STATISTICS 602-3
GENERALIZED LINEAR AND NONLINEAR MODELLING

Spring 2005
DAY COURSE

Instructor: Rachel Altman

Prerequisites:

STAT 302 or STAT 350.

Textbook:

An Introduction to Generalized Linear Models (3rd edition) by: A.J. Dobson; publisher: Chapman & Hall.

Calendar Description:

A skills-oriented unified approach to a broad array of non-linear regression modelling methods including classical regression, logistic regression, probit analysis, dilution assay, frequency count analysis, ordinal-type responses, and survival data.

Outline:

NOTE: This course extends the concepts, methods and approach of Stat 302-3to 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 Fundamental background.
2. Overview: Empty model, link function, simple examples of structuring a mean value vector with link function and design matrix, and of structuring variance with a variance function; iterated reweighted least squares estimation.
3. Examples from exponential-type likelihood models: Normal, including classical linear regression and other links; Poisson, inclu