

STATISTICS FOR ECONOMISTS
ECONOMICS 103
SUMMER 2008

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Office Hours: Thursdays, 1:30-3pm.

Class Webpage: Blackboard Courseware (<http://courseweb.library.upenn.edu>)

This course is an introduction to probability theory and statistical inference. The topics that will be covered include elementary probability theory, sampling, estimation, hypothesis testing, correlation and regression. Special attention will be given to the application of these statistical tools to the analysis of economic phenomena. Calculus is a prerequisite.

This is a course in Economic Statistics, with calculus as a prerequisite. A two-semester sequence of mathematical statistics (either Stat 430 and 431) can be taken instead to satisfy the statistics requirement of the major in Economics. Econ 103 cannot be taken by any student who has already completed the sequence Stat 430/431. If a student takes Stat 430 only then they must take Econ 220 to fulfill the requirement and MAY NOT take Econ 103. If a student has taken Stat 101, 102, 111, 112, then they MUST take Econ 103. Note: Students who took STAT 111/112 or ESE301/302 prior to, or in the Spring 2006 semester, can count that sequence as waiving out of the ECON 103 requirement. After Spring 2006, however, STAT 111/112 and ESE301/302 will not be counted to satisfy any of the Economics Department statistics requirements. As of Spring 2008, STAT 101/102 will no longer satisfy the statistics requirements. Students who completed STAT 101 or STAT 101/102, STAT 111 or the 111/112 or ESE 301/302 sequence should enroll in ECON 103.

Homework: I expect to assign 4 homeworks. Homeworks will not be graded but students are strongly encouraged to turn them in.

Exams: There will be two in-class exams: one midterm and one final exam. The tentative dates are:

midterm: Thursday July 24th

final: Thursday August 14th

Required Textbook: Newbold, Carlson and Throne, *Statistics for Business and Economics*

Recommended Supplementary Textbooks:

- DeGroot, M. and M. Schervish, *Probability and Statistics*
- Anderson, Sweeney and Williams. *Essentials of Statistics for Business and Economics*

Grades:

- $\text{FINAL GRADE} = 40\% \times \text{MIDTERM} + 60\% \times \text{FINAL}.$

Course Plan:

Part I: Introduction to Probability Theory

1. Probability models, conditional probability, independence, Bayes rule (NCT Ch.4)
2. Random variables (NCT Ch.5 and 6)

Part II: Introduction to Statistics

1. Sampling and sampling distributions (NCT Ch.7)
2. Point and interval estimation (NCT Ch.8)
3. Hypothesis testing (NCT Ch.9)
4. Linear regression (NCT Ch.10)