

Introductory Econometrics (ECON 436)

Fall 2022

001: Tuesdays and Thursdays 8:30am-9:45am (DMSB 113)

002: Tuesdays and Thursdays 1:15pm-2:30pm (DMSB 137)

003: Tuesdays and Thursdays 10:05am-11:20am (DMSB 113)

Announcements in class, via e-mail, or on Blackboard supersede anything written here.

Instructor: Prof. Jessica Brown

Jessica.Brown@moore.sc.edu (put Econ 436 in the subject!)

Student Office Hours: Tues. 9:00pm-10:00pm on Zoom: <https://moore-sc-edu.zoom.us/my/jessica.h.brown>; Thurs. 11:30am-12:30pm in person: DMSB 436; or by appointment

Teaching Assistant: Jonathan Tregde

jonathan.tregde@grad.moore.sc.edu (put Econ 436 in the subject!)

Student Office Hours: Wed. 2-3:30pm

Location: 452 P2 (cubicle - see map on page 6)

Some Important Dates:

Midterm 1: September 15

Midterm 2: October 18

Last day to withdraw with a W: November 2

Midterm 3: November 22

Paper due: December 2

Final Exam: Tuesday, December 6th, 9:00-11:30 a.m. (001);

Thursday, December 8th, 9:00-11:30am (003), 12:30-3:00pm (002)

I am providing the exam dates now so that you can put them in your calendar and plan to be here. The exam dates will not be moved, and exams must be taken at the times they are given.

Academic Bulletin Description: The use of statistical techniques to analyze economic relationships. The emphasis is on the application of linear regression to real-world economic data.

Course Description: In this course you will start the process of becoming a consumer and producer of empirical economic research. You will learn to apply statistical methods to estimate and test economic relationships. The methods we learn in this course have a wide range of applications in many different areas - many firms now employ economists who are trained to use econometric tools in a variety of settings!

Full Course Objectives and Learning Goals: Students who successfully complete Econ 436 should be comfortable with basic statistics and probability. They should be able to use a statistical/econometric computer package to estimate an econometric model and be able to report the results of their work in a non-technical and literate manner. In particular a student who successfully completes Econ 436 will be able to estimate and interpret linear regression models and be able to distinguish between economic and statistical importance. They should be able to critique reported regression results in applied academic papers and interpret the results for someone who is not trained as an economist. They should be able to read write ups of research in the popular press and assess their credibility.

Prerequisite(s): ECON 224 or ECON 221 and 222; MATH 122 or 141; STAT 201 or Management Science 291. I will assume you have good command of the material covered in these classes, particularly Statistics. There will be an overview of the required statistical knowledge at the beginning of class, but I strongly suggest you review the material from your introduction to statistics course if it has been a few semesters since you took this class.

Important Note: This is a required course for the economics major: a minimum grade of C is required in this course for majors. If by the middle of the semester you fear you will not reach this goal please contact me ASAP - do not wait until the end of the semester to try to remedy a poor performance as it will be too late!

Textbooks (Required):

Joshua Angrist and Jörn-Steffen Pischke, *Mastering 'Metrics: The Path from Cause to Effect*, 2015 (ISBN: 978-0-691-15283-7 or 978-0-691-15284-4)

James Stock and Mark Watson *Introduction to Econometrics*, 3rd Edition, updated (any edition is really fine, feel free to buy used copies)

We will also use *MyEconLab* and Learning Catalytics.

The cheapest option for purchasing the book and MyEconLab is to purchase MyEconLab access with digital access to the textbook (ISBN: 0133487679 or 9780133487671). This option also includes Learning Catalytics access.

Register for MyEconLab by following the appropriate link on Blackboard under "Course Content."

Software:

This class will use statistical software. You have a choice of whether you want to use Stata or R. Stata and R are data and statistical analysis software. *If you have not used R before, I strongly suggest that you use Stata for this course.* This is for two reasons: first, students have found Stata to be much more user-friendly and easier to pick up than R. Second, I am more familiar with Stata, so I can provide better and faster support. By now, I have seen most of the errors that Stata gives and know how to fix them.

R is available as a free download at: <https://www.r-project.org>. A six-month student license of Stata BE can be purchased for \$48 from the Stata website: <https://www.stata.com/order/new/edu/profplus/student-pricing/>

Communication Policy:

- E-mail is the best way to get in touch with me: Jessica.Brown@moore.sc.edu.
- All e-mails regarding this class *must* have “Econ 436” in the subject - this helps me filter important e-mails so I can make sure to respond to you.
- I will respond to emails within two *business days*. I am usually much faster but cannot provide guarantees.
- The above guidelines apply even right before a homework is due or an exam is scheduled. This means homework should be attempted early so that questions can be answered in time.

