

SYLLABUS

Economics 103/Sociology 190: Introduction to Probability and Statistical Methods

Fall 2005

Class Meetings: Monday/Thursday 9:50-11:00 plus ALT2 Wednesday and lab

Professor Phil Levine
Lecturer
Economics Department
PNE 419
x-2162
office hours: Monday 1:30 – 3:00
Thursday 11:00 – 12:30

Professor Joseph Swingle
Lab Instructor
Sociology Department
PNE 332
x-3841
office hours: Monday 11:00 – 1:00
Wednesday 3:30 – 5:00

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 of regression analysis.

COURSE REQUIREMENTS

- 1) problem sets (15% of grade)
- 2) 2 midterm exams (25% of grade each)
- 3) final exam (35% of grade)

Problem sets are an integral part of the course. The only way to learn statistics is by practicing it. 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. The two midterm exams will be closed book and taken in class on 10/6 and 11/17. **ANY CONFLICTS WITH THESE EXAM DATES** may be resolved by taking the exam earlier than scheduled, not later than scheduled.

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 studying probability and statistics 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.

Class Meetings:

Lectures will be given every Monday and Thursday by Professor Levine. We also will have class meetings on some ALT 2 Wednesdays (see course schedule). These additional meetings will be reserved for review sessions and to go over exams. In addition, you will be required to register and attend additional meetings in a “laboratory” setting, which will be led by Professor Swingle. These 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.

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Course Schedule

Course Schedule

Lecture	Date	Topics	Required Reading
1	9/8	Introduction to the Class	
2	9/12	All about Data	ASW: Chapters 1 and 2
ALT	9/14	NO CLASS MEETING	
3	9/15	Descriptive Statistics for One Variable	ASW: Chapter 3
4	9/19	Descriptive Statistics for Multiple Variables	
5	9/22	Basic Probability Theory	ASW: Chapter 4
6	9/26	Basic Probability Theory	
ALT	9/28	NO CLASS MEETING	
7	9/29	Discrete Probability Distributions	ASW: Chapter 5
8	10/3	Discrete Probability Distributions	
9	10/6	MIDTERM EXAM #1	
	10/10	NO CLASS – FALL BREAK!	
10	10/13	Discrete Probability Distributions	
11	10/17	Continuous Probability Distributions	ASW: Chapter 6
ALT	10/19	GO OVER MIDTERM #1	
12	10/20	Continuous Probability Distributions	
13	10/24		
14	10/27	Analysis of Variance	
15	10/31	Mathematics of Expectations	
ALT	11/2	NO CLASS MEETING	
16	11/3	Sampling	ASW: Chapter 7
17	11/7	Sampling	
18	11/10	Confidence Intervals	
19	11/14	Confidence Intervals	ASW: Chapter 8
ALT	11/16	REVIEW SESSION	
20	11/17	MIDTERM EXAM #2	
21	11/21		ASW: Chapter 9
	11/24	NO CLASS – THANKSGIVING BREAK!	

22	11/28	Testing the Difference between Two Means	ASW: Chapter 10
23	12/1	Cross-Tabulations and Contingency Tables	ASW: Chapter 11
24	12/5	Bivariate Distributions and Measures of Association	
ALT	12/7	GO OVER MIDTERM #2	
25	12/8	Regression Analysis	ASW: Chapter 12.1 and 12.2
26	12/12	Regression Analysis	ASW: Chapter 13.1 and 13.2