

AEC 4990 Special Topics in Agricultural Economics and Agribusiness – Section 01
“Applied Quantitative Research”
Tuesdays & Thursdays, 3:30 – 4:45 p.m., 310 Lloyd-Ricks-Watson Building

Instructor

Dr. Andrew Stevens, Assistant Professor

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Office Hours

Drop-in office hours: Wednesdays, 10:00 – 12:00 p.m.

One-on-one meetings available by appointment

Course Description

(Prerequisites: EC 3123, AEC 4223, and AELC 3203, or consent of instructor) Three hours lecture.

Produce an original research paper. Quantitative research methods and their applications. Writing for academic and professional audiences.

Class Schedule and Due Dates

The following schedule is subject to change.

DE = *Doing Economics* (See Course Materials)

I. GETTING STARTED: RESEARCH QUESTIONS, EXISTING LITERATURE, AND DATA SOURCES

- Tu – Jan 9: Course Introduction: What is applied quantitative research?
- Th – Jan 11: Developing a Good Research Question
 - Reading: DE Chapters 1 & 2
- Tu – Jan 16: Discussion of Proposed Research Questions
 - **DUE**: Homework 1
- Th – Jan 18: How to Read/Summarize Existing Literature
 - Reading: DE Chapters 3 & 6
- Tu – Jan 23: Strategies for Decoding Research Articles
- Th – Jan 25: What Does a Good Literature Review Look Like? (And How Do Citations Work?)
 - **DUE**: Homework 2
- Tu – Jan 30: What Data Do You Need to Answer Your Question?
 - Reading: DE Chapters 8 & 9
- Th – Feb 1: Finding Your Data (interactive – bring ideas and questions)
- Tu – Feb 6: How to Explain Your Data
 - **DUE**: Homework 3

II. QUANTITATIVE METHODS AND DATA ANALYSIS

- Th – Feb 8: We’re Not Just Applied Statisticians: Why We Need Theory
 - Reading: DE Chapter 7
- Tu – Feb 13: Peer Review: Literature Reviews
 - **DUE**: Draft Section 1

- Th – Feb 15: Quantitative Analysis: Choosing the Right Approach
 - Reading: DE Chapters 10 & 11
- Tu – Feb 20: Crash Course in Regression Analysis: Theory
- Th – Feb 22: Crash Course in Regression Analysis: Practice
- Tu – Feb 27: Correlation Is Not Causation: Thinking Carefully About Causal Inference
- Th – Mar 1: Discussion of Analytical Strategies/Homework 4
 - **DUE**: Homework 4

III. COMMUNICATING TO READERS: SUMMARIZING DATA, EXPLAINING RESULTS AND IMPLICATIONS

- Tu – Mar 6: Data Description and Summary Statistics: What’s the Difference Between a Standard Deviation and a Standard Error?
- Th – Mar 8: The Visual Display of Quantitative Information: Channeling Edward Tufte
- Tu – Mar 13: **NO CLASS – SPRING BREAK**
- Th – Mar 15: **NO CLASS – SPRING BREAK**
- Tu – Mar 20: Peer Review: Data Descriptions
 - **DUE**: Draft Section 2
- Th – Mar 22: Writing About Results
 - Reading: DE Chapter 12
- Tu – Mar 27: Drawing Conclusions from Your Results
- Th – Mar 29: Peer Review: Methodology and Analysis Sections
 - **DUE**: Draft Section 3

IV. WRITING FOR ACADEMIC AND PROFESSIONAL AUDIENCES

- Tu – Apr 3: Writing About Your Research
 - Reading: “Economical Writing” by: Deirdre N. McCloskey (see Course Materials)
 - Reading: DE Chapter 5
- Th – Apr 5: Academic Articles and Professional Reports
- Tu – Apr 10: Introductions and Conclusions
- Th – Apr 12: Turning Your Article into a Presentation or Poster
 - **DUE**: Rough Draft
- Tu – Apr 17: Peer Feedback
 - **DUE**: Peer Reviews
- Th – Apr 19: One-on-One Consultations
- Tu – Apr 24: Miscellaneous Additional Information: Human Subjects Research, Data Security, and More
- Th – Apr 26: **READING DAY**: Optional one-on-one consultations
- W – May 2: **FINAL EXAM PERIOD**: In-class presentations (**3:00 – 6:00 p.m.**)
 - **DUE**: Final Draft

