

Analytics for Agribusiness and Applied Economics Syllabus

AEDE 4002 SPRING 2025

Course Information

- **Course times and location:** class on Tuesdays and Thursdays, 11:10 a.m. – 12:30 p.m. in 210 Animal Science Building Zoom and lab on Fridays 12:40 – 1:35 p.m. in 005 Agricultural Administration Building
- **Credit hours:** 3
- **Mode of delivery:** In Person

Instructor

- **Name:** Eliot Alexander
- **Email:** alexander.632@osu.edu
- **Phone Number:** 501-952-8215
- **Office location:** 231 Agricultural Administration Building0
- **Office hours:** Wednesdays from 10-11 a.m. and Thursdays from 12:30 p.m.-1:30 p.m.
- **Preferred means of communication:**
 - My preferred method of communication for questions is **email**.
 - My class-wide communications will be sent through the Announcements tool in CarmenCanvas. Please check your [notification preferences](https://go.osu.edu/canvas-notifications) (go.osu.edu/canvas-notifications) to be sure you receive these messages.

Teaching Assistant

- **Name:** Eric Belleville
- **Email:** belleville.11@buckeyemail.osu.edu
- **Office hours:** Mondays from 2-3 p.m. and Thursdays from 10-11 a.m.

Course Prerequisites/Co-Requisites

AEDE: 4001 or Econ 4001.02

Course Description

Students will be introduced to and gain experience with quantitative statistical models and related analytical methods and their application to food, agricultural, and environmental systems. There is an emphasis on real world application and presentation of the results.

Course Learning Goals and Outcomes

- By the end of this course, students will have a deeper understanding of economic statistics, econometrics, and have greater confidence in its application using MS Excel.
 - As a result, students will be able to recall the basics of ordinary least squares model estimation, with its advantages and disadvantages.
- By the end of this course, students will understand appropriate alternatives to ordinary least squares, and when assumptions underlying the classical linear regression model are violated.
 - As a result, students will be able to apply model construction and estimation techniques to agribusiness and applied economics problems.



How This Course Works

Mode of delivery: This course is taught in person. Students are expected to attend class each week during the scheduled meeting sessions.

Pace of online activities: This course is divided into **weekly modules** that are released one week ahead of time. Students are expected to keep pace with weekly deadlines but may schedule their efforts freely within that time frame.

Credit hours and work expectations: This is a 3 credit-hour course. According to [Ohio State bylaws on instruction](http://go.osu.edu/credithours) (go.osu.edu/credithours), students should expect around 3 hours per week of time spent on direct instruction (instructor content and Carmen activities, for example) in addition to 6 hours of homework (reading and assignment preparation, for example) to receive a grade of [C] average. This includes studying, reviewing and editing notes, discussing with fellow students, etc. and does not equate to assignments and work activities.

Attendance and participation requirements: Research shows regular participation is one of the highest predictors of success. With that in mind, I have the following expectations for everyone's participation:

- **Participating in online activities for attendance: at least once per week**
You are expected to log in to the course in Carmen every week. During most weeks you will probably log in many times. If you have a situation that might cause you to miss an entire week of class, discuss it with me *as soon as possible*. In the case of emergency or illness, contact the instructor as soon as possible to discuss possible accommodations at the discretion of the instructor and with appropriate documentation.

Course Materials, Fees and Technologies

Required Materials and/or Technologies

- Introduction to Statistics by David M. Lane et. al
 - This book is in the public domain and is free

Required Equipment

- **Computer:** current Mac (MacOS) or PC (Windows 10) with high-speed internet connection.
- **Other:** a mobile device (smartphone or tablet) to use for BuckeyePass authentication

If you do not have access to the technology you need to succeed in this class, review options for [technology and internet access](https://go.osu.edu/student-tech-access) (go.osu.edu/student-tech-access).

Required Software

Microsoft Office 365: All Ohio State students are now eligible for free Microsoft Office 365. Visit the [installing Office 365](https://go.osu.edu/office365help) (go.osu.edu/office365help) help article for full instructions.

JASP: For more advanced statistics, we will be using [a free statistical software called JASP](#).

