

Course Information

Class Meeting: MWF 11:00-11:50 am

SWITZLER HALL 301 (on Mondays and Wednesdays)

MIDDLEBUSH 8 (on Fridays)

Professor: Alyssa Carlson (preferred address, Dr. Carlson or Professor Carlson)

Email: carlsonah@missouri.edu

Professor Office Hours: M 3:30-4:30pm, W 9:30-10:30am

Course Description

This class is an introduction to econometric methods. Econometrics combines economic theory, mathematics, and statistical inference to quantify economic phenomena. This course will teach you how to use data to answer economic questions like "Does this government policy improve welfare as measured by employment and wages?" OR "What is the impact of increases in interest rates on inflation?" OR "What are the returns on your investment in obtaining higher education?"

Specifically, we will study methods for quantitative analysis of economic data including estimation techniques, tests of significance, prediction and forecasting reviewed with respect to problems presented by economic data and information demands of economic decision models.

Prerequisites

Have taken ECONOM 1014 or ECONOM 1000 or ABM 1041 or equivalent; and ECONOM 3271 or STAT 2200 or STAT 2500 or STAT 4710 or ABM 2225 or equivalent. This means you are familiar with topics in microeconomics and have learned basic probability and statistics. Calculus is not a pre-requisite for this course however, the course is rigorous, as we combine basic economics, algebra, statistical concepts, and computer applications.

Learning Objectives

At the end of the course you will be able to

1. Interpret a linear regression model and describe how it can answer an economic question of interest
2. Explain the mechanics of the Ordinary Least Squares estimator and inference for the estimator.

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3. Interpret estimates and execute inference in Stata.

Each of the learning objectives are milestones that will help you to achieve the ultimate goal:

At the end of this course, I will have knowledge to correctly apply econometric methods to answer a variety of economics questions, provide clear communication of the results, and justify the approach I have taken.

Whether you plan to enter private industry, government, or academia, this skill is highly valued and worth pursuing (beyond just a good grade in the class).

Text and Material

There is no required text for this course. The lecture notes will provide you with enough text and information to master the material. If you would like to have additional references throughout the course, the following text is recommended.

- [Wooldridge, Jeffrey M. *Introductory econometrics: A modern approach*. Nelson Education, 2016.](#)

This course uses [Stata](#) to analyze data and obtain estimates. For this, you will need to have access to a computer. You have a choice on how to access Stata for the semester

- Purchase a Stata License (recommended)
- Use Software anywhere/Computer labs (free)

We will talk about this more later in the course...

Schedule of Topics

Below is the list of topics covered in the course, which weeks are allocated to covering that topic, and the relevant chapters in recommended Wooldridge and Greene textbooks.

Topic	Wooldridge	Stata Homework	Canvas Quiz
Review	App. B and D	SH 1 (Data cleaning and Summary statistics)	
Simple Regression Part 1	Chapter 2	SH 2 (Simple Regression)	CQ 1
Simple Regression Part 2	Chapter 2	SH 3 (Simple Regression)	CQ 1

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MIDTERM 1			
Multiple Regression Part 1	Chapter 3	SH 4 (Multiple Regression)	CQ 2
Multiple Regression Part 2	Chapter 3	SH 5 (Multiple Regression)	CQ 2
Hypothesis Testing Part 1	Chapter 4	SH 6 (Hypothesis Testing)	CQ 3
Hypothesis Testing Part 2	Chapter 4	SH 7 (Hypothesis Testing)	CQ 3
MIDTERM 2			
Qualitative Data	Chapter 7	SH 8 (Qualitative data)	CQ 4
Heteroskedasticity	Chapter 8	SH 9 (Heteroskedasticity)	CQ 4
Specification and Data issues	Chapter 9	SH 10 (Specification and Data issues)	CQ 5
Time Series and Forecasting	Chapter 10 and 18.5	SH 11 (Time Series)	CQ 5
FINAL		Thursday, May 9 3-5 pm	

See the Calendar on Canvas for exact assignment due dates.

Grade Composition

Midterms (15% each, total 30%) - There are two midterms, they will occur on Wednesdays and you will have the usual class time (50 min) to take the exams. The Monday class prior to the midterm will be a review class. The Friday class for the week of the midterm will be cancelled. The midterms consist of both multiple choice and short answers.

Final (25%) - The final will occur on **Thursday, May 9 3-5 pm**. The final exam is cumulative, you will have 2 hours to complete the exam.

