

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.

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Economics #210 Office Hours: M, W 9:00am-10:30am

TAs 5:00 PM Section

Oana Hirakawa Email: ootocian@ucsd.edu
Economics #127 Office Hours: T, 1:30pm-2:30pm
Meng Juanjuan Email: jumeng@ucsd.edu
Sequoyah #234 Office Hours: F, 4:00pm-5:00pm
William Leung Email: w2leung@ucsd.edu
Economics #123 Office Hours: TH, 9:30am-10:30am

TAs 6:30 PM Section

Yi Zhan Email: yzhan@ucsd.edu
Sequoyah #234 Office Hours: TH, 2:00pm-3:00pm
Michael Furchtgott Email: mfurchtg@ucsd.edu
Economics #122 Office Hours: F, 9:00am-10:00am
Lucas Siga Email: lsiga@ucsd.edu
Sequoyah #224 Office Hours: T, 5:00pm-6:00pm

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, variance, frequencies, 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.

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) Additional Issues in Economics. Selection Problems. Endogeneity and simultaneous equations.

Grading There will be a number of Problem Sets, two Midterm Examinations and a Final Exam.

Problem Sets: (10% of Final Grade) There will be a total of 4 problem sets. It is VERY important to do problems in this course, as this is the best preparation for both learning and the exams. Assignments are due in class the day specified. Please do not interrupt class or come to my office to hand in assignments (I do not grade them, they might get lost). Late assignments will not be accepted since the answer key is immediately posted on the web.

Midterms: (50% of Final Grade) There will be two midterms for the course. The first one will take place on Wednesday October 21 and correspond to 20% of the final grade. The second midterm will be on Monday November 16 and correspond to 30% of the final grade.

Final: (40% of Final Grade) During finals week.

Exam policies: You may use a calculator, a simple one is enough. All grading problems (exams and problem sets) must be rectified within a week of being returned. There will be no regrading of exams written in pencil. Makeup exams will only be given if absence is due to medical reasons (Doctors certificate required). In general, makeup exams will be at least as difficult as the regular exam, most likely harder.

TA Sections They start the week of October 5. The 5:00pm class has section on Mondays 8:00-8:50pm (PCYNH 109) and the 6:30pm class has section on Tuesday 8:00-8:50pm (PETER 108). TAs will review material and attendance is not required. You are welcome to attend whichever TA section is most convenient for you provided there is sufficient room in the classroom.

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

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, practice problems and solutions will also be available from the class webpage.