University of California, San Diego
Department of Economics

Economics 120B - Econometrics
Spring 2017
MWF 11:00 am - 11:50 pm, Center Hall 214

Instructor:
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Teaching Assistants
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Teaching Assistants Office Hours
120B Problem Solving and Economics Tutoring Lab (PSET): Undergraduate and graduate TAs will be available to answer your questions in Econ 300 most evenings and on Sunday. In Econ 300 there is room for you to work on your homework and get your questions answered if you get stuck. We hope to offer PSET on Mondays, Tuesdays, Wednesdays and Thursdays from 5:30-8:30pm and Sunday from 2-6pm but please check the web page for actual hours: https://economics.ucsd.edu/undergraduate-program/courses/pset-lab.html

Discussion Sections
Tuesday 7:00 – 7:50 pm, Center Hall 105
Tuesday 8:00 – 8:50 pm, Center Hall 105

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
Required Textbook: "Introduction to Econometrics" by James H. Stock and Mark W. Watson, 2nd edition (2007), Pearson/Addison-Wesley. Chapters to be covered: 1-9.

Required 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 lab in Economics Building #100, and in other computer labs on campus, such as ERC 117. Do not use other software packages to complete course assignments. Students can also access STATA via the Virtual Lab. See http://acms.ucsd.edu/students/govirtual/index.html for more information. Individual copies of Intercooled STATA (i.e., STATA /IC) can be leased for six months for $75 from http://www.stata.com/order/new/edu/gradplans/student-pricing/. Small STATA is not adequate due to its inability to handle large datasets. Websites for help on using STATA will be provided on our web page on TED.

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. The first discussion section will take place April 11th.

Stata Lab and Tutorial Sections
We will have a Stata lab this quarter. Claudio Labanca is the head TA for the Stata lab. He manages a separate set of undergraduate TAs. During the quarter the Stata lab TAs will provide 3 tutorial sections to facilitate the learning and use of STATA. In those sessions, 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. During the quarter, the Stata lab TAs will also provide support for the homework assignments you will have to complete using Stata. Their office hours will be listed on TritonEd. Please use the Stata lab email, statalab.ucsd@gmail.com, for any questions related to Stata and the empirical problem sets.

Stata Lab Teaching Assistants
Claudio Labanca clabanca@ucsd.edu
Other TAs TBA

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
12% Homework Assignments
3% Stata Tutorial Attendance
35% Midterm Exam
50% Final Exam

The midterm examination is scheduled to **Wednesday, May 10th, from 7 to 8:20 pm, in Pepper Canyon Hall 106**. Most likely, there will be an **overflow** room for the midterm so check the class website closer to the date of the midterm for information about it.
The final exam will take place on **Friday, June 16th from 11:30 am to 2:30 pm** and will be cumulative. The dates for the exams are not negotiable. There are no make up exams. If you miss a midterm for a justifiable and verifiable medical/legal reason, your midterm grade will be your grade on the final. Otherwise you will receive a zero, no exceptions!!

The overall course grade, computed using the weights specified above, will be curved. In general, the class average corresponds to the lowest B-.

Outline of the Course

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

- Covariance and Correlation (Review)
- Correlation vs. causality; Policy analysis vs. prediction; Experimental vs. nonexperimental data
- 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
- Revisit Econ 120A. Use regression with only intercept to infer about the mean
- Revisit Econ 120A. Use dummy variable regression to compare means from different subpopulations.

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)

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