

Econ 171: Decisions Under Uncertainty

Spring 2007

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Department of Economics, UCSD

Course Objectives

Econ 171 is an introduction to decision theory using a Bayesian statistical framework. The objective of this course is to provide you training in making careful and informed decisions under uncertainty. While the techniques covered are in common use in corporate decision-making, they can be helpful as well in household decision-making. Particular topics covered in the class include decision trees, payoff tables, alternative decision criteria, expected utility theory, and risk aversion.

This course requires a consistent ten-week commitment of time and effort. There are three basic pillars of success in this course:

1. Read and understand the assigned materials from the text and supplemental readings.
2. Work and submit on time the required problem sets, and develop an understanding of how to solve similar problems in the process.
3. Attend lectures and understand the material covered in lecture.

Anyone who fulfills the above obligations in a timely manner can be reasonably assured of success in the course. Other strategies, such as substituting visits with a tutor for the pillars of success outlined above, is likely to result in a poor course outcome.

Regular Meeting Times

Course lectures are scheduled for Tuesday / Thursday from 8:00 am – 9:20 am in Solis 107. Section is scheduled from 12:00 pm – 12:50 pm in Peterson 110. There will be no section meeting in the first week of the course.

Prerequisites

The mathematical prerequisites for Economics 171 are Economics 120A and Math 20F. You should not enroll in the course unless you have satisfied these prerequisites.

Web Page

The course web page may be accessed at <http://webct.ucsd.edu>. Students are strongly advised to become familiar with accessing the web page early on, as this will be a repository for the syllabus, course lecture notes, problem sets and their solutions, and course announcements. Please access the course web site regularly in order to keep abreast of any changes. If you have any question regarding grading policy, exam format or any other issues, consult the course web page first. Chances are that you can find the answer there. If you cannot, please contact

one of the TAs or me by e-mail.

Supplemental Readings

A set of supplemental readings will be made available through electronic reserves at the UCSD library. These will be used to complement and update the material in the text. The supplemental readings may be accessed at the following URL:

<http://reserves.ucsd.edu/eres/courseindex.aspx?error=&page=dept>

Textbooks

Required:

The required text for this class is *Making Decisions*, D.V. Lindley – Second Edition (Wiley 2001). I have asked that copies of the book be placed on reserve at SSH.

Problem Sets

There will be four assignments, each of which will carry a weight of 5% towards the final grade. The assignments will be posted on the course web site every Tuesday, and will be due at the start of lecture the following Tuesday. Group study and free discussion are encouraged, but you should write up and submit your own answers. Do not e-mail assignments. Late homework will generally not be accepted. If you have a valid excuse, please e-mail me. I will return your graded problem sets to class. If you are unable to pick up your problem set in class, you may pick it up at my office.

If you have any question on the problem sets, please ask the TA or me during our office hours. I would prefer to talk to you in person. If you do not have time to meet, you may also send your questions by e-mail, but note that e-mail is not an ideal medium for clearing up questions of understanding.

Examinations

There will be a midterm exam carrying a weight of 30%, and a final exam carrying a 50% weight. Both exams will be closed book. Bring a calculator which is capable of computing log and exponential functions. (Note: You should be able to find a suitable calculator for less than \$20 if you do not already own one.) You do not need to bring a blue book, but you may wish to bring your own paper as a supplement to the writing space provided on the exam.

There will be no make-up exams. If for some reason you miss the midterm exam, then the final exam will carry its weight. An exception will be made for medical emergencies, in which case a doctor's certificate is required. Please hand in the doctor's certificate in class or stop by my office.

The midterm exam will be given during regular class time (8:00 am - 9:20 am) on Tuesday May 8, 2007, and the final is on Monday June 11, 2007 (8:00 am – 11:00 am). The final will

be cumulative, but there will be relatively more emphasis placed on the material covered in the second half of the course.

Grading

All grading problems must be rectified within a week from the time a graded exam or assignment is returned.

- Re-grading of exams will not be allowed if they were written in pencil. If you write in pencil, however, you can look over the exam at my office, and resolve grading disputes before leaving the office. Please address exam re-grading requests to me.
- If you have any questions or complaints regarding the grading of problem sets, please resolve them with the TA who graded the assignment.

Course grades will be computed as follows. First, if the mean score of either exam is below 75 percent, points will be added to all scores to bring the mean for that exam up to 75. Second, a weighted average of numerical scores will be obtained. Suppose your scores on the problem sets are 90, 90, 90 and 90. Further, assume your midterm and final exam scores are 80 and 85 (after possible adjustment), respectively. Then the final course average is computed as the weighted average rounded to the nearest integer (with 0.5 rounded up): $90*5\%+90*5\%+90*5\%+90*5\%+80*30\%+85*50\% = 84.5 \Rightarrow 85$. The weights on the problem sets, midterm and final exam cannot be changed. Finally, letter grades will be assigned using the following scale:

≥ 95 A+	[80,85) B+	[65, 70) C+	[50 55) D
[90,95) A	[75,80) B	[60, 65) C	< 50 F
[85,90) A-	[70,75) B-	[55, 60) C-	

Note that the scale is exact. So if your score is 84.5, you will get an A- (after rounding up to 85). Grades very close to the boundary might be rounded up if the student is an active participant in class.

I will not assign letter grades on the midterm. However, you can refer to the above table to see where you stand.

E-mail and Office Hours

Instructor: Stephen Stohs sstohs@ucsd.edu

Office Hours: Immediately following class meeting time, otherwise by appointment

TAs: Hiroaki Kaido (hkaido@ucsd.edu) / Philip Neary (pneary@ucsd.edu) / Elisa Hovander (ehovande@ucsd.edu)

TA office hours will be arranged in class.

Course Outline

<u>Basic Topic</u>	<u>Text Readings</u>
Decisions and uncertain events	Ch 1
A numerical measure for uncertainty	Ch 2
The laws of probability	Ch 3
A numerical measure for consequences	Ch 4
The utility of money	Ch 5
Midterm Exam	May 8, 2007
Bayes' Theorem	Ch 6
Value of information	Ch 7
Decision trees	Ch 8
Miscellaneous Topics	Supplemental readings (TBA)
Final Exam	June 11, 2007, 8am – 11am