Learning Objectives

By the end of this course, students should be able to:

- Pose research questions that are both sufficiently interesting and analytically tractable.
- Identify and collect data appropriate to a particular quantitative analysis.
- Apply statistical methods to describe data in both table-based and graphical formats.
- Summarize and synthesize existing research on a particular topic.
- Identify and/or apply analytical methods (regression analysis, randomized control trials, etc.) that address and answer the research question at hand.
- Responsibly conduct research that complies, as appropriate, with regulations concerning human subjects, data security, non-disclosure agreements, etc.
- Employ the structure of academic journal articles and/or professional research briefs.
- Write clearly and efficiently for academic and professional audiences.
- Produce policy-relevant original research in an applied quantitative setting.

Course Materials

Required texts:

- Greenlaw, Steven A. (2005). *Doing Economics: A Guide to Understanding and Carrying Out Economic Research*. Houghton Mifflin.
 - Note: new copies are very expensive. The MSU Library has hard and electronic copies available via [Course Reserves](#), listed under “AEC 4803: Applied Quantitative Research.”
- McCloskey, Deirdre N. (2000). *Economical Writing, 2nd Edition*. Prospect Heights, IL: Waveland Press.

Class Assignments

Homework Assignments:

- Homework 1: Developing a Research Question
 - Propose three viable research questions for your research paper
- Homework 2: Annotated Bibliographies
 - For each proposed research question, list three academic/professional sources. For each source, identify the research question, data source(s) used, and main conclusion(s).
- Homework 3: Show Me the ~~Money~~ Data
 - Describe the data you *currently possess*. Include the number and type of observations, variable descriptions, and source of information. If the student is planning to collect data, report a detailed plan and timeline for data collection.
- Homework 4: Summary of an Analytical Framework
 - Discuss what your research is and isn't able to accomplish. Will your analysis be descriptive? Predictive? Causal? What assumptions will you need to make when doing your analysis? What could future research do differently to get an even stronger result?
- *Additional readings, reading quizzes, and/or short assignments may be assigned on an ad-hoc basis at the instructor's discretion. All such assignments will contribute to the “Homework Assignments” component of a student's final grade.*

Draft Sections of Research Paper

- Draft Section 1: Literature Review
- Draft Section 2: Data Description and Summary Statistics
- Draft Section 3: Methodology and Quantitative Analysis

Components of Final Paper/Presentation

- Rough Draft: a full-length version of your article
- Peer Review: constructive critique of another student's rough draft; suggestions for improvement
- Final Draft: a complete and final version of your research article or report
- In-class Presentation: a short verbal presentation of your research. Can be either slides (e.g. PowerPoint) or a poster.

Methods of Evaluation and Standards of Achievement

Students' final course scores will be calculated according to the following formula:

- Homework Assignments: 20%
- Draft Sections: 15%
- Rough Draft: 10%
- Peer Review of Rough Draft: 5%
- Final Draft: 45%
- Presentation: 5%

Letter grades will be assigned according to the following scheme. I reserve the right to adjust ("curve") the scheme upward ("easier") if warranted. However, no downward adjustment will be made.

- A: > 90%
- B: 80% – 89.99%
- C: 70% – 79.99%
- D: 60% – 69.99%
- F: < 60%

Students will be held to two different standards, depending on the following criteria:

- Students who satisfy the course prerequisites and are not already engaged in undergraduate research: Research paper puts forth a well-posed question, reviews relevant existing literature, identifies and summarizes relevant data, presents statistics and stylized facts to address the research question, discusses future analyses that would be appropriate to better answer the research question, and is clearly written.
- Students already engaged in undergraduate research projects or pursuing an Honors Thesis: Research paper puts forth a well-posed question, situates the student's research within existing scholarship, identifies and summarizes appropriate data, describes and applies an appropriate analytical methodology, discusses results in order to answer the research question, reviews the policy/industry relevance of findings, and displays excellence in written communication.

General Class Information

Electronic Devices: Unless I say otherwise, I do not permit electronic devices (cell phones, laptops, tablets, etc.) in my classroom. Please print out any materials (readings, etc.) you may want to access in lecture ahead of time, since you will not be able to view them on your computer in class. If you believe mitigating circumstances justify an exception to this policy, please speak with me directly.

