488.4416

232 Ag. Admin Bldg., Columbus OH, 43210

Office hour: Mondays, 1:00-2:45pm, or by appointment

Office hour is 100% at distance learning via CarmenZoom

<https://osu.zoom.us/j/96786990344?pwd=dmw2M0FTUS9seHpNOFN0YXpoSDZpQT09>

Meeting ID: 967 8699 0344

Password: 980777

One tap mobile

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162.255.36.11 (US East)
221.122.88.195 (China)
115.114.131.7 (India Mumbai)
115.114.115.7 (India Hyderabad)
213.19.144.110 (Amsterdam Netherlands)
213.244.140.110 (Germany)
103.122.166.55 (Australia Sydney)
103.122.167.55 (Australia Melbourne)
64.211.144.160 (Brazil)
69.174.57.160 (Canada Toronto)
65.39.152.160 (Canada Vancouver)
207.226.132.110 (Japan Tokyo)
149.137.24.110 (Japan Osaka)
Meeting ID: 967 8699 0344
Password: 980777

Teaching Assistant

TBA

Hours by email appointment

Communication

You are welcome to email me with any questions you may have pertaining to course policies or content. I check my email regularly. If I cannot adequately answer your questions by email, I will respond with an invitation to meet in person or discuss the matter via Zoom. Questions pertaining to homework assignments should be directed to the teaching assistant first.

Prerequisites

MATH 1130, College Algebra for Business, and either AEDECON 2001, Principles of Food and Resource Economics, or ECON 2001, Principles of Microeconomics, or equivalent.

Learning Outcomes

Successful students will have the ability to:

- Formulate and solve foundational problems in agribusiness and applied economics employing basic quantitative techniques.
- Analyze and interpret economic solutions to foundational problems in agribusiness and applied economics.

Students meet the learning outcomes by attending all lectures, mastering the material covered in lectures, completing all homework assignments, and thoroughly preparing for the midterm and final examinations.

Textbooks/Readings

Hal Varian. *Intermediate Microeconomics: A Modern Approach*, 8th Edition. W.W. Norton & Company ISBN-13: 978-0393934243. Note: various sites offer this book online free of charge.

Bernard. W. Taylor. *Introduction to Management Science*. Prentice Hall; any edition between 8th and 13th.

Additional materials will be posted on Carmen.

Lecture Notes and Handouts

All handouts will be posted on Carmen. Depending on student need, limited hard copies of handouts may be printed and brought to the classroom before each class.

Course Technology

Although all official lectures will be delivered in person, upon mutual agreement between instructor and students, some other meetings (e.g., office hours) may be conducted virtually over zoom. In order to participate, you will need: a) a computer; b) high-speed internet connection; and c) webcam and microphone, fully installed and tested. You will need to use BuckeyePass multi-factor authentication to access your courses in Carmen. For help with your password, university email, Carmen, or any other technology issues, questions, or requests, you can contact the IT Service Desk at 614-688-4357 (HELP).

Course Topics

We will cover a range of applied economic theory and practical issues related to agribusiness:

- Review of key economic concepts
- Consumer theory and applications
- Production theory and applications
- Monopoly behavior
- Exchange, welfare, and externality

We will use quantitative analysis tools to address the issues suggested by theory and challenges raised by real life practices:

- Review algebra
- Graphs and functions
- Linear equations
- Optimization
- Matrix operation
- Mathematical programming

Evaluation

5 Assignments	50%
Participation bonus (see related section below)	5%
1 Midterm Examination	20%
1 Final Examination	30%
Total	100%

Final grades will be assigned as follows:

93-100+ ≡ A 90-92.99 ≡ A- 87-89.99 ≡ B+ 83-86.99 ≡ B 80-82.99 ≡ B-
77-79.99 ≡ C+ 73-76.99 ≡ C 70-72.99 ≡ C- 67-69.99 ≡ D+ 60-66.99 ≡ D
Less than 60 ≡ E

Homework Assignments

There will be five individual homework assignments and each assignment is weighted equally (10% each). Typically, these assignments will be handed out during a lecture, and the assignments will involve applications of the techniques introduced in the class. The use of computer spreadsheets will be required to complete at least some of the assignments. Group discussion is encouraged for these assignments, but each individual student is expected to submit his/her **own work separately**. Homework assignment answers must be submitted via Carmen in electronic format (e.g., MS Word) or as a graphic image produced from a scan of handwritten answers, provided the answers are clearly legible. You can easily scan your answers by using Notes App or something similar on a smart phone or iPad. Homework assignment answers should be submitted by **10:00am** on the due date to be considered “on time.” Each assignment is graded out of 100 points. Late submissions will receive a penalty of 25 points per day (including weekends) being late conditional on solutions have not been discussed by the instructor during class. If a late assignment is turned in after the solutions have been discussed in class, the late assignment will automatically receive a zero.

Each homework assignment will be graded on a 0-100 point scale. However, only the percentage contribution to your final grade will be recorded in the Carmen gradebook. Each homework assignment accounts for 10% of your final course grade. Thus, if you receive a grade of 95 on a homework, 9.5 (which is $95 \times 10\%$) will be recorded in the Carmen gradebook and if you fail to turn in a homework assignment, zero will be recorded in the Carmen gradebook.

Examinations

The midterm exam is tentatively scheduled on Tuesday February 27, 2024. Note: pending evolvment of the pandemic, this date may need to change but if it does, I will notify you at least one full week ahead of time. It will only be pushed back if necessary but not brought forward. It will be an in-class exam lasting 75 minutes.

