

FALL 2017 - STAT 652 G100

STATISTICAL LEARNING AND PREDICTION (3)*Class Number: 8017 Delivery Method: In Person***COURSE TIMES + LOCATION:**

Tu 10:30 AM – 11:20 AM
RCB 8100, Burnaby

Th 9:30 AM – 11:20 AM
ASB 10900, Burnaby

EXAM TIMES + LOCATION:

Dec 12, 2017
8:30 AM – 11:30 AM
WMC 3260, Burnaby

INSTRUCTOR:

Brad McNeney
mcneney@sfu.ca
1 778 782-4815
Office: SC-K10565

PREREQUISITES:

STAT 302 or STAT 305 or STAT 350 or equivalent.

Description

CALENDAR DESCRIPTION:

An introduction to the essential modern supervised and unsupervised statistical learning methods. Topics include review of linear regression, classification, statistical error measurement, flexible regression and classification methods, clustering and dimension reduction. Students with credit for STAT 452 may not take this course for further credit.

COURSE DETAILS:**Outline:**

1. Statistical Learning and Prediction
2. Measuring prediction error
3. Linear regression essentials and extensions
4. Classification: Predicting categorical data
5. Variable selection in linear regression
6. Non-linear regression methods
7. Trees and ensembles
8. Additional modern prediction methods
9. Unsupervised learning: clustering and dimension reduction

Grading

Assignments	30%
Midterm	30%
Final Exam	40%

NOTES:

Above grading is subject to change.

Materials

REQUIRED READING:

An Introduction to Statistical Learning with Applications in R. Gareth James, Daniela Witten, Trevor Hastie and Robert Tibshirani (2013). New York: Springer.

Available **on-line** through the SFU Library

ISBN-13: 978-1461471370.

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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