

FALL 2014 - STAT 852 G100

MODERN METHODS IN APPLIED STATISTICS (4)*Delivery Method: In Person***COURSE TIMES + LOCATION:**

Mo 1:30 PM – 3:20 PM

AQ 5050, Burnaby

We 2:30 PM – 4:20 PM

AQ 5049, Burnaby

INSTRUCTOR:

Thomas Loughin

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778-782-8037

Office: 2910 Surrey

PREREQUISITES:

Prerequisite: : STAT 830 and STAT 853 or permission of instructor.

Description

CALENDAR DESCRIPTION:

An advanced treatment of modern methods of multivariate statistics and non-parametric regression. Topics may include: (1) dimension reduction techniques such as principal component analysis, multidimensional scaling and related extensions; (2) classification and clustering methods; (3) modern regression techniques such as generalized additive models, Gaussian process regression and splines.

COURSE DETAILS:**Course Outline:**

1. Problems with high dimensions,
2. Variable selection: stepwise, shrinkage, LASSO, and penalized likelihood
3. Modern regression techniques: Splines, trees, generalized additive models
4. Dimension reduction techniques: Principal components and multidimensional scaling
5. Classification and clustering methods,
6. Ensemble learning methods.

Grading

Assignments	50%
Projects	50%

NOTES:

All grading is subject to change.

Materials

REQUIRED READING:

Textbook:

The Elements of Statistical Learning: Data Mining, Inference, and Prediction (2nd ed.) by Trevor Hastie, Robert Tibshirani, Jerome Friedman. Publisher: Springer

DEPARTMENT GRADUATE NOTES:

Students with Disabilities:

Students requiring accommodations as a result of disability must contact the Centre for Students with Disabilities 778-782-3112 or csdo@sfu.ca

GRADUATE STUDIES NOTES:

Important dates and deadlines for graduate students are found here: https://www.sfu.ca/dean-gradstudies/current/important_dates/fall_2014.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:

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