The final exam will be held 8:00-9:45am, Monday, April 29, 2024. Students who are unable to write an exam because of illness or other legitimate reasons, should contact the instructor as soon as possible to make alternative arrangements. The usual university regulations apply in these situations.

The midterm and final examinations will be initially graded on a 0-100 scale. However, only the percentage contribution to your final grade will be recorded in the Carmen gradebook. Thus, if you receive a score of 93 on the midterm, 18.6 (which is $93 \times 20\%$) will be recorded in the Carmen gradebook, and if you receive 91 on the final examination, 27.3 (which is $91 \times 30\%$) will be recorded in the Carmen gradebook.

Participation/Attendance Policies and Bonuses

Attending lectures is critical to success in this class. Lectures provide a public forum for interactive discussion of important concepts and methods covered in the course. Students who request office hour meetings will be asked to reflect on their attendance first and show how their questions may be related to the lecture materials.

There are a total of up to 5 bonus points for class participation/attendance. These points can be earned through means such as actively participating in classes, answering pop quizzes, or other related activities.

University, College and Departmental Policies

Please read and familiarize yourself with the following content.

Academic Misconduct

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-48.7). For additional information, see the Code of Student Conduct at <http://studentconduct.osu.edu>

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University's Code of Student Conduct, and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University's Code of Student Conduct and this syllabus may constitute Academic Misconduct.

The Ohio State University's Code of Student Conduct (Section 3335-23-04) defines academic misconduct as: Any activity that tends to compromise the academic integrity of the University, or subvert the educational process. Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University's Code of Student Conduct is never considered an excuse for academic misconduct, so you should review the Code of Student Conduct and, specifically, the sections dealing with academic misconduct.

If the instructor suspects that a student has committed academic misconduct in this course, the instructor is obligated by University Rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the University's Code of Student Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the University.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Disability Accommodations

The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let the instructor know immediately so that the options can be discussed privately. To establish reasonable accommodations, the instructor may request that you register with Student Life Disability Services. After registration, make arrangements with the instructor as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

Diversity and Discrimination

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

- Online reporting form at equity.osu.edu,
- Call 614-247-5838 or TTY 614-688-8605,
- or email equity@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

- All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.

- The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.

For additional information on Diversity, Equity, and Inclusion in CFAES, contact the CFAES Office for Diversity, Equity, and Inclusion (<https://equityandinclusion.cfaes.ohio-state.edu/>). If you have been a victim of or a witness to a bias incident, you can report it online and anonymously (if you choose) at <https://studentlife.osu.edu/bias/>.

Grievances

According to University Policies, if you have a problem with this class, you should seek to resolve the grievance concerning a grade or academic practice by speaking first with the instructor or professor. Then, if necessary, take your case to the department chairperson, college dean or associate dean, and to the provost, in that order. Specific procedures are outlined in Faculty Rule 3335-8-23. Grievances against graduate, research, and teaching assistants should be submitted first to the supervising instructor, then to the chairperson of the assistant's department.

Mental Health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, and difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life Counseling and Consultation Services (CCS) by visiting ccs.osu.edu or calling (614) 292- 5766. CCS is located on the 4th Floor of the Younkin Success Center. You can reach an on-call counselor when CCS is closed at (614) 292-5766 and 24 hour emergency help is also available through the 24/7 National Prevention Hotline at 1-(800)-273-TALK or at suicidepreventionlifeline.org.

David Wirt, wirt.9@osu.edu, is the CFAES embedded mental health counselor. He is available for new consultations and to establish routine care. To schedule with David, please call 614-292-5766. Students should mention their affiliation with CFAES when setting up a phone screening.

Religious Accommodation

It is Ohio State's policy to reasonably accommodate the sincerely held religious beliefs and practices of all students. The policy permits a student to be absent for up to three days each academic semester for reasons of faith or religious or spiritual belief.

Students planning to use religious beliefs or practices accommodations for course requirements must inform the instructor in writing no later than 14 days after the course begins. The instructor is then responsible for scheduling an alternative time and date for the course requirement, which may be before or after the original time and date of the course requirement. These alternative

accommodations will remain confidential. It is the student's responsibility to ensure that all course assignments are completed.

Content Warning

Some content in this course may involve media that may elicit a traumatic response in some students due to descriptions of and/or scenes depicting acts of violence, acts of war, or sexual violence and its aftermath. If needed, please take care of yourself while watching/reading this material (leaving (virtual) classroom to take a water/bathroom break, debriefing with a friend, contacting a confidential Sexual Violence Advocate 614-267-7020, or Counseling and Consultation Services at 614-292-5766 and contacting the instructor if needed). Expectations are that we all will be respectful of our classmates while consuming this media and that we will create a safe space for each other. Failure to show respect to each other may result in dismissal from the class.

Lyft Ride Smart (when not contracting social distancing recommendations/regulations)

Lyft Ride Smart at Ohio State offers eligible students discounted rides, inside the university-designated service area, from 9 p.m. to 3 a.m. Each month, 10,000 discounted rides will be made available on a first-come, first-served basis and OSU will contribute \$4 per ride. Prices may be impacted by distance, traffic, time of day, special events and prime time surcharges. To qualify for program discounts, users must select "shared ride" when booking in the Lyft app. When using ride sharing, remember to visually confirm vehicle info/descriptions in the company app and ask the driver to say who they are picking up. For more details, visit <https://ttm.osu.edu/ride-smart/>.

Safety and Health

All students, faculty and staff are required to comply with and stay informed university safety and health guidance <https://safeandhealthy.osu.edu/>.

Copyright

The materials used in connection with this course are subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.