Late Assignments and Make-up Exams: In general, I will not accept late homework assignments or give make-up exams. I will, however, make exceptions consistent with the list of approved absences listed in [AOP 12.09](#). In cases where such an absence is predictable (religious observances, legal proceedings, official university activities, etc.), it is the student's responsibility to propose an accommodation *ahead of time*. In these cases, the expectation is that the student will turn in their assignment or take their exam before the regularly scheduled time. In cases where an absence is unpredictable (family death, student illness, etc.), it is the student's responsibility to contact me as soon as reasonably possible to discuss an accommodation. Additionally, the student is expected to provide satisfactory documentation of their reason for absence. I reserve the right to make the final determination of whether an absence is excused and whether a proposed accommodation is acceptable.

Illness: If you are ill, please refrain from attending lecture until you are feeling better. I would much rather you get and stay healthy (and keep your classmates healthy) than prolong and spread an illness. If you are sick, please contact me as soon as possible. We can work on a strategy to keep you "on track" in this course. If you have serious symptoms (high fever, etc.), please stay home and call the Longest Student Health Center at (662) 325-2431.

Academic Misconduct/Student Honor Code ([AOP 12.07](#))

When you matriculated to Mississippi State University, you assumed a commitment to uphold the University's Honor Code, which reads: "As a Mississippi State University student, I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do." You will be required to state your commitment to this Honor Code on your work in this course, and ignorance of the rules does not exclude you from Honor Code requirements or processes. Note that any form of plagiarism, whether intentional or unintentional, is a violation of the Honor Code, and academic misconduct violations will be handled in accordance with [AOP 12.07](#). For additional information, please visit: <http://honorcode.msstate.edu/policy>.

Title IX ([OP 03.04](#))

MSU is committed to complying with Title IX, a federal law that prohibits discrimination, including violence and harassment, based on sex. This means that MSU's educational programs and activities must be free from sex discrimination, sexual harassment, and other forms of sexual misconduct. If you or someone you know has experienced sex discrimination, sexual violence and/or harassment by any member of the University community, you are encouraged to report the conduct to MSU's Director of Title IX/EEO Programs at (662) 325-8124 or by e-mail to titleix@msstate.edu. Additional resources are available at <http://www.msstate.edu/web/security>, or at <http://students.msstate.edu/sexualmisconduct/>. Please note that under current law and policy, faculty members are designated as "Responsible Employees," and have a mandatory duty to report any evidence of sexual misconduct they receive. As such, if you seek confidential assistance relating to an instance of sexual misconduct, please contact Student Counseling Services at (662) 325-2091.

Support Services ([AOP 13.03](#))

Students who need academic accommodations based on a disability should visit the Office of Student Support Services in 01 Montgomery Hall, call (662) 325-3335, or visit <http://www.sss.msstate.edu>.

Attendance Policy

Class attendance does not directly factor into your course grade, and I will not generally record attendance. However, some in-class activities will directly contribute to your course grade, and missing class on those days will mean you miss out on those points. Regularly attending and actively participating in class is one of the best predictors of student success. See [AOP 12.09](#) for the university's general attendance policy.

Campus Resources

Writing a research paper requires skills that are not necessarily emphasized in your previous coursework. In particular, this course will challenge you to be a strong writer. Please make early and frequent use of the following resources:

- Office Hours: please come talk to me about your research one-on-one!
- Other Faculty: visit other professors who have expertise in areas relevant to your research. Professors love to talk about research; it's what we do when we're not teaching. Talk to lots of different people and don't be shy.
- The Writing Center: make use of the excellent resources at the MSU Writing Center (www.writingcenter.msstate.edu). You can make appointments to set up free one-on-one sessions to work on your paper with dedicated writing specialists.
- The Library: looking for some help finding the resources you're looking for? Want to find examples of other good undergraduate research? Want to talk to someone other than me? Reach out to a subject specialist at the library! You can find a list of specialists at <http://lib.msstate.edu/help/specialists/>. Many students may want to start by reaching out to Ms. Sheeji Kathuria (skathuria@library.msstate.edu), who is the subject specialist in social sciences, or Dr. Deborah Lee (dlee@library.msstate.edu), who is the library liaison for finance, economics, and agricultural economics.

NOTE: In Spring 2018, for administrative reasons, this course is being offered as AEC 4990: "Special Topics in Agricultural Economics and Agribusiness." In future semesters, the course is expected to be offered under a unique course number and title – AEC 4803/6803: "Applied Quantitative Analysis."