

STA 4222 / 5223: Sample Survey Design
Section 155F / 16BE
Fall 2014

Instructor: Samuel Wong swkwong@stat.ufl.edu
Office: Griffin-Floyd 225

TA: Yang Wu ywu@ufl.edu

Website: <http://www.stat.ufl.edu/~swkwong/teaching.html>
Course materials will be posted on e-learning/Sakai.

Office hours: TBD

Textbook: Not required.

Some reference books for the material we'll cover in this class, if you are interested in further reading:

- *Sampling: Design and Analysis* by Sharon L. Lohr
- *Elementary Survey Sampling*, 7th ed. by Richard L. Scheaffer
- *Survey Methods and Practices*, published by Statistics Canada

Lectures: Tue 11:45-1:40, Thu 12:50-1:40 FLO 100

Objectives:

The main goals of this course are (1) to learn how sample surveys are conducted and to understand the designs commonly used, (2) to learn how to analyze data collected from surveys. Towards these goals, we will spend time on the statistical theory underlying surveys, as well as practical implementation. We will look at a number of recent surveys as examples (of both what to do, and what not to do!).

Topics:

1. *Design of surveys:* Random, stratified, and cluster sampling; sample size calculations.
2. *Data analysis:* Calculating estimates and standard errors, ratio and regression estimation, poststratification.
3. *Practical issues:* Nonresponse, cost, data collection, causes of bias.

Software:

There are many software packages that can be used to analyze survey data. We will use the free, open-source package *R* (<http://r-project.org>), which you should download and install on your computer. Instructions will be provided along with homework assignments.

Course requirements:

The final grade will be based on homework (25%), and three in-class tests during the semester (25% each). There will be no final exam.

- Homework will be assigned approximately weekly. They can include a mix of mathematical (theoretical, pencil & paper) problems, and survey analysis (applied, computing) problems. Homework is due at the beginning of lecture on the specified date. No late homework will be accepted. Assignments will be equally weighted; your lowest score on the homework assignments will be dropped. You are welcome to discuss homework problems with other students; however, the solutions you submit must be written by yourself, in your own words.
- Three 50-minute tests will be held in-class, tentatively on Sept 25, Oct 30, and Dec 9. All tests are closed-book, closed-calculator, closed-phone. You may bring two double-sided pages of self-prepared notes to the tests.

Grading:

The tentative cutoffs are the usual 10% scale (90% = A, 80% = B, etc.), though will very likely be relaxed. Assigned grades are not negotiable.

Policies:

Please be familiar with the Academic Regulations listed at

<https://catalog.ufl.edu/ugrad/current/Pages/academic-regulations.aspx>.

Note that no make-up exams will be given with the exception of documented medical emergencies. Any accommodations requested will require appropriate arrangements with the Dean of Students Office. You are expected to abide by the Student Honor Code and exhibit academic integrity.