

FALL 2020 - STAT 310D100

BHF C8I 7HCB HC 85H5 G7 9B79: CF H<9 GC7 5@G7 9B79G f&L

Class Number: 3863 Delivery Method In Person**COURSE TIMES + LOCATION:**Mo 10:30 AM – 12:20 PM
REMOTE LEARNING, Burnaby**EXAM TIMES + LOCATION:**Dec 18, 2020
12:00 PM – 3:00 PM
REMOTE LEARNING, Burnaby**INSTRUCTOR:**

Aaron Danielson

PREREQUISITES:

60 units in subjects outside of the Faculties of Science and Applied Science and one of STAT 201, STAT 203, STAT 205, STAT 270, BUEC 232, or POL 201. Corequisite: STAT 311.

Description

CALENDAR DESCRIPTION:

An introduction to modern tools and methods for data acquisition, management, visualization, and machine learning capable of scaling to Big