

ECN410/PUB610: ECONOMETRICS

DR. LAURA M. CRISPIN

SYLLABUS, FALL 2023



(Source: quickmeme.com)

Tu/Th, 12:30pm-1:45pm

Location Barbelin Hall 226

WHAT IS ECONOMETRICS?

Econometrics is AWESOME!! Econometrics is a fancy way of saying “advanced data analysis.” Data analytics is a highly sought after skill in the job market, and in the age of big data, econometricians are becoming increasingly more important to companies and government agencies.

WHAT IS THIS COURSE ABOUT?

In this course, you’ll be learning how to find relationships between variables using best practices in Economics. We will have a brief review of basic statistics, then begin the formal econometric portion of the course by studying basic linear regressions. We will study more advanced methods as the semester progresses, and ultimately study causal methods. Throughout the course, you’ll be working with STATA, an amazing software package that will help you to analyze data and practice econometric techniques as we learn about econometric theory. If time permits, we’ll also be working a little with R-studio, which is becoming one of the leading free software programs for data analysis in the corporate world.

In short, each chapter will consist of an intuitive approach, a theoretical/mathematical derivation, and an application where you will practice using a variety of data sets. At the end of this course, you’ll be confident in your software skills and your empirical knowledge, plus you’ll be familiar with several publicly available datasets. This will also

prepare you to advance to Research Methods (ECN487 – The best course ever!) or engage in independent research, should you choose.

IMPORTANT TO NOTE:

We will be using a “flipped classroom” mode of instruction, where students watch my lectures and take notes asynchronously during the week, then attend class in-person for hands-on exercises relevant to the materials covered in lecture. In order to make this semester and this mode of learning successful, you will all need to check into Canvas and check your email frequently, and get organized in terms of knowing deadlines, and being proactive about your learning.

LEARNING OBJECTIVES

By the end of the semester, students must be able to:

- Understand the assumptions of OLS
- Estimate and interpret single and multivariate OLS models
- Perform and interpret common hypothesis tests such as t-test, F-test, Chi-squared test
- Understand and correct for common problems that can arise in the context of OLS such as heteroscedasticity, multicollinearity, and omitted variable bias
- Use Stata proficiently to perform basic analysis, Introduction to R-Studio for basic analysis

TEXTS AND SOFTWARE

Required: Wooldridge, *Introductory Econometrics, A Modern Approach*. 6th ed.

There will be a copy on course reserves in the library and I have a hardcopy in my office that you are welcome to borrow. There are also older editions of the textbook that would do well and may be less expensive or free.

Additional readings will be assigned throughout the course and the citation information will be provided in advance in class and on Canvas.

Required Software:

1. STATA BE, student edition, 6-month data license (www.stata.com)
2. R-studio (towards the end of the semester)

*****You are required to bring your laptop to class every day, as we will be doing many in-class exercises that require Stata. If you do not have access to a laptop, please contact me or the Technology Service Center for a loaner*****

[I recognize that textbooks & software can be expensive. If you are facing difficulty with affording your materials for this course (or any course), there are resources available on campus that can help you. Should you need them, just let me know.]

GRADING

As indicated above, your grade for this course will be based on a variety of assignments. The fraction of the points allocated to each is shown below. Attendance is not accounted for specifically in your grade, but I expect all students to attend each class. Only four “unexcused” absences allowed. Only documented, university-approved absences will be considered “excused” absences. There will be no "extra credit" given.

	Grade Breakdown
Class Participation*	15%
Homework	25%
Midterm	30%
Final	30%

***PUB610 Graduate students and HON students: Your class participation will also include writing several policy memos, annotated bibliographies, and leading the class discussion for at least one reading assignment.** More details will be provided during the semester.

You are responsible for all material in lectures, classes, and readings. The final exam will be comprehensive with an emphasis on new material.

PARTICIPATION IN DISCUSSION AND IN-CLASS EXERCISES

Your participation grade will be based on your participation in classroom discussions, in-class practice exercises, and group work. Active participants will receive full credit.

HOMEWORK ASSIGNMENTS

There will be five homework assignments given through Canvas that will be graded for completion and effort. Each will be worth 5% of your total grade.

EXAM POLICIES

Exams will be given in-person. There will be a mix of multiple choice and written response questions. You may wish to bring a calculator, but a laptop will not be required. Practice materials will be provided before the midterm and final.

MISSED CLASS POLICY

As discussed above, class attendance and participation is critical in this fast paced, intensive study of econometrics. However, emergencies may arise and force you to miss class. If you are ill and/or contagious, please do not come to class! In these circumstances, you are required to get the notes and materials from a classmate **BEFORE** the next lecture. You are encouraged to come to my office hours to discuss any questions regarding the materials.

MAKE UP POLICY

If you miss class, you are required to get the notes from a classmate **BEFORE** the next class.

Students have three “passes” for late homework submission. You can use each one for an extra day on three different assignments, or all three on one assignment – no questions asked. Otherwise, late assignments will not be accepted.

