



Statistics and Machine Learning
21:219:329 (3 credits)

COURSE DESCRIPTION:

Basic concepts in statistical learning and implementation in Python or R are introduced. Course covers linear regression, logistic regression, ensemble methods, optimization methods for model learning, and various advanced topics such as deep neural networks, kernel learning and Gaussian processes.

PREREQUISITE(S):

Students must have completed Calculus II prior to taking Statistics and Machine Learning. This course may be counted as an elective for computer science majors.

TEXT BOOK:

An Introduction to Statistical Learning with Application in R (James, Witten, Hastie, Tibshirani) <http://faculty.marshall.usc.edu/gareth-james/ISL/>

DEPARTMENT WEBSITE: <http://www.ncas.rutgers.edu/math>

THIS COURSE COVERS THE FOLLOWING:

Introduction
Statistical Learning
Linear Regression
Classification
Resampling Methods
Model Selection
Regularization
Tree-based method
Support Vector Machines
Advanced topics (Nonparametric model, neural network, Gaussian process, etc.)

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