
Economics 102A**Stanford University****Autumn 2004-2005**

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Please read this document carefully. It describes some important course policies and deadlines, and I will assume that you are familiar with them.

Econ 102A: Introduction to Statistical Methods for Social Scientists**Course overview and objectives**

Economics is an inexact science: people, firms, and markets behave in ways that are only imperfectly predictable. In this course, we will explore some of the statistical methods economists use for analyzing these imperfectly-predictable agents and phenomena.

Econ 102A comprises the first half of the “statistics and econometrics” portion of the Stanford Economics Department’s undergraduate core curriculum. After completing Econ 102A, most of you will wish to proceed to Econ 102B in order to refine and expand your understanding of the statistical and econometric methods used in economic research. Econ 102A and 102B are organized in parallel with the intermediate microeconomic and macroeconomic theory sequence (Econ 50-51-52), so you may take Econ 102A even if you have not yet completed Econ 50. For those of you who do not plan to major in economics, Econ 102A may serve as a stand-alone introduction to statistical techniques that are widely used throughout the social sciences.

Prerequisite: Math 41 or equivalent; Econ 1 strongly recommended

Unlike many introductory statistics courses, Econ 102A makes use of differential and integral calculus. Some familiarity with multivariate calculus (Math 51, Econ 50M, or the equivalent) will be useful, although we will not use multivariate calculus nearly as frequently as, say, in Econ 50. Some of our homework assignments will require the use of Microsoft Excel or a similar spreadsheet program.

Course organization

Lectures will be held in Cubberley Auditorium, Mondays and Wednesdays from 1:15 to 3:05pm. At the end of each week, you will attend a 50-minute section with your teaching assistant. There may also be some additional meetings for review before the midterm and final exams. It is very important that you attend lectures, since we will be covering quite a lot of material that does not appear in the textbooks. I also encourage you to attend office hours (both mine and those held by the TAs). I am in my office every day, and will be happy to schedule appointments outside my posted office hours.

Teaching assistants and section meetings

You will be assigned a teaching assistant and a specific TA section meeting time by Thursday, September 30; sections will meet for the first time that week. In section meetings, TAs will collect and return homeworks, review each week's material, and present examples not covered in lectures. You will be responsible for all material covered in sections.

E-mail and course website; section registration

We will make extensive use of our class web site throughout the quarter. As soon as possible, and certainly by Wednesday, September 29, please indicate your preference for a TA section on the Econ 102A course website at <http://coursework.stanford.edu>. Also remember to add Econ 102A to your study list in Axxess; if you do so immediately, it will simplify your coursework registration. All homework assignments, answer keys, handouts, and supplementary readings will be available on coursework. Our coursework website will also provide information about office hour times and locations; the TAs and I will use coursework to make course-related e-mail announcements. Make sure that you check coursework frequently!

Homeworks

Homeworks will be assigned approximately every week, and will be due during your TA section meetings unless otherwise announced. If you are unable to hand in an assignment during section, due to travel plans or other conflicts, you can submit your homework early or via fax. Make sure, though, that you make these arrangements with me or with your TA *beforehand*. No late homeworks will be

accepted. I will drop your lowest homework score in calculating your final grade, so you will not be penalized if illness, travel, emergency, stress, or laziness should cause you to skip one assignment.

Midterm and final exam

There will be one midterm exam in class on Monday, November 1; the final exam will be on Wednesday, December 8, from 8:30 to 11:30 am. There will be no make-up exams and no early sittings for exams. Varsity athletes or others traveling on official university business may be able to take exams by fax: please contact me well in advance in order to make arrangements. If you are unable to take the final exam at the appointed time, but have completed all other requirements for the course, I can give you a grade of “Incomplete” to be resolved by taking the Econ 102A final exam at the end of a future quarter.

Grading

Your final numerical average will be calculated based on your performance in homeworks (25%), the midterm (30%), and the final exam (45%). Numerical scores will not be converted to letter grades until the very end of the quarter. Specific letter grades will never be assigned to individual homework assignments or exams. If, due to a serious illness or family death, you are unable to take the midterm exam, your final grade will be based solely on your homeworks and final exam. You must contact me immediately with appropriate documentation, though, in order to receive this accommodation.

Students with documented disabilities

Students who have a physical or mental impairment that may necessitate an academic accommodation or the use of auxiliary aids and services in a class must initiate a request with the Student Disability Resource Center (DRC). The DRC will evaluate the request along with the required documentation, recommend appropriate accommodations, and prepare a verification letter dated in the current academic term in which the request is being made. Please contact the DRC as soon as possible; timely notice is needed to arrange for appropriate accommodations. The DRC is located at 563 Salvatierra Walk (phone 723-1066 Voice; 725-1067 TTY; <http://www.stanford.edu/group/DRC/>).

Required text

Moore, McCabe, Duckworth, and Sclove, *The Practice of Business Statistics*, Freeman, 2003.

Lecture notes and class attendance

The notes you take during class lectures will serve as your single best resource in preparing for homework assignments and exams and in identifying which topics are most important. The material covered in lectures will roughly follow the topics presented in the Moore, McCabe, Duckworth, and Sclove (MMDS) text. We will often explore topics in greater mathematical detail than MMDS, accordingly, we may provide you with some additional resources based on other texts during the quarter. I will assign some problems directly from these texts in our weekly homework assignments; I strongly encourage you work through many additional problems (particularly those for which answers appear in the back of the book!) as part of your own study.

Copies of my lecture notes may be posted in pdf format as “Course Materials” in the coursework website. These copies will be posted at my discretion, and will not include all information covered in lectures; for most students, it would be unwise to rely on them as a substitute for lecture attendance.

Economics Department Common Course Policies

All courses taught in the Stanford Department of Economics are governed by a common set of course management rules. A document explaining these rules is included on our coursework website, and on the Economics Department website at <http://www-econ.stanford.edu/academics/courses.html>. Please be sure to read this document in its entirety, and let me know if you have any questions.

Course lecture & readings schedule (subject to revision)

Date	Subject	Textbook Readings
M 9/27	Course overview; introduction to single-variable descriptive statistics; graphs and histograms; measures of central tendency and variability	Chapter 1
W 9/29	Single-variable distribution functions; introduction to the normal distribution	Chapter 1
M 10/4	Two-variable statistics; scatterplots; correlation and covariance; introduction to least-squares regression	Chapter 2
W 10/6	Regression and correlation; joint, marginal, and conditional distribution functions	Chapter 2
M 10/11	Sampling; experimental design	Chapter 3
W 10/13	Probability; random variables; sampling distributions	Chapter 4
M 10/18	Probability; random variables; sampling distributions	Chapter 4
W 10/20	Probability theory; independence; some important distributions.	Chapter 5
M 10/25	Probability theory, continued; Conditional probability; Bayes's rule	Chapter 5
W 10/27	Further applications of probability theory	Chapter 5
M 11/1	<i>Midterm Exam (in class)</i>	
W 11/3	Confidence intervals	Chapter 6
M 11/8	Significance tests	Chapter 6
W 11/10	Inference on means; comparing means	Chapter 7
M 11/15	Inference on variance; F tests	Chapter 7
W 11/17	Inference on proportions	Chapter 8
M 11/22	Two-way tables	Chapter 9
W 11/24	<i>No class ... the day before Thanksgiving</i>	
M 11/29	Regression inference	Chapter 10
W 12/1	Review and summary	
W 12/8	<i>Final Exam 8:30-11:30am</i>	