Exams may be made up within one week of the original exam date for students who have an “excused” absence and provide appropriate documentation. Missed exams for unexcused/unverifiable reasons are not eligible for make-up.

TECHNOLOGY POLICY

You must bring your laptop with STATA installed to every class. We will be using this software a LOT, and unlike previous semesters, we cannot share devices with those around us.

Texting, cell phone, and laptop use during class is distracting to your peers and to me, and therefore, the use of laptops and cell phones is not permitted during class (except with instructor permission). Should you need to make a phone call or send a text message, please do so before or after class. Students who are texting during class will receive a zero for their class participation grade. If your texting during class becomes a distraction, I reserve the right to ask you to leave the classroom for the remainder of the lecture.

INCLUSIVE LEARNING ENVIRONMENTS (Source: Dr. Cecilia M. Orphan, University of Denver)

In this class, we will work together to develop a learning community that is inclusive and respectful. Our diversity may be reflected by differences in race, culture, age, religion, sexual orientation, socioeconomic background, and myriad other social identities and life experiences. The goal of inclusiveness, in a diverse community, encourages and appreciates expressions of different ideas, opinions, and beliefs, so that conversations and interactions that could potentially be divisive turn instead into opportunities for intellectual and personal enrichment.

A dedication to inclusiveness requires respecting what others say, their right to say it, and the thoughtful consideration of others' communication. Both speaking up and listening are valuable tools for furthering thoughtful, enlightening dialogue. Respecting one another's individual differences is critical in transforming a collection of diverse individuals into an inclusive, collaborative and excellent learning community. Our core commitment shapes our core expectation for behavior inside and outside of the classroom.

ACADEMIC HONESTY

Students are expected to be familiar with the **SJU Academic Honesty Policy**, published in the Student Handbook and University Catalog, and to adhere to it at all times. Unauthorized use of notes, assistance, or collaboration during an exam will result in failure of the assignment.

The University's Academic Honesty Policy states that "the unauthorized recording, sale, or use of lectures and other instructional materials" is a violation of the Policy and is considered an act of dishonesty. Students do not have my permission to **RECORD** or **DISTRIBUTE** my words, emails, lectures, comments, or any of our class discussions in **ANY** format without my written consent.

STUDENTS WITH DISABILITIES

Reasonable academic accommodations may be provided to students who submit appropriate documentation of their disability. If students have need of assistance or questions with this issue, they are encouraged to contact the Office of Student Disability Services (SDS) at sds@sju.edu or by phone at 610.660.1774. The Office of SDS also provides an appeal/grievance procedure for complaints regarding requested or offered reasonable accommodations. More information can be found at: www.sju.edu/sds.

"OUTSIDE OF THE CLASSROOM" INFORMATION

CONTACT INFORMATION

E-mail: lcrispin@sju.edu

Telephone: 610-660-1594

Office Address: 107C Barbelin Hall

Office Hours: I have appointments from 10am-11am on Tuesdays and Thursdays, and from 10-11:30am on Wednesdays. Some appointments will be via Zoom and some will be in-person in my office. You can book office hours via Starfish. If you need alternative hours, please email me to book an appointment.

Email policy: I try to return emails as quickly as possible (usually within 24-48 hours), but during peak times and over the weekend, it may take me longer to respond. Please make sure to include your name in your email sign-off (I can't always tell who you are from your email address alone).

RECOMMENDATION LETTERS: I am glad to write recommendation letters for great students, and it is easier to write them for students whom I know. I encourage you to come to office hours so I can meet with you and talk about the position that you are applying to. Please note that I require at least two weeks' notice for all recommendation letters. Please include your resume and unofficial transcripts, along with any other helpful materials with your email request.

SJU POLICY PROHIBITING DISCRIMINATION, HARASSMENT AND RETALIATION: "As a Catholic, Jesuit University, Saint Joseph's is committed to the just and respectful treatment of students, faculty, and staff. To this end, Saint Joseph's prohibits unlawful discrimination against, and harassment of, its employees, students, or applicants for employment or admission on the basis of any characteristic protected by state or federal law. The prohibition extends to discrimination, harassment and retaliation by third parties visiting campus or participating in University-sponsored activities" (excerpted from page 1 of the policy). The [full policy](#) includes information about available resources and confidentiality.

SJU SEXUAL MISCONDUCT POLICY: POLICY REGARDING SEXUAL ASSAULT, SEXUAL HARASSMENT, SEXUAL EXPLOITATION, DOMESTIC VIOLENCE, DATING VIOLENCE, OR STALKING: "Saint Joseph's University...is committed to providing an institutional environment where all persons may pursue their studies, careers, duties, and activities in an atmosphere free of the threat of sexual assault, sexual harassment, sexual exploitation, domestic violence, dating violence, and stalking (for purposes of this Policy, this conduct may be referred to, collectively, as "Sexual Misconduct"). Sexual Misconduct directed toward students, employees or any member of the University community, including third parties, regardless of sexual orientation or gender identity, interferes with the expectation that all individuals at the University will learn and work in an environment that is free from discrimination. Sexual Misconduct, as defined by the University, may also constitute a crime" (excerpted from page 3 of the policy). For support, resources, and reporting related to sexual misconduct, please visit [Sexual Misconduct: Support & Resources](#) page and read the [full policy](#).

