University of California, San Diego
Department of Economics

ECON 120B-Econometrics, Fall 2015

TuTh 3:30-4:50, Center Hall 101

Instructor: Martin Santamaria
Office: 114 Economics
Office Hours: W 2:30-3:30 PM
Email: misantamaria@ucsd.edu
Class Web Page: https://ted.ucsd.edu/

Teaching Assistants

Yann Panassie yannp@ucsd.edu
Office Hours: Tuesday 5-6pm at SH233

Yanjun "Penny" Liao yal005@ucsd.edu
Office Hours: Monday 3-4pm at SH234

Xiaxin Wang xiw105@ucsd.edu
Office Hours: Thursday 1-2pm at ECON 125

Fanglin "Lynn" Sun f4sun@ucsd.edu
Office Hours: Friday 2-3pm at SH 206

Discussion Sections

Wednesday 7:00 – 7:50 pm, Solis Lecture Hall104
Wednesday 8:00 – 8:50 pm, Solis Lecture Hall 104

Course Description

The course aims to prepare students for practical empirical research in an academic or business setting. It introduces the three basic concepts in econometrics: quantifying uncertainty with confidence intervals; using regression to infer causal relationships; and using regression for prediction. It teaches competency in STATA. The course provides the standard tools necessary to perform and read empirical research.

Course Materials

Textbook

We will use *"Introduction to Econometrics* " by James H. Stock and Mark W. Watson, 2nd edition (2007), Pearson/Addison-Wesley.

Software

The software for this course is STATA (www.stata.com). Students are not required to buy the software. Students can use STATA in the computer labs on campus, such as ERC 117.
Students can also access STATA via the Virtual Lab. For more information, see http://acms.ucsd.edu/students/govirtual/index.html
Individual copies of Intercooled STATA (i.e., STATA /IC) can be leased for six months for $69 from. http://www.stata.com/order/new/edu/gradplans/student-pricing/

Do not use other software packages to complete course assignments.

Course Web Page
A course web page is available at https://ted.ucsd.edu/. It will include information relevant to the course, such as announcements, homework assignments, information on Stata lab and tutorials, practice problem sets and tests, solutions, syllabus, schedule and more. You should check this page regularly.

Lectures and Discussion Sections

It is important to come to every lecture. If you should miss a class, it is your responsibility to get the notes and any information provided in class. There are weekly discussion sections for this course. They are not mandatory. However, you should attend them since the TAs will go over practice problems, the kind of problems you may encounter on exams.

Stata Lab and Tutorial Sections

During the quarter the TAs will provide tutorial sections to facilitate the learning and use of STATA. The students will be able to follow and repeat the STATA commands using a computer in the lab. The commands learned in these tutorials are mainly the ones you will need to know for the homework assignments. The TAs will also provide support for the homework assignments you will have to complete using Stata.

The first week of class you will have to go to TED and chose a section for the STATA lab. You can chose only one section.

Stata Lab Teaching Assistants

Claudio Labanca clabanca@ucsd.edu

Love Lovstrom llofstro@ucsd.edu

Jake Seiya Bellamy jsbellam@ucsd.edu

Jubilee Cheung j4cheung@ucsd.edu

Homework

There will be three homework assignments in this course. Homework assignments are STATA exercises and will serve as a way to learn and practice that software. Complete all your homework assignments on your own. Remember, homework is assigned to assist you in learning the software and at the same time it is a good check of your understanding of the econometrics concepts taught in class.

Grading

15% Homework Assignments
35% Midterm Exam
50% Final Exam

Administrative Issues

1. If you have a documented disability, please come talk to me as soon as possible so that I can make suitable accommodations for you. If you believe that you have a disability and desire accommodation, please register with the Office for Students with Disabilities.
2. If you choose to use a laptop to take notes during the lecture, please sit in the back row. No other use of electronic devices is allowed during class.
3. Students found guilty of academic dishonesty will earn a failing grade for the course. In addition, the Council of Deans of Students Affairs will impose a disciplinary penalty.
4. There are no make up exams. If you need to miss a midterm for a verifiable legal/sports/medical reason, your midterm grade will be your grade on the final. Otherwise you will get a zero, no exceptions!!
5. If you arrive late to an exam, I will allow you to take the exam in the time that remains as long as no one has turned in his/her exam.

Outline of the Course

Part I: Introduction and Review (Chapters 1-3)

- Random Variable and its probability distribution. Two random variables: Joint, marginal and Conditional Distributions.
- Mean and Variance. Covariance and Correlation (Review)
- Correlation vs. causality; Policy analysis vs. prediction; Experimental vs. nonexperimental data.
- Hypothesis testing (Review).
- Exact/finite sample distribution vs. large sample distribution
- Introduction to STATA (input data, create log and do files, run regressions, graph, etc.)

Part II. Linear Regression with One Regressor (Chapters 4 and 5)

- Least Square principle
- Sampling distribution of OLS estimator (data generating process)
- Confidence interval and hypothesis testing: small sample approach and large sample approach

Part III. Linear Regression with Multiple Regressors (Chapters 6 and 7)

- Sampling distribution of the OLS estimator
- Confidence interval and hypothesis testing for a single coefficient
- Confidence set and joint hypothesis testing for more than one coefficient

Part IV. Topics in Multiple Regression (Chapters 8 and 9)

- Sources of OLS bias: measurement error, omitted variable, simultaneity and sample selection
- Modeling nonlinear functions
- Dummy variable regressions