



Econ 113
Introduction to Econometrics
Summer 2021
Session 2

Instructor: Harrison Shieh

Email: hashieh@ucsc.edu

Office Hours: Tuesdays 2:30pm – 4:30pm

Course Dates: 07/26/21 – 08/27/21

Course Meeting Days & Times: Tuesday and Thursdays, 9AM – 12:30PM

Section Attendance: You have to attend at least ONE section a week.

Teaching Assistants:

1. Sakshi Singh (ssing153@ucsc.edu)
 - a. Office Hours: Wed 9:00am – 10am; Fri 6:30pm – 7:30pm
 - b. Sections: Wed 6:30pm – 7:30pm; Fri 9:00am – 10:00am
2. Hyunjin Yun (hyun8@ucsc.edu)
 - a. Office Hours: Mon/Wed 2:30pm – 3:30pm
 - b. Sections: Mon/Wed 1:00pm – 2:00pm

MSI Tutor

1. Mike Moreno (mmorenop@ucsc.edu)
 - a. MSI Sessions: TBA

Course Description: Practical methods for organizing and analyzing economic data, testing economic hypotheses, and measuring economic relationships. Regression analysis is the main empirical method, and basic statistical and probability theory is included. Students gain hands-on computer experience with an econometric software package. Students cannot receive credit for this course and Applied Mathematics and Statistics 113.

Prerequisite(s): ECON 1 and ECON 2; STAT 5 or 7; and one of the following: ECON 11B, AM 11B, MATH 22, or MATH 23A. ECON 100A or ECON 100B strongly recommended as preparation.

Credit Hours: 5

Text(s): Wooldridge, Jeffrey M. *Introductory Econometrics: A Modern Approach*. I will primarily be referring to the 6th edition, but any version is okay, although you may need adjust the pages accordingly.

Software: I will primarily teach the course in *Stata*, although I will also accept assignments completed in R. If using Stata, Stata IC is sufficient. Please purchase Stata IC as soon as possible here: <https://www.stata.com/order/new/edu/profplus/student-pricing/>. You only need the

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6/month plan (This costs \$48). You can split this license (up to three computers, I believe). If you are using R, please download RStudio. Any other languages will have limited support (Python, SPSS, Eviews, Matlab, etc.). Midterms *will not cover programming*.

Letter Grade Distribution (Subject to Change):

<i>Percent</i>	<i>Grade</i>
≥ 93	A+
90-92.99	A-
87-89.99	B+
83-86.99	B
80-82.99	B-
77-79.99	C+
73-76.99	C
70-72.99	C-
67-69.99	D+
63-66.99	D
60-62.99	D-
≤ 59.99	F

At the end of the quarter, I will add 0.5% to all grades and then use the above grade distribution to determine your final grade. DO NOT email me about rounding.

Assignment Grade Distribution: There are 4 categories of assignments for this course:

- Section Attendance (10%): You must attend at least one section a week. Sections will review the concepts and do a lot of the heavy lifting on teaching the programming. Week 5 section will not be mandatory, however.
- Problem Sets (20%): There will be weekly problem sets on Canvas. These problem sets will include both a programming and theory element. You will have a maximum three attempts per assignment, with the average being your final score. No problem sets will be dropped.
- Group Quizzes (20%): There will be one or two in-class group quizzes per lecture day. You will be divided into break-out rooms and you will work on problems with your group mates on Canvas. The lowest 2 quizzes will be dropped. I will automatically assign groups for each

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quiz. If you cannot make lecture for a *verifiable and pre-authorized reason*, (that is, you are in a different time zone, you have other issues that you've talked to me about, etc.) I will provide make-up opportunities every week. You must contact me prior and request this option.

- Midterm (25%): There will be a take home midterm assigned at the end of Week 2. This will cover both the Week 1 and Week 2 material. You will have a few days to complete the midterm.
- Final (25%): The final is cumulative. The exam will be administered via Canvas and Zoom during normal lecture hours – you will have the entire lecture time to complete it.

