ECONOMETRICS 120B

Instructor: Martin Santamaria   Email: misantamaria@ucsd.edu
114 Economics   Office Hours: Mon 3-4 PM

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.

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

Grade

Your grade will be determined as follows:

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

Stata Tutorials and Homework

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.

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. The week before each assignment there will be a tutorial that you can attend where the TA's will show you how to do the homework.

First Tutorial: April 5 and 7   **Homework 1** due on April 16
Second Tutorial: April 19 and 21   **Homework 2** due on May 14
Third tutorial: May 17 and 19   **Homework 3** due on May 28

Midterm Exam

The Midterm exam will count for 35% of your final grade and will take place Tuesday April 26th from 8pm until 9:20pm in GH 242. All sections will take the midterm together.

Final Exam

The final exam will count for half of your grade.
The 11am section's final will be June 10th from 11:30am-2:30pm in CENTR 214.
The 1pm section's final exam will be on June 9th from 11:30am-2:30pm in PCYNH 109.
The 2pm section's exam will be on June 10th from 3pm-6pm in PCYNH 109.

Exam policies

You may use a calculator, a simple one is enough. All grading problems must rectified within a week of being returned. You will have to show full work and derivations to receive full credit. Since each section will be curved individually you are NOT allowed to take the final exam with another section.

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://tritoned.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, it is HIGHLY encouraged since the TAs will go over practice problems, the kind of problems you may encounter on exams.

The schedule of lectures and discussion section can be checked at
https://act.ucsd.edu/scheduleOfClasses/scheduleOfClassesStudentResult.htm?page=3
Discussion Sections

To avoid overcrowding in discussion sections I ask that if you plan to attend a discussion section other than the one you were assigned you must contact the TA teaching the section you plan to attend and get their approval.

Teaching Assistants

Baek, Yaeln   yibaek@ucsd.edu
Office Hours: Thursday 4pm Room TBA

Lippold, Kye   klippold@ucsd.edu
Office Hours: Wednesday 3pm in Econ 119

Chen, Qihui   qic005@ucsd.edu
Office Hours: Wednesday 4pm Room TBA

Liao, Yanjun   yal005@ucsd.edu
Office Hours: TBA

Yann Panassie   yannp@ucsd.edu
Office Hours: TBA

Lu Jiajun   jil465@ucsd.edu
Office Hours: Tuesday 4pm in SH205

Stata Lab Teaching Assistants

Claudio Labanca   clabanca@ucsd.edu

Huang Xun   xuh006@ucsd.edu

Jake Seiya Bellamy   jsbellam@ucsd.edu

Bian Di   dibian@ucsd.edu

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. You MUST take your final exam with the section you are registered in. No exceptions!!!
6. 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.