

Econ 308: Econometrics
Syllabus—Spring 2018

Class meets TTH 2-3:20 in Tyler #113

Professor: Pasita Chaijaroen

Email: pchaijaroen@wm.edu

Office hours: T 12-1:30, TH 9:30-11, and by appointment

Office: Tyler #337

Mailbox: Tyler #312

TA: Joanna Tan, Daniel Tay

Email: jatan01@email.wm.edu,

dgtay@email.wm.edu

Office hours: TBA

Office hour location: TBA

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 world 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 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/>

We will learn Stata through self-guided data exercises. Our teaching assistants are also a great resource should you have questions about Stata.

Note: If you already know R, please feel free to use it.

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 homework and 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.
- **Quizzes:** There will be 3-5 quizzes throughout the semester. The lowest quiz score will be dropped.
 - There will be no make-up quizzes. If you have to miss a quiz, that quiz score will be dropped. If you have to miss more than one quiz, you have to obtain an appropriate documentation in advance AND your quizzes will be reweighted.
- **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 February 27 and the second exam will be according to the college's final exam schedule. Each exam is 1 hour and 15 minutes.
 - 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/quizzes, 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/quizzes.
- **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 22, and the final paper is due on April 26.
- **Plickers questions:** I ask questions where students answer using a Plickers card. Scores and attendance rates from these questions serve as extra credits when your grade is marginal.

- Students should keep the card for the whole semester. You should also take a note of your card number. If you lose the card, you are responsible for reprinting the card from https://www.plickers.com/PlickersCards_2up.pdf.

Grades

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

Homework	11%
Data exercises	11%
Quizzes	13%
Short essays	3%
Project	12%
Exams	25% 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 26	Add/drop deadline
Feb 27	First exam
Mar 16	Withdraw deadline
Mar 22	Project proposal deadline
Apr 26	Project deadline
May 3	Second/Final exam