

**36-726**

**Statistical Practice**

**Spring 2019**

## **Course Policies and Syllabus**

**Instructors:** Howard Seltman   Baker Hall 232H   412-268-3938   [hseltman@stat.cmu.edu](mailto:hseltman@stat.cmu.edu)  
Susan Buchman   TBA   [sbuchman@andrew.cmu.edu](mailto:sbuchman@andrew.cmu.edu)

**Class Times:** Mondays/Wednesdays 3:30-4:50 in WEH 5409

**Course Webpage:** <https://cmu.instructure.com/> or <http://www.stat.cmu.edu/~hseltman/726/>

### **Overview and Objectives:**

Statistical Practice is the capstone consulting project course of the Master's of Statistical Practice program. In the first two weeks of class, clients present their projects. Student then rank projects and are assigned to a single project in groups of two or three. Each project is assigned one of the two faculty instructors as a mentor. Students work for 12 weeks with the client and the mentor to develop solutions to the client's problem in the framework of guided practice. Typically, a project involves:

1. Learning to work with the client, and fully understanding the client's needs
2. Understanding the data and cleaning it
3. Optionally gathering new data by web scraping or other means
4. Testing various solutions to the client's problem
5. Fully developing one or more solutions
6. Providing interim reports to the client
7. Providing a final written report, a final oral report with slides, and well-documented software during the last two weeks of the semester

During the semester, some of the classes will be lectures about presentation skills, computational approaches, and new statistical theory and practice related to specific projects. Most of the classes will be devoted to incremental practice talks. Each project group will also meet weekly with their mentor. Written reports will be evaluated for feedback at two times during the semester. A major portion of the learning comes from listening to and questioning other groups, so that you gain experience from all twelve projects, rather than just one.

The specific objectives of this course are that by the end of the semester you will be able to

1. Demonstrate effective interpersonal skills related working with clients
2. Demonstrate effective skills for data cleaning, analysis, and model verification
3. Demonstrate effective written and oral presentation skills.
4. Work effectively in a group setting
5. Demonstrate production of software that is well-documented enough to be useful to a client
6. Grasp the entire arc of the consulting project, and explain how to approach a new project

### **Evaluation:**

It is essential to the success of this class that you participate actively. This means that you must work as a group to divide and recombine tasks, including data analysis, computation, writing, and speaking, and you must take part in discussions of other groups' work. The only way for this class to work successfully is if everyone is present, prepared, and on time. Attendance is mandatory.

Since we are aiming for mastery of material, it will not be unusual to be asked, based on feedback from the instructor or other students, to redo an analysis, rewrite a program, or rewrite a report to improve it. In fact, you should expect to do several drafts/iterations of your work.

All of these activities will contribute to your final course grade.

**Syllabus:**

- First two weeks: Client presentations to the class (scheduled class time and other times)
- Middle 12 weeks: Projects
- Final two weeks: Class presentation to the clients (scheduled class time and other times)

**Getting in touch with us:**

The easiest and most reliable way to get in touch with us is by email. Feel free to send mail at any time. We will respond as soon as we can.

Beyond regular weekly, you are also welcome to stop by our offices any time to discuss the class. Please understand that we may not be free to talk to you at that time, but, in that event, we can make an appointment for a later time.

**Academic Integrity:**

As a graduate student at Carnegie Mellon University, you are expected to uphold high standards of academic integrity. Please read the official policy at <http://www.cmu.edu/policies/student-and-student-life/academic-integrity.html>.

In this course, you must cite the source of any code that you do not write yourself, and you must cite the source (with quotation marks if unchanged) for text in written reports. You must not discuss any client related issues with anyone other than team members, class instructors, and the client. Unless given explicit permission from the client, you cannot share data or reports with anyone outside of the class. Unless given explicit permission, you must delete all client data at the end of the semester. Feel free to talk to us if you have any questions or comments about what constitutes plagiarism or inappropriate collaboration.

**Take care of yourself:**

Do your best to maintain a healthy lifestyle this semester by eating well, exercising, avoiding drugs and alcohol, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress.

All of us benefit from support during times of struggle. You are not alone. There are many helpful resources available on campus and an important part of the college experience is learning how to ask for help. Asking for support sooner rather than later is often helpful.

If you or anyone you know experiences any academic stress, difficult life events, or feelings like anxiety or depression, we strongly encourage you to seek support. Counseling and Psychological Services (CaPS) is here to help: call 412-268-2922 and visit their website at <http://www.cmu.edu/counseling/>. Consider reaching out to a friend, faculty or family member you trust for help getting connected to the support that can help.

**Physically disabled and learning disabled students:**

The Office of Equal Opportunity Services provides support services for both physically disabled and learning disabled students. For individualized academic adjustment based on a documented disability, contact Equal Opportunity Services at [eos@andrew.cmu.edu](mailto:eos@andrew.cmu.edu) or (412) 268-2012.