BA386T – STATISTICS (FIRST HALF)

DALLAS EMBA

FALL, 2011

Professor:	**Tom Sager**
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Textbook:	***Data Analysis and Decision Making with Microsoft Excel*** **(3rd Edition, revised) by Albright, Winston, and Zappe**

BA 386T Mission Statement

You will learn how to manage uncertainty in business decisions through the use of statistical models. The full meaning of this overarching objective will be manifested as the course unfolds. But in preview, it involves proposing a quantitative model for a business decision, verifying the validity of the model with available data, drawing inferences from the model, and summarizing the uncertainty of the inferences. These comments apply to both halves of this course, but in particular to my half. The capstone of my half of the course is a data analysis project in which you will apply these tools to a real business problem.

How you will benefit: You will become able to analyze business data and thereby to make justifiable statements like: "I forecast that next year's sales will be $20 million, and I am 90% sure that sales will be between $19 million and $21 million." You will also become able to critique similar statements made by others. More generally, you will become able to perform correct data analyses yourself; you will become able to critique the data analyses of others; and you will be prepared to dialogue with a statistician when you need help.

Leadership and this Course

The Texas MBA program is designed to develop influential business leaders. The MBA Program has identified four fundamental pillars of leadership: knowledge, teamwork, ethics, and worldview. In this course, you will grow your knowledge of proper methods to analyze business data. Through informal study groups and the capstone team project, you will enhance your teamwork and communication skills. You will see how best practices in analyzing data combat unethical uses of data. Finally, although statistics is universal (there is no Chinese statistics, no Mexican statistics – there is just one *statistics*), you will see some examples of non-U.S. data requiring analysis for local purposes.

Course Policies

1. **GRADING:**
The part of BA386T that I teach counts for 50% of your overall grade for the course. In my part, four components of your work will be evaluated numerically:

Participation	100 points maximum
Homework	100 points maximum
Project	300 points maximum
Final Exam	500 points maximum
COURSE SCORE (Total)	**1000 points maximum**

Your score on my part will be combined with your scores in Professor Dyer's part to determine your final grade in consultation with Professor Dyer. There is no predetermined grade distribution. However, the faculty MBA Programs Committee has recommended for Dallas MBA Courses a GPA of 3.42. Plus (+) and minus (-) marks will also be assigned.

2. **FINAL EXAM.** Because of the short duration of my part of the course, there will be only one examination. The Final Exam for my part will be given on Friday, September 23 from 6:00pm-8:00pm in the regular classroom. The Final Exam will be comprehensive. For the Final, you may use a simple hand calculator and limited reference material (to be announced). I encourage you to use a calculator that includes logarithm and exponential functionality. Use of computers is not permitted during the Final exam. If you are uncertain whether your calculating device qualifies as a "simple hand calculator", please ask me. My intent is to create a level playing field by allowing access to cheap, widely available calculators and disallowing devices with advanced statistical functionality.

3. **HOMEWORK.** Homework will be graded on effort. That is, you will receive full credit (one point) on every problem or part of a problem for which you make a *bona fide* effort, whether your solution is correct or not. You will receive zero points on every problem that you omit or for which your effort is *pro forma*. Problems with multiple parts may receive one point per part. The formula for the homework portion of your COURSE SCORE is total homework points earned ÷ total number of homework points assigned * 100. You may discuss the homework with each other as much as you wish, but you are required to write up the solutions on your own. Copying or editing the work of another is a violation of the Honor Code. Homework assignments will be posted on BlackBoard. I request that you submit your homework via BlackBoard. Homework solutions will be made available via BlackBoard. Each homework assignment references data in an Excel workbook that will be posted on BlackBoard. As a convenience to you, I suggest that you type your homework solutions in the Excel data workbook, labeled by question number, next to the data that corresponds to the question, and submit the Excel workbook as your homework solution. The homework solutions that I will post on BlackBoard will be in that format.

4. **PARTICIPATION.** Class participation is an important part of your learning experience. At the beginning of each part of a class, a list of "Gold Star" students will be announced. When called upon for a "Gold Star" question, Gold Star students are expected to engage in dialogue related to the subject of the day's lecture. For other than Gold Star discussions, any student may participate by raising his/her hand to be recognized. Your participation mark will be based on the totality of your participation, but especially on your Gold Star participation.

5. **RESEARCH PROJECTS.** The research project is the capstone of my part of the course. Your class will be divided into teams. Your team will define a business research project involving statistical analysis of a real and interesting business data set that your team will obtain. Your team will prepare a written report and make a short oral presentation to the class based on the team's statistical analysis. The written report will be due on Friday, September 23; the oral presentations will be given on Friday, September 23 from 4:00pm-5:45pm. To provide you with timely feedback and to insure that your projects are feasible, I require each team to submit a one-page written project proposal on or before Friday, September 2. Your project proposal must describe specifically your research objective, the data you will obtain, how you will obtain the data, discuss what methods you expect to apply, and state what you expect to show with your analysis. Proposals will be approved, or returned for revision. With permission, team projects may be changed after September 2. Your project/presentation will be graded on how well you employ the methods of statistical analysis taught in this course and on your skill in presenting your analysis orally and in writing. Every member of your team will receive the same score, subject to controls for "free riding."

