

STA 410/2102: Statistical Computation (Sep-Dec 2014)

Instructor:

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Office hours: Wednesdays, 1:10-2:00pm, in SS6026A.

Textbook:

Geof H. Givens and Jennifer A. Hoeting, *Computational Statistics*, 2nd edition, Wiley.

The [textbook webpage](#) has datasets, R code, and errata.

Evaluation:

60% Three assignments (20% each), tentatively due Oct 14, Nov 4, and Dec 2.

40% Two 110-minute tests (20% each), held in lecture time on Oct 16 and Nov 27.

Graduate students in STA 2102 may have some additional questions to do on tests or assignments (which will be bonus questions for undergraduates).

Computing:

Assignments will be done in R. Statistics Graduate students will use the Statistics research computing system. Undergraduates and graduate students from other departments will use [CQUEST](#). You will probably automatically have an account on CQUEST if you're an undergraduate student in this course (you need to fill out a form if you're a grad student).

You can also use R on your laptop or home computer by downloading it for free from www.R-project.org. I'll be trying out the idea of doing some in-class (non-credit) exercises, for which you may wish to bring your laptop, though I'll provide some laptops for those who don't have one with them. If you don't bring a laptop, you may wish to at least bring a USB memory stick or a SD memory card so you can take away what you did (I don't know whether wifi will be available).

At the r-project.org site, there is an [Introduction to R](#). You can also look at Hadley Wickham's online book on [Advanced R](#).

You might also be interested in trying out my faster implementation of R, called pqR, available from pqR-project.org, although, it currently is distributed only in source form, and hence is easily installed only on Linux/Unix systems. (Installing from source on a Mac is straightforward if you're already familiar with how to do that for other R versions (and in particular, you have installed Apple's Xcode development software), but installing on Microsoft Windows is experimental.) But right now, please wait a few days for the latest version of pqR, coming very soon!

What to read:

You should now be reading Chapter 2 of the textbook.

Example R programs:

[Demonstration of rounding in floating-point computations](#)

[Maximum likelihood estimation of n for binomial data](#)

[Two functions for finding zeros using bisection.](#)

[Two functions for finding zeros using Newton iteration.](#)

[Maximum likelihood estimation of Poisson mean from interval data](#)

Web pages for past versions of the course:

[Spring 2004](#) - [Spring 2003](#) - [Spring 2002](#) - [Fall 2000](#) - [Spring 2000](#)