

# ECONOMETRICS 120A

The course introduces students to the science of statistics, building student skills in the analysis of data and introducing the formal methods used by statisticians to learn about the real world. As a building block students will be introduced to basic probability theory. We will gain an understanding of the collection of data and the problems and opportunities this affords. Students will be expected by the end of the course to understand the foundations of modern statistical analysis in preparation for 120B and 120C.

**Instructor** Andres Santos (x42407)

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Economics #210

Office Hours: Mondays 4:30pm-7:00pm

**Textbook** “Introductory Statistics for Business and Economics” by T.H. Wonnacott and R.J. Wonnacott, Fourth Edition or Fifth Edition, John Wiley and Sons: New York. There is also a custom version of the book made for UCSD students. This book is exactly the same as non-custom version, only less expensive.

## Course Outline

Part I (Chapters 1, 2, 11.1 and 11.2) Introduction to descriptive statistics (mean, median, mode, variance, frequencies, interquartile analysis, etc) and graphical analysis.

Part II (Chapters 4 and 5) Discrete and continuous Random Variables. Multiple Random Variables and their transformations. *Note:* Chapter 3 will not be covered. Please read this chapter even though it is not directly examined – the remaining chapters use some of its materials.

Part III (Chapters 6 and 7) Sampling and Point Estimation. Law of Large Numbers and Central Limit Theorem. Unbiasedness and Efficiency of estimators.

Part IV (Chapters 8 and 9) Hypothesis Testing and Confidence Intervals. Critical and p-values. Type I and Type II errors. Duality of Hypothesis Testing and Confidence Intervals.

Part V (Time Permitting) Selection Problems. Endogeneity and simultaneous equations.

**Grading** There will be four Problem Sets, two Midterm Examinations and a Final Exam.

Problem Sets: Even though they will not be collected or graded, it is VERY important to do them. The problem sets and additional practice problems are the best way to learn and be prepared for the exams.

Midterms: (50% of Final Grade) The first midterm will take place on October 22 and correspond to 20% of the final grade. The second midterm will be on November 15 and correspond to 30% of the final grade.

Final: (50% of Final Grade) Date and room to be announced.

Exam policies: You may use a calculator, a simple one is enough. All grading problems must be rectified within a week of being returned. There will be no regrading of exams written in pencil. You will always have to show full work and derivations to receive full credit.

## Administrative Issues

1. If you have a documented disability, please come to 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. Students found guilty of academic dishonesty will earn a failing grade for the course. In addition, the Council of Deans of Student Affairs will impose a disciplinary penalty.
3. If you need to miss a midterm for a verifiable medical/legal reason, the rest of the exams will be reweighed so they account for 100% of your grade. Failure to notify me promptly that you must miss a midterm will result in a zero grade for that midterm. Unexcused absences will also result in a zero.

**Webpage** It can be found on WebCT. All problem sets and answer keys will be posted here.

**Sections** TAs will review material covered in class and go over solutions to problem sets as well as practice problems. While attendance is not mandatory, you may find them highly beneficial, especially if you are confused with the material being covered in class.

**Software** All of the statistics in this course can be done using the Microsoft Excel spreadsheet program, which is available in the computer laboratory in Econ 100. You may use other econometric or statistical software. Data, problem sets and solutions will also be available from the class webpage.

## Teaching Assistants

Danielken Molina (dmolina@ucsd.edu)	Office Hours: Sequoyah #140. Wednesdays 4:00pm-5:00pm
David Kaplan (dkaplan@ucsd.edu)	Office Hours: Economics #124. Thursdays 12:00am-1:00pm
John McAdams (jmcadams@ucsd.edu)	Office Hours: Sequoyah #226. Fridays 1:00pm-2:00pm
Lucas Siga (lsiga@ucsd.edu)	Office Hours: Sequoyah #224. Mondays 3:00pm-4:00pm
Samuel Chen (sac008@ucsd.edu)	Office Hours: Sequoyah #139. Fridays 10:00am-11:00am
Sung Je Byun (s1byun@ucsd.edu)	Office Hours: Economics #112. Wednesdays 5:00pm-6:00pm
Xiahua Wei (xiwei@ucsd.edu)	Office Hours: Sequoyah #227. Tuesdays 3:00pm-4:00pm
Yi Zhan (yzhan@ucsd.edu)	Office Hours: Sequoyah #234. Thursdays 3:00pm-4:00pm