Midterm Grade Replacement Policy: You are allowed to replace your midterm scores with the final. Once you commit to the midterm swap, whatever you score on the final *will be used in lieu of your midterm score, higher or lower*. For example, if you score a 55% on the midterm, committed to a grade swap prior to the final, and then scored a 40% on the final, *the midterm will be scored as 40%*.

- You must sign up before the posted deadline. Signing up is a commitment – you cannot renege after you have started the final.
- You must sign up for this policy *before* your final. A sign-up sheet will be provided on Canvas.
- This policy is automatically in effect if you miss your midterm for whatever reason.
- You cannot use your midterm to replace a missed final. The final is mandatory.
- If there is a curve on the final, your raw score on the final will be used for the midterm. If there is a curve on the midterm, it will apply to the raw score. For example, if there was a 7% curve on the midterm and the raw score on the final was a 73%, then your midterm score will be an 80%. Essentially, the final's curve will not apply to the replaced midterm score, but the midterm curve will be applied to the swapped grade.

Student Learning Objectives: At the completion of this course, students will be able to:

1. Learn about hypothesis testing and its applications.
2. Learn about linear regression models and how to apply the model to a wide range of applications in economics.
3. Interpret linear regression model coefficients.
4. Use a statistical package to estimate linear regression models.

Course Policies:

1. Lecture Policy
 - This is a synchronous course – your attendance in lecture is required over Zoom.
 - Please be aware of your netiquette – treat your classmates and the teaching staff with respect. Comments in the chat box should be professional and appropriate for the setting.

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- There will be an approximately 15-minute break every 1.5 hours or so.
 - Anyone violating the basic standards of netiquette will be booted off the lecture.
 - There are daily quizzes, so while attendance is not explicitly collected, there are no make-up lecture quizzes, unless cleared with me first.
2. Grading Policy
 - Although the above scale is posted here, depending on the class performance, I may either curve or shift the distribution (under my discretion)
 - I reserve the right to curve (or not curve) the final grades
 - Grades are final unless a documented mistake has been made. If you believe there to be a grading error, please schedule an appointment and we will discuss it.
 - Do not ask me about extra credit.
 - All grades will have an automatic 0.5% bump at the end of the course – this handles all concerns about rounding.
 - If you believe there to be a mistake, you have 3 days after assignment grades are posted to appeal the grade.
 3. Make Up Policy
 - No late work is accepted.
 - If you miss the midterm, you can use the midterm replacement policy outlined above. Otherwise, no make-up midterms will be administered.
 - If you miss a problem set due date due to a legitimate and verifiable excuse, at my discretion, I will offer an alternative assignment or grading scheme. You must contact me within a week of the due date.
 4. Accessing Canvas and Tech Support
 - Go to <https://canvas.ucsc.edu/>
 - Login using your normal UCSC credentials.
 - If there are issues, contact me first.
 - You will need either a Windows PC or a Mac PC to complete the course requirements as well as a modern web browser (Chrome or Firefox).
 - Do NOT use Safari or any mobile browser, equations and graphs do not show up properly in them.
 5. Regular and Effective Contact
 - I will be available to you in a few different ways. The primary method of contact will be through Canvas announcements. I will also be available during scheduled office hours (and by appointment).
 - I will try to answer emails at least once a day, during normal working hours. After hours responses will depend, but generally I will be available. There may be some delay during weekends, but generally expect a response within 1 – 2 business days. If I do not respond within that time frame, send a follow-up.
 6. General Policies
 - You will need a calculator. A phone calculator is acceptable.

