Objectives and Prerequisites
ECON 005. Statistics for Economists. Prerequisites: Economics 1 and 2, Mathematics 104 and 114. Students who have taken one or two courses in Statistics in another department or institution may not register for ECON 005.

This course introduces the student to statistical methods with emphasis on applications in quantitative economics. The course focuses on elementary probability and inferential statistical techniques and emphasizes (1) their nature, strengths, and limitations, (2) implementation in modern computing environments, and (3) practical applications in economics.

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 not on mathematical proofs of theorems, but rather 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.

Lecture and Office Hours
Lecture Hours:
Tuesday: 1:30 - 3:00, Vance B2
Thursday: 1:30 - 3:00, Vance B2

Office Hours (McNeil 343):
Wednesday: 1:30 - 3:00, McNeil 343
or by appointment (Tel: 8-6765, E-mail: ozmucur@ssc.upenn.edu)
Teaching Assistant
Michaela Gulemetova-Swan
Office: McNeil 438
E-mail: gulemeto@econ.upenn.edu
Office Hours: Thursday 3:30-5:00

Textbooks and Other References

Required:

Recommended:

Sources on the web:
www.prenhall.com/berenson
www.ssc.upenn.edu/econ
www.census.gov
www.bls.gov
www.bea.doc.gov
www.federalreserve.gov
www.stls.frb.org
www.phil.frb.org
www.cbo.gov
www.fms.treas.gov
www.nber.org
www.napm.org
www.conferenceboard.org
www.economagic.com
www.economics.about.com
www.chass.utoronto.ca/link
www.worldbank.org
www.imf.org
www.oecd.org
Course Outline

1. Descriptive Statistics and Data Analysis (Lectures #1, #2, #3)
   Berenson, Levine and Krehbiel, Chps. 1, 2, 3, 16.9, Appendix
   Berk & Carey, Chps. 1-4

2. Probability (Lectures #4, #5)
   Berenson, Levine and Krehbiel, Chp. 4

3. Probability Distributions (Lectures #6, #7)
   Berenson, Levine and Krehbiel, Chp. 5.1, 5.3
   Berk & Carey, pp. 169-179

4. Normal Distribution (Lectures #8, #9)
   Berenson, Levine and Krehbiel, Chp. 6.1
   Berk & Carey, pp. 179-190

5. Sampling Distributions (Lectures #10, #11)
   Berenson, Levine and Krehbiel, Chp. 7
   Berk & Carey, pp. 192-201

6. Point and Interval Estimation (Lectures #12, #13, #14)
   Berenson, Levine and Krehbiel, Chp. 8.1 - 8.4
   Berk & Carey, pp. 209-216

7. Hypothesis Testing (Lectures #15, #16, #17)
   Berenson, Levine and Krehbiel, Chp. 9
   Berk & Carey, pp. 217-227

8. Two-Sample Tests (Lectures #18, #19, #20)
   Berenson, Levine and Krehbiel, Chp. 10.1 – 10.3, 12.1
   Berk & Carey, pp. 228-233

9. Simple Linear Regression (Lectures #21, #22, #23)
   Berk & Carey, Chp. 8

10. Multiple Regression (Lectures #24, #25)
    Berk & Carey, Chp. 9
Exams

There will be two exams with equal weights. All examinations are closed book. A calculator is required for all exams.

Midterm Exam (October 23rd, Thursday)

Final Exam (to be scheduled by the Registrar; preliminary December 18, 11:00-1:00)
(Tentative schedule by the Registrar http://www.upenn.edu/registrar/timetable/tfinals.html)
See final exam rules: http://www.econ.upenn.edu/Undergraduate/FinalExamRules.htm

Homework Problems (Berenson, Levine, Krehbiel)

Homework assignments are essential to learning the material. The assignment submitted should represent individual work. Homework assignments will be collected in class on the due date, only. No late assignment will be accepted. Each homework assignment is worth 10 points (maximum of 100 points)

HW1: 2.6, 2.8, 2.14, 2.15, 2.12, 2.21, 2.22, 2.24, 2.26, 2.73
HW2: 3.1, 3.8, 3.10, 3.14, 3.15, 3.18, 3.42, 16.59, 16.61, 16.62, TP2.2
HW3: 4.1, 4.2, 4.3, 4.4, 4.7, 4.9, 4.10, 4.18, 4.19, 4.32, 4.33
HW4: 5.1, 5.2, 5.3, 5.6, 5.8, 5.12, 5.14, 5.15, 5.16, 5.19, 5.20
HW5: 6.1, 6.2, 6.4, 6.7, 6.8, 6.10, 6.11, 6.49, 6.50, 6.51
HW6: 7.1, 7.2, 7.4, 7.6, 7.11, 7.12, 7.14, 7.22, 7.24, 7.25, 7.30, 7.31, 7.34, 7.35, 7.38
HW7: 8.1, 8.2, 8.8, 8.11, 8.14, 8.17, 8.18, 8.20, 8.22, 8.24, 8.32, 8.34, 8.36, TP8.1
HW9: 10.1, 10.4, 10.5, 10.10, 10.12, 10.16, 10.23, 10.24, 10.27, 10.30, 10.34, 10.36

Grading

The final grade for the course will be based on two exams, and homework assignments:
Homework assignments 10%
Midterm Exam (October 23rd, Thursday) (45%)
Final Exam (to be scheduled by the Registrar; preliminary Dec 18, 11:00-1:00) (45%)