BOSTON COLLEGE

Department of Economics

Statistics Soner Tunay
EC 151.08-09 Carney 33B, x2-8704
Fall 1997

This is an introductory course in statistics. Contrary to some belief, Statistics is neither simple-minded formula crunching nor pure mathematical manipulation. Instead, statistics is the science of collecting, summarizing and interpreting the data. In this course you will learn to apply statistics to the real life problems. Statistical concepts will be taught with applications in mind. The course has three major sections: Descriptive statistics, probability and distributions and statistical inference.

Office Hours: Mon., Wed., Fri. 2-2:45

Text: Keller and Warrack: Statistics for Management and Economics, forth ed., Wardswoth, 1997. (required)

Course requirements: Quizzes(15%), mid-term exams(25% each), final exam(35%).

Course organization and expectations: The class meets three times a week (Mon., Wed., Fri. 12-1 or 1-2) in O'Neill 254. There will be problem sets and computer assignments after each major subject. I will not grade them, but they will be determinant in the final evaluation. I will not accept the ones that are not returned on time. I encourage small group study on problem sets as long as everyone contributes to the problem solving equally. I believe, teamwork improves your abilities to share ideas and learn from others. Naturally, you will be evaluated from your own work on the exams.

Every new topic requires the previous ones to be understood and digested as well. In order to motive this, there will be **random** quizzes. So, you are expected to be ready to take a short quiz in any time. Even though the quizzes are in a random fashion, they will be mostly out of your homework assignments. There will not be any make-ups for the missed quizzes. I will drop the lowest quiz grade in the end.

The first mid-term exam will be on Feb. 23rd, Mon. The second one is on March 30th, Mon. They both will be in the evening after 6 PM. The final exam is announced by the registrar and you should be able to check it on U-view.

The structure of the course will follow the textbook closely. You are required to read the assigned sections in the textbook. I also believe that a quick glance at the topics before each class helps you to learn the subject material faster.

Syllabus

Introduction to Statistics (Ch. 1)
Descriptive Statistics (Ch. 2,4)
- i) Measures of central tendency (4.2)
- ii) Measures of dispersion (4.3, 4.4)
- iii) Measures of association (4.6)
- iv) Graphical descriptions: Histograms (2.3)

Probability (Ch. 6)
- I) Probability Rules and Random Events (6.2, 6.3, 6.4)
- ii) Probability Distributions (6.4)
- iii) Conditional Probability and Probability Trees (6.2, 6.3)
- iv) Expected Value and Variance (6.5)
- v) Binomial Distribution (6.7)

Continuous Random Variables and Probability Distributions (Ch. 7)
- i) Probability Distributions for Continuous Random Variables (7.2)
- ii) The Normal Distribution (7.3)

Sampling Distribution (Ch. 8)
- i) Sampling Distribution of the Sample Mean (8.2)
- ii) The Central Limit Theorem

Point Estimation (Ch. 9)
- i) Properties of Estimators: Unbiasness, Efficiency and Consistency (9.2)

Interval Estimation (Ch. 9, 11)
- i) Confidence Intervals (9.2)
- ii) Student's *t* distribution (11.1, 11.2)
- iii) Interval estimation (9.3, 11.2)

Hypothesis Testing (Ch. 10)
- i) Concepts of Hypothesis Testing (10.2)
- ii) Tests of the Mean (10.3, 11.2 p.376)
- iii) Tests for the Difference Between Two Means (12.2) - if time allows