Course #: STAT 5428  
(CRN 15576)  
Course Title: Introduction to Statistical Analysis  
Credit Hrs: 3  
Term: Fall 2014  (Instruction 08/25/2014-12/04/2014)  
Course Meetings & Location: 09:30am – 10:50am MW  Classroom Building C203  
11:00am – 11:50am MW  Bell Hall 130  
Prerequisite Courses: STAT 2480 with a grade of C or higher.  
Instructor: Xiaogang Su  
Office Location: Bell Hall 320  
Contact Info: Phone: (915) 747-6860 [O]  
xsu@utep.edu  
Fax: (915) 744-6502  
Office Hours: 1:30-2:30pm TW  
Class Web page: https://sites.google.com/site/xgsu00/stat-5428  
Course Description and Learning Outcomes: Fundamental techniques for statistical data analysis, including basic probability concepts, inference about means and variances of two populations, analysis of variance and covariance, least squares and logistic regression, categorical data analysis, nonparametric tests and experimental design. Analysis of biological and other data sets using statistical software packages, checking validity of modeling assumptions, and alternatives when modeling assumptions are not satisfied. Computer simulations are used to illustrate concepts such as power and confidence level. Open to students of all disciplines.
The course is aimed to provide coverage of commonly used statistical methods and show how to use them with R to analyze data and interpret results. This course schedule below is tentative and the instructor may vary from it when necessary. Please use this primarily as an outline of the course materials covered throughout the semester and refer to the class web site for updated information.

1. Introduction and Reviews – The basics and preliminaries
2. Introduction to R
3. Describing data: descriptive statistics and statistical graphics
4. One-Sample Inferences
   a. Statistical Inference: Estimation and hypothesis testing
   b. Continuous data - mean/median, variance, skewness, and kurtosis
   c. Categorical data – proportion, one-way contingency tables
5. Two-Sample Inferences (similarly aligned)
6. Designs of experiments and ANOVA
7. Simple/Multiple Linear Regression
8. Model Selection and Diagnostics
9. Logistic Regression (if time allows)

Course Activities/Assignments: Lecture Component (class instructions) plus Lab Component (mostly on programming and exercise problems)

Course Schedule:
- 08/25 Class starts
- 10/31 Class drop deadline
- 12/08 - 12/12 Final Exam Period

Holidays:
- 09/01 Labor Day
- 11/27-11/28 Thanksgiving
Grading Policy: There will be three midterms and one comprehensive final exam, plus computer projects and a few in-class pop quizzes, which, in together, add up to the final grade. Homework assignments will be made available on the course web page. No homework will be collected. But you are highly recommended to do homework regularly and independently.

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<th>Date and Time</th>
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<tr>
<td>Midterm Exam I</td>
<td>09/24 Wed. 9:30-10:50am</td>
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<td>Midterm Exam II</td>
<td>10/22 Wed. 9:30-10:50am</td>
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<td>Midterm Exam III</td>
<td>11/19 Wed. 9:30-10:50am</td>
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<td>Computer Projects</td>
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<td>In-Class Pop Quizzes</td>
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<td>Final Exam</td>
<td>12/08 Mon. 10:00am-12:45pm</td>
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Letter grades are determined according to the following scale below. Note these raw final scores are out of 105.

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<th>Grade Score</th>
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<tr>
<td>A</td>
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<td>B</td>
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Make-up Policy: Incomplete grades and make-up exams are given only in extreme instances and only with prior permission of the instructor. All assigned projects must be turned in on time. NO LATE COURSEWORK WILL BE ACCEPTED, EXCEPT EXTREME SCENARIOS.

Attendance Policy: Class attendance is required and helpful to decide borderline grades. If a student has to be absent from a particular seminar, he/she will be responsible for catching up with course material. If you expect to miss up to 10 class hours for any reason, then please do not consider taking this course.

Academic Integrity Policy: Please see http://academics.utep.edu/Default.aspx?tabid=23785

Civility Statement: This is a class where participation is required. You will be participating in classroom discussions. All students will be treated with respect.

Disability Statement: If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass.
Military Statement: If you are a military student with the potential of being called to military service and/or training during the course of the semester, you are encouraged to contact me as soon as possible.