

# Statistics and Modeling

STA 371H - Fall 2009

**Course Description.** This course introduces some of the basic concepts in quantitative business analysis. We discuss methods that are used extensively in business organizations to solve large, structured problems. Such methods generate results that support decision-making at all levels of the organization over various time horizons. Secondly, these methodologies should improve your own problem solving skills. We stress an approach to problem solving that helps the decision-maker to (a) consider a richer set of alternatives, (b) understand and question assumptions, and (c) consider diverse measures of performance. The teaching approach will include lectures, skill-building exercises, and cases with the support of several software packages available on the PC in Microsoft Excel.

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**TextBook:** Albright, S. C., W. L. Winston, C. Zappe. "Data Analysis and Decision Making with Microsoft Excel", Revised Third Edition.

**Homework Assignment** will be assigned throughout the semester. There will be roughly 4-5 homework assignments. One homework (your worst) score will be dropped.

Homework assignments will be posted on *Blackboard* (<http://courses.utexas.edu>). You may open an assignment (and even print it out) several times before submitting your answers. Click on the *Submit* button (at the bottom) when you are done. Assignments must be completed by midnight on their due dates. It is recommended that you do not wait until the last minute to complete assignments. This will allow for any unexpected difficulties (with the material, website, etc.). Homework assignments are to be completed individually and not in teams. Once the deadline has past, you will be able see how you did on an assignment.

**Case Studies** are to be completed in self-selected groups of three to five people. Please form your case groups as soon as possible. If you have problems finding a group, please see me. We will have three or four cases throughout the semester. At minimum, your case report should address the questions posed. Please use the following format for case reports: a one page executive summary, a description of analysis section (maximum four pages), and an appendix. The executive summary should be a clear statement of your findings using non-technical language. It should entice the reviewer (the TA or me) to want to read the analysis section. Be as clear and concise in the analysis section as possible. Relegate any detailed supporting material (e.g., figures, tables, and equations) to an appendix and reference it appropriately. The entire report should use 1.5 line spacing, 12-point font, and one-inch margins. No late case assignments will be accepted since solutions will be handed out or discussed in class on the day they are due.

**Tests** will be given in the [MOD Lab](#) during class time. We will have three tests. Your final test will be cumulative. There will be no make up tests and the final test score (if higher) will replace one of the previous test scores.

**Grading.** Each test will account for 25% of your final grade. All assignments and cases together will account for the other 25%.

**Webpage.** All assignments, due dates, solutions, lecture slides, cases, sample tests and other course material will be posted on blackboard (<http://courses.utexas.edu/>).

**Computing.** This is a very quantitative course and there will be substantial numerical calculations. We will use Microsoft Excel and some software tools installed on it. For the sake of consistency we will stick to Excel 2007 on Windows for demonstrations. Also note that this is the setup that will be available to you at the MOD lab during your tests. The McCombs School of Business has 2 computer labs with Dell computers: CBA 5.304/5.325([MOD Lab](#)) and CBA 5.322([Millennium Lab](#)). Lab hours are extensive both in the [CBA labs](#) and the [SME](#).

### **Tentative Course Schedule**

<b>Topic</b>	<b>Text</b>
Correlation and Regression	Chapters 11 and 12
Time Series Analysis and Forecasting	Chapter 13
Simulation and Risk Analysis	Chapter 16 and 17
Optimization Models	Chapter 14 and 15

Each topic will roughly require 6 lectures.