

ECON 103-1: INTRODUCTION TO PROBABILITY AND STATISTICAL METHODS
Spring Semester, 2008

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Office hours: Mon. 12:30-1:30pm, Tues., 11:15-12:15, Thurs. 1-2pm and by appointment

COURSE DESCRIPTION:

The aim of this course is to introduce students to statistical methods and their applications in social science and public policy. Knowledge of basic probability theory is necessary to accomplish this goal and its instruction is an integral part of this course. The course will be divided into four main sections. Initially we will cover descriptive statistics, including statistical summary measures and the graphical display of data. The second section covers the probability theory that forms the basis of statistical inference. The third section covers sampling, estimation, and inference. The final section will provide a very brief introduction to regression analysis.

COURSE LECTURES:

Lectures will be given on Mondays and Thursdays from 8:30am to 9:40am in PNW116. We also will have class meetings on ALT 1 Wednesdays (see your course schedule) from 8:30 to 9:40am. You should assume that there is class on every ALT 1 Wednesday unless otherwise announced.

TUESDAY LABS:

In addition to lectures, you will be required to register and attend additional meetings in a "laboratory" setting. You should be registered for either Lab A, which meets Tuesdays 8:30-9:40am in PNE130 (**NOTE CHANGE**), or Lab B, which meets Tuesdays 9:50am-11:00am in PNW121. The lab meetings will reinforce the material introduced in lecture, give you "hands-on" experience with solving the kinds of problems you will see on problem sets and exams, and show you how to use Excel for numerous quantitative applications.

TEACHING ASSISTANTS:

The course teaching assistants, Amelia Cutler (Lab A) and Yo-Jud Cheng (Lab B), will be available for assistance with problem sets at lab classes on Tuesdays. The TAs will also have drop-in hours in the Econ Help Room (PNW116) on Wednesday and Thursday from 7-9pm. The TAs are not responsible for answering any questions outside of these Tuesday course meetings or Econ Help Room hours, so please do not send them email.

COURSE CONFERENCE:

You will automatically be subscribed to the course conference. Please get in the habit of checking it when you check your email. I will use the conference to make announcements and post assignments and handouts, and you can use it to ask questions of me or of your fellow students. I will occasionally provide explanations of questions from class via the course conference if time does not permit me to answer them in class. You are responsible for anything on the course conference.

COURSE REQUIREMENTS:

1. **PROBLEM SETS.** (15% of grade) Problem sets are an integral part of the course. The only way to learn statistics is by practicing it. All problem sets are due **by 1pm** on the due date unless otherwise announced. Turn in problem sets to my faculty mailbox in the economics department. **DO NOT** turn in problem sets to the Sneeringer "pick-up" box (this is next to a sign marked "NOT FACULTY MAILBOXES"). If you turn in the problem set to the wrong location, it will not be accepted. Since written solutions will be distributed on the due date, **NO LATE PROBLEM SETS WILL BE ACCEPTED.** Computer difficulties should be expected and factored in the time allotted to complete the exercises. There will be 8 problem sets. You can work with each other but you must turn in individual sets of answers that are in your own words. If you turn in a problem set that is in the words of another person, this is plagiarism. See "Academic Honesty Policy" below.
2. **TWO MIDTERMS.** (25% of grade each) The two midterm exams will be closed book, in-class exams on Feb. 26th and April 15th. Any conflicts with these exam dates may be resolved by taking the exam earlier than scheduled, not later than scheduled. The midterms will cover the material presented in lecture, labs, and the assigned readings.

3. **FINAL EXAM.** (35% of grade) The final exam is closed book and is self-scheduled during the final exam period. The final exam will be comprehensive and will cover all material presented in lecture, labs, and the assigned readings.

REQUIRED TEXT:

Anderson, David R., Dennis J. Sweeney, and Thomas A. Williams. 2006. *Essentials of Statistics for Business and Economics* (4th edition). Thomson-Southwestern.

On the course schedule, this text is referred to as ASW. Students often find it beneficial to skim the appropriate chapters before coming to class and then to read the chapters more carefully after being introduced to the material in lecture. In lecture, I am not able to cover everything in as much detail as the text. You should therefore be sure that you understand the material in it, and should not think that only material covered in lecture is relevant.

CONTACTING THE PROFESSOR VIA EMAIL:

I will make every effort to respond to emails quickly; however, allow 24 hours for a response to an email. I cannot guarantee that if you email me the night before something is due, that I will be able to respond in time for it to make a difference in terms of your assignment. Do not expect responses to emails after 5pm on the day before an exam. Additionally, I encourage you to use the class conference to ask questions, as other students may have similar concerns. If you have a question about class but would like for it to appear on the course conference anonymously, please email me it to me directly. Please state that you would like it posted anonymously to the course conference.

RESPONSIBILITIES – MINE AND YOURS

My responsibilities are to come to class prepared; respond to and encourage questions and other appropriate class participation insofar as class size permits; oversee grading of problem sets and exams; return graded assignments within two weeks; be available during office hours and for scheduled appointments; and stimulate enthusiasm for statistics and for learning.

Your responsibilities are to attend and participate in lecture; attend and participate in labs; complete the assigned readings in a timely manner (allowing time to re-read difficult material); complete all assignments on time; take two in-class midterms and a comprehensive final; come to class on time so as not to disrupt other students' learning; and to turn off your cell phone COMPLETELY before class and lab.