CarmenCanvas Access

You will need to use [BuckeyePass](https://buckeyepass.osu.edu) (buckeyepass.osu.edu) multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you do each of the following:

- Register multiple devices in case something happens to your primary device. Information can be found at [BuckeyePass](https://buckeyepass.osu.edu) (buckeyepass.osu.edu).
- Users will only receive one SMS passcode at a time. Using the “Trust Browser” feature on a user’s first authentication log in of the day will allow the user to bypass the need for another passcode for 24 hours.
- [Install the Duo Mobile application](https://it.osu.edu/learner-technology-handbook/ch3/duo) (https://it.osu.edu/learner-technology-handbook/ch3/duo) on all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service.

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at [614-688-4357 \(HELP\)](tel:614-688-4357) and IT support staff will work out a solution with you.

Technology Skills Needed for This Course

- Basic computer and web-browsing skills
- [Navigating CarmenCanvas](https://go.osu.edu/canvasstudent) (go.osu.edu/canvasstudent)



- [CarmenZoom virtual meetings](https://go.osu.edu/zoom-meetings) (go.osu.edu/zoom-meetings)
- [Recording a slide presentation with audio narration and recording, editing and uploading video](https://go.osu.edu/video-assignment-guide) (go.osu.edu/video-assignment-guide)

Technology Support

For help with your password, university email, CarmenCanvas, or any other technology issues, questions or requests, contact the IT Service Desk, which offers 24-hour support, seven days a week.

- **Self Service and Chat:** go.osu.edu/it
- **Phone:** [614-688-4357 \(HELP\)](tel:614-688-4357)
- **Email:** servicedesk@osu.edu

Grading and Faculty Response

How Your Grade is Calculated

Assignment Category	Points
Problem Sets	10
In-Class Quizzes	20
Analysis Project	70

In-Class Quizzes

Each class will begin with a brief quiz. Make sure you arrive to class on time! Part of being a good student is being on time, and students who arrive late will miss their opportunity to take the quiz.

Problem Sets

Students will complete six problem sets throughout the semester, due roughly every other week. In these students will develop a range of analytical skills in Excel and JASP. You may spend time in labs working on these with the TA, Eric.

Analysis Project

Students will define an agricultural, food, or environmental business or economic related question that can be addressed using an econometric technique we learned in class. After identifying a valid data source to test their hypothesis, students will estimate an appropriate econometric model to address the question and write a paper describing their results and conclusions. Finally, students will give a brief presentation of their analysis to the class.

Extra Credit

OSU has a lot of resources to help students become better students, including the [Younkin Success Center](#) and the [Dennis Learning Center](#). I highly recommend that you check out these websites.

These excellent resources also entail opportunities for you to earn extra credit:

1. At the Dennis Learning Center, you can [schedule a free one-on-one appointment with a trained Academic Coach](#) who can help you with any of a variety of academic areas like reducing procrastination, note-taking, exam preparation, etc. You will receive 1% in extra credit towards your final grade for attending one 30-minute meeting.
2. The DLC also offers [45-minute Zoom workshops](#) on a variety of helpful topics. Attend as many of the workshops as you want, and write a brief reflection on the workshop. Include three things you learned and/or thought were interesting from the talk. Submit this reflection



via Carmen, and you will earn 0.5 percentage points towards your final grade for each reflection. Each workshop will typically be given on two different dates to help accommodate your schedule; you will only get credit for attending a particular workshop once.

Academic integrity and collaboration: Your written assignments must be your own original work. You are encouraged to ask a trusted person to proofread your assignments before you turn them in but no one else should revise or rewrite your work.

Late Assignments

You may submit most assignments late for a late penalty of 10% per day after the deadline. These assignments will be available to do on Carmen for one week after their deadline. I do not have any exceptions to this policy (accepting work more than one week late, dropping the late penalty, etc.).

Instructor Feedback and Response Time

I am providing the following list to give you an idea of my intended availability throughout the course. Remember that you can call [614-688-4357 \(HELP\)](tel:614-688-4357) at any time if you have a technical problem.

- **Preferred contact method:** If you have a question, please contact me first through my Ohio State email address. I will reply to emails within **24 hours on days when class is in session at the university**.
- **Class announcements:** I will send all important class-wide messages through the Announcements tool in CarmenCanvas. Please check [your notification preferences](http://go.osu.edu/canvas-notifications) (go.osu.edu/canvas-notifications) to ensure you receive these messages.
- **Grading and feedback:** For assignments submitted before the due date, I will try to provide feedback and grades within **seven days**. Assignments submitted after the due date may have reduced feedback and grades may take longer to be posted.]

