CS/STAT 6313.001 – Statistical Methods for Data Science

Course Information
Course Number/Section: CS/STAT 6313.001
Course Title: Statistical Methods for Data Science
Term: Fall 2017
Days & Times: MW 10:00 – 11:15am
Location: ECSS 3.420

Professor Contact Information
Instructor: Dr Bill Semper
E-Mail: WJS130130@utdallas.edu
Office hours: MW 1:00 - 2:00 pm, ECSS 4.602
Phone: 972-883-4139
Website: www.utdallas.edu/~wjs130130/

Course Pre-requisites, Co-requisites, and/or Other Restrictions:
Prerequisites: CS/SE/STAT 3341 or equivalent.

Course Description
Introduction to statistics, including simple descriptive statistics and graphical statistics. Statistical inference, including parameter estimation, confidence intervals, and hypothesis testing. Chi-square tests, nonparametric statistics, Bootstrap, and Bayesian Inference. Regression Analysis, including Least squares estimation, analysis of variance, ANOVA, and multivariate regression. Introduction to the R programming language, with hands on application.

Student Learning Objectives/Outcomes
Students will learn the basics of statistical analysis and be able to apply the fundamental methods of sampling, interval estimation, hypothesis testing, and regression analysis. Students will be able to use the R programming language to analyze data sets.

Required Textbooks and Materials
Academic Calendar: *These descriptions and timelines are subject to change at the discretion of the Professor.*

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>August 21</td>
<td>Classes Begin</td>
</tr>
<tr>
<td>October 18</td>
<td>Mid-Term Exam</td>
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<tr>
<td>December 6</td>
<td>Classes End</td>
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<tr>
<td>December 6</td>
<td>Final Exam</td>
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Grading Policy

<table>
<thead>
<tr>
<th>HW</th>
<th>10%</th>
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<tbody>
<tr>
<td>Mid-Term Exam</td>
<td>45%</td>
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<tr>
<td>Final Exam</td>
<td>45%</td>
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Please note: No extra credit assignments will be given.

Grading will be on a curve, with the mean point for the class being used as the B+/A- cutoff point. If the mean score is above 90%, the following scale is used:

\[
\begin{align*}
92 \leq \text{score} \leq 100 & \quad A \\
90 \leq \text{score} < 92 & \quad A- \\
88 \leq \text{score} < 90 & \quad B+ \\
82 \leq \text{score} < 88 & \quad B \\
80 \leq \text{score} < 82 & \quad B- \\
\text{score} < 80 & \quad C
\end{align*}
\]

The instructor reserves the right to assign B- grades to students with final scores less than 2 standard deviations below the median score. The instructor reserves the right to assign C grades to students who score less than 50% on the final.

For detailed information about University policies and procedures related to this syllabus, please refer to [http://go.utdallas.edu/syllabus-policies](http://go.utdallas.edu/syllabus-policies).