

440.605.51: Statistics, Spring 2008, Lettau

Johns Hopkins University
Part-Time Graduate Program for Applied Economics
440.605.51 Statistics

Spring 2008

Instructor: Michael Lettau

Class Schedule: 6:00 - 8:45pm Tuesdays, January 22 – April 29

No Class: March 18

WebCT Site for Course at <http://webct.jhu.edu>. Access to the site requires a Johns Hopkins Enterprise Directory ([JHED](#)) password.

E-Mail: mlettau1@jhu.edu (Please use this address only if the e-mail system within WebCT is not available.)

I. Course Overview

This course covers the statistical theory behind empirical procedures commonly used in economic research. It is intended to provide the theoretical background for subsequent graduate courses in econometrics.

II. Course Textbook

Anderson, David R., Dennis J. Sweeney, and Thomas A. Williams. Statistics for Business and Economics, 10th Edition South-Western College Publishing, 2007. (Earlier editions are acceptable.)

III. Course Requirements

Midterm Exam (35%) posted March 4, due March 11

Final Exam (35%) April 29

Problem Sets (25%)

Participation (5%)

The midterm will be a take-home exam. The final will be an open-book and open-note exam during the scheduled class time.

Problems sets are due one week after they are assigned, although they will also be accepted up to one week late without penalty. Students may work on the problem sets in groups, and the group may turn in one answer sheet. However, at least some independent work from each student is strongly encouraged. Additional exercises from the textbook will be assigned, but students will not be required to turn in answers to them unless I announce otherwise.

IV. Tentative Schedule

Unit 1: Introduction, Mathematical Review, Axioms of Probability

Readings: Mathematical Handout; Chapter 1; Chapter 4
Assignment: Problem Set 1

Unit 2: Empirical Frequencies, Sample Means, Comovement of Variables

Readings: Chapter 2
Assignment: Problem Set 2

Unit 3: Probability Mass Functions and Probability Density Functions

Readings: Sections 5.1-5.2, 5.4-5.6; Chapter 6
Assignment: Problem Set 3

Unit 4: Expected Values, Moments, Expectation Theorems

Readings: Sections 5.3
Assignment: Problem Set 4

Unit 5: Normal Distribution, Sample Mean

Readings: Review Section 6.2; Sections 7.1-7.5
Assignment: Problem Set 5

Unit 6: Asymptotic Properties of Sample Mean

Readings: Sections 7.6-7.7
Assignment: Problem Set 6

Midterm Exam: posted March 4, due March 11

Unit 7: Sample Variance, Hypothesis Tests, Confidence Intervals

Readings: Chapters 8-9
Assignment: Problem Set 7

Unit 8: Student's T Distribution, Asymptotic Results, Bivariate Distributions

Readings: Chapter 10
Assignment: Problem Set 8

Unit 9: Standard Bivariate Normal Distribution, Expectations in Bivariate Distributions, Independence

Readings: Section 12.2
Assignment: Problem Set 9

Unit 10: Analysis of Variance, Conditional Expectation Functions

Readings: Sections 13.1-13.3
Assignment: Problem Set 10

Unit 11: Topics in Econometrics

Readings: Chapter 14
Assignment: Problem Set 11

Review

Readings: Chapter 15; Review previous readings
Assignment: no new problem set

Final Exam: April 29

V. JHU Ethics Statement

Cheating is wrong. Cheating hurts our community by undermining academic integrity, creating mistrust, and fostering unfair competition. The university will punish cheaters with failure on an assignment, failure in a course, permanent transcript notation, suspension, and/or expulsion. Violations can include cheating on exams, plagiarism, reuse of assignments without permission, improper use of the Internet and electronic devices, unauthorized collaboration, alteration of graded assignments, forgery and falsification, lying, facilitating academic dishonesty, and unfair competition. Ignorance of these rules is not an excuse. For more information, see the [Ethics Board web site](#).