*Revised by Dr. Xiao Li*
*8/1/15*

**BRAZOSPORT COLLEGE**
**SYLLABUS FOR TMGT 3350**
**APPLIED TECHNICAL STATISTICS**
**FALL 2015**

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| **INSTRUCTOR:** | **Dr. Xiao Li** |
| **DAYS/TIME,LOCATION:** | **Online** |
| **INSTRUCTOR OFFICE HOURS:** | **As Needed, Office: J216** |
| **PHONE:** | **979-230-3281(ofc.) or 248-884-9426 (cell)** |
| **E-Mail:** | **xiao.li@brazosport.edu** |

## COURSE DESCRIPTION

This course introduces students to descriptive statistics (measures of central tendency and variation and representing data graphically), and statistical inference. Inference will involve sampling techniques, estimation, hypothesis testing, and simple regression. Applications emphasize continuous improvement of products and services. (3 SCH, 3 lecture, 0 lab) CIP 52.1302.0036
*Prerequisite: Senior standing and TMGT 3307.*

*This section will be delivered in a hybrid format, requiring the student to spend substantial time online (via D2L) participating in discussions and team projects, submitting assignments, and completing assessments.

## TEXTBOOK OR COURSE MATERIAL INFORMATION

Klibanoff, Sandroni, Moselle, Saraniti (2006). Managerial Statistics: A Case-Based Approach. South-Western Cengage Learning. ISBN: 13: 978-0-324-22645-4; 10: 0-324-31446-9

Contact the Brazosport College Bookstore with a credit card for course materials. Phone: 979.230.3651. Fax: 979.230.3653. Email:bookstore@brazosport.edu.
Website: http://www.brazosport.edu/bookstore

## COURSE LEARNING OBJECTIVES

Upon successful completion of this course, the student will be able to:

A. To make the topic of applied statistical regression both accessible and relevant.

B. Apply an understanding of descriptive statistical measures and statistical inference to effectively perform sampling techniques, estimation, hypothesis testing to typical situations using MS Excel/Kstat software.

C. To develop an understanding of what regression is and how to apply it in a variety of decision-making contexts.

D. Apply the basics of statistical process control to the continuous improvement of products and services.

E. To introduce business statistics as a compelling and invaluable element of management of management education.

## STUDENT LEARNING OUTCOMES

Students will:

- apply course concepts by individually completing weekly assigned problems. All assignments are to be submitted in Desire2Learn system by due date noted in the *Course Schedule* below. **Unless prior arrangement is made with the instructor, late homework will not be accepted**.
- demonstrate written, oral, and interpersonal communication skills and apply key course concepts by working as a team to complete cases assigned by the instructor. These cases must be submitted to Desire2Learn by the due date noted in the Course Schedule below.
- demonstrate their knowledge of course concepts by performing successfully on the mid-term and final exams. These exams may only be taken on a make-up basis if arranged with the instructor prior to the date scheduled in the Course Schedule below.

## STUDENTS WITH DISABILITIES

Brazosport College is committed to providing equal education opportunities to every student. Brazosport College offers services for individuals with special needs and capabilities including counseling, tutoring, equipment, and software to assist students with special needs. Please contact the Special Populations Counselor, 979.230.3236, for further information.

## ACADEMIC HONESTY

Brazosport College assumes that students eligible to perform on the college level are familiar with the ordinary rules governing proper conduct including academic honesty. The principle of academic honesty is that all work presented by you is yours alone. Academic dishonesty including, but not limited to, cheating, plagiarism, and collusion shall be treated appropriately. Please refer to the Brazosport College Student Guide for more information. This is available online at http://www.brazosport.edu. Click on the CATALOGS AND SCHEDULES link under STUDENTS.

Academic dishonesty violates both the policies of this course and the Student Code of Conduct. In this class, any occurrence of academic dishonesty will be referred to the Dean of Student Services for prompt adjudication, and will, at a minimum, result in _____F_____ in this course. Sanctions may be imposed beyond your grade in this course by the Dean of Student Services.

## COURSE REQUIREMENTS AND GRADING POLICY

***Grading Scale:*** 9-100% = A, 80-89 = B, 70-79% = C, 60-69% = D, Below 60% = F. (Please note that a grade of D will not be accepted in the B.A.T. program)

The course grade will be determined from the following:

| Assignments, Team Cases and Exams | Points |
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| Week 1 | 10 |
| Week 2 | 30 |
| Week 3 | 30 |
| Week 4 | 20 |
| Week 5 | 20 |
| Week 6 | 20 |
| Week 7 | 30 |
| Week 8 | 30 |
| Week 10 | 20 |
| Week 11 | 30 |
| Week 12 | 30 |
| Week 13 | 30 |
| Mid-term Exam | 100 |
| Final Exam | 100 |
| **Total Points** | **500** |

**MAKE-UP POLICY**

**No make-up** for Assignments, Quizzes, Mid-term and Final Exams

**STUDENT RESPONSIBILITIES**

Students are expected to fully participate in this course. The following criteria are intended to assist you in being successful in this course:

a. understand the syllabus requirements
b. use appropriate time management skills
c. communicate with the instructor
**d.** complete course work on time, and utilize online components (such as Desire2Learn) as required.

