



## Syllabus

### STA 309 Elementary Business Statistics

[www2.mcombs.utexas.edu/faculty/gail.gemberling](http://www2.mcombs.utexas.edu/faculty/gail.gemberling)

Spring 2012: 9-10 and 10-11

*Prerequisites: Math 408C or 408K and Math 408D or 408L*

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or by appointment.

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#### Course Overview:

A course in basic statistics is offered in a wide variety of disciplines--from the social sciences to business to the natural sciences. The same statistical methods are applied across disciplines. Therefore it should not be surprising that the tools you will learn to use in this course will benefit you in your future courses and careers regardless of whether your career interest is Finance, Accounting, MIS, Management or Marketing. In this course you will learn basic descriptive statistical methods, sampling methodology, how to draw inferences from samples to larger populations and how to make predictions based upon historical relationships between variables.

This course has been designated a Quantitative Reasoning flag course by the University College. Quantitative Reasoning courses are designed to equip you with skills that are necessary for understanding the types of quantitative arguments you will regularly encounter in your adult and professional life. You should therefore expect a substantial portion of your grade to come from your use of quantitative skills to analyze real-world problems.

My experience has shown that statistics is best taught through a series of clear and carefully worked examples. Therefore, theoretical background in descriptive and inferential statistical methods will be provided, however a great deal of time will be spent teaching you how to apply the theory to the real world. Statistics is not about memorizing formulas. Instead it is about recognizing the appropriate statistical test to perform in a given situation. This requires practice on the part of the student. As we cover the topics, if you do not have a clear understanding of one topic it is wise to seek help immediately. The next topic will build upon the previous one. Please allow us to assist you as soon as you find that you have questions.

#### Textbook:

Moore, D. S., McCabe, G. P., Duckworth, W. M., & Alwan, L. C. The Practice of Business Statistics; W. H. Freeman & Company (**second edition**), 2009. *You do not need to purchase the study guide or any Excel manuals.*

Course Packets: Can be purchased at the GSB Copy Center (GSB 3.136)

Notes for Chapters 6, 7, 8 & 9 (these will only be helpful if used during lecture in class and are not a substitute for coming to class)-- for use after Test 1.

Sample Exams 1, 2 & 3

Grading Procedure:

2 Tests and Final Exam: Test 1 worth 25%; Test 2 worth 30%; Final Exam worth 25%  
10 Homework Assignments worth a total of 20% (7 written and 3 using Excel)

Exams and Homework:

There will be 2 tests and a final exam given at designated times during the semester. They will be multiple-choice and will require computation and interpretation of the various statistical methods covered in this course. For the tests and the final exam, you will each be allowed to bring a single 8.5 by 11 inch sheet of paper with any formulas or conceptual items you may need written on it. You are responsible for deciding what to write on this sheet and you may write on both sides of it. Sample exams may be found in the course packets.

Written homework to be turned in for a grade will be distributed via e-mail as we finish each chapter. Due dates will be laid out in these e-mails and also announced in class although approximate due dates are listed below. In addition, there will be 3 homework assignments using Excel (posted on the class web page) to be completed and turned in for a grade. Brief explanations regarding how to perform various statistical tests in Excel are available on the class web page under the Handouts link, however we will go over these methods in class. **Written Homework should be done neatly with answers circled and all work shown. Homework will only be accepted in hard copy form and not via e-mail. Homework not turned in by the time the papers are taken from the classroom at the end of the 10 AM Class (10:50) will be assessed a 10% late penalty. Homework will not be accepted after 2 PM on the due date.**

<b><u>Homework Assignment</u></b>	<b><u>Approximate Due Date</u></b>
Chapter 1 (to be sent to you via e-mail)	Monday Jan. 30
Chapter 2 (to be sent to you via e-mail)	Friday Feb. 3
Chapter 3 & 4 (to be sent to you via e-mail)	Friday Feb. 10
Excel 1 (posted on class web page)	Wednesday Feb. 15
Chapter 6 (to be sent to you via e-mail)	Monday Mar. 5
Chapter 7 (to be sent to you via e-mail)	Monday Mar. 26
Excel 2 (posted on class web page)	Friday Mar. 30
Chapter 8 (to be sent to you via e-mail)	Friday Apr. 20
Chapter 9 (to be sent to you via e-mail)	Wednesday Apr. 25
Excel 3 (posted on class web page)	Monday Apr. 30

### Additional Practice (Essential for the Exams):

Selected written homework problems from the textbook (listed under the Homework Link on the class web page) will also be assigned for exam preparation purposes. Although you will not turn them in, you should do these as we go through the material as this will provide important practice for the exams and the homework that is to be turned in for a grade. Solutions to these problems are posted on the class website under the Homework Link. Your proficiency with statistics will improve with active practice. This means working problems and understanding and explaining your results. The textbook has about 100 problems per chapter from which to gain additional practice. Answers to all odd-numbered problems are given in the back of the textbook.

