Syllabus

Spring 2002

Course:	Biometry 971, Biometrical Models
Instructor:	Steve Kachman
Office:	104 D Miller Hall
Phone:	472-2903
Office Hours:	TuTh 11:00-12:00 and by appointment
Text Book:	*Generalized, Linear, and Mixed Models*, McCulloch and Searle
Prerequisites:	Biometry 970
	Matrix Algebra
	Linear Models
	Distributions
	Experimental Design
	Basics of Theory and Inference
	SAS
Homework:	Approximately once every other week
	20% will be deducted for each day late.
Exams:	Two exams, will be announced at least one week in advance
Final Exam:	Thursday, May 9 10:00-Noon
	Revise travel plans accordingly.
Conflicts:	Expected to take exams at the scheduled time
	If an exam conflicts with an activity vital to your program,
	please have your major advisor contact me well in advance.
	I should be notified as soon as possible of any potential conflicts.
Grading:	Exams 200 pts
	Final 150 pts
	Homework 100 pts
	Quizzes 50 pts
	Grading will be on a straight 90, 80, 70, 60 percent basis.
	Available at http://blackboard.unl.edu/
Web page:	http://biometry.unl.edu/faculty/steve/971/2002/

The objective of the course is to extend your repertoire of approaches towards modeling beyond the standard linear model based approaches. Towards this objective we will examine the various assumptions made in a standard analysis, examine our options when our assumptions are different, and examine our options when these assumptions are relaxed. Along the way we will not only look at the application of different analytical methods but, we will also look at the theory behind these methods.

Outline

1. Linear Models (A Review)
2. Generalized Linear Models
3. Mixed Models
   (a) Fixed and Random
   (b) BLUE and BLUP
   (c) Variance Components
4. Repeated Measures
   (a) MANOVA
   (b) Structured Covariance Matrices
5. Generalized Linear Mixed Models
   (a) Likelihood based
   (b) Bayesian