Boston College
Department of Economics

EC155- Honors Statistics Spring,2001
Richard McGowan,S.J. Tues,Thurs: 12:00

Text: Introduction to the Practice of Statistics, (Moore and McCabe) 3rd ed, Freeman

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Office Hours: Tuesday (3-5); Thursday( 3-5)
If you can not meet me at any of these times, please make an appointment.

Course Structure:

The course will consist of lecture and problem review. Usually, I will go over assigned problems as well as cover new material every class. It is important to note that we will be covering a fair amount of material in a limited amount of time. In "doing" Statistics, a considerable amount of computation is required (so give up a six pack and buy a decent calculator). Much of this calculation is rather mindless and best suited for the computer(or someone, *anyone* else). In this class, these mindless tasks will be minimized by learning the use of computer packages (such as STATVIEW, Excel, SPSS, SAS or any other statistics package). You will have three computer projects so that you will be required to learn a statistical package. These projects will also give you a chance to present and write up your conclusions from analyzing some "real" world data so that you can appreciated how a researcher would use statistical information to make conclusions.

In general, Statistics is a subject that is best learned at the point of a pencil and a little bit at a time. I would highly advise you to make class although I will not keep attendance but I expect you to keep up with the material. Finally, feel free to stop me at any point to ensure that you understand the material before we move on. The only dumb questions are those not asked (and you'd be surprised how grateful the rest of the class is when a "dumb" question is asked).

Course Objectives:

You will not be a statistician at the end of this course. But you will have an appreciation of the power as well as the limitations of statistical thinking. Some of you will find Statistics to be interesting- even fun- some of you won't; most will find it somewhere between tolerable and mildly entertaining. Regardless, a proper dose of Statistics will be invaluable in your future as a student and a scientist. Sure you can get through life without it- but the same can be said for literacy, not to mention other "collegiate" activities, such as visits to the Crimson or riding the bus to Neutron as a freshman.

What you will not be expected to do is memorize formulas although some concepts will come second nature to you. I will try and give you examples from Finance and Marketing, Accounting as well various stories from my research on the various "sin" industries such as cigarettes, gambling and alcohol. This applications approach will make you feel that this material is not just merely a theoretical nightmare or another educational hoop that needs to be jumped through. But rather realize that Statistics is a type of thinking that needs to be appreciated by anyone who hopes to have a career where conclusions have to be made on the basis of analyzing data.

Grading Procedure:

1.) There will be case studies & quizzes that will account for 35% of the final grade.
2.) There will be a mid-term exam that will account for 30% of the final grade.
3.) Cumulative Final exam: 35% of the final grade

N.B. All exams and quizzes will be open notes and book. The answer book for your text book is available reserve desk at O'Neill. **Please take the tests and hand in the cases on time!** Unless you have an excuse that would have Al and "W" embrace in DC!

Grade Equivalents

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|---|---|---|
| A = 93 or above | B- = 80 - 77 | D+ = 64 - 62 |
| A- = 92 - 90 | C+ = 76 - 74 | D = 61 - 57 |
| B+ = 89 - 86 | C = 73 - 69 | D- = 56 - 54 |
| B = 85 - 81 | C- = 68 - 65 | F = 54 and under |

Schedule of Topics

| Topic | Class Date | Chap. in text |
|---|---|---|
| Descriptive Statistics | Jan. 16 | 1.1-1.2 |
| Probability Theory<br>Bayes' Theorem | Jan. 18,23,25 | 4 |
| Concept of a Probability Distribution:<br>Binomial, Poisson, Normal | Jan.30<br>Feb.1,6,8 | 5.1, 1.3 |
| Sampling, Confidence Intervals,<br>Sample Size, Proportions,<br>"t" distribution | Feb. 13,15<br>Feb.20,22,27 | 5.2<br>6.1,7.1 |

**MID-TERM EXAM : Thursday March 1st**

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| Hypothesis Testing<br>(Parametric tests) | March 13,15<br>March 20,22 | 6.2,6.3,<br>6.4,7.2, 8 |
| Chi-Square Distribution | March 27,29 | 9 |
| Analysis of Variance(F test) | April 3,5 | 12 |
| Simple Regression | April 10,17,19 | 10 |
| Multiple Regression | April 24, 26<br>May 1 | 1 1 |

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**FINAL EXAM: A lovely Spring Day: Saturday May 5th, 12:30 P.M. (Chaps. 6,7,8,9,10,11,12)**