

BOSTON COLLEGE
DEPARTMENT OF ECONOMICS
STATISTICS EC151.04
FALL 2004

INSTRUCTOR	VIKTORS STEBUNOV	E-MAIL	STEBUNOV@BC.EDU
CLASS TIMES	MWF, 11AM	OFFICE HOURS	TBA
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TEXT

The Practice of Business Statistics Using Data for Decisions, by Moore, McCabe, Duckworth, and Sclove, W.H. Freeman, 2003

Excel Manual by Fred Hoppe, W.H. Freeman, 2003

Both texts are placed on Course Reserves.

COURSE OBJECTIVE

This course covers the basic theory of Statistics with emphasis on its applications. It promotes working with data using spreadsheet software. Hopefully, you will learn to appreciate the importance of Statistics in making informed decisions.

COURSE ORGANIZATION

The course will consist of lectures and discussion sessions. Usually, Mondays and Wednesdays will be lecture days. Fridays will be left for discussion sessions and, perhaps, computer tutorials. It is important to note that we will be covering a fair amount of material in a limited amount of time. You will not be expected to memorize formulas, although some concepts will come second nature to you. In studying Statistics, a considerable amount of computation is required, thus you are advised to learn the basics of using a software package (MS Excel) early in the term. Towards the end of the term, you will have a take home projects to be carried out in Excel. This project will give you a chance to apply all the material covered throughout the term, analyze some "real" data in Excel and write up your conclusions. Class attendance is strongly recommended. Beware that skipping a class or two is not a valid excuse for failing to report for an exam or to submit a take home project by a due date.

I intend to post class material regularly on a WebCT course site. WebCT is a web-based application used to make and host course web sites. In theory, you simply log into the WebCT application using a web browser to read class announcements, to download class material and to submit take home projects. In practice, however, we will see how smoothly it will go... I also intend to update the syllabus regularly (the list of topics covered) to mark our progress.

In general, Statistics is a subject that is best learned at the point of a pencil and a little bit at a time. It takes a fair amount of time and effort, but I will try to make your learning experience as pleasant as possible. But, please, be proactive in class: participate in discussions and ask questions.

GRADING POLICY

There will be weekly assignments (not graded, but discussed in class), two midterm exams, a final exam, and a take home project. They will count toward the grade as follows:

Midterm 1	20%
Midterm 2	20%
Take home project	20%
Final	40%.

Both midterms and final are open notes and books. There will be no sample or past midterms available, the weekly assignments discussed in class should prepare you for the exams. There will be no make up midterms. If you miss a midterm exam for a legitimate reason, the percentage of that exam will be distributed on the other exams and the take home project. Otherwise, you will get a zero from that midterm exam. There will be no extra credit assignments or projects. The take home projects are *individual*, you may discuss the projects briefly among your classmates just to get them going, but your submission should be your own work! Remember, a group work is easily detected and will be heavily penalized. You will be assigned percent scores for each of the midterms, the final and the project, and the final letter grade will be assigned based on your weighted score. There is a standardized procedure for submission of grade complaints in the College of Arts and Sciences. You must follow the procedure if you have complaints.

The dates of the midterms, the final, and the due date of the take home project will be announced later. You may expect the first midterm to be given in the second week of October, the second midterm - in the second week of November, the final during the exam week, and, finally, the take home project due the first week of December.

ACADEMIC INTEGRITY

I take academic integrity seriously. Cheating or other academic dishonesty will be not tolerated. I require that you abide by BC's standards of Academic Integrity. Be sure you are familiar with the sections on Academic Integrity in the Boston College Catalog (pp. 32-33) or on-line at BCInfo (A-Z index, Academic Integrity).

SOFTWARE

The course places a strong emphasis on understanding concepts of Statistics, with Excel included throughout as the key supplement. Topics will be presented with illustrative examples, identification of required assumptions, and underlying theory. Excel instructions will be provided along with typical displays of results. On one hand, because Excel was not designed to be a complete tool for statistical analysis, it lacks some important features and it is important to know its pitfalls and how to correct those. On the other, it is very popular and easy to learn.

Corporate America has embraced the spreadsheet as an efficient and effective tool for the analysis of data and Microsoft Excel has become the premier program for working with those spreadsheets. Even though you might not end up with using Statistics in your professional career, you are likely to use spreadsheet applications.

TENTATIVE TOPICS AND PROJECT

1. Introduction to Statistics; Ch.1
2. Describing, Exploring, and Comparing Data; Ch. 2-3
3. Probability and Sampling Distributions; Ch. 4
4. Probability Theory; Ch. 4
5. The Central Limit Theorem; handout
6. Maximum likelihood; handout
7. Statistical Inference; Ch.7, Ch. 9, handouts
8. Nonparametric Tests; Ch. 16
9. Correlation and Regression; Ch. 10, Ch. 11
10. One -Way and Two -Way Analysis of Variance; Ch. 14, Ch. 15
11. (optional) Bootstrap Methods; Ch. 18

Project 1 *The project deals with a regression analysis using the Ordinary Least Squares estimation technique. You will be asked to carry out an estimation of some regression equation in Excel using a data set provided. Moreover, you will be asked to test the validity of assumptions behind the regression equation and draw conclusions about the adequacy of the regression equation. You may download a sample project from the web page <www2.bc.edu/~stebunov/teaching.htm>.*