

## 140.776 STATISTICAL COMPUTING

(Biostatistics – 1<sup>st</sup> term, 3 units)

### COURSE SYLLABUS

#### Instructor

Hongkai Ji

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Course page: <http://www.biostat.jhsph.edu/~hji/courses/statcomputing/>

#### Teaching assistant

Thomas Prior

Office: E3038

Office hours: TBA

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#### Class times

Tuesday 1:30 - 2:50pm

Thursday 1:30 - 2:50pm

#### Location

Wolfe W2008

#### Description

Covers practical issues in statistical computing. Introduces statistical programming language R, including reading and storing data, plotting and visualization, writing programs, organizing and commenting code, debugging, accessing R libraries, creating R packages with documentation, and LATEX typesetting. Topics in statistical data analysis provide working examples.

**Course learning objectives:** Upon successful completion of the course, students will be able to: 1) install and configure software necessary for a statistical programming environment; 2) understand generic programming language concepts as they are implemented in a high-level statistical language; 3) write and debug programs using R;

4) build and organize a software package with documentation for publishing on the internet.

### **Grading policy**

Participation: 10%

Homework: 70%

Exam: 20%

### **Schedule**

Aug 25 (Thu): Introduction to statistical computing

Aug 30 (Tue): Getting started with R

Sep 1 (Thu): R: data types (HW 1)

Sep 6 (Tue): R: data types

Sep 8 (Thu): R: graphics

Sep 13 (Tue): R: graphics

Sep 15 (Thu): R: programming (HW 2; HW 1 due)

Sep 20 (Tue): R: programming

Sep 22 (Thu): R: programming

Sep 27 (Tue): LaTeX

Sep 29 (Thu): R: programming & debug (HW 3; HW 2 due)

Oct 4 (Tue): R: debug

Oct 6 (Thu): R: statistical functions

Oct 11 (Tue): Building R packages

Oct 13 (Thu): Building R packages, review

Oct 18 (Tue): Final exam (**BRING YOUR COMPUTER WITH R**) (HW 3 due)