6. **COMPUTERS.** I use a laptop computer extensively in class as a means to display data and analyses and to show how to accomplish statistical tasks in Excel. Prior to each class, I will post on BlackBoard all of the files that will be used in that class. If you have a laptop, you may find it helpful to download these files and bring your laptop to class so that you can replicate class demonstrations. If you do not have a laptop, you may wish to print out these files, bring them to class, and take notes. Having the files in front of you as we discuss them will maximize your learning. The DEMBA program does not require you to have a laptop computer, and you will be able to master statistics just fine without one. However, it is essential that you have access outside of class to a computer of some sort that runs Microsoft Excel. The textbook, my class discussion and notes assume that you do; most homework will require use of Excel. Your textbook may include a CD-ROM that contains the Palisades Decision Tools Suite, a collection of Excel add-in programs. We will use the StatTools add-in from this suite extensively throughout my part of the course. Professor Dyer will use other components, such as @Risk and PrecisionTree in his part of the course. ***Please do not install these programs from the CD-ROM!*** The CD-ROM contains limited student versions of the software. The full professional version of Decision Tools is available to you as a single download from a McCombs site (www.mccombs.utexas.edu/services/cbacc/coe/).

7. **PROFESSIONAL BEHAVIOR IS EXPECTED.**
- Turn off cell phones, pagers, Blackberrys and the like before entering class.
- Avoid arriving late to class.
- Minimize unscheduled personal breaks.
- Mute the volume control on your laptop.
- Respect the learning experience of other students as you would have them respect yours.
- Ordinarily, raise your hand to be recognized in order to speak.
- Avoid surfing the internet or dealing with email in class.
- If a compelling business or personal reason requires you to miss a class, let me know before class (if possible) so that alternative arrangements can be made for homework, class participation, etc.

8. Unless otherwise announced, you are responsible for material assigned in the text whether or not that material is covered in class.

9. Unless otherwise announced, you are responsible for material covered in class and on handouts, emails, or BlackBoard postings whether or not it is in the text.

10. It is unfair to allow a student to raise his/her score by submitting extra work unless all students are allowed the same opportunity. Therefore, extra work for extra credit will not be permitted.

11. **ACADEMIC DISHONESTY**. All students are expected to observe the UT Honor Code fully. Your responsibilities regarding the Honor System are described at http://deanofstudents.utexas.edu/sjs/spot_honorcode.php, which is incorporated herein by reference. I urge you to become familiar with this. If the application of the Honor System to this class and its assignments is unclear in any way, it is your responsibility to ask me for clarification.

12. **STUDENTS WITH DISABILITIES**. Upon request, the University of Texas at Austin provides appropriate academic accommodations for qualified students with disabilities. Services for Students with Disabilities (SSD) is housed in the Office of the Dean of Students, located on the fourth floor of the Student Services Building. Information on how to register, downloadable forms, including guidelines for documentation, accommodation request letters, and releases of information are available online at http://deanofstudents.utexas.edu/ssd/index.php. Please do not hesitate to contact SSD at (512) 471-6259, VP: (512) 232-2937 or via e-mail if you have any questions.

TENTATIVE SCHEDULE OF TOPICS

Date	**Topic**	**Related Textbook Reading (Chapter: Sections)**
Tues Aug 2 7:30-11:30	1. Introduction 2. Sample statistics and the normal distribution 3. Sampling distributions	1. Ch 2; Ch 3: 1-7,9 2. Ch 11: 1-3; Ch 13: 3.2; Ch 5: 1-3,6,7; Ch 6: 1-5 3. Ch 2: 2; Ch 8 (except: 3.3-3.6)
Wed Aug 3 8:00-noon	4. Random samples – identification 5. Random samples – confidence intervals 6. Random samples – hypothesis tests	4. <Class Notes #4> 5. Chap 9: 2, 3, 5, 9 6. Chap 10: 2, 3, 4.1, 6
Fri Aug 5 8:00-10:00	7. Simple regression 8. Multiple regression	7. Ch 11: 1, 2, 4, 5; Ch 12: 2, 3, 11 8. Ch 11: 5; Ch 12: 2,3,10; Chap 11: 6.1
Sat Aug 27 1:00-5:00	8. (cont'd) Multiple regression & techniques 9a. Cross-sectional modeling practicum 10a. Time series modeling practicum	8.<Class Notes #9>, Chap 11: 6.3 11a. Chap 11: 5-7; Chap 12: 2-7 12a. Chap 13: 1, 2, 3.3.2, 4-6, 9.3
Sat Sep 10 8:00-noon	9b. Cross-sectional modeling practicum 10b. Time series modeling practicum	11b. Chap 11: 5-7; Chap 12: 2-7 12b. Chap 13: 1, 2, 3.3.2, 4-6, 9.3
Fri Sep 23 4:00-8:00	Oral reports on research projects **FINAL EXAM** (in class)	

Each class will consist of two or more parts, separated by short breaks.

SCHEDULE OF HOMEWORK DUE DATES

All homework assignments will be posted on BlackBoard. Please submit homework solutions electronically via the Homework folder in BlackBoard. Homework is due by 8:00 am on the date indicated in the schedule below.

	Topic	**Due Date**
Homework #1	Sample statistics, Normal distribution	Tues Aug 9
Homework #2	Sampling distributions, Random Samples	Tues Aug 16
Homework #3	Confidence intervals, Hypothesis tests	Tues Aug 23
Homework #4	Simple regression	Tues Aug 30
Homework #5	Multiple regression	Tues Sep 6
Homework #6	Further regression techniques	Tues Sep 13
Homework #7	Model building	Tues Sep 20