

ECON 120A-Introduction to Statistics

Winter 2018

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114 Economics

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Office Hours: Mon 3pm-4pm

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 using a random sample from a population.

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.

Course Outline

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

Part II (3 weeks) (Chapters 3, 4 and 5) Basic Probability theory. Discrete and continuous Random Variables. Multiple Random Variables and their transformations.

Part III (3 weeks) (Chapters 6 and 7) Sampling and Point Estimation. Sampling distribution of an Estimator. Law of Large Numbers and Central Limit Theorem. Unbiasedness and Efficiency of estimators.

Part IV (3 weeks) (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

Honors 120A

If you earn an A/A- grade in my class this quarter, I recommend that you take the one-unit honors class 120AH in the fall. Honors classes are capped at 20 students and you will get to know the faculty member well (important for getting letters of recommendation). These classes typically have you give a short presentation and write a short paper. Presenting and writing in the major are two valuable skills that are challenging for us to offer in large classes. I recommend you take advantage of the 120AH opportunity.

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.

Your required textbook is provided by the UC San Diego Bookstore in a digital format through TritonEd and is free for the first two weeks of classes. After two weeks, your student account will be charged the special reduced price of \$32.00 unless you opt-out of the content. If you choose to opt-out despite the lower cost, you must do so by 1/20/2018.

On TRITONED under announcements there is a link to a video that explains how to access your e-book and how to opt out.

Lectures

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.

The schedule of lectures and discussion section can be checked at

<https://act.ucsd.edu/scheduleOfClasses/>

Discussion Sections

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.

Ideally, you want to try working on the practice problems **BEFORE** you attend a discussion session so you have a better idea of where you need help from the TA's. Also, feel free to email the TA's in advance with suggestions on what problems to cover during the discussion session.

Teaching Assistants

Baek, Yaein
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Han, Mengyan
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Practice Problems

The book has a lot of great problems to practice. In addition, I will assign extra practice problems every week. Even though they will not be collected or graded, it is VERY important to do them.

The book's problem and additional practice problems are the best way to learn and be prepared for the exams. The solutions to the problem sets will be covered by the T.A.s during the discussion sessions and solutions will be posted after the TA's have covered them.

Problem Solving and Economics Tutoring Center (PSET)

Learn to solve problems on you own!

The Economics Department is making a problem solving and tutoring center available to all students in Econometrics (120ABC) on M-TH 6pm-9pm and on Sundays from 2-6pm in Econ 300.

PSET webpage can be found at

<https://economics.ucsd.edu/undergraduate-program/courses/pset-lab.html>

The ability to apply the concepts from class to solve problems is the most important skill we want you master in our core classes. PSET is designed to help you learn to tackle problems successfully by having grad and undergrad TAs there to help you think through a problem—right when you get stuck.

I encourage you to take advantage of these great resource, especially if you feel that your background for this class is not particularly strong. Let the tutors help you as you work on the practice problems.

If you struggle to tackle your homework, we believe that PSET will be an efficient and effective way for you to learn how to think like an economist.

Exams and Grade

There will be two Midterm Examinations and a Final Exam.

Your grade will be determined as follows:

25% Midterm 1 (January 31st)
25% Midterm 2 (February 28th)
50% Final Exam (March 19th)

Midterm Exams (50% of Final Grade):

The first midterm will take place on Wednesday January 31st during the usual lecture time and correspond to 25% of the final grade.

The second midterm will be on Wednesday February 28th during the usual lecture time and correspond to 25% of the final grade.

Final Exam (50% of Final Grade)

The final is on 3/19/2018 from 3pm am until 6pm.

Room for the final exam will be announced by the registrar and can be checked at:

<https://act.ucsd.edu/scheduleOfClasses/>

Final Grade

The final grade for this exam class will be curved following the economics department guidelines. This means you will be evaluated by your performance in the class relative to the performance of other students. If you have any questions about the curve, please come and see me.

Exam policies

You must show full work and derivations to receive full credit.

Calculator

You must bring your own calculator for the exam. You may use a simple calculator, graphing calculators are NOT allowed during exams.

Re grade request

If you would like to request a regrade of your exam, you will have to submit a written regrade form (this form will be available on TRITONED) explaining which question you would like to be regraded and why you think there is a mistake in the grading.

All grading problems must be rectified within a week of the exam being returned.

Exam exceptions

There are NO makeup exams. If you need to miss a midterm for a verifiable medical/legal/sports 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.

If you can't make it to the assigned time for the final, please consider signing out of this class.

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. 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. 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.
5. UCSD has automated wait-lists. If you have any questions regarding adding the class, please contact the undergraduate advisors in Sequoyah Hall 245. The economics department does not allow late additions (additions after the second week) to any class.

