
Economics 103 & 103L: Introduction to Econometrics

UCLA Department of Economics, Summer 2026 Session A

Instructor: Jake Anderson

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Course Information

Instructor: Jake Anderson
Email: jakeanderson@g.ucla.edu [Include “Econ 103” in the subject line of all email]
Lecture: MW 10:45 AM–12:50 PM (Pacific), Online via Zoom
Recordings: Posted after each lecture, assuming no technical issues
Office Hours: Tuesdays 1:00–3:00 PM, Online via Zoom (same link as lecture)
Session: A6, June 22–July 31, 2026 (6 weeks)
Zoom Link: <https://ucla.zoom.us/my/jakemanderson>
Textbook: *Principles of Econometrics* by Hill, Griffiths, and Lim, 5th Ed. (PDF on BruinLearn)
Campuswire: <https://campuswire.com/p/G52FE255C>, Code: 1857

Enrollment

In past courses in your academic journey, you usually have a lecture with the professor, then a discussion section with the TA. In this course, because there is a coding component, there is also a 103L “lab” component. The naming is confusing on the enrollment side, but I’ll be referring to them as Lecture, Lab, and Discussion. This means you will be enrolled in three things:

1. Lecture (Jake’s Lectures on MW)
2. Lab (Jake’s Hands-on coding practice using R on Wednesdays)
3. Discussion (Led by your TA)

This course requires that you enroll in the lecture (MW), discussion, and also Lab (Wednesdays).

Course Calendar

	Mon		Tue	Wed		Thu	Fri
Week 1	6/22 Lecture 1 10:45 - 12:50 PM		6/23	6/24 Lecture 2 Lab 1 10:45 - 12:50 PM 3:30 - 4:45 PM		6/25	6/26
Week 2	6/29 Lecture 3 10:45 - 12:50 PM		6/30	7/1 Lecture 4 Lab 2 10:45 - 12:50 PM 3:30 - 4:45 PM		7/2	7/3
Week 3	7/6 Lecture 5 10:45 - 12:50 PM		7/7	7/8 Midterm Lab 3 10:45 - 12:50 PM 3:30 - 4:45 PM		7/9	7/10
Week 4	7/13 Lecture 6 10:45 - 12:50 PM		7/14	7/15 Lecture 7 Lab 4 10:45 - 12:50 PM 3:30 - 4:45 PM		7/16	7/17
Week 5	7/20 Lecture 8 10:45 - 12:50 PM		7/21	7/22 Lecture 9 Lab 5 10:45 - 12:50 PM 3:30 - 4:45 PM		7/23	7/24
Week 6	7/27 Lecture 10 10:45 - 12:50 PM		7/28	7/29 Final 10:45 - 12:50 PM		7/30	7/31

= Lecture/Lab
 = Exam
 = No class

Course Content

The following is a tentative outline of topics covered in each lecture. The textbook is *Principles of Econometrics* (PoE) by Hill, Griffiths, and Lim, 5th Edition.

Week	Lecture	Topic	Reading
Week 1	Lecture 1	Intro to Econometrics; Probability Review (random variables, distributions, expectation, variance)	Ch 1, PP
	Lecture 2	Probability Review cont. (covariance, conditioning, normal distribution, CLT)	PP
Week 2	Lecture 3	Simple Linear Regression: the model, OLS estimation, interpreting coefficients	Ch 2.1–2.3
	Lecture 4	SLR: assumptions (SR1–SR6), sampling properties, Gauss-Markov theorem	Ch 2.4–2.7
Week 3	Lecture 5	Interval estimation and hypothesis testing (t-tests, p-values)	Ch 3
	Midterm	Covers Lectures 1–5 (Chapters 1–3 + Probability Primer)	
Week 4	Lecture 6	Prediction, goodness of fit (R^2), functional forms (log-linear, log-log, quadratic)	Ch 4
	Lecture 7	Multiple regression: model, OLS, interpretation, assumptions (MR1–MR6)	Ch 5.1–5.3
Week 5	Lecture 8	MR inference, hypothesis testing, interaction terms, polynomials	Ch 5.4–5.6
	Lecture 9	F-tests, joint hypotheses, omitted variable bias, multicollinearity, model selection	Ch 6
Week 6	Lecture 10	Indicator variables, treatment effects, difference-in-differences	Ch 7
	Final	Cumulative (~30% Lectures 1–5, ~70% Lectures 6–10)	

PP = Probability Primer (textbook appendix). Schedule is tentative and subject to change.

Lab Content

Labs are hands-on coding sessions using R. Each lab builds on the lecture material from that week.

