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University of Georgia
Department of Economics
ECON 8070
Fall 2026

Statistics for Econometrics

Syllabus

Course Time: MW 11:35am–12:55pm

Location: Journalism 0412

Office Hours: Monday 2:45–3:45pm or by appointment (in person or via Zoom)

Teaching Assistant: Rachel Lobo, email: rachel.lobo@uga.edu, office hours: Tuesday 9:00am–10:00am, B456 Amos Hall (in person) or [Zoom](#), or by appointment.

Course Description:

This course provides an introduction to probability and statistics for Ph.D. students.

Course Materials:

- Course Website: https://bcallaway11.github.io/Courses/ECON_8070_Fall_2026/
- eLC: <https://elc.uga.edu>

Textbook:

- (1) **Required:** *Probability & Statistics for Economists*, by Bruce Hansen (<https://www.ssc.wisc.edu/~bhansen/probability/>)
- (2) **Required:** *Econometrics*, by Bruce Hansen (<https://ssc.wisc.edu/~bhansen/econometrics/>)

Additional References:

- (1) *Probability, Statistics, and Econometrics* by Oliver Linton
- (2) *Statistical Inference*, 2nd Edition, by George Casella and Roger Berger
- (3) *Probability and Statistics for Economics and Business: An Introduction Using R* by Jason Abrevaya
- (4) *Probability and Statistical Inference*, any edition, by Robert Hogg, Elliot Tanis, and Dale Zimmerman

(5) *Asymptotic Statistics* by A.W. van der Vaart

Software:

We will use R (<https://www.r-project.org/>) to analyze data. R is freely available and available across platforms. You should go ahead and download R for your personal computer as soon as possible. It is also available at most computer labs on campus.

I also recommend using RStudio as a tool for writing code in R. You can download it here: <https://posit.co/download/rstudio-desktop/>; choose the free version based on your operating system (Windows, Mac, etc.).

If you have a laptop, it will sometimes be helpful to bring it to class as we will sometimes spend 15-30 minutes of class working on problems using actual data, and I think that it is most helpful for you to be able to work on the problem as I go through it with the class.

Additional R References:

There are tons of free R resources available online. Here are some that seem particularly useful to me.

Undergraduate-level emphasizing econometrics:

- (1) Introduction to Econometrics with R, by Cristoph Hanck, Martin Arnold, Alexander Gerber, and Martin Schmelzer (<https://www.econometrics-with-r.org/>)

Introductions to programming in R:

- (2) Introduction to Data Science: Data Wrangling and Visualization with R, by Rafael Irizarry (<https://rafalab.dfci.harvard.edu/dsbook-part-1/>)
- (3) Shorter Video Tutorials on LinkedIn Learning: [R for Data Science: Analysis and Visualization](#), by Barton Poulson. You should have access to LinkedIn Learning by logging in with your UGA credentials.

Homeworks:

There will be roughly 5–6 homeworks throughout the semester. They will be a mix of problems and data work. Homeworks will be due at the start of class, and I do not accept late homeworks. You should turn in a hard copy of your homework.

For coding questions, both the code that you wrote and the output of the code should be turned in, and I expect the results to be very concise (in general, less than 1 page per answer). Unless otherwise stated, I'll expect you to code all the estimators that we talk about in class on your own. For example, you can run a regression in R using the `lm` command or you can code it using matrices—I'll expect you to use matrices, though it is perfectly fine to compare your results to those generated by using R's command.

About using AI: the point of the homeworks is to help you learn. It's not my intent that you have AI do the homeworks for you, but if talking to AI while you are doing the homework helps you learn, then you are welcome to do that.

About working with other students: basically the same comment as for AI applies. I expect you to do your homeworks independently (and not rely too heavily on other students), but you are not forbidden from talking about the homeworks with each other if that helps you learn the material.

Given the difficulties that AI creates for using homeworks as an assessment device, I am implementing some additional trial policies for homework this semester (these may be adjusted or revoked during the semester):

- Every time a homework is due, it will be accompanied by a short homework quiz on the same day in class.
- Coding problems will only be assessed based on attempting to do them. However, questions about them on the homework quizzes will be fair game.
- Solutions to other questions must be handwritten. These questions will be graded.

My aim is to reduce the incentive to use AI on homeworks (you turning in a homework generated by AI seems to be tempting, unfair to other students, and a big waste of everyone's time), while, as much as possible, continuing to provide an incentive to work hard outside of class time.

Tests:

There will be two midterms and a final exam.

- Midterm 1: Wednesday, Sept. 30, in class
- Midterm 2: Wednesday, Oct. 28, in class
- Final Exam: Monday, Dec. 7, 12:00–3:00pm

Attendance:

In-person attendance for the class is required. My general expectation is that students will show up for all classes during the semester. I will periodically take attendance. The third and fourth classes that you miss during the semester will result in 2 points taken off your final grade each. Subsequent missed classes will result in 5 points taken off your final grade for each class missed.

Classes missed due to health reasons will be counted as excused absences (i.e., they will not count as an absence in the previous paragraph). You do not need to provide me any documentation like a doctor's note unless the number of absences starts to add up. The main other types of excused absences in my class are for major health issues of a close relative, a sibling's wedding, and religious holidays. The main types of unexcused absences are for job interviews, other work, taking the GRE, other travel, and participation in clubs or other extracurricular activities. For other absences, please contact me.

Grades: Grades will be 5% homework submissions, 10% homework quizzes, 25% for each midterm, and 35% final exam. I will use the following grade scale

A	A-	B+	B	B-	C+	C	C-	D	F
93-100	90-93	87-90	83-87	80-83	77-80	73-77	70-73	60-70	<60

though I may eventually curve grades to some extent.

Course Outline: Available on course website: https://bcallaway11.github.io/Courses/ECON_8070_Fall_2026/

Course Statements and Policies

- *UGA Student Honor Code:*

“I will be academically honest in all of my academic work and will not tolerate academic dishonesty of others.” A Culture of Honesty, the University’s policy and procedures for handling cases of suspected dishonesty, can be found at honesty.uga.edu.

- *Syllabus Changes:*

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

- *UGA Well-being Resources:*

“UGA Well-being Resources promote student success by cultivating a culture that supports a more active, healthy, and engaged student community.”

Anyone needing assistance is encouraged to contact Student Care & Outreach (SCO) in the Division of Student Affairs at 706-542-8479 or visit sco.uga.edu. Student Care & Outreach helps students navigate difficult circumstances by connecting them with the most appropriate resources or services. They also administer the Embark@UGA program which supports students experiencing, or who have experienced, homelessness, foster care, or housing insecurity.

UGA provides both clinical and non-clinical options to support student well-being and mental health, any time, any place. Whether on campus, or studying from home or abroad, UGA Well-being Resources are here to help.

- Well-being Resources: well-being.uga.edu
- Student Care and Outreach: sco.uga.edu
- University Health Center: healthcenter.uga.edu
- Counseling and Psychiatric Services: caps.uga.edu or CAPS 24/7 crisis support at 706-542-2273
- Health Promotion / Fontaine Center: healthpromotion.uga.edu
- Accessibility & Testing: accessibility.uga.edu

Additional information, including free digital well-being resources, can be accessed through the UGA app or by visiting well-being.uga.edu.