Grading Scale

93–100: A
 90–92.9: A-
 87–89.9: B+
 83–86.9: B
 80–82.9: B-
 77–79.9: C+
 73–76.9: C
 70–72.9: C-
 67–69.9: D+
 60–66.9: D
 Below 60: E



Other Course Policies

Discussion and Communication Guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Writing style:** While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. A more conversational tone is fine for non-academic topics.
- **Tone and civility:** Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online. I will provide specific guidance for discussions on controversial or personal topics.
- **Citing your sources:** When we have academic discussions, please cite your sources to back up what you say. For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.
- **Backing up your work:** Consider composing your academic posts in a word processor, where you can save your work, and then copying into the Carmen discussion.

Academic Integrity Policy

See [Descriptions of Major Course Assignments](#) for specific guidelines about collaboration and academic integrity in the context of this online class.

Ohio State's Academic Integrity Policy

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 I recommend that you review the Code of Student Conduct and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am 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.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- [Committee on Academic Misconduct](http://go.osu.edu/coam) (go.osu.edu/coam)
- [Ten Suggestions for Preserving Academic Integrity](http://go.osu.edu/ten-suggestions) (go.osu.edu/ten-suggestions)
- [Eight Cardinal Rules of Academic Integrity](http://go.osu.edu/cardinal-rules) (go.osu.edu/cardinal-rules)

Copyright for Instructional Materials

The materials used in connection with this course may be 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.

Creating an Environment Free from Harassment, Discrimination, and Sexual Misconduct

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:

1. Online reporting form at equity.osu.edu,
2. Call 614-247-5838 or TTY 614-688-8605,
3. 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.

Diversity

The Ohio State University affirms the importance and value of diversity of people and ideas. We believe in creating equitable research opportunities for all students and to providing programs and curricula that allow our students to understand critical societal challenges from diverse perspectives and aspire to use research to promote sustainable solutions for all. We are committed to maintaining an inclusive community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among all members; and encourages each individual to strive to reach their own potential. The Ohio State University does not discriminate on the basis of age, ancestry, color, disability, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, race, religion, sex, gender, sexual orientation, pregnancy, protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment.

To learn more about diversity, equity, and inclusion and for opportunities to get involved, please visit:

- <https://odi.osu.edu/>
- <https://odi.osu.edu/racial-justice-resources>
- <https://odi.osu.edu/focus-on-racial-justice>
- <https://cbssc.osu.edu/>

In addition, this course adheres to **The Principles of Community** adopted by the College of Food, Agricultural, and Environmental Sciences. These principles can be found at <https://cfaesdei.osu.edu/about-us/cfaes-principles-community>. For additional information on Diversity, Equity, and Inclusion in CFAES, contact the CFAES Office for Diversity, Equity, and Inclusion (<https://cfaesdei.osu.edu/>). If you have been a victim of or a witness to harassment or discrimination or a bias incident, you can report it online and anonymously (if you choose) at <https://equity.osu.edu/>.

Your 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, feeling down, 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's Counseling and Consultation Service (CCS) by visiting ccs.osu.edu or calling 614-292-5766. CCS is located on the 4th floor of the Younkin Success Center and 10th floor of Lincoln Tower. You can reach an on-call counselor when CCS is closed at 614-292-5766 and 24 hour emergency help is also available 24/7 **by dialing 988 to reach the Suicide and Crisis Lifeline.**

For students in the College of Food, Agricultural, and Environmental Sciences, David Wirt, wirt.9@osu.edu, is the CFAES embedded mental health counselor on the Columbus campus. To contact David, please call 614-292-5766. Students should mention their affiliation with CFAES if interested in speaking directly with David.

Religious Accommodations

Ohio State has had a longstanding practice of making reasonable academic accommodations for students' religious beliefs and practices in accordance with applicable law. In 2023, Ohio State updated its practice to align with new state legislation. Under this new provision, students must be in early communication with their instructors regarding any known accommodation requests for religious beliefs and practices, providing notice of specific dates for which they request alternative accommodations within 14 days after the first instructional day of the course. Instructors in turn shall not question the sincerity of a student's religious or spiritual belief system in reviewing such requests and shall keep requests for accommodations confidential.

