



Statistics 222 — Spring 2016 Syllabus Masters of Statistics Capstone Project

CCN: 87789

Class meets MW 9–11A in 340 EVANS

Instructor: K. Jarrod Millman

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Office Hours: TBA

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Office Location: 393 Evans Hall

Office Hours: TBA

I reserve the right to make changes to the syllabus.

Course Description: In this course you will develop a portfolio of data analysis projects, culminating in a collaborative group project in which you'll work with an academic or industry partner. The course is somewhat unique in that it's organized around data sets and not around a prespecified set of lecture topics. However, along the way, we'll cover a variety of methods used in modern applied statistics, we'll explore computational tools for working with non-standard data formats and doing reproducible research, and we'll practice the communication skills you'll need to be a successful practicing statistician.

Course Structure: In the first part of the course, everyone will be working on the same data analysis projects, some individually and some in groups. For each of the group projects, you'll be assigned a team of 3-4 students. In the second part of the course, you'll again be working in a team, and you'll also have an industry partner who is providing the data set. For this project, each team will turn in one final report.

Prerequisites: Statistics 201A-201B, 243. Restricted to students who have been admitted to the one-year Masters Program in Statistics beginning fall 2012 or later.

Credit Hours: 4

Text(s): There is no required textbook for this course. I will be pointing you to a lot of different resources as we go, and you will also be collecting them yourself and sharing them with the class. However, I strongly recommend:

Friedman, J., Hastie, T., & Tibshirani, R. (2001). *The Elements of Statistical Learning* (Vol. 1). Springer, Berlin: Springer Series in Statistics.

You can find online via [SpringerLink](#).

Grading:	Participation	5%
	Quizzes	5%
	Readings	5%
	Individual report	10%
	Small projects	20%
	Final project	55%

Quizzes will be held during class. I will drop your lowest score.

For each assigned reading, you will submit a 2 paragraph report by 21:00 on the Thursday it is due. Unless otherwise specified, the first paragraph should summarize the reading. The second paragraph should briefly explore something that interested you (e.g., you may wish to focus on one aspect of the paper in more depth, you may wish to discuss something in the reading that you disagree with).

There will be 2 small projects and 1 individual project. You will be provided a rubric at the start of each project. You may discuss the individual projects with your classmates, but you will be required to work on it independently.

Your final project report will be graded on a 0-100 scale. I'll give you a rubric ahead of time.

Course Policies:

Attendance and behavior in class: You are expected to attend all lectures and labs. Any known or potential extracurricular conflicts should be discussed in person with me during the first two weeks of the semester, or as soon as they arise. **Cellphones** are to be turned off during class time. **Laptop** use during class will often be required, but should be used for course work only (i.e., not for surfing the web).

Submission of assignments: Assignments will be accepted by electronic submission to GitHub only. There will be no makeup quizzes. No late reading reports or homeworks will be accepted.

Academic integrity: Any work submitted by you and that bears your name is presumed to be your own original work that has not previously been submitted for credit in another course. While you are permitted to discuss the assignment for the individual project, both the code and writeup must be your own. In particular, discussing your code with another student is acceptable, whereas simply giving him or her your own code is not. This is different from the group projects, in which what you turn in will be jointly produced by the entire team, and sharing of code is encouraged. If you are not clear about the expectations for completing any particular assignment, be sure to seek clarification from the instructor. Any evidence of cheating or plagiarism will be subject to disciplinary action. Please read the Honor Code (<http://asuc.org/honorcode/index.php>) carefully.

Students with disabilities: If you need accommodations, please make arrangements in a timely manner through DSP.