Objectives and Prerequisites

The course focuses on elementary probability and inferential statistical techniques. The course begins with a survey of basic descriptive statistics and data sources and then covers elementary probability theory, sampling, estimation, hypothesis testing, correlation, and regression. The course focuses on practical issues involved in the substantive interpretation of economic data using the techniques of statistical inference. For this reason, empirical case studies that apply the techniques to real-life data are stressed and discussed throughout the course, and students are required to perform several statistical analyses of their own.

Prerequisites: Economics 1 and 2, Mathematics 104 and either 114 or 115. Economics 103 cannot be taken by any student who has already completed statistics at the level of Stat 101. Students who have one semester of statistics (either Stat 101 or Stat 430) must take the second course in statistics or Economics 220 to satisfy the statistics requirement of the major. (Students with a one semester AP Statistics credit for Stat 101 or higher can drop the credit in order to take Economics 103 via a release form available from the department.)

Note: Econ 103 satisfies the University's Quantitative Data Analysis requirement.

Lecture and Office Hours

Lecture Hours:
Monday: 11 – 12, ANNS 111
Wednesday: 11- 12, ANNS 111
Friday: 11 - 12, ANNS 111

Office Hours (McNeil 343):
Monday: 1– 2:30
Wednesday: 9-10:30
Textbook and Other References


Sources on the web:

Grading

The final grade for the course will be based on three midterm exams and a final exam:

Exam 1 (February 22, Friday, 11-12) (20%)
Exam 2 (March 28, Friday, 11-12) (20%)
Exam 3 (April 18, Friday, 11-12) (20%)
Final Exam (scheduled by the Registrar –preliminary, Tuesday, May 13, 12-2) (40%)

Students are responsible for making sure, at the beginning of the term, that they can attend the exams. Registering for a course means that you certify that you will be present for the exam.

Courses taught in the Department of Economics are covered by a common set of course management policies. Registering for this course means that you will follow these policies. See, Departmental Policies for Undergraduate Economics Courses http://www.econ.upenn.edu/Undergraduate/Departmental%20Course%20Policies.htm

The Department has a guideline for the distribution of grades. This guideline will be followed in this course:
00-30% grades: A or A-
40-50% grades: B+, B, or B-
20-30% grades: C+ or below
Exams
There will be three exams and a final exam. All examinations are closed book/notes. A formula sheet is not allowed in examinations. A calculator is required for examinations.

Exam 1 (February 22, Friday, 11-12) (20%)
Exam 2 (March 28, Friday, 11-12) (20%)
Exam 3 (April 18, Friday, 11-12) (20%)
Final Exam (scheduled by the Registrar –preliminary, Tuesday, May 13, 12-2) (40%)
http://www.upenn.edu/registrar/pdf_main/08A_Final_Exam_Schedule.pdf
See Departmental Policies for Undergraduate Economics Courses
Any conflicts regarding exams will be resolved according to University and Departmental Policies.

Any requests for re-grading of exams must be submitted in writing within one week from the date that exams are made available. Please note that the re-grade period begins on the date that the exams are made available and not on the date that you pick up the exam. If you miss the class during which the exams are returned, it is your responsibility to pick up your graded exam within the one-week period. When you request a re-grade, we retain the right to re-grade your entire exam. Do not mark or make notes on your graded exam, and do not alter in any way the answers to the questions. Such alterations will be construed as violations of the Code of Academic Integrity and may be referred for disciplinary action.

Suggested exercises
Chapter 1: 4, 8, 12, 20
Chapter 2: 2, 4, 7, 16, 18, 22, 32, 42
Chapter 3: 2, 3, 6, 15, 16, 22, 36, 44, 50
Chapter 4: 2, 4, 10, 12, 14, 20, 22, 24, 28, 30, 32, 36, 38, 40, 42
Chapter 5: 3, 4, 6, 7, 8, 10, 16, 18, 20, 24, 25, 26, 30, 34
Chapter 6: 1, 2, 4, 10, 13, 14, 18, 20, 22, 24
Chapter 7: 1, 3, 4, 8, 11, 13, 14, 16, 18, 19, 20, 23, 24, 26, 32, 34, 35, 36, 40
Chapter 8: 2, 4, 5, 6, 12, 13, 18, 20, 22, 24, 25, 31, 32, 42
Chapter 9 : 2, 4, 5, 6, 10, 11, 12, 15, 16, 18, 20, 24, 27, 28, 32, 38, 40
Chapter 10:1, 2, 4, 6, 8, 9, 10, 12, 16, 18, 19, 20, 24, 26, 28, 29, 30, 32, 34, 36
Chapter 11: 2, 4, 6, 8, 14, 15, 16, 17, 18
Chapter 12: 1, 2, 4
Chapter 13 : 1, 2, 8, 10
Chapter 14: 1, 2, 4, 6, 8, 14, 18, 20, 24, 26, 28
Chapter 15: 2, 4, 8, 12, 14, 16, 20, 23, 24, 26
Chapter 16: 1, 4, 5, 8, 10, 11, 12
Chapter 18: 12, 14, 18

Attendance
Attendance is required, and is essential for learning the course material.
Course Outline

1. Introduction, Descriptive Statistics and Data Analysis
   Anderson, Sweeny, and Williams, Chapters 1, 2, 3

2. Probability
   Anderson, Sweeny, and Williams, Chp. 4

3. Discrete Random Variables and Probability Distributions
   Anderson, Sweeny, and Williams, Chp. 5 (omit sections 5.5 & 5.6)

4. Continuous Random Variables and Probability Distributions
   Anderson, Sweeny, and Williams, Chp. 6 (omit sections 6.3 & 6.4)

5. Sampling Distributions
   Anderson, Sweeny, and Williams, Chp. 7

6. Point and Interval Estimation
   Anderson, Sweeny, and Williams, Chp. 8

7. Hypothesis Testing: mean and proportion of a single population
   Anderson, Sweeny, and Williams, Chp. 9 (omit sections 9.6 - 9.8)

8. Hypothesis Testing: means and proportions with two populations
   Anderson, Sweeny, and Williams, Chp. 10

9. Hypothesis Testing: population variances
   Anderson, Sweeny, and Williams, Chp. 11

10. Goodness-of-Fit Tests and Independence
    Anderson, Sweeny, and Williams, Chp. 12 (omit section 12.3)

11. Analysis of Variance
    Anderson, Sweeny, and Williams, Chp. 13 (omit sections 13.3 - 13.5)

12. Regression, Model Building and Forecasting
    Anderson, Sweeny, and Williams, Chapters. 14, 15 (omit sections 15.7-15.9),
    16 (omit sections 16.3-16.6), 18 (omit sections 18.2, 18.4 & 18.6)