Econ 308: Econometrics
Syllabus—Spring 2017
Class meets TTH 2-3:20 in Tyler #113

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Course Description

This course is an introduction to econometrics, a set of statistical tools commonly used in economics and related disciplines. We will cover theoretical concepts and real word applications on how to specify basic econometric models as well as how to estimate and interpret model parameters. Our main focus will be on how to apply these techniques to real world data and how to interpret results.

Prerequisites

The prerequisites to this course are Econ 101, Econ 102, and Econ 307, or equivalent. Students should be familiar with basic economic and statistical concepts. Specifically, students are expected to have some background on statistical methods and statistical inference as well as simple economic concepts such as supply and demand. Students who are not familiar with Stata are encouraged to start learning it early in the semester. See below for tutorial recommendations.

Textbook

A required textbook is *Introductory Econometrics, A Modern Approach* by Jeffrey Wooldridge, 6th edition. You may use older editions as long as you check homework question numbers and make sure to do the right homework questions. In addition to this book, if you are interested in more advanced econometric techniques and Stata, I recommend *Microeconometrics using Stata* by Cameron and Trivedi.

Computing/Software

Stata will be the main software for this class. Assignments will require this program. Stata 14 (the latest version of the software) is available on the Public Access Computer (PAC) labs around campus. You may also access Stata from your computer by ssh into stat.wm.edu using your WMuserid and password. Stata GradPlan offers discounts to WM students if you would like to purchase Stata. More information about Stata at WM can be found here: https://www.wm.edu/offices/it/services/software/licensedsoftware/mathstats/stata/index.php

If you are not familiar with Stata, some good online resources include

- Pfaff's *A Brief Introduction to Stata with 50+ Basic Commands* : https://www.researchgate.net/publication/240618050_A_BRIEF_INTRODUCTION_TO_STATA_WITH_50_BASIC_COMMANDS
- IDRE at UCLA offers detailed tutorial videos and webpages here (note that some commands on this website are outdated): http://www.ats.ucla.edu/stat/stata/sk/default.htm
- Carolina Population Center's version is quite well-organized: http://www.cpc.unc.edu/research/tools/data_analysis/statatutorial
- Princeton's brief tutorial: http://data.princeton.edu/stata/

Joanna, our teaching assistant, is also a great resource should you have questions about Stata. Data exercises are also designed to help you learn Stata.

Assignments and Exams

- **Homework**: Homework (roughly weekly), due dates, and solutions will be posted on Blackboard. The lowest homework score will be dropped.
- **Data exercises**: These exercises focus on how to work with real world data. They are guided Stata exercises that will help prepare you for the computing part of the class project. The exercises and due dates will be posted on Blackboard. Each submission should include a document that contains your answers, a do file, and a log file.
    - Notes for homework and data exercises: Students are encouraged to work in groups, but each student must submit her own homework with her own words, and computing/mathematical work. All works must be submitted in hard copies, except when stated otherwise. Late submission is subject to penalty. No work is accepted after the solution is posted or after 48 hours of the deadline, whichever is sooner.
- **Exams**: There are two exams which are non-cumulative except for concepts that are built on top of each other. The first exam will be in class on March 2 and the second exam will be according to the college's final exam schedule. Each exam is 1 hour and 15 minutes. In addition to these two exams, you may choose to take an optional 35-minute mini exam if you are not satisfied with your performance on the first exam. The mini exam will be cumulative, and the score on this exam will replace half of your first exam grade (the first exam and the mini exam will be worth 15% of the class grade each).
    - If you have to miss any exam, you have to obtain appropriate documentation **in advance** AND your exams will be reweighted. There will be no makeup exams.
    - If you are eligible for accommodations on exams, you must contact Student Accessibility Services as soon as possible. After you have a proper letter for the semester, it is also your responsibility to set up an exam appointment with them and notify me prior to all exams.
- **Short essays**: You will be asked to write short essays at the end of some unannounced classes. The essays will address your understanding and problems with materials

covered in those classes. These essays serve as an incentive for you to attend classes and as a feedback for me.

- **Group Project**: You will apply econometric methods from the class to a question that interests you. We will discuss the project in details as the class proceeds. Each group will have 2-3 members. A topic proposal is due on March 23, and the final paper is due on April 27.

Grades

Each individual assignment/exam will not be curved, but the class grade may be curved. The breakdown is as follows:

Homework	14%
Data exercises	14%
Short essays	2%
Project	10%
Exams	30% each

Topics

1. Introduction (Ch.1)
2. Simple linear regressions (Ch.2)
3. Multiple linear regressions
    a. Estimation and small sample properties (Ch.3)
    b. Inference (Ch.4)
    c. Large sample properties (Ch.5)
    d. Dummy variables and non-linear terms (Ch.6-7)
    e. Heteroskedasticity (Ch.8)
4. Limited dependent variable models (Ch.7, Ch.17)
5. Panel data (Ch.13-14)
6. Instrumental variables and simultaneous equations (if time permits) (Ch.15-16)
7. Time series data (if time permits) (Ch.10-12)

Important Dates

Date	
Jan 27	Add/drop deadline
Mar 2	First exam
Mar 17	Withdraw deadline
Mar 23	Project proposal deadline
Mar 30	Mini exam
Apr 27	Project deadline
May 8	Second/Final exam