

Syllabus

Spring 2005

- Course:** Statistics 970, Linear Models
- Instructor:** Steve Kachman
- Office:** 104 D Miller Hall
- Phone:** 472-7302
- Office Hours:** MWF 2:00-3:00 and by appointment
- Text Book:** *Plane Answers to Complex Questions: The Theory of Linear Models*,
Ronald Christensen
- Prerequisites:** Matrix Algebra
Distributions
Experimental Design
Basics of Theory and Inference
- Homework:** Approximately once a week
20% will be deducted for each day late.
- Exams:** Two exams, will be announced at least one week in advance
- Final Exam:** 7:30–9:30 Thursday, May 5
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 and Quizzes 100 pts
Grading will be on a straight 90, 80, 70, 60 percent basis.
- Web Page <http://statistics.unl.edu/faculty/steve/970/2005/>

The objective of this course is to extend our understanding of the standard linear model based approaches. We will make extensive use of matrix algebra. You will therefore need to become comfortable working with matrices. We will also examine the theory behind these methods. You will therefore need to become comfortable with the distributions of linear and quadratic forms. Because this course does not exist in a vacuum, you will need to be able to relate the theory to the application and the application to the theory.

Outline

Week	Topics
1	Introduction
2	Distribution Linear & Quadratic Forms
3	Identifiability & Estimability
4	MLE/BLUE
5	Bayes/GLS
6	Regression & Exam I
7	Multifactor Designs
8	Hypothesis Testing
9	
10	SPRING BREAK
11	
12	
13	Exam II
14	Covariance
15	Mixed Models
16	