

# STAT 154: MODERN STATISTICAL PREDICTION AND MACHINE LEARNING

University of California, Berkeley  
Summer 2015

## Schedule

Session B: June 8, 2015–August 14, 2015

LECTURE: MWF 12–1:30 PM, 247 Cory Hall

LAB / SECTION: TuTh 11–12:30 PM, 340 Evans Hall

## Instructor

Jeffrey Regier

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Office hours: TBA

## Graduate student instructor

Ashia Wilson

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Office hours: TBA

## Course websites

1. <http://www.stat.berkeley.edu/~jeff/stat154/syllabus.html>
2. <https://bcourses.berkeley.edu/courses/1332807>

## Texts

- PRIMARY: G. James, D. Witten, T. Hastie, and R. Tibshirani, *An Introduction to Statistical Learning*. <http://www-bcf.usc.edu/~gareth/ISL/> (free online)
- SECONDARY: T. Hastie, R. Tibshirani, and J. Friedman, *The Elements of Statistical Learning*. Second Edition. <http://statweb.stanford.edu/~tibs/ElemStatLearn/> (free online)

## Course topics

We will cover most of the topics in the primary course text, including linear regression, classification, cross-validation, the bootstrap, model selection, regularization, splines, generalized additive models, tree-based methods, support vector machines, and unsupervised learning.

## Prerequisites

- a semester of multivariate calculus or the equivalent, esp. partial derivatives; e.g. MATH 53
- a semester of linear algebra or the equivalent (matrices, vector spaces); e.g. MATH 54
- a semester of statistical inference or the equivalent; e.g. STAT 135

## Grading

Final grades will be based on homework assignments and quizzes during section (30%), 2 in-class exams (20% each), and a final project (30%). Each student's lowest quiz grade will be dropped.

**Academic integrity**

You may discuss assignments with other students, but each student must submit his or her own work. You may NOT copy any part of others' solutions or computer code verbatim. You may NOT transfer a copy of your computer code to any other student, or allow other students to copy any part of your work verbatim. Students may NOT collaborate on quizzes or exams. Violations will be referred to the university's administrators.