Communication to Students:

Announcements will be made via e-mail and Blackboard. All students are required to check their University of South Carolina e-mail and the Blackboard website.

Grade Components:

Participation:

Reading quizzes:	2%, <i>drop 1</i>
All other participation:	8%, <i>drop 5</i>
MyEconLab Assignments:	10%, <i>drop 2</i>
Coding Homework Assignments:	12%, <i>drop 1</i>
Empirical Paper:	13%
Midterms:	15% each, 30% total (two highest scores count)
Final Exam:	25%

Grade Scale:

A	90-100%
B+	87-89.9%
B	80-86.9%
C+	77-79.9%
C	70-76.9%
D	60-69.9%
F	< 60%

Note that grades may be curved. I will only curve “up” and not “down.”

Participation: Participation is split into two parts: reading quizzes and all other participation. Out-of-class reading quizzes on the *Mastering Metrics* material will be administered via MyEconLab. Your lowest reading quiz will be dropped when calculating your final grade. All other participation encompasses polls, small in-class class assignments, and small out-of-class assignments for which you will be asked to participate. We will be using Learning Catalytics (which you will find in MyEconLab) for the in-class portion, and your score will partially be based on correctly answering questions but primarily based on participation. Learning Catalytics requires access to a device with internet (i.e., phone, tablet, computer) during class. To use Learning Catalytics on your iPhone, you will need to turn off the pop-up blocker. You can “drop” five classes/activities from your score, but no make-ups or extra credit will be offered for missed participation.

Problem Sets: Problem sets (either online in *MyEconLab* or the coding assignments) will be due most Wednesdays with a couple of exceptions. The tentative schedule is provided on the calendar at the end of the syllabus. The coding homework assignments will require use of either Stata or R (your choice). I will drop the two lowest *MyEconLab* scores and the lowest coding score when determining your grade.

Midterm Exams: Three midterm exams will be held **in person** during class time. Midterms will primarily cover the material since the previous midterm but may also include a couple of questions on previous material. It is also necessary to understand earlier material in order to understand and perform later material. Your highest two scores on the three midterms will count toward your final grade. The first midterm will take place on **Thursday, September 15th**, the second midterm will take place on **Tuesday, October 18th**, and the third midterm will take place on **Tuesday, November 22nd**. Mark your calendars now!

Empirical Paper: The empirical paper, using the tools you learn in this class, will be due **Friday, December 2nd**. A proposal describing your plan for the paper is due **Wednesday, November 9th**. The proposal will count toward part of your paper grade. You will work on the paper in groups of three to five people. More details about the paper and proposal will follow in a separate announcement closer to the due date.

Final Exam: The final exam will take place in person on **Tuesday, December 6th**, 9:00am-11:30am for Section 001, **Thursday, December 8th**, 9:00am-11:30am for Section 003 and 12:30pm-3:00pm for Section 002. The final exam is comprehensive. Mark your calendars now!

Course Policies

- **Attending a different section:** I am teaching three sections of the course this semester. You are free to attend whichever section you want for lectures and do not need to inform me. However, if you would like to take a midterm or the final with a section other than the one to which you are assigned, you must contact me at least three business days in advance so I can assign you a seat and ensure there is enough space.
- **Class Modality:** This is an entirely in-person class. It will not be live-streamed or recorded.
- **Excused absences:** I have built absence-related drops (participation, exams) into the course so that we should not need to make modifications for excused (versus unexcused) absences. However, please contact me if you have or expect to have more than four excused absences on regular class days or more than one excused absence on exam days.
- **Makeup exams:** Makeup exams are not given for the midterms. If you miss an exam, it will be your dropped midterm. If you miss the final, you can take it the next time this course is offered.
- **Academic Integrity:** Please be aware of the University's Honor Code policy: <http://www.sc.edu/policies/ppm/staf625.pdf>. Academic misconduct will be taken very seriously. Honor code violations may result in probation, suspension, expulsion, or a notation on your transcript. Any assignment for which you are explicitly allowed to work in groups should still be written up in your own words and turned in individually unless otherwise specified. You may not take any unauthorized materials into an exam. *If you are found cheating on an exam or assignment, you will receive a zero on that exam or assignment, **and it will not be dropped.*** In addition, **no material from this course, including your own homework solutions, is to be posted on websites such as Course Hero.** More broadly, the content for this course - syllabi, lecture notes, recordings, practice problems, answer keys, quizzes, exams, etc. created by me for this course - is protected by copyright law. Do not post any of my course materials on any website. Violations will result in an F for the course.
- **Regrading:** If you believe your score on a midterm or homework was penalized incorrectly, you must turn in the exam or homework with a typed, 1-page description of why you want a particular question regraded and a clear and complete explanation of why you believe you deserve more credit. These should be handed back to me in class or in office hours within a week of receiving the exam or homework. Note that when an exam or homework is regraded, *the entire exam or homework will be regraded*, which could result in an increase or decrease in score. If there is a simple addition error please bring it to my attention right away, and I will fix it.