ACADEMIC HONESTY POLICY

In fairness to students who put in an honest effort, cheaters will be harshly treated. Any evidence of cheating will result in a score of zero (0) on that assignment or examination. Cheating includes but is not limited to plagiarism, bringing unauthorized material into an exam, copying off another person's exam, and allowing someone to copy off of your exam. Incidences of cheating will be reported to the General Judiciary Committee.

SPECIAL ACCOMODATIONS

If you require special accommodations due to learning or other disability, you must contact Jim Wice, the Director of Disability Services. If you take an exam at a different time or a different location based on disability, it is your responsibility to contact me to schedule it.

ECON HELP ROOM AND INDIVIDUAL TUTORS

I encourage you to take advantage of the Econ Help Room and the PLTC. The Econ Help Room is located in PNW116 and is open from 7-9pm on Sundays through Thursdays. While the TAs for this section of Econ103 will only be in the help room on Wednesdays and Thursdays, there are TAs from other sections of Econ103 and for other economics classes who may be able to help you on the other days.

Students who are interested in having an individual tutor should contact the PLTC. The PLTC (Pforzheimer Learning and Teaching Center) is on the 3rd floor of Clapp Library. If you would like an individual tutor for the class, you need to fill out the "Tutor Request Form" on the PLTC website (<http://www.wellesley.edu/PLTC/>). The PLTC will send me a note saying that you have requested a tutor. I do not need to approve a tutor. There is no cost to you for an individual tutor. If you feel you are struggling in the class, I strongly recommend attending the Econ Help Room and getting an individual tutor.

COURSE SCHEDULE:

Lecture*	Date	Topic	Required Reading
1	Mon., Jan. 28	Introduction to the class	
	Tues., Jan. 29	LAB	
2	Wed., Jan. 30	ALT -- Data and its graphical description	ASW: Chapters 1 and 2
2	Thurs., Jan. 31	Data and its graphical description	
3	Mon., Feb. 4	Descriptive statistics for one variable	ASW: Chapter 3
	Tues., Feb. 5	LAB	
3	Thurs., Feb. 7	Descriptive statistics for one variable	
	Fri., Feb. 8	Problem Set #1 due	
4	Mon., Feb. 11	Descriptive statistics for multiple variables	
	Tues., Feb. 12	LAB	
5	Wed. Feb. 13	ALT -- Basic probability theory	ASW: Chapter 4
5	Thurs., Feb. 14	Basic probability theory	
	Mon., Feb. 18	NO CLASS, President's Day	
	Tues., Feb. 19	LAB	
5	Thurs., Feb. 21	Basic probability theory	
	Fri., Feb. 22	Problem Set #2 due	
	Mon., Feb. 25	REVIEW SESSION	
	Tues., Feb. 26	LAB -- MIDTERM EXAM #1	
	Wed., Feb. 27	ALT -- GO OVER MIDTERM #1	
6	Thurs., Feb. 28	Random variables, probability distributions, and expectations	ASW: Chapter 5
7	Mon., Mar. 3	Discrete probability distributions	
	Tues., Mar. 4	LAB	
7	Thurs., Mar. 6	Discrete probability distributions	
	Fri., Mar. 7	Problem Set #3 due	
8	Mon., Mar. 10	Continuous probability distributions	ASW: Chapter 6
	Tues., Mar. 11	LAB	
	Wed., Mar. 12	ALT	
8	Thurs., Mar. 13	Continuous probability distributions	

9	Mon., Mar. 17	Sampling	ASW: Chapter 7
	Tues., Mar. 18	LAB	
	Wed., Mar. 19	Problem Set #4 due	
9	Thurs., Mar. 20	Sampling	
10	Mon., Mar. 31	Confidence intervals	ASW: Chapter 8
	Tues., Apr. 1	LAB	
	Wed., Apr. 2	ALT	
10	Thurs., Apr. 3	Confidence intervals	
	Fri., Apr. 4	Problem Set #5 due	
11	Mon., Apr. 7	Hypothesis testing	ASW: Chapter 9
	Tues., Apr. 8	LAB	
11	Thurs., Apr. 10	Hypothesis testing	
	Fri., Apr. 11	Problem Set #6 due	
	Mon., Apr. 14	REVIEW SESSION	
	Tues., Apr. 15	LAB -- MIDTERM EXAM #2	
	Wed., Apr. 16	ALT -- Go over Midterm #2	
12	Thurs., Apr. 17	Testing the difference between two means	ASW: Chapter 10
12	Tues., Apr. 22	Regular class ("Monday schedule") Testing the difference between two means	
13	Thurs., Apr. 24	Cross-tabulations and contingency tables	ASW: Chapter 11
	Fri., Apr. 25	Problem Set #7 due	
13	Mon., Apr. 28	Cross-tabulations and contingency tables	
	Tues., Apr. 29	LAB	
14	Thurs., May 1	Regression analysis	ASW: Chapter 12.1 and 12.2
14	Mon., May 5	Regression analysis	
	Tues., May 6	LAB	
	Thurs., May 8	Problem Set #8 due	

*Number corresponds to title of lecture.