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University of Georgia
Department of Economics
ECON 8080
Spring 2022

Introduction to Econometrics

Syllabus

Course Time: Tuesdays and Thursdays, 8:00am – 9:15am

Location: BLC II Benson Hall C101

Office Hours: Tuesday 9:30am – 10:30am or by appointment (in person or via Zoom)

Teaching Assistant: Hugo Rodrigues, email: hsantanna@uga.edu, office hours: Friday 10:00am – 12:00pm or by appointment (via Zoom only: <https://zoom.us/j/7466987608>)

Course Description:

This course provides an introduction to econometric theory for Ph.D. students.

Course Materials:

- Course Website: https://bcallaway11.github.io/Courses/ECON_8080_Spring_2022/
- eLC: <https://elc.uga.edu>

Course Prerequisites: ECON 8070

Textbook:

- (1) **Required:** *Econometrics*, by Bruce Hansen (<https://ssc.wisc.edu/~bhansen/econometrics/>)

Additional References:

- (1) *Econometric Analysis of Cross Section and Panel Data*, by Jeffrey Wooldridge, 2010.
- (2) *Econometrics*, by Fumio Hayashi, 2000.
- (3) *Introduction to Econometrics*, by Bruce Hansen, 2020. <https://www.ssc.wisc.edu/~bhansen/probability/>
- (4) *Panel Data Econometrics*, by Manuel Arellano, 2003
- (5) *Causal Inference: The Mixtape*, by Scott Cunningham, 2020. <https://mixtape.scunning.com/>

- (6) *Quantile Regression*, by Roger Koenker, 2005
- (7) *The Elements of Statistical Learning*, by Trevor Hastie, Robert Tibshirani, and Jerome Friedman, 2017. <https://hastie.su.domains/ElemStatLearn/>

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://www.rstudio.com/products/rstudio/download/#download>; 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 Analysis and Prediction Algorithms with R, by Rafael Irizarry (<https://rafalab.github.io/dsbook/>)
- (3) STAT 545: Data Wrangling, exploration, and analysis with R, by Jenny Bryan (<https://stat545.com/>)

Homeworks:

There will be roughly 5 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 homeworks, I expect both the code written 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 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.

Tests:

There will be two midterms and a final exam. The midterm exams will be held on February 15 and March 29 during the class time. The final exam will be held on Tuesday, May 10 from 8:00am – 11:00am.

Attendance:

In-person attendance for the class is required. That being said, under the present circumstances, I will be lenient on this front. In plain words, you are not authorized to miss class for no reason, sleeping late, etc., but you are authorized to miss class due to any health issues and do not need to provide any documentation (e.g., doctor’s note). I’ll periodically take attendance for our class.

Grades: Grades will be 20% homeworks, 25% for each midterm, and 30% final exam.

Course Outline: Available on course website: https://bcallaway11.github.io/Courses/ECON_8080_Spring_2022/

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 www.uga.edu/ovpi. Every course syllabus should include the instructor’s expectations related to academic honesty.
- The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

Coronavirus Information for Students

UGA adheres to guidance from the University System of Georgia and the recommendations from Georgia Department of Public Health (DPH) related to quarantine and isolation. Since this may be updated periodically, we encourage you to review the latest guidance [here](#). The following information is based on guidance last updated on December 29, 2021.

Face coverings:

Following guidance from the University System of Georgia, face coverings are recommended for all individuals while inside campus facilities.

How can I obtain the COVID-19 vaccine? University Health Center is scheduling appointments for students through the UHC Patient Portal (https://patientportal.uhs.uga.edu/login_dualauthentication.aspx). Learn more here – <https://www.uhs.uga.edu/healthtopics/covid-vaccine>.

The Georgia Department of Health, pharmacy chains and local providers also offer the COVID-19 vaccine at no cost to you. To find a COVID-19 vaccination location near you, please go to: <https://georgia.gov/covid-vaccine>.

In addition, the University System of Georgia has made COVID-19 vaccines available at 15 campuses statewide and you can locate one here: <https://www.usg.edu/vaccination>

What do I do if I have COVID-19 symptoms? Students showing COVID-19 symptoms should self-isolate and get tested. You can schedule an appointment with the University Health Center by calling 706-542-1162 (Monday-Friday, 8 a.m.-5p.m.). Please DO NOT walk-in. For emergencies and after-hours care, see <https://www.uhs.uga.edu/info/emergencies>.

What do I do if I test positive for COVID-19? (Isolation guidance) If you test positive for COVID-19 at any time, either through a PCR test, an Antigen test, or a home test kit, you are required to report it through the [DawgCheck Test Reporting Survey](#). Follow the instructions provided to you when you report your positive test result in DawgCheck.

As of December 29, 2021, when an individual receive a positive COVID-19 test: Everyone, **regardless of vaccination status**, should:

- Stay home for 5 days.
- If you have symptoms or your symptoms are resolving after 5 days, you can leave your house and return to class.
- Continue to wear a mask around others for 5 additional days.

What do I do if I have been exposed to COVID-19? (Quarantine guidance)

If you have been exposed (within 6 feet for a cumulative total of 15 minutes or more over a 24-hour period – unmasked**) to someone with COVID-19 or to someone with a positive COVID-19 test and you are:

- Boosted, or have become fully vaccinated within the last 6 months (Moderna or Pfizer vaccine) or within the last 2 months (J&J vaccine)
 - You do not need to quarantine at home and may come to class.
 - You should wear a mask around others for 10 days.
 - If possible, get tested on day 5.
 - If you develop symptoms, get tested and isolate at home until test results are received, then proceed in accordance with the test results.
- Unvaccinated, or became fully vaccinated more than 6 months ago (Moderna or Pfizer vaccine) or more than 2 months ago (J&J vaccine) and have not received a booster:
 - You must quarantine at home for 5 days. After that you may return to class but continue to wear a mask around others for 5 additional days.

- If possible, get tested on day 5.
- If you develop symptoms, get tested and isolate at home until test results are received, then proceed in accordance with the test results.

** “Masked-to-masked” encounters are not currently considered an exposure; this type of interaction would not warrant quarantine.

You should report the need to quarantine on DawgCheck (<https://dawgcheck.uga.edu/>), and communicate directly with your faculty to coordinate your coursework while in quarantine. If you need additional help, reach out to Student Care and Outreach (sco@uga.edu) for assistance.

Well-being, mental health, and student support

If you or someone you know needs assistance, you are encouraged to contact Student Care & Outreach in the Division of Student Affairs at 706-542-7774 or visit <https://sco.uga.edu/>. They will help you navigate any difficult circumstances you may be facing by connecting you with the appropriate resources or services. UGA has several resources to support your well-being and mental health: <https://well-being.uga.edu/>

Counseling and Psychiatric Services (CAPS) is your go-to, on-campus resource for emotional, social and behavioral-health support: <https://caps.uga.edu/>, TAO Online Support (<https://caps.uga.edu/tao/>), 24/7 support at 706-542-2273. For crisis support: <https://healthcenter.uga.edu/emergencies/>.

The University Health Center offers FREE workshops, classes, mentoring and health coaching led by licensed clinicians or health educators: <https://healthcenter.uga.edu/bewelluga/>

Monitoring conditions:

Note that the guidance referenced in this syllabus is subject to change based on recommendations from the Georgia Department of Public Health, the University System of Georgia, or the Governor’s Office. For the latest on UGA policy, you can visit coronavirus.uga.edu.