ECONOMETRICS 120A

Course Description: This course introduces students to the science of statistics, providing students with the foundational skills for using data to answer real world inquiries. As a building block, student will be introduced to fundamental probability and statistical theory. The class will also cover data collection and visualization techniques, with an emphasis on potential issues and challenges. By the end of the course, students are expected to master the basis of statistical analysis, in preparation for 120B and 120C which will delve into more advanced statistical methods.

*Lectures*: Monday and Wednesday from 5:00-6:20pm, Cognitive Science Building (CSB) 001

*Canvas webpage*: https://canvas.ucsd.edu/courses/53303

*Gradescope page*: https://www.gradescope.com/courses/693042

Textbook: To complement lecture notes, you can refer to Philip Stark (Berkeley statistician) free online book: https://www.stat.berkeley.edu/~stark/SticiGui/Text/preface.htm. You can also use the UCSD Econometrics Video Handbook (on canvas)

Course Outline:

Ch1 Introduction

       Part I : Probability

              Ch2 Descriptive Statistics

              Ch3 Probability Distributions.

              Ch4 Two Random Variables.

       Part II: Statistical inference

              Ch5 Sampling

              Ch6 Point Estimation.

              Ch 7 Hypothesis Testing

              Ch 8 Confidence Intervals

*Statistical software:* All 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 (Stata, R, Python, etc.). Data, Problem sets and solutions will also be available from the class webpage.

Grading: There will be 4 assignments, two midterm examinations (Monday 02/05 and Wednesday 02/28, in class) and a final exam on Monday March 18th (location TBD). The assignments have a total weight of 10% of the final grade, the midterms are each worth 25% and the final is worth 40% of your grade. It is important to do problems in this course, this is the best way of learning the material and the best preparation for the exams. Assignments are due on Gradescope. Late assignments will not be accepted as the answer key is immediately posted on the web.

*Exam policies:* You may use a calculator, a simple one is enough (phones, laptops etc are not allowed). All grading problems (exams and problem sets) must be rectified within a week. 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.

Office Hours: Fridays 11am to 12pm, on zoom (https://ucsd.zoom.us/j/97242559953) or by appointment

*TA contacts:*

- Graduate Teaching Assistant: Colin Wardius - cwardius@ucsd.edu
- Undergraduate Instructional Assistant: Krystal Wiu -  j2qiu@ucsd.edu

*TA sections:*

- Monday and Wednesday 7-7:50pm, PCYNH 121