

STA 22101S: Applied Statistics II
Wednesday, 2-5 pm, BA B024

Spring, 2015

Course description: This course focuses on generalized linear models and related methods for applications, with an emphasis on planning of studies, analysis of categorical data, generalizations of linear regression models, and interpretation. The topics covered will include: planning of studies, categorical data, generalized linear models, random effects and mixed linear models, and semiparametric and nonparametric regression.

Grading: The grade in the course will be based on three homework sets (60%) and a final project (40%). Late homework will not be accepted, but the homework with the worst grade will count for just 10%, with the remaining three homework sets counting equally. The final project will consist of analysis of a data set, which you will find. Each student must find a unique set of data. You will submit a report on the analysis of the data, along with executable R code that reproduces the analysis. Homework and project will be submitted electronically. Tentative due dates for homework sets are 11.59 pm on: Feb 4, Mar 4, Apr 1. Project due April 15.

Text: The course text is *Extending the Linear Model with R* by J.J. Faraway (Chapman & Hall). Highly recommended is *Principles of Applied Statistics* by D.R. Cox and C.A. Donnelly (CUP).

I will often refer to Chapters 8 - 10 of *Statistical Models* by A.C. Davison (Cambridge University Press).

I will also refer to *Advanced Data Analysis from an Elementary Point of View*, by C. Shalizi. The current version is available (and often updated) at [Shalizi's web page](#). Additional useful resources include the 4th addition of *Modern Applied Statistics with S* by W.N. Venables and B.D. Ripley (Springer), *Applied Statistics* by D.R. Cox and E.J. Snell (Chapman & Hall) and *Elements of Statistical Learning*, by T. Hastie, R. Tibshirani, and J. Friedman (Springer).

Course web page(s): I am using Blackboard to manage the course list and grading, but the course information is all on the web page

<http://www.utstat.utoronto.ca/reid/2201S15.html>. The Blackboard page for STA2201S will lead you to this page via the first announcement.

Computing: The course is built around the R computing package. There are some R resources listed on the course webpage.

Contact: Nancy Reid: SS 6002A, reid@utstat.utoronto.ca.

Office Hours: Tuesday 1 to 3, or by appointment. Please check with me by email during [workshop weeks](#) at the Fields Institute – Jan 13, 20 27, Feb 10, 24, Mar 24.

TA: Bo Chen, broad.chen@mail.utoronto.ca.