With sufficient notice, instructors will provide students with reasonable alternative accommodations with regard to examinations and other academic requirements with respect to students' sincerely held religious beliefs and practices by allowing up to three absences each semester for the student to attend or participate in religious activities. Examples of religious accommodations can include, but are not limited to, rescheduling an exam, altering the time of a student's presentation, allowing make-up assignments to substitute for missed class work, or flexibility in due dates or research responsibilities. If concerns arise about a requested accommodation, instructors are to consult their tenure initiating unit head for assistance.

A student's request for time off shall be provided if the student's sincerely held religious belief or practice severely affects the student's ability to take an exam or meet an academic requirement and the student has notified their instructor, in writing during the first 14 days after the course begins, of the date of each absence. Although students are required to provide notice within the first 14 days after a course begins, instructors are strongly encouraged to work with the student to provide a reasonable accommodation if a request is made outside the notice period. A student may not be penalized for an absence approved under this policy.

If students have questions or disputes related to academic accommodations, they should contact their course instructor, and then their department or college office. For questions or to report discrimination or harassment based on religion, individuals should contact the [Office of Institutional Equity](#).

Policy: [Religious Holidays, Holy Days and Observances](#)

Weather or other short-term closing

Although Ohio State strives to remain open to ensure continuity of services to students and the public, extreme conditions can warrant the usage of the university's [Weather or Other Short-Term Closing Policy](#). Please [visit this webpage](#) to learn more about preparing for potential closings and planning ahead for winter weather.

ACCESSIBILITY ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Requesting Accommodations

The university strives to maintain a healthy and accessible environment to support student learning in and out of the classroom. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration,

make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion.

If you are isolating while waiting for a COVID-19 test result, please let me know immediately. Those testing positive for COVID-19 should refer to the Safe and Healthy Buckeyes site for resources. Beyond five days of the required COVID-19 isolation period, I may rely on Student Life Disability Services to establish further reasonable accommodations. You can connect with them at slds@osu.edu; 614-292-3307; or slds.osu.edu.

Disability Services Contact Information

- Phone: [614-292-3307](tel:614-292-3307)
- Website: slds.osu.edu
- Email: slds@osu.edu
- In person: [Baker Hall 098, 113 W. 12th Avenue](#)

Accessibility of Course Technology

This online course requires use of CarmenCanvas (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations as early as possible.

- [CarmenCanvas accessibility](http://go.osu.edu/canvas-accessibility) (go.osu.edu/canvas-accessibility)
- Streaming audio and video
- [CarmenZoom accessibility](http://go.osu.edu/zoom-accessibility) (go.osu.edu/zoom-accessibility)

Course Schedule

Refer to the CarmenCanvas course for up-to-date due dates.

Week	Pages	Topics, Readings, Assignments, Due Dates
Jan. 8-14	11-27 40-51, 82-85, 165-169	Syllabus / Intro to Statistics Visualizing Data
Jan. 15-21	131-133, 144-151 223-244	Summarizing Data Causation
Jan. 22-28	249-251, 256-262 299-322	Normal Distributions Sampling Distributions
Jan. 29 – Feb. 4	299-322 328-335	Sampling Distributions Estimation (PS1 due Feb. 2)
Feb. 5-11	337-348 370-391	Estimation Hypothesis Testing
Feb. 12-18	370-391 399-417	Hypothesis Testing Testing Means (PS2 due Feb. 16)
Feb. 19-25	462-467 473-481	Linear Regression
Feb. 26 – Mar. 3	468-472	R Squared (PS3 due Mar. 1)
Mar. 4-8	495-506	Multiple Regression
Mar. 9-17		Spring Break
Mar. 18-24		Binary Variables (Project Proposal due Mar. 21)
Mar. 25-31		Omitted Variables (PS4 due Mar. 29)
Apr. 1-7		Non-linear Forms (PS5 due Apr. 5)
Apr. 8-14		Logistic Regression (Papers due Apr. 9 and 11)



Apr. 15-21		Presentations (PS6 due Apr. 19)
Final Exam		None!

