

**OPRE 6301  
Cohort MBA  
Fall 2009**

**Instructor:**

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**Office Hours:**

**MA 3.208 Mondays and Wednesdays 5:00 – 6:45  
Otherwise by Appointment**

**Text:**

**STATISTICS FOR MANAGEMENT AND ECONOMICS, 8<sup>th</sup> EDITION, by G. KELLER, DUXBURY PRESS, 2008. (ISBN 10 digit 0-324-56949-1 ; ISBN 13 digit 978-0-324-56949-0)**

**Student Learning Objectives/Outcomes:**

- 1) Be able to organize and summarize raw data**
- 2) Be able to build and evaluate a regression model from raw data**
- 3) Be able to apply the basic rules of Probability Theory**
- 4) Be able to apply the concept of a random variable to solve business problems**
- 5) Be able to apply the Normal, Poisson, and Binomial Distributions to solve business Problems**
- 6) Be able to simulate data from the Normal, Poisson, and Binomial Distributions**
- 7) Be able to identify significant changes in averages and proportions**
- 8) Be able to determine if two populations have the same mean or the same proportion**
- 9) Be able to determine if several populations have the same mean**

## **Grades:**

Course grade is based solely on three case studies (take-home examinations) given at the end of each module described below. There is no final exam. Each exam will be graded on the following scale:

- A 94 – 100
- B 87 – 93
- C 75 – 86

The final grade is the arithmetic average of the scores on the three exams and will be converted to course grades using the following scale:

- A 94.67 – 100
- A- 93.33 – 94.33
- B+ 91.33 – 93
- B 88.67 – 91
- B- 86.33 – 88.33
- C+ 84.33 – 86
- C 79.33 – 84
- C- 75 – 79
- F <75

Textbook practice problems for each section are suggested below. These are designed to help you understand the techniques and concepts introduced in the course and their completion does not count toward your grade.

## **Supplementary Materials:**

Lecture notes for the course and EXCEL files that will be used in the lectures can be downloaded from my web site [www.utdallas.edu/~wiorkow/](http://www.utdallas.edu/~wiorkow/)

## **Class Procedure:**

Each module corresponds to approximately 12-15 hours of classroom time.

This course assumes that you are using a computer statistical package to implement the statistical procedures. All lectures use Microsoft EXCEL for illustrative purposes.

You are responsible for the material covered in the class sessions, a small portion of which is not covered in the text book. Conversely, you are not responsible for material in the text book not covered in the lectures.

## **Module 1 – Descriptive Statistics**

**Textbook Chapters:** Chapter 1; Appendix 1; CD Appendices A1 – A3  
Chapter 5  
Chapter 2  
Chapter 3  
Chapter 4; 4.1 – 4.4 [Add "t" and "z"]  
Chapter 16  
Chapter 17; 17.1 – 17.2  
Chapter 18; 18.1 – 18.2; 18.6

**Illustrative Problems:** 5.5, 5.6, 5.9, 5.11, 5.12  
2.12, 2.14, 2.20; 2.38; 2.42a, 2.56, 2.58, 2.74, 2.84, 2.88  
4.2, 4.4, 4.6, 4.8, 4.10, 4.20, 4.22, 4.60  
16.2, 16.6, 16.12, 16.24a, 16.28(a,b), 16.34, 16.46, 16.48a  
17.10(a,b,c), 17.12  
18.4, 18.16

## **Module 2 – Probability and Random Variables**

**Textbook Chapters:** Chapter 6  
Chapter 7 [Add Poisson Approximation to the Binomial]  
Chapter 8: 8.2 – 8.3 [Add Normal Approximation to the Poisson]  
[Add simulation of random variables using the computer]  
Chapter 22 [Add Risk Criteria; Decision Simulation]

**Illustrative Problems:** 6.8, 6.28, 6.36, 6.40, 6.42, 6.44, 6.56, 6.58, 6.62, 6.66, 6.70, 6.80  
6.96, 6.100  
7.20, 7.30, 7.36, 7.54, 7.62, 7.70, 7.72, 7.74, 7.90, 7.92, 7.98,  
7.112, 7.118, 7.122, 7.130  
8.34, 8.36, 8.38, 8.40, 8.42, 8.54, 8.56, 8.64,  
9.30, 9.32, 9.36, 9.38, 9.42 (Not a typo)  
22.8a, 22.10(a,c), 22.14a, 22.16

## **Module 3 – Statistical Estimation and Inference**

**Textbook Chapters:** Chapter 9  
Chapter 11: 11.1 – 11.2  
Chapter 10  
Chapter 12: 12.1, 12.3  
Chapter 13: 13.1 – 13.3, 13.5

**Chapter 14: 14.1 – 14.2**

**Chapter 15: 15.1 – 15.2**

**Illustrative Problems: 9.22, 9.28, 9.30, 9.32, 9.36**  
**11.10, 11.16, 11.42**  
**10.26, 10.32, 10.36, 10.38, 10.52, 10.56**  
**12.16, 12.24, 12.30, 12.34, 12.70,**  
**13.4, 13.14, 13.16, 13.28, 13.40, 13.50, 13.70, 13.86, 13.88**  
**14.10, 14.12, 14.16,**  
**15.12, 15.22, 15.28**

**(Note: The book uses an alpha value of .10. This is bad practice, use alpha = .05 or .01).**

### **Tentative Class Schedule**

<u><b>Date</b></u>	<u><b>Activity</b></u>	<u><b>Exam Schedule</b></u>
<b>Thursday, Aug 20 through Friday Sep 4</b>	<b>Begin Module 1</b>	
<b>Monday Sept 7</b>	<b>Labor Day Holiday</b>	
<b>Wed Sept 9 through Monday Sept 21</b>	<b>Finish Module 1</b>	<b>Distribute First Exam</b>
<b>Wednesday Sept 23</b>	<b>Student Questions</b>	
<b>Monday, Sept 28</b>	<b>Begin Module 2</b>	<b>Exam 1 Due</b>
<b>Wed Sep 30 through Monday Oct 26</b>	<b>Finish Module 2</b>	<b>Distribute Second Exam</b>
<b>Wednesday, Oct 28</b>	<b>Student Questions</b>	
<b>Monday, Nov 2</b>	<b>Begin Module 3</b>	<b>Exam 2 Due</b>
<b>Wed Nov 4 through Wed Nov 25</b>	<b>Continue Module 3</b>	
<b>Monday Nov 30</b>	<b>Finish Module 3</b>	<b>Distribute Third Exam</b>
<b>Wednesday Dec 2</b>	<b>Student Questions</b>	
<b>Monday Dec 7</b>		<b>Exam 3 Due</b>