

Friday 3:30 - 6:20 p.m.

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References:

Probability and Statistics with R, 2nd ed., Ugarte M., Militino A., and Arnholt A., CRC Press, 2016.

An Introduction to Statistical Learning with Applications in R. James, Witten, Hastie, and Tibshirani. Springer, 2015.

Pre-requisites: The DSO 529 pre-requisite does not apply. This course has no course prerequisite beyond a basic knowledge of probability and Statistics, as that of a first course in probability, and matrix algebra.

Course Objectives: The course provides an overview of statistical methods useful to data analytics focusing on engineering and decision making applications. Most of the statistical methods are drawn from a multivariate analysis course.

Week	Topic	EXAMS
1	Introduction to R	
2	Exploratory Data Analysis using R	
3	Introduction to Data Mining & Statistical	
4	Multivariate Statistics (and linear algebra)	
5	Linear Models - 1	
6	Linear Models - 2	
7	Midterm 1	TBD
8	Discrimination	
9	Classification	
10	Clustering	
11	Principal Components	
12	Logistic regression - 1	
13	Logistic regression - 2	
14	Outliers	
15	Monte Carlos simulation applications	
	FINAL EXAM	TBD

Grading Policy: homework assignments 30%, midterm exam 30%, final exam 40%.

Software: When dealing with large multivariate data sets a computational tool is required. In this course the R package is the main computational tool. Students will use their own laptop during exams and class sessions.

Academic Integrity. The Viterbi School of Engineering adheres to the University's policies and procedures governing academic integrity as described in SCampus (www.usc.edu/dept/publications/SCAMPUS/). Students are expected to be aware of and to observe the academic integrity standards described in SCampus, and to expect those standards to be enforced in this course.

Students with Disabilities. Any Student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776