STAT 890
Selected Topics: Linear Models

Fall 2010
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. Tom Loughin

Textbook:

Analysis of Messy Data Volume 1: Designed Experiments, 2nd ed. By George A. Milliken & Dallas E. Johnson. Publisher: Chapman & Hall/CRC

Course Description:

A modern approach to normal theory General Linear Models including models with random effects and "messy" data. Topics include experimental units, blocking, theory of quadratic forms, linear contrasts, analysis of covariance, heterogeneous variances, factorial treatment structures, means comparisons, missing data, random effects, mixed model formulation, estimation and inference, multi-unit designs, pseudoreplication, repeated measures.

Course Outline (tentative):

Heterogeneous variances
Unequal Sample Size Analysis

UTIWAY TREATMENT STRUCTURE (2 weeks)
Balanced and unbalanced cases
Means models vs. effects models
Methods of means comparisons
Contrast construction
Missing treatment combinations
Heterogeneous variances
Unequal Sample Size Analysis

MULTI-UNIT DESIGNS (~3 weeks)
- Split-plots
- Strip-plots
- Extensions
- Pseudoreplication
- Repeated measures

STUDENT PRESENTATIONS (~1 week)

Grading Scheme (tentative):

Homework: 20%
Midterm: 20%
Project: 20%
Final: 40%

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 June 2010