

Econ 9472
Econometric Theory I
Fall 2017

Instructor J. Isaac Miller millerjisaac@missouri.edu
Course MW 2:00-3:15PM Middlebush 11
Office Hours MW 10:00AM-noon Professional 221
Website courses.missouri.edu (Canvas)

Objectives

The objective is to introduce the student to econometric analysis of data at an advanced level. The emphasis of the course is on theoretical analysis of cross-sectional methods and of least squares in particular. Although all econometric tools are designed with an eye toward empirical application, a solid theoretical understanding of these tools is critical to sound application of them. These tools are used in nearly all fields of research in economics and econometrics, as well as in business, finance, political and other social sciences, and also some natural sciences.

Prerequisite: PhD standing in economics or instructor's consent.

Texts

- Hansen, B.E. (2017). *Econometrics*. (**required**)
- Stachurski, J. (2016). *A Primer in Econometric Theory*. (recommended)

Topics Covered

I. Mathematical and Statistical Tools

- Conditional Expectation and Projection (Chapter 2)
- The Algebra of Least Squares (Chapter 3)

II. Econometrics 101

- Least Squares (OLS) (Chapter 4)
- Normal Regression and Maximum Likelihood (ML) (Chapter 5)
- Asymptotic Theory (Chapters 6 & 7)
- Hypothesis Testing (Chapter 9)

III. Extensions

- Endogeneity (Chapter 10)
- More topics as time allows

Grade Composition

HW Assignments 40% of the course grade
Homework assignments will require programming using a statistical package. I will provide *limited* classroom instruction for GAUSS, which is available in the computer lab in Middlebush 7 or from <http://www.aptech.com/>. You may use an alternative software package at your own risk. I expect you to complete HW assignments *on your own* with only *limited* collaboration.

First Test (in-class, closed-book) 30% of the course grade
I will announce the date at least two weeks in advance.

Second Test (in-class, closed-book) 30% of the course grade
Friday, December 15, 8:15-9:30AM. (Not cumulative, scheduled during exams.)

Statement on Academic Dishonesty:

Academic integrity is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of cheating, consult the course instructor.

Statement on Disabilities:

If you anticipate barriers related to the format or requirements of this course, if you have emergency medical information to share with me, or if you need to make arrangements in case the building must be evacuated, please let me know as soon as possible. If disability related accommodations are necessary (for example, a note taker, extended time on exams, captioning), please register with the [Disability Center](#), S5 Memorial Union, 882-4696, and then notify me of your eligibility for reasonable accommodations. For other MU resources for students with disabilities, click on "Disability Resources" on the MU homepage.

Statement on Intellectual Pluralism:

The University community welcomes intellectual diversity and respects student rights. Students who have questions concerning the quality of instruction in this class may address concerns to either the Departmental Chair or Divisional leader or Director of the Office of Students Rights and Responsibilities (<http://osrr.missouri.edu/>). All students will have the opportunity to submit an anonymous evaluation of the instructor at the end of the course.

Statement on Academic Inquiry, Course Discussion and Privacy

University of Missouri System Executive Order No. 38 lays out principles regarding the sanctity of classroom discussions at the university. The policy is described fully in section 200.015 of the Collected Rules and Regulations. In this class, students may not make audio or video recordings of course activity, except students permitted to record as an accommodation under section 240.040 of the Collected Rules. All other students who record and/or distribute audio or video recordings of class activity are subject to discipline in accordance with provisions of section 200.020 of the Collected Rules and Regulations of the University of Missouri pertaining to student conduct matters. Those students who are permitted to record are not permitted to redistribute audio or video recordings of statements or comments from the course to individuals who are not students in the course without the express permission of the faculty member and of any students who are recorded. Students found to have violated this policy are subject to discipline in accordance with provisions of section 200.020 of the Collected Rules and Regulations of the University of Missouri pertaining to student conduct matters.