

Course Syllabus

[Jump to Today](#)

Economics 4650 Online

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T, F 9-11am in OST 368

Introduction

This class has the potential for being one of the most rewarding classes you can take as an undergraduate. You should learn a lot about statistical modeling and learn to use R (along with Excel) to perform econometric analysis. This will be an applied class and should prepare you for working with data in a job environment or in graduate school. The class builds on Economics 3650 and we will review basic probability and statistics as we move through the material. No experience with computers is assumed.

Goals

- To become familiar with multivariate regression analysis
- To learn about the statistical foundations of ordinary least squares
- Learn how to use the statistical software package R
- Learn how to detect violations of classical model assumptions (CLRM)
- Learn how to deal with violations of the CLRM
- Learn how to collect, summarize, and analyze cross-sectional, time series, and mixed cross-sectional/time series data

Evaluation

- Set of assignments (15% grade)
- One online midterm examination (30% grade, open book)
- One online final examination with take home component (40% grade, open book)
- One applied paper (15% grade)
- Grades based on 90, 80, 65 % cuts (A-, B-, C-)

Text

The textbook is a custom edition based on 10 chapters from A.H. Studenmund, *Using Econometrics: A Practical Guide* (6/e). The ISBN 10 for the custom text is: 1-269-23602-4 and for the full text it is: 0-13-136773-0. You can use either.

Modules

The online course is based on a series of modules which track chapters from the custom text--full text chapters are noted in parenthetical remarks. The majority of work in this course is applied and these modules are designed to help you succeed in assignments, exams, and your project.

The first chapter is a review of statistics (chapter 17 in full text). You should be comfortable with this material from Economics 3650, or your basic probability and statistics course. We then progress through ordinary least squares, the classical regression model, and hypothesis testing (full text chapters 17, 2, 4, and 5.) The midterm exam is based on this material.

After the midterm, we move through model specification including the choice of explanatory variables and the choice of function form (chapters 6 and 7 in the full text). Diagnostics are covered in the next three modules: multicollinearity, serial correlation, and heteroskedasticity (chapters 8, 9, and 10 in the full text).

The final module (chapter 11 in the full text) will help you with your final project and paper.

Modules will open up over the course and include overviews, links to video, sample data, R code, and assignments.

Assignments and Exams

Assignments and exams will be available on Canvas for download, and must be uploaded before the due date noted online. The midterm and final will be timed and administered from the Uonline center (or an approved proctoring center). Both the midterm and final are open book tests. Please see <https://uonline.utah.edu/> (<https://uonline.utah.edu/>) for exam scheduling.

Each weekly assignment consists of two parts: 1) an applied task utilizing R, and 2) concept questions from the text. These assignments are designed to enhance your understanding of key material and ensure you are able to apply your understanding appropriately.

Software

The course uses R extensively. It is widely used in business, academia, and government. R is also free and operates the same across computing platforms. Because this course is very applied in nature, we will learn econometrics by doing econometrics and thus by learning to use R. It is available at <http://cran.us.r-project.org> (<http://cran.us.r-project.org>), where you can download it for Linux, OS X, and Windows. Within each of the class modules, .R files consisting of commands run in the text

guides (also included in the modules) are available for reference and use. You will discover thousands of useful ways to use R on the internet.

Discussions

Please participate in discussion groups in the course. Topics will open up to allow you to ask and answer questions, find data, and provide helpful comments to members of the course. **You can earn up to 2.5% extra credit** by actively participating in discussion groups. (The extra credit will not show up in the Canvas system, but I will add at the end of the term).

Disclaimers

Proper documentation of a disability is required in order to receive services or accommodations. Any student eligible for and requesting reasonable academic accommodations due to a disability must provide a letter of accommodation to their professor from the Disability Resource Center within the first two weeks of the beginning of classes. Please contact the Center on the main campus to follow through with the documentation process. They are located in the Student Services Center, or you may call for an appointment and further information regarding the Americans with Disabilities Act (ADA).

It is your responsibility to maintain your computer and related equipment in order to participate in the online portion of the course. Equipment failures will not be an acceptable excuse for late or absent assignments. Classroom equivalency: Discussion threads, e-mails, and chat rooms are all considered to be equivalent to classrooms, and student behavior within those environments shall conform to the Student Code.

Date	Day	Details	
Jan 19	Sun	Assignment 1 (https://utah.instructure.com/courses/269234/assignments/1358300)	due by 11:59pm
Jan 26	Sun	Assignment 2 (https://utah.instructure.com/courses/269234/assignments/1358301)	due by 11:59pm
Feb 2	Sun	Assignment 3 (https://utah.instructure.com/courses/269234/assignments/1358303)	due by 11:59pm
Feb 9	Sun	Assignment 4 (https://utah.instructure.com/courses/269234/assignments/1358304)	due by 11:59pm
Feb 21	Fri	Midterm (Online) (https://utah.instructure.com/courses/269234/assignments/1358298)	due by 11:59pm
Mar 9	Sun	Assignment 5 (https://utah.instructure.com/courses/269234/assignments/1358305)	due by 11:59pm
Mar 23	Sun	Assignment 6 (https://utah.instructure.com/courses/269234/assignments/1358306)	due by 11:59pm
Mar 30	Sun	Assignment 7 (https://utah.instructure.com/courses/269234/assignments/1358307)	due by 11:59pm
Apr 6	Sun	Assignment 8 (https://utah.instructure.com/courses/269234/assignments/1358308)	due by 11:59pm
Apr 13	Sun	Assignment 9 (https://utah.instructure.com/courses/269234/assignments/1358309)	due by 11:59pm
Apr 25	Fri	Final (Take Home Part) (https://utah.instructure.com/courses/269234/assignments/1358310)	due by 5pm
		Term Project (https://utah.instructure.com/courses/269234/assignments/1358302)	due by 5pm
		Final Exam (Online Part) (https://utah.instructure.com/courses/269234/assignments/1358299)	due by 7pm