140.776 STATISTICAL COMPUTING
(Biostatistics – 1st term, 3 units)

COURSE SYLLABUS

Instructor
Hongkai Ji
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Teaching assistant
Thomas Prior
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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)