Stata Homework (25%) - There are 11 Stata homeworks throughout the semester. Every Friday will be in a computer lab for a Stata lecture/time to begin the Stata homework. It is due the following Friday by the beginning of class. You will submit them on canvas. Your lowest Stata homework grade will be dropped.

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Canvas Quizzes (20%) - These homeworks will be canvas quizzes to check your knowledge of the material covered but they are open book and untimed (but with a due date). You will have the opportunity to take the quiz 3 times, and your final quiz grade is the average grade.

FOR 7371 STUDENTS (4371 students can ignore): Graduate Students will also need to do a project. This will account for 15% of your grade while the other assignments make up the remaining 85%

Project (15%, while all the above assignments make up 85%) - You will be given a choice of several articles/datasets in which you will need to write a 5 page report summarizing the research question and data setting, results from 3 regression specifications and your interpretations of those results.

Grading Scale

At minimum, you will receive the following letter grades:

>94% : A

90% - 94%: A-

87% - 90%: B+

84% - 87%: B

80% - 84%: B-

75% - 80%: C+

70% - 75%: C

65% - 70%: C-

60% - 65%: D+

55% - 60%: D

50% - 55%: D-

<50%: F

I reserve the right to lower the grading scale (e.g., a 93% becomes an A instead of an A-).

Course Expectations

You can expect me to

- Be available during office hours or appointments to talk all things econometrics!
- Provide clear and quick communication. I will try to respond to emails within 24 hours (mostly likely faster). If I have not responded within 24 hours, I do ask that you email me again to make sure the correspondence was not lost in my inbox.
- Fair grading of homework, exams, and projects with a clear understanding of what the expectations are for each grade level.

I expect you to

- Actively participate in the course. What you get out of it is what you are willing to put into it. This also means that if you are struggling with the material, it is up to you to reach out for help.
- Turn in assignments on time and individually but you may work together or use other resources (the textbook, wikipedia, youtube tutorials are all great resources you should feel comfortable using) but all answers should be written in your own words.
- Come prepared to office hours/appointments when you have questions about the material or homework. Make sure that you take the time to review the lecture notes, textbook, and/or answer keys before the office hour/appointment so we can have a productive conversation.
- Be polite and respectful to me, your fellow classmates and yourself!

Academic Integrity

Academic integrity is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of cheating, consult the course instructor or the [Office of Academic Integrity](#).

Students are expected to adhere to this honor pledge on all graded work whether or not they are explicitly asked in advance to do so: "I strive to uphold the University values of respect, responsibility, discovery, and excellence. On my honor, I pledge that I have neither given nor received unauthorized assistance on this work."

Academic Inquiry, Course Discussion, and Privacy

When students record something that happens in a course (a lecture, class discussions, meetings, etc.) it has an impact on the rights of the people captured in that recording. For example, the instructor and the University may have rights to the intellectual property contained in that recording. At the same time, another student who may have been recorded has the right to privacy. In order to protect these rights, MU employs a policy (called [“Executive Order No. 38”](#)) to govern both situations you may encounter while taking a course – when an instructor allows recordings and when they do not.

In this class, students may make audio or video recordings of course activity unless specifically prohibited by the faculty member. However, the redistribution of audio or video recordings of statements or comments from the course to individuals who are not students in the course is prohibited without the express permission of the faculty member and of any students who are recorded.

If the instructor doesn't specifically prohibit recording course activity, then the students are allowed to record and the same prohibitions regarding distribution apply.

Students who violate this policy are subject to discipline in accordance with provisions of [section 200.020](#) of the Collected Rules and Regulations of the University of Missouri pertaining to student conduct matters.

FERPA

The Family Educational Rights and Privacy Act (FERPA) of 1974 is a federal law designed to protect the privacy of educational records; to establish the rights of students to inspect and review their education records; and to provide guidelines for the correction of inaccurate and misleading data through informal and formal hearings. The law applies to any individual who is or has been in attendance at an institution and regarding whom the institution maintains educational records. Once students have matriculated to the University of Missouri, i.e. enrolled in course work, FERPA rights transfer to the student, regardless of the student's age.

Students can enable certain individuals to have access to their education records by signing a FERPA waiver. The consent must specify records to be disclosed, state the purpose of the disclosure and identify the party or class of parties to whom the disclosure must be made.

