Students requiring accommodations as a result of disability must contact the Centre for Students with Disabilities 778-782-3112 or csdo@sfu.ca

Instructor: Dr. Jiguo Cao

Prerequisite:
STAT 830 and STAT 850 or permission of the instructor.

Textbook:

Recommended:
1. *Categorical Data Analysis, 3rd ed.* by Alan Agresti. Publisher: Wiley
2. *Extending the Linear Model with R: Generalized Linear, Mixed Effects and Nonparametric Regression Models,* by Julian Faraway. Publisher: CRC Press
3. *Generalized Linear Models, 2nd ed.* By McCullagh and Nelder. Publisher: CRC Press

Calendar Description:
The theory and application of statistical methodology for analyzing non-normal responses. Special emphasis on contingency tables, logistic regression, and log-linear models. Other topics can include mixed-effects models and models for overdispersed data.

Outline:

1. Analysis of contingency tables
2. Generalized linear models (GLMs)
   a. The exponential family
   b. Link functions
   c. Relationship to linear models
   d. Iterated reweighted least-squares estimation
3. Models for overdispersed data
   a. Quasi-likelihood
   b. Introduction to estimating functions
4. Models for multinomial data
   a. Log-linear models
   b. Ordinal responses

Grading Scheme:

Assignments – 20%
Midterm – 20%
Final – 30%
Project – 30%

Revised October 25, 2013