FALL 2016 - STAT 850 G100

LINEAR MODELS AND APPLICATIONS (4)

Class Number: 4150 *Delivery Method: In Person*

COURSE TIMES + LOCATION:

We, Fr 11:30 AM – 1:20 PM
AQ 5004, Burnaby

INSTRUCTOR:

Boxin Tang
boxint@sfu.ca
1 778 782-4898
Office: SC-K10560

PREREQUISITES:

STAT 350 or equivalent.

Description

CALENDAR DESCRIPTION:

A modern approach to normal theory for 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, multi-unit designs, pseudoreplication, repeated measures mixed model formulation and estimation and inference.

COURSE DETAILS:

Course Outline:

1. Introduction; scope of linear models.
2. General theory; least squares and Gauss-Markov theorem; normal linear models; quadratic forms.
3. Anova models; design issues; block designs; fractional factorial designs.
4. Model selection; diagnostics; algorithms; selection criteria.
5. Multicollinearity; ridge regression; robust estimation; the bootstrap.
6. Mixed linear models; generalized linear models; nonparametric regression.

Grading

Assignments	10%
Midterm 1	25%
Midterm 2	25%
Presentation	20%
Written Report	20%

NOTES:

All grading is subject to change.

GRADUATE STUDIES NOTES:

Important dates and deadlines for graduate students are found here: http://www.sfu.ca/dean-gradstudies/current/important_dates/guidelines.html. The deadline to drop a course with a 100% refund is the end of week 2. The deadline to drop with no notation on your transcript is the end of week 3.

REGISTRAR NOTES:

SFU's Academic Integrity web site http://students.sfu.ca/academicintegrity.html is filled with information on what is meant by academic dishonesty, where you can find resources to help with your studies and the consequences of cheating. Check out the site for more information and videos that help explain the issues in plain English.

Each student is responsible for his or her conduct as it affects the University community. Academic dishonesty, in whatever form, is ultimately destructive of the values of the University. Furthermore, it is unfair and discouraging to the majority of students who pursue their studies honestly. Scholarly integrity is required of all members of the University. http://www.sfu.ca/policies/gazette/student/s10-01.html

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