

Johns Hopkins University
Zanvyl Krieger School of Arts and Sciences
Advanced Academic Program in Applied Economics

Syllabus Statistics 440.605.52 Fall 2007

Instructor: Nate Goldstein
Class Time: 6:00 - 8:45 pm Tuesdays
Office Hours: Before and after class as needed
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Web Site: <http://webct.jhu.edu>

I. Overview

This course provides a survey of probability and statistical inference and is designed to provide the requisite theoretical and intuitive background for 440.606 Econometrics. This course is taught at a level that assumes comfort with the course content in 440.304 Mathematical Methods for Economists, including differentiation, integration, and optimization.

II. Course Materials

There is no required text for this course, and all of the concepts necessary for this course will be covered in adequate detail during lecture. However, I highly recommend purchasing Anderson, Sweeney, and Williams' Statistics for Business and Economics (tenth edition) and Ross' A First Course in Probability (seventh edition), both of which are available in the bookstore. Several lectures will closely parallel the material covered in those texts and for that reason will be an excellent source to clarify any points of confusion. There are additional examples and practice problems that will provide excellent preparation for the midterm and final exams. (The answers to the many of the exercises are available in the back of the book.) Finally, the texts will serve as a valuable reference source for you in your future economics courses.

The text will be complemented with handouts on probability distribution functions and point estimation to further address those concepts.

The lecture notes for this course will not be made available. However, the transparencies used in lecture are retained and kept on reserve in the library for students who may miss a lecture. Also kept on reserve is Swokowski's Calculus with Analytical Geometry, which is an excellent source of problems for students wishing to practice their differentiation and integration.

III. Course Requirements

Grades will be assigned using the following:

Take-home Midterm Exam (40%)
Take-home Final Exam (40%)
Problem Sets (20%)

Problem sets are posted on the web site on Tuesdays and are due the following Tuesday at the beginning of lecture. Although exams must be completed independently, you may work on the problem sets in a group

and the group may submit a single problem set. However, some independent work from each student is strongly encouraged.

IV. Ethics Statement

The strength of Johns Hopkins University depends on academic and personal integrity. In this course, you must be honest and truthful. Ethical violations include cheating on exams, plagiarism, reuse of assignments, improper use of the Internet and electronic devices, unauthorized collaboration, alteration of graded assignments, forgery and falsification, lying, facilitating academic dishonesty, and unfair competition.

Report any violations you witness to the instructor. You may consult the associate dean of students and/or the chairman of the Ethics Board beforehand. See the guide on “Academic Ethics for Undergraduates” and the Ethics Board web site for more information.

Date	Material
September 11th	<i>Lecture 1</i> : Descriptive Statistics, Math Review Readings: ASW Chapters 1-3; Math Review Handout
September 18th	<i>Lecture 2</i> : Introduction to Probability Readings: ASW Chapter 4; Ross Chapters 1, 2
September 25th	<i>Lecture 3</i> : Random Variables and Univariate Probability Distribution Functions Readings: ASW Chapter 5; Ross Chapters 3, 4; Probability Distribution Functions Handout
October 2nd	<i>Lecture 4</i> : Univariate Probability Distribution Functions (con't.) Readings: ASW Chapter 6; Ross Chapter 5; Probability Distribution Functions Handout
October 9th	<i>Lecture 5</i> : Sampling Distributions and The Central Limit Theorem Readings: ASW Chapter 7; Ross Chapter 8
October 16th	<i>Lecture 6</i> : Hypothesis Testing of a Single Population Mean with known σ Readings: ASW Chapters 9.1-9.3, 9.5-9.8, 11.1
October 23rd	Take-home midterm posted, no lecture
	Take-home midterm due
October 30th	<i>Lecture 7</i> : Hypothesis Testing of Variance, Goodness of Fit, and Independence Readings: ASW Chapter 12
November 6th	<i>Lecture 8</i> : Bivariate Probability Distribution Functions Readings: Ross Chapters 6, 7; Probability Distribution Functions Handout
November 13th	<i>Lecture 9</i> : Hypothesis Testing of a Single Population Mean (with unknown σ), Two Population Means (with known σ), or Two Population Variances Readings: ASW Chapters 9.4, 10, 11.2
November 20th	<i>Lecture 10</i> : Estimation – Interval, Method of Moments, and Maximum Likelihood Readings: ASW Chapter 8, Point Estimation Handout
November 27th	<i>Lecture 11</i> : ANOVA and Hypothesis Testing of Three Population Means Readings: ASW Chapter 13
December 4th	Review Session
December 7th (Friday)	Take-home final posted
December 14th (Friday)	Take-home final due