

BOSTON COLLEGE
Department of Economics
EC151.09: Statistics
Fall 2004
PINAR UYSAL

SYLLABUS

Tentative !

Class Hours: Monday, Wednesday, Friday, 3:00 pm to 3:50 pm

Class Location: Campion 231

Office Hours: Monday 1:00-1:50 pm or by appointment

Office Location: 21 Campanella Way, room 462-E

Office Phone: (617) 552 8707

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Course Objectives:

This course aims to introduce the students to basic concepts of statistics. It is concerned with descriptive statistics, basic probability theory, estimation, and hypothesis testing. You should be able to use statistical methods to solve practical problems. In addition to the theoretical material, you will learn how to implement estimation using software such as EXCEL and STATA.

Course Text: "Statistics for Business and Economics" by Paul Newbold, William L. Carlson and Betty Thorne, Prentice Hall, Fifth Edition, 2003.

Requirements:

Evaluation will be based on four quizzes - lowest one will be dropped (15%), computer assignments (15%), two midterms (20% each), and a final exam (30%). There will be weekly problem assignments that are to be solved on the due date however they are not going to be collected or graded.

All exams will be closed notes and books. No makeup and no points if you miss quizzes. If you miss a midterm and there is a verifiable medical

reason and arrangements are made before the midterms, you will be assigned additional questions in the final exam. Be sure that you are familiar with the section on “Academic Integrity” which can be found online at:

<http://www.bc.edu/offices/stserv/academic/resources/policy/#integrity>

Study Strategies:

Attend lectures! However do not expect to understand everything in class, you will need to work on the average 3-4 hours per week outside the class to get a better grasp.

Read your lecture notes and textbook and work as many additional problems from the text as you can stand.

Teamwork is important for problem solving here and in your future career. Form teams for problem solving, discussing concepts, and solving computer assignments. The only thing is each person should write up his/her own answer for the computer assignments. Getting others to do your homework may buy you a few points, but it will mean forgoing an important opportunity to practice applying the tools.

Finally, it is crucial not to fall behind, because later material builds on earlier one. So I urge you to please come visit me in the office hours at the slightest sign of confusion.

Course Outline:

1-Summarizing Numerical Information : Descriptive Statistics

Population and Samples

Tables and Graphs

Mean and Median

Indicators of Dispersion

Moments of Higher Order

Mutiple Observations and Grouped Data

Descriptive Relationships

2- Probability

Basic Concepts

Operations on Sets

Probabilities and Rules
Bayes Theorem
Permutation and Combinations

3- Random Variables and Probability Distributions
Random Variables
Probability Distributions

4- Discrete Random Variables
Uniform Distribution
Binomial Distribution
Hypergeometric Distribution
Poisson Distribution
Jointly Distributed Discrete Random Variables

5- Continuous Random Variables
Normal Distribution
Exponential Distribution
Jointly Distributed Continuous Random Variables

MIDTERM 1

6-Sampling and Sampling Distributions Sampling from a Population
Sampling Distribution of the Sample Mean
Sampling Distribution of a Sample Proportion
Sampling Distribution of the Sample Variance

7-Estimation Point Estimators
Confidence Intervals

8-Hypothesis Testing
Tests of the Mean
Tests of the Variance

MIDTERM 2

9-Linear Regression
Correlation Analysis
Linear Regression Model
Gauss-Markov Theorem

10-Additional Topics if Time Allows

11-Review Before the Final