STA 250: Statistics
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Lectures: WF 11:45-1:00 Soc-Psy 126
Office Hours: M 10:30-11:30 AM, Old Chem 219A

Description
The focus of this course is statistical inference – concepts and procedures. A statistician views inference in a data analysis task the same way a detective views deduction in a crime investigation – to conclude about the unseen from what is observed. The two dominating approaches to statistical inference – the classical approach based on sampling theory and the modern Bayesian approach based on inductive logic – are introduced and discussed through a diverse set of data analysis examples. Equal emphasis is placed on learning concepts and mastering the mathematical/computing tools needed to apply them. A basic training is offered on the statistical package R.

Text

Prerequisite
Proficiency in calculus based probability at the level of STA 230(104)/MATH 230(135) and some knowledge of linear algebra at the level of MATH 221(104). Consult chapters 1-5 (1-6 in 4/e) of DeGroot and Schervish. HW 1 tests your preparation for this course.

Resources
Handouts, homework/lab assignments and grades will be posted on the Instructor’s course webpage at http://www.stat.duke.edu/~st118/sta250/. Daily, walk-in help sessions are available from Statistical Education Center at Old Chem 211A (http://www.stat.duke.edu/courses/sec-schedule). R is installed on the university computers and is also freely available from http://cran.r-project.org/. Grades will be maintained on Sakai (https://sakai.duke.edu). Scribbles from class and online Q/A will be hosted on Piazza (https://piazza.com/duke/fall2013/sta250/home).

Assessment
Course grade consists of weekly homework assignments (20%), weekly lab work (5%), three in-class mid-term exams (3 × 15% = 45%) and a final exam (30%). Discussion is allowed, plagiarism is not!

Policies
We observe strict adherence to Duke Community Standard. Missing homework and lab should be notified and make-up should be requested (via appropriate official forms; see course webpage) ASAP. Missed mid-terms cannot be made up, but will be subsumed by the following test. Missed final results in an Incomplete grade.