STAT 602
Generalized Linear and Nonlinear Modelling

Spring 2008
Day Course

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. Rachel Altman

Prerequisite:

STAT 302 or STAT 330 or permission of instructor. Open only to graduate students in departments other than Statistics & Actuarial Science.

Textbook:

An Introduction to Generalized Linear Models (2nd edition) by: A.J.Dobson; publisher: Chapman & Hall.

Calendar Description:

A methods oriented unified approach to a broad array of nonlinear regression modelling methods including classical regression, logistic regression, probit analysis, dilution assay, frequency count analysis, ordinal type responses, and survival data. A project will be assigned related to the student's field of study.

Outline:

NOTE: This course extends the concepts, methods and approach of STAT 302-3 to cover a wide variety of types of outcome data. It employs a modern unified approach to a broad array of nonlinear regression problems.

1. Brief review of linear regression and likelihood theory
2. Theory of generalized linear models: the exponential family, link function, iteratively reweighted least-squares estimation
3. Goodness-of-fit and model selection
4. Models for particular types of outcomes: binary, categorical, count, multinomial
5. Overdispersion and quasi-likelihood
6. Survival analysis
   (or as much of the above as time permits.)

Grading Scheme:

To be announced by the instructor at the beginning of class.

Students should be aware that they have certain rights to confidentiality concerning the return of course papers and the posting of marks. Please pay careful attention to the options discussed in class at the beginning of the semester. Students are reminded that Academic Honesty is a cornerstone of the acquisition of knowledge. Scholarly integrity is required of all members of the University. Please consult the General Guidelines of the calendar for more details.

Revised October 2007