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- Generally, for problem sets and exams, additional time requests will not be honored, unless there is a valid request made through Disability Services and Accommodations office
7. Academic Honesty Policy
- Academic dishonesty will not be tolerated. This includes the usage of third-party “homework helper”, document hosting sites, and online forums, which include, but are not limited to, Chegg, Tutor.com, posting on Reddit, etc. Communicating with classmates during exams via Discord, WhatsApp, and other messaging services also violates the academic honesty policy. Please refer to the university policy on academic honesty. Just do not cheat or plagiarize. Any student caught violating this policy will be referred to the Office of Student Conduct for further discipline, as well as receiving a zero on the assignment or course (at the instructor’s discretion).
8. Title IX and CARE
- UC Santa Cruz is committed to providing a safe learning environment that is free of all forms of gender discrimination and sexual harassment, which are explicitly prohibited under Title IX. If you have experienced any form of sexual harassment, sexual assault, domestic violence, dating violence, or stalking, know that you are not alone. The Title IX Office, the Campus Advocacy, Resources & Education (CARE) office, and Counseling & Psychological Services (CAPS) are all resources that you can rely on for support.
 - Please be aware that if you tell me about a situation involving Title IX misconduct, I am required to share this information with the Title IX Coordinator. This reporting responsibility also applies to course TAs and tutors (as well to all UCSC employees who are not designated as “confidential” employees, which is a special designation granted to counselors and CARE advocates). Although I have to make that notification, you will control how your case will be handled, including whether or not you wish to pursue a formal complaint. The goal is to make sure that you are aware of the range of options available to you and that you have access to the resources you need.
 - Confidential resources are available through CARE. Confidentiality means CARE advocates will not share any information with Title IX, the police, parents, or anyone else without explicit permission. CARE advocates are trained to support you in understanding your rights and options, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and more. You can contact CARE at (831) 502-2273 or care@ucsc.edu.
 - In addition to CARE, these resources are available to you:
 - If you need help figuring out what resources you or someone else might need, visit the Sexual Violence Prevention & Response (SAFE) website, which provides information and resources for different situations.

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- Counseling & Psychological Services (CAPS) can provide confidential counseling support. Call them at (831) 459-2628.
- You can also report gender discrimination and sexual harassment and violence directly to the University's Title IX Office, by calling (831) 459-2462 or by using their online reporting tool.
- Reports to law enforcement can be made to the UC Police Department, (831) 459-2231 ext. 1.
- For emergencies, call 911.

9. Disability Services and Accommodations

- If any students need disability support or specific accommodations, please feel free to contact me and we can arrange accommodations. Please also contact the DRC team for more assistance, since I will need an accommodations authorization letter from the DRC Office. You can reach them at: 831-459-2089 or drc@ucsc.edu

Tentative Course Outline (Subject to change; this schedule is a projection):

Week	Content	Due Dates
1	Lecture 1 (Tuesday) Introduction to Econometrics Types of Data and Sampling	
	Lecture 2 (Thursday) Probability Review Statistics Review	Syllabus Quiz due 7/29 at 9am
2	Lecture 3 (Tuesday) Statistics Review Hypothesis Testing	HW1 due Sun. 8/1 at 9am
	Lecture 4 (Thursday) Hypothesis Testing	
3	Lecture 5 (Tuesday) Simple Linear Regression (Theory) Simple Linear Regression (Estimation, Units, Logs, RTO)	HW2 due Sun. 8/8 at 11:59pm Take Home Midterm due Tue. 8/10 at 8:59am
	Lecture 6 (Thursday) Multivariate Regression Model (Estimation, Specification) Multivariate Regression Model (Inference)	
4	Lecture 7 (Tuesday) Multivariate Regression Model (Inference) Binary Variables, Interaction Terms, Heteroskedasticity, Endogeneity	HW3 due Sun. 8/15 at 11:59pm
	Lecture 8 (Thursday) Panel Data Intro to Causal Inference (Diff, FE, and Diff-in-Diff)	HW4 due Sun. 8/22 at 11:59pm
5	Lecture 9 (Tuesday) Intro to Causal Inference (Diff, FE, and Diff-in-Diff)	
	Lecture 10 (Thursday) Final Exam	HW5 due Thurs. 8/26 at 9am

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