### Other Course Materials:

You will need a calculator for this course to be used with homework and brought to the tests. A basic calculator that adds, subtracts, multiplies and divides and finds square root will be sufficient. You may not use a cell phone to do calculations during the exams. You should also have a recent version of Microsoft Excel on your computer or you may use the computers in the Business School labs. The Business School has determined that this course will be taught utilizing Excel because it is what you will most likely have available to you in your future work environment. However, there are a number of statistical procedures that we will cover in this course that Excel does not readily perform. I will try to point out to you what Excel will and will not do and any errors in the Excel functions of which there are a few. For procedures that Excel does not perform, the publisher of your textbook has provided an additional software package (WHF Stat) that installs within Excel. We will be using this software during the semester and you will receive detailed instructions on how to access it.

### Student Responsibility:

The dates on the course outline on this syllabus are approximate and therefore subject to change. Such announcements will be made in class and sent to you via e-mail (at the official address listed in Blackboard). You are responsible for checking this e-mail regularly. While class attendance will not be taken, students who come to class will receive valuable information during lecture that will assist in performing well on exams. **Good class attendance along with regular practice is the best way to do well in the class.** Make-up exams will not be given except for a University approved reason.

ADA Accommodations: Compliance with the Americans with Disabilities Act is a policy of this course. Students with disabilities may request accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities, 471-6259, <http://www.utexas.edu/diversity/ddce/ssd/>. If you are entitled to accommodations please let me know well before the exam by providing your accommodation letter and discussing with me the particular accommodations you will need. This will allow me time to make sure that all of your needs can be met.

Academic Dishonesty: Dealing with academic dishonesty is a painful situation for all. Fortunately I have had to do so only rarely in my twenty years at McCombs. ***The McCombs School of Business has no tolerance for acts of scholastic dishonesty. Students who violate***

*University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since dishonesty harms the individual, all students, and the integrity of the University, policies on scholastic dishonesty will be strictly enforced. The UT Honor Code and an explanation of what constitutes scholastic dishonesty may be accessed at <http://registrar.utexas.edu/catalogs/gi09-10/ch01/index.html>.*

**Course Outline:**

<b>Topic</b>	<b>Text Reference</b>	<b>Approximate Dates</b>
Introduction		Jan. 18
Descriptive Statistics--Describing Distributions	1.1, 1.2	Jan. 20, 23
Brief Probability Overview Normal Distributions	1.3	Jan. 25, 27
Least Square Regression/Correlation (Descriptive)	2.1, 2.2, 2.3, 2.4	Jan. 30, Feb. 1
Experimental Design; Randomness; Sampling Distributions	3.1, 3.2, 4.1, 4.4, 3.3	Feb. 3, 6, 8
Descriptive Statistics with Excel	Handout/Web	Feb. 10, 13
Review for Exam		<b>Feb. 15</b>
<b>Excel Homework 1 Due (in class)</b>		<b>Feb. 17</b>
<b>Office Hours During Class Time</b>		<b>Feb. 20</b>
<b>Test 1</b>		<b>Feb. 20</b>
Estimation, Confidence Intervals, Sample Size, Tests of Significance (for one mean using z), Alpha, Beta, & Power	6.1, 6.2, 6.3, 6.4	Feb. 22, 24, 27, 29, Mar. 2
<b>March 12-16 Spring Break</b>		
Confidence Intervals and Hypothesis Tests for one mean using t	7.1	Mar. 5, 7, 19
Confidence Intervals and Hypothesis Tests for 2 means using t	7.2 (Omit pooled 2- sample procedure)	Mar. 21, 23
Inferential Statistics for Means with Excel	Handout/Web	Mar. 26, 28
Review for Exam		<b>Mar. 30</b>
<b>Excel Homework 2 Due (in class)</b>		<b>Mar. 30</b>

<b>Office Hours During Class Time</b>		<b>Apr. 2</b>
<b>Test 2</b>		<b>Apr. 4</b>
Binomial Probability Distributions; Normal Approximation to the Binomial; Introduction to Inference for Categorical Variables	5.2 As Background	Apr. 9, 11
Estimation, Confidence Intervals, Sample Size and Hypothesis Testing (one proportion using z)	8.1	Apr. 13, 16
Confidence Intervals and Hypothesis Testing for 2 Proportions using z	8.2	Apr. 18
Inference for Two-Way Tables (Chi Square)	9.1, 9.2	Apr. 20, 23
Inferential Statistics for Categorical Data using Excel and WHF Software	Handout/Web	Apr. 25, 27
Review for Exam <b>Excel Homework 3 Due (in class)</b>		<b>Apr. 30</b>
<b>Office Hours During Class Time</b>		<b>May 2</b>
<b>Test 3</b>		<b>May 4</b>