# *CS/STAT 6313.001 – Statistical Methods for Data Science*

**Course Information**

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| *Course Number/Section* | *CS/STAT 6313.001* |
| *Course Title* | *Statistical Methods for Data Science* |
| *Term* | *Spring 2015* |
| *Days & Times* | *TTHR 10:00 – 11:15am* |
| *Location* | *CN 1.120* |

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**Professor Contact Information**



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| *Instructor* | *Dr Bill Semper* |
| *E-Mail* | *WJS130130@utdallas.edu* |
| *Office hours* | *Tues 2:30 – 4:30 pm, ECSS 4.706* |
| *Phone* | *972-883-4139* |
| *Website* | *www.utdallas.edu/~wjs130130/* |



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**Course Pre-requisites, Co-requisites, and/or Other Restrictions:**

*Prerequisites: CS/SE/STAT 3341 or equivalent.*

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**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.*

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**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.*

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**Required Textbooks and Materials**

*Text: Applied Statistics and Probability for Engineers, Montgomery and Runger, 6th Edition, Wiley. ISBN-13 9781118539712. We will cover chapters 1-5 (briefly), 6 – 11, 13 – 15.*

**Assignments & Academic Calendar:** ***These descriptions and timelines are subject to change at the discretion of the Professor.***

| Date | Topic |
|---|---|
| January 13 | Classes Begin |
| February 12 | Test 1 |
| March 26 | Test 2 |
| May 7 | Test 3 |

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**Grading Policy**

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|---|---|
| HW | 10% |
| Test 1 | 30% |
| Test 2 | 30% |
| Test 3 | 30% |

**Please note: No extra credit assignments will be given.**

Grading will be on a curve, although it is the opinion of the instructor that there is a certain minimum set of knowledge which you must demonstrate to be considered proficient in the subject. The curve takes into account problems in measurement and will not be decided until all grades are in. Your midterm grade will have a limited number of data points and may or may not be an accurate reflection of your final grade, just your proficiency up to that point. The base grading scale given below may be adjusted based upon the performance of the class as a whole:

| | | |
|---|---|---|
| 100-92 A | 91-90, A- | |
| 89-88, B+ | 87-82, B | 81-80, B- |
| 79-78, C+ | 77-72, C | 71-70, C- |

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