- **Electronics in the Classroom:** For Learning Catalytics questions, you will need a device with access to the internet. However, I encourage you to use this device **only** for responding to Learning Catalytics questions. Otherwise, electronics can be a significant distraction in class. Research has shown that students do better when they do not use laptops during class.
- **Children in Class:** Infants are welcome in class at any time, especially if they are still nursing. If child care arrangements for older children fall through, you are also welcome to bring them to class if you would otherwise have to miss class. This is meant to be a temporary arrangement for extenuating circumstances. In either case, please sit near the door in case you need to step out.
- **SDRC Accommodations:** I am happy to work with you to ensure that this class is accessible to all. To that end, please let me know as soon as possible if you have any SDRC-approved accommodations. SDRC proctoring services are available this semester for those needing accommodations on exams. *You should put in requests now to ensure there is a slot available for you.*
- **Food and Drink:** University policy does not allow food or drink (other than water) in this classroom. I ask that you respect this policy.
- **Extra Credit:** There will be no extra credit in this class.

DMSB 4th Floor Map:



Broad Course Outline:

This is a guide to topics we will discuss and textbook chapters that go along with each topic. Additional readings may be announced in class. **Only the exam dates are set in stone; schedule of topics, homework, and reading quizzes may be adjusted as the course progresses.**

Week of:	Monday	Tuesday	Wednesday	Thursday	Friday
Aug. 15				Intro, Causality (<i>SW Ch.1; MM Intro</i>)	
Aug. 22		Prob & Stats Review (<i>SW 2.1, 2.2, 2.3</i>)	MEL HW1 Drop w/o W	Prob & Stats Review (<i>SW 2.3, 25., 2.6</i>)	
Aug. 29		Prob & Stats/Coding (<i>SW 2.2, 2.4, 3.2</i>)	MEL HW2	Hypoth. Testing/Coding (<i>SW 3.2, 3.4</i>)	
Sept. 5	Labor Day	Hypoth. Testing/Coding (<i>SW 3.2, 3.3, 3.4</i>)	RQ MM Ch. 1	Experiments (<i>MM Ch. 1</i>)	
Sept. 12	Coding HW1	Experiments (<i>SW 1.2, 3.5</i>)	MEL HW3	Midterm 1	
Sept. 19		Univariate OLS (<i>SW 3.1,4.1-3,5.1-2,5.5</i>)		Univariate OLS (<i>SW 4.4,5.3-4,8.2,11.1</i>)	
Sept. 26		Multivariate (<i>SW Ch. 6</i>)	MEL HW4	Multiv HT, Polynomials (<i>SW 6.3, 7.1-3, 8.2</i>)	
Oct. 3	RQ MM Ch. 2	Multivariate (<i>MM Ch. 2, SW 7.5</i>)	Coding HW2	Multivariate (<i>SW 6.7</i>)	
Oct. 10		Multivariate (<i>Review</i>)	MEL HW5	Fall Break	Fall Break
Oct. 17		Midterm 2		Pre-DD Concepts (<i>SW 1.3, 8.3, 10.1-5</i>)	
Oct. 24		Diff-in-Diff (<i>SW 13.4</i>)	Coding HW3 RQ MM Ch. 5	Diff-in-Diff (<i>MM Ch. 5</i>)	
Oct. 31		IV (<i>SW Ch. 12</i>)	MEL HW6 RQ MM Ch. 3 Drop Deadline	IV (<i>MM Ch. 3</i>)	
Nov. 7		Election Day No Class	Proposal Due	IV (<i>MM Ch. 3</i>)	
Nov. 14	RQ MM Ch. 4	RD (<i>SW 13.4, MM Ch. 4</i>)	Coding HW 4	RD (<i>SW 13.4, MM Ch. 4</i>)	
Nov. 21	MEL HW7	Midterm 3	Thanksgiving	Thanksgiving	Thanksgiving
Nov. 28	RQ MM Ch. 6	Putting it together (<i>MM Ch. 6</i>)		Wrap Up	Paper Due
Dec. 5		Final Exam 001 9am-11:30am		003: 9am-11:30am 002: 12:30pm-3:00pm	

MM: *Mastering 'Metrics*

SW: *Stock & Watson textbook*

MEL: MyEconLab

RQ: Reading Quiz (online at MEL)