Lab	Topic	Skills
Lab 1 (W1)	Intro to R and RStudio	R basics, data types, vectors, data frames, loading data, summary statistics, basic plots
Lab 2 (W2)	Simple Linear Regression in R	Fitting and interpreting OLS, reading regression output, residual plots, scatterplots with fitted lines
Lab 3 (W3)	Inference in R	Confidence intervals, hypothesis tests from regression output, p-values, t-statistics, testing linear combinations
Lab 4 (W4)	Multiple Regression and Functional Forms	Adding regressors, log transformations, quadratic terms, interaction terms, comparing models
Lab 5 (W5)	F-tests, Diagnostics, and Indicator Variables	Joint hypothesis tests, restricted vs. unrestricted models, dummy variables, difference-in-differences, VIF

Course Description

This course is an introduction to the theory and practice of linear regression analysis with an emphasis on its use in economic research. It will introduce the method of least squares, the Gauss-Markov theorem, and apply concepts from Econ 41—such as confidence intervals and hypothesis tests—in the univariate and multivariate regression context. The course emphasizes applications with real data using R to implement the discussed methods. Students are expected to learn and master the basic quantitative tools covered in this course in preparation for upper-division economics courses (e.g., Econ 104, 133) and for future empirical research.

Prerequisites

Students must have completed Econ 11 (Microeconomic Theory) and Econ 41 (Statistics for Economists), or approved equivalents. This course builds heavily on Econ 41; please make sure you are comfortable with that material. No prior coding experience is required.

Coding / Statistical Software

We will use R and RStudio, both of which are free. Please install them before the first lab. If your computer cannot run R, use the campus computers (e.g., Powell Library) or the UCLA Virtual Desktop.

If you are new to R, the best way to get started is **swirl**, an interactive R package that teaches

you R from within R itself. Install it with `install.packages("swirl")` and run `library(swirl); swirl()` to begin.

Free online R resources:

- *Hands-On Programming with R* by Grolemund: <https://rstudio-education.github.io/hopr/>
- *R for Data Science* by Grolemund and Wickham: <https://r4ds.had.co.nz/>
- *Principles of Econometrics with R* by Colonescu: <https://bookdown.org/ccolonescu/RPoE4/>
- *Introduction to Econometrics with R*: <https://www.econometrics-with-r.org/>

Examinations

Exams will be held online during the regular lecture time (MW 10:45 AM–12:50 PM). Details on exam format and proctoring will be provided before each exam.

Midterm: Wednesday, July 8, 10:45 AM–12:50 PM

Final: Wednesday, July 29, 10:45 AM–12:50 PM

Grading

Econ 103L has no separate problem sets or exams; you will receive the same grade in 103 and 103L. Your final grade is based on participation, problem sets, a midterm, and a final exam. There are two weighting options; your grade is determined by whichever gives you the higher score:

	Option 1	Option 2
Participation	10%	10%
Problem Sets	15%	15%
Midterm	30%	20%
Final Exam	45%	55%

Students who are on the Campuswire leaderboard through contributions, answering questions, and participating will be eligible for extra credit points.

Email Etiquette

Who to contact:

Topic	Contact
Material or concept questions	Campuswire or your TA
Grading disputes	Your TA first; escalate to me if unresolved
Accommodations	Center for Accessible Education (CAE)
Enrollment issues	Registrar or Economics department admin
Personal circumstances	Jake

Email formatting:

1. Subject line: "Econ 103 — [brief topic]"
2. Include your name and UID in the body of every email
3. Use a clear, specific subject (not "Question" or "Help")

General etiquette: Use a professional greeting (e.g., "Hi Jake" or "Dear Jake"). Be clear: state your question or request upfront. Before emailing, you must establish that you have made an attempt to answer your question using other resources: the syllabus, course materials, and your TA.

Problem Sets

There will be approximately 3–4 problem sets containing both theoretical questions and R coding exercises. Problem sets must be submitted on BruinLearn by the posted deadline. Late submissions will receive half credit, unless you have CAE accommodations or have arranged an extension beforehand with a reasonable justification. It is strongly preferred that you submit your homework in one file. It is recommended (but not required) that you write your solutions in R Markdown. Coding questions must be submitted as a PDF accompanied by the code used to generate it.

ChatGPT / LLM Policy

You are free to use ChatGPT or other AI tools for homework, but use them carefully. Always verify the answers and make sure you understand the reasoning. You will not be permitted to use any online resources during exams.

Policy on Missed Exams

Exams must be taken at the scheduled times. Department policy does not allow makeup midterms (<https://economics.ucla.edu/undergraduate/common-syllabus/>). If a student has a legitimate, documented reason for missing the midterm, additional weight will be placed on the final

exam. Documentation (e.g., a doctor's note) must clearly state that the student was unable to attend. A student who misses an exam without a valid excuse will receive a zero. If a student misses the final due to a verifiable emergency, a makeup will be arranged. Missing all exams results in an automatic grade of "F."

Center for Accessible Education (CAE)

Students needing academic accommodations based on a disability must contact the CAE, which will oversee administering assessments. Any arrangements must be communicated to the instructor during the first week of classes. See <https://www.cae.ucla.edu>.

Academic Honesty

While I encourage students to form study groups and learn from each other, all submitted work must be your own. Do not copy the work or code of classmates. Any violations of academic honesty will be reported to the Office of the Dean of Students. See <https://www.deanofstudents.ucla.edu/Academic-Integrity>.

Campus Resources

- **CAPS** (Counseling and Psychological Services): <https://counseling.ucla.edu>
- **Bruin Shelter**: <https://www.bruinshelter.org>
- **Community Programs Office** (food closet, computer lab, basic needs): <https://cpo.ucla.edu/front-page/basic-and-essential-needs-main-page/basic-needs>