BIAS INCIDENT REPORTING: "Bias- or hate-motivated conduct creates barriers to inclusion and trust, and all campus members are responsible to respond to harmful incidents quickly and effectively in order to ensure the wellbeing of targeted individuals and groups, to facilitate collective learning, and to re-establish clear norms that forestall future incidents. Bias incidents affect not only the targeted individual or group, but often make an entire group or community feel vulnerable and unwelcomed" (Excerpt from [full description](#)).

"The Saint Joseph's University [Non-Discrimination Statement](#) prohibits discrimination on the basis of sex/gender, race, age of 40 or over, color, religion, national origin, ethnic origin, sexual orientation, gender identity, disability, genetic information, pregnancy, marital status, and military and military veteran status, and any other status protected by law in the administration of its admission, educational, financial aid, employment, athletic, or recreational policies or programs."

If you have encountered a bias incident, please consider reporting the experience by completing and submitting a [Bias Incident Form](#); contacting Public Safety at 610-660-1111 or visiting the Public Safety

Office in Barbelin Hall; or reaching out to the Bias Incident Coordinator – at 610-660-1145. Read more about [definitions](#) and the [process](#) on SJU's [Bias Incident Reporting](#) webpage.

BASIC NEEDS:

Saint Joseph's University recognizes that not all students may have access to adequate resources to meet commonplace or basic needs. If at any point in the semester you find that your academic performance or overall wellbeing is negatively affected by challenges related to access to class materials, housing, food or basic needs (e.g., skipped meals and/or unable to buy groceries or a housing insecurity is experienced, etc.), please complete this form, which will be sent to the Office of Student Success. A staff member will work with you to connect you with University and/or other resources. For support with food and basic needs, you are also encouraged to visit the [HawkHUB](#) in person or submit an online order. Finally, and if you are comfortable, please contact me to discuss specific ways in which I can support you. I am committed to helping you succeed!

TENTATIVE COURSE SCHEDULE (SUBJECT TO CHANGE AS NEEDED)

****PLEASE CHECK CANVAS FOR DETAILS OF LECTURE AND ASSIGNMENT DEADLINES****

Week 1 (8/29; 8/31): Review of Statistics & Probability; Introduction to STATA; Ch. 1 – Nature of Econometrics and Economic Data

Sept. 5: Last day of add/drop period

Week 2 (9/5; 9/7): Ch. 2 – The Simple Regression Model

Week 3 (9/12; 9/14): Ch. 3 – Multiple Regression Analysis: Estimation

Monday Sept. 18 – Homework #1 due by 11:59pm

Week 4 (9/19; 9/21): Ch. 4 – Multiple Regression Analysis: Inference; Ch. 5 - Multiple Regression Analysis: OLS Asymptotics

Week 5 (9/20; 9/22): Ch. 6 – Multiple Regression Analysis: Further Issues

Week 6 (9/26; 9/28): Ch. 7 – Multiple Regression Analysis with Qualitative Information: Binary Variables

Monday Oct. 2: Homework #2 due by 11:59pm

Week 7 (10/3; 10/5): Ch. 8 – Heteroskedasticity; Ch. 9 – More on Specification and Data Issues

Week 8 (10/10; 10/12): Midterm review

Thursday October 12: Midterm (ch. 1 – 9)

Fall Break: Monday October 16 – Tuesday October 17

Week 9 (10/19): Ch. 10 – Basic Regression Analysis with Time Series Data

Week 10 (10/24; 10/26): Ch. 11 – Further Issues in Using OLS with Time Series Data;
Ch. 12 – Serial Correlation and Heteroskedasticity in Time Series regressions

Monday Oct. 30: Homework #3 due by 11:59pm

Week 11 (10/31; 11/2): Ch. 13 – Pooling Cross Sections across Time

Week 12 (11/7; 11/9): Ch. 14 – Advanced Panel Data Methods

Monday Nov. 13: Homework #4 due by 11:59pm

Week 13 (11/14; 11/16): Ch. 15 – Instrumental Variables Estimation and Two Stage
Least Squares

Week 14 (11/21): Ch. 17 – Limited Dependent Variable Models and Sample Selection
Corrections (Note – we are skipping Ch. 16) – **Asynchronous learning day &
Assignment**

Nov. 22 – Nov. 26: Thanksgiving Break – no classes

Nov. 28: Last day to withdraw from classes

Week 15 (11/28; 11/30): CH. 17 (cont'd); R-studio & R- programming

Week 16 (12/5; 12/7): Last week of classes – review of everything

Friday Dec. 8: Homework #5 due by 11:59pm

Tues., Dec 12 – Reading Day

Dec. 13 – Dec. 19: Final Exam Week (Our final exam date is TBD)

Dec. 21: Final Grades Due