

ECON417: Introductory Econometrics
College of Business, University of Nebraska–Lincoln
Syllabus, Fall 2021

Instructor: Federico Zincenko

Lectures: Mondays and Wednesdays, 11:00am - 12:15pm

Howard L. Hawks Hall (HLH) 211

Office hours: Mondays 1:30pm - 2:15pm, Tuesdays 11:45am - 1:00pm

HLH 525J

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Reader: Ishita Ahmed

Office hours: Wednesdays 3:00pm - 4:00pm

HLH 406

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Prerequisites:

ECON210, or both ECON211 and ECON212; ECON215 or equivalent.

Course description

The objective of this course is to provide econometric tools that are useful to analyze and interpret economic data combining economic models with statistical methods. These tools are commonly employed in business, government, and academic research. They are useful for those intending to become quantitative economic analysts and also for those interested in knowing how economics is applied to real-world problems.

The primary topic of the course is the linear regression model, which allows us to quantify the effect of changing one variable on another one. Such an effect is quantified by parameters, or a single coefficient. The course focuses on interpretation and statistical inference about these parameters. These issues will be studied following an applied perspective. For instance, we will learn how to answer the following questions: What are the returns to education? Does reducing class size improve elementary school education? Is there gender discrimination in the labor market?

We will employ the statistical software R, which can be freely downloaded from the website <https://www.r-project.org>.

Bibliography

The course will be mainly based on the slides posted on the website. These slides must be complemented with the following textbook:

J. M. Wooldridge (2019). *Introductory Econometrics: A Modern Approach*. 7th ed. South-Western. [Henceforth, W2019]

Supplementary textbooks

R. C. Hill, W. E. Griffiths, and G. C. Lim (2011). *Principles of Econometrics*. 4th ed. Wiley.

J. H. Stock and M. W. Watson (2019). *Introduction to Econometrics*. 4th ed. Addison-Wesley. [Henceforth, SW2019]

E. A. Tanis and R. V. Hogg (2008). *A Brief Course in Mathematical Statistics*. Pearson Prentice Hall.

Requirements and grading policy

The final grade will be based on six problem sets, two midterms, a final exam, and participation; attendance is not a requirement. The weights are as follows.

Problem sets (18%): six problem sets, each of them weights 3%. Most of them involve using the software R, which will be taught in lectures. Students can submit their answers individually or in pairs. Submissions must be done through the course website (see below).

Midterms (40%): two in-class midterms. Highest-grade midterm weights 22.5%, the other 17.5%. Dates are September 29 and November 17.

Final (40%): it is in-person and cumulative. It will take place on Friday, December 17, from 10:00am to 12:00pm at HLH 211.

Participation (2%): commenting, as well as answering and formulating questions, in class is considered part of the grade.

All exams are closed-book and no calculators, nor any electronic devices, are allowed. You can bring letter-size sheet with notes on only one side for the midterms, and with notes on both sides for the final. The only valid reason for missing an exam (or a homework) is

serious illness to be verified in writing by a medical doctor; a job interview is not a valid reason for missing an exam or a homework. If you cannot make one midterm due to a serious illness, the final weights 50% (instead of 40%) and the midterm you take 30%. If you cannot make any of the exams on the specified date, you cannot take this course.

Course website

The course website is available through Canvas, the University of Nebraska's web-based course management system: <https://canvas.unl.edu>. Course materials (slides, problem sets, etc.) and grades will be posted on this website.

Equipment checkout

Laptop checkout is offered at the following ITS locations: Nebraska Union, Dinsdale Learning Commons, Adele Coryell Hall Learning Commons, and Henzlik Hall. Visit the website <https://its.unl.edu/services/equipment-checkout> for more information.

Face covering policy

Face masks are required in all indoor spaces, including classrooms and offices. The Direct Health Measures provide an exception if the individual "is giving a speech, lecture, or broadcast to an audience so long as six (6) feet of distancing from other individuals is maintained and only while said speech, lecture, or broadcast is being delivered". This means that instructors may, if they wish, remove their face coverings while lecturing, provided that they can maintain six feet of distance between themselves and their students.

Student code of conduct and academic honesty

Students at the University of Nebraska are members of an academic community in which academic integrity and responsible conduct are essential for the community to function. To ensure that students know what is expected of them, the University has adopted the Standards of Academic Integrity and Responsible Conduct: please, read carefully the website <https://studentconduct.unl.edu/student-code-conduct>.

Academic honesty is essential to the existence and integrity of an academic institution. The responsibility for maintaining that integrity is shared by all members of the academic community. The aforementioned standards address academic dishonesty. Students who commit acts of academic dishonesty are subject to disciplinary action and are granted due process and the right to appeal any decision.

Services for students with disabilities

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can discuss options privately. To establish reasonable accommodations, I may request that you register with Services for Students with Disabilities (SSD). If you are eligible for services and register with their office, make arrangements with me as soon as possible to discuss your accommodations so they can be implemented in a timely manner. SSD contact information: 117 Louise Pound Hall; 402-472-3787.

Counseling and psychological services

UNL offers a variety of options to students to aid them in dealing with stress and adversity. Counseling and Psychological Services (CAPS, [link](#)) is a multidisciplinary team of psychologists and counselors that works collaboratively with Nebraska students to help them explore their feelings and thoughts and learn helpful ways to improve their mental, psychological and emotional well-being when issues arise. CAPS can be reached by calling 402-472-7450. Big Red Resilience & Well-Being (BRRWB, [link](#)) provides one-on-one well-being coaching to any student who wants to enhance their well-being. Trained well-being coaches help students create and be grateful for positive experiences, practice resilience and self-compassion, and find support as they need it. BRRWB can be reached by calling 402-472-8770.

Statement on classroom recording

To ensure the free and open discussion of ideas, individuals cannot record lectures, discussions, nor office hours. Only classroom activity during the exams can be recorded by the camera located in the classroom.

Course Outline

1. Introduction to the course. Nature of econometrics and economic data. Fundamentals of probability and mathematical statistics.

Refs: W2019 (Ch. 1 & Appendices A-C); SW2019 (Chs. 1-3), Tanis and Hogg (2008)

2. Simple linear regression model. Ordinary least squares (OLS) estimator.

Refs: W2019 (ch. 2)

3. Multiple linear regression (MLR) analysis: estimation.

Refs: W2019 (ch. 3)

4. MLR analysis: inference.

Refs: W2019 (ch. 4)

5. MLR analysis: OLS asymptotics.

Refs: W2019 (ch. 5)

6. MLR analysis: further issues.

Refs: W2019 (ch. 6)

7. MLR analysis with qualitative information.

Refs: W2019 (ch. 7)

8. Heteroskedasticity. Generalized least squares estimation.

Refs: W2019 (ch. 8)

9. More on specification and data issues. Validity of studies based on the MLR model.

Refs: W2019 (ch. 9), SW2019 (ch. 9).