Intellectual Pluralism

The University community welcomes intellectual diversity and respects student rights. Students who have questions or concerns regarding the atmosphere in this class (including respect for

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diverse opinions) may contact the departmental chair or divisional director, the [Office of Academic Integrity](#), or the [MU Equity Office](#).

Mental Health

The University of Missouri is committed to supporting student well-being through an integrated network of care, with a wide range of services to help students succeed. The MU Counseling Center offers professional mental health care and can help you find the best approach to treatment based on your needs. Call to make an appointment at 573-882-6601. Any student in crisis may call or go to the MU Counseling Center between 8:00-5:00 M-F. After hours phone support is available at 573-882-6601.

Visit our website at <https://wellbeing.missouri.edu/> to take an online mental health screening, find out about workshops and resources that can help you thrive, or learn how to support a friend.

Netiquette

Your instructor and fellow students wish to foster a safe online learning environment. All opinions and experiences, no matter how different or controversial they may be perceived, must be respected in the tolerant spirit of academic discourse. You are encouraged to comment, question, or critique an idea but you are not to attack an individual. Our differences, some of which are outlined in the University's nondiscrimination statement, will add richness to this learning experience. Please consider that sarcasm and humor can be misconstrued in online interactions and generate unintended disruptions. Working as a community of learners, we can build a polite and respectful course ambiance.

Religious Holidays & Accommodations

Many religious faiths are represented in the student body. The University of Missouri does not restrict student free exercise of religion, unless 1) the restriction is in the form of a rule of general applicability, and does not discriminate against religion or among religions; and 2) it can be demonstrated that the application of the restriction is essential to furthering a compelling university interest, and is not unduly restrictive considering the relevant circumstance. The policy of the University attempts to strike a reasonable balance between accommodating the religious practice of students and meeting academic needs and standards.

Consult IDE's Guide to Religions for the form that can be used to notify an instructor of an absence associated with religious practice. Students are expected to notify their instructor(s) by

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completing and submitting this form in a manner that is consistent with the procedure outlined in the university's policy on student religious accommodation. Providing false information regarding sincerely held religious practice is a violation of the university's Standard of Conduct and will not be tolerated.

Nondiscrimination Policy (Prohibited Discrimination)

The University of Missouri does not discriminate on the basis of race, color, national origin, ancestry, religion, sex* (including gender), pregnancy, sexual orientation, gender identity, gender expression, age, disability, protected veteran status, and any other status protected by applicable state or federal law. Discrimination includes any form of unequal treatment such as denial of opportunities, harassment, and violence. *Sex discrimination includes rape, sexual assault, sexual harassment, unwanted touching, stalking, dating/domestic violence, stalking, and sexual exploitation. Retaliation for making or supporting a report of discrimination or harassment is also prohibited.

If you experience discrimination or sexual violence, you are encouraged (but not required) to report the incident to the MU Office for Civil Rights & Title IX. Learn more about your rights and options at civilrights.missouri.edu or call 573-882-3880. You also may make an anonymous report online.

If you are a survivor, or someone concerned about a survivor, and need immediate information on what to do, see [RSVP Resources page](#). Both the [Office for Civil Rights & Title IX Links to an external site](#), and the [RSVP Center](#) can provide assistance to students who need help with academics, housing, or other issues.

In the event that you choose to write or speak about having experienced any of these forms of prohibited discrimination or harassment, Mizzou policies require that, as your instructor, I share this information with the MU Office for Civil Rights & Title IX. They will contact you to offer information about resources, as well as your rights and options as a member of our campus community.

Students with Disabilities

The goal of the University of Missouri is to ensure an inclusive learning environment for all students. [The University of Missouri Disability Center](#) provides services and accommodations for students to participate fully in the learning experience and to experience equitable evaluation of their performance. Students (including online students) with a documented disability can contact the Disability Center to establish an [Accommodation Plan](#). Documented disabilities include *hearing, vision, mobility, learning and attention, psychological health, and physical health*. Students' accommodations are implemented with the input of students to maximize the

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learning experiences. The MU Disability Center keeps information about a student's disability confidential.

Please notify me of your eligibility for accommodations as soon as possible. Additionally, if there are aspects of the course that present as barriers, such as inaccessible course content (e.g., learning assessments, PowerPoints, non-captioned videos, images, tables, PDFs) or if you need an immediate accommodation due to an injury, please contact me or the Disability Center as soon as possible.