**TMGT 3350 Applied Technical Statistics Fall 2015 Course Schedule**

| **Dates** | **Readings/Topic** | **Assignments** |
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| Week 1 (8/24-8/30) | Chapter 1: Introduction to Probability Distributions and Estimation : **1.1-1.7 page 1-18** | • Introduce yourself to the class<br>• Describe the following key term: 1) Mean; 2) Variance; 3) Standard deviation; 4) Population; 5) Sample; 6) Normal Distribution; 7) Standard Normal Distribution. Upload your week 1 assignment through Desire2Learn system,<br>**Due 8/30 (10 points)** |
| Week 2 (8/31-9/6) | Read the following material written by Dr. Li<br>***Applied Technical Statistics Examples*** | • Exercise 1 on page 9 of Applied Technical Statistics Examples<br>• Exercise 2 on page 11 of Applied Technical Statistics Examples<br>• Exercise 3 on page 14 of Applied Technical Statistics Examples |

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| | Posted on **week 2** learning module | **Due 9/6 (30 points)** |
| Week 3 (9/7-9/13) | Chapter 1: Introduction to Probability Distributions and Estimation<br>• **Sampling Distribution**<br>• **Confidence Interval**<br>• **Kstat** | • Get familiar with Kstat<br>• Get familiar with the following Excel Functions: AVERAGE; NORMDIST; NORMINV; NORMSDIST; NORMSINV; TDIST; TINV<br>• Problems 1, 2, 3, 4, 6, 8 (page 31-33)<br>**Due 9/13(30 points)** |
| Week 4 (9/14-9/20) | Review Chapter 1 | • Problem 10, 12 (page.33)<br>**Due 9/20 (20 points)** |
| Week 5 (9/21-9/27) | Chapter 2: Hypothesis Testing | • Describe the new terms on page 56<br>• Use the example ***Test Marketing*** on text on page 37-40 to illustrate 5 steps to do hypothesis testing (Must include KStat analysis in Excel format, same as **figure 2.1: Univariate statistics for sales** on page 37)<br>**Due 9/27 (20 points)** |
| Week 6 (9/28-10/4) | Review Chapter 2 | • Problem 4 (page 61)<br>• Get familiar with **KStat**, get to know how to use KStat to do Univariat statistics analysis<br>**Due 10/4 (20 points)** |
| **Week 7 (10/5-10/11)** | Chapter 3: Introduction to Regression | • Describe the following key terms: linear regression; best fit line; method of least squares<br>• Using the data file ***autoram.xls*** to conduct the following analysis:<br>1) Univariate statistics (same as pp. 67);<br>2) Scatterplot of price vs. income (same as pp. 67);<br>3) Regression of price vs. income (same as pp.67)<br>**Due 10/11 (30 points)** |
| Week 8 (10/12-10/18) | Review Chapter 3<br>Mid-term Study sheet will be posted | • Problems 2 and 4 (pp. 83-84)<br>**Due 10/18 (30 points)** |

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| Week 9 (10/19-10/25) | Mid-term Exam | Cover Ch1 through Ch3 and Extra Material: ***Applied Technical Statistics Examples***<br><br>**Due 10/25 (100 Points)** |
| Week 10 (10/26-11/1) | Chapter 4: Using the Regression Equation | • Describe the new terms on page 100-101<br>• Using the data file ***newspapers.xls*** to conduct the following analysis and interpret the results:<br>1) Univariate statistics (same as P. 93);<br>2) Scatterplot for Sunday vs daily (same as P.93)<br>3) Regression of price vs. income (same as P. 94)<br>4) Prediction of Sunday sales (same as p.96)<br><br>**Due 11/1 (20 points)** |
| Week 11 (11/2-11/8) | **Review Chapter 4** | • Problem 2, and 8<br><br>**Due 11/8 (30 points)** |
| Week 12 (11/9-11/15) | Chapter 5: Dummy and Slope Dummy Variables | • Describe the new terms on page 122<br>• Using the data file ***california.xls*** to conduct the following analysis and interpret the results<br>1) Simple regression for the Monterey system (same as page 111 Figure 5.3);<br>2) Simple regression for the Bakersfield system (same as page 112 Figure 5.4);<br>3) Complete data for California Strawberries same as page 112 Figure 5.6);<br>4) Multiple regression for California Strawberries, Inc. (same as page 115 Figure 5.7)<br><br>**Due 11/15 (30 points)** |
| Week 13 (11/16-11/22) | Chapter 9: Dealing with Time and Seasonality | • Using the data file ***sada.xls*** to conduct the following analysis and interpret the results<br>1) page 188 Figure 9.1;<br>2) Page 188 Figure 9.2;<br>3) page 190 Figure 9.4;<br>• Case 3 on page 200: ***Restaurant Planning***<br><br>**Due 11/22 (30 points)** |
| Week 14 (11/23-11/29) | **Thanksgiving Holiday** | **No Assignments** |

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| Week 15 (11/30-12/6) | Prepare Final Exam | **Final Study Sheet** will be posted |
| **Week 16 (Final Exam)** | Final Exam (Take Home Exam) | Cover Chapters 1, 4, 5 & 9<br><br>**Due 12/8 by 11:59PM (100 Points)** |

**OTHER STUDENT SERVICES INFORMATION**

Information about the Library is available at http://www.brazosport.edu/library or by calling 979.230.3310.

For assistance with online courses, an open computer lab, online and make-up testing, audio/visual services, and study skills, visit Learning Services next to the Library, call 979.230.3253, or visit http://www.brazosport.edu/learningservices.

For drop-in math tutoring, the writing center, supplemental instruction and other tutoring including e-tutoring, visit the Student Success Center, call 979.230.3527, or visit http://www.brazosport.edu/studentsuccesscenter.

To contact the ***Social Sciences and Business*** Department call **(979.230.3222).**

The Student Services provides assistance in the following:

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| Counseling and Advising | 979.230.3040 |
| Financial Aid | 979.230.3294 |
| Student Life | 979.230.3355 |

To reach the Information Technology Department for computer, email, or other technical assistance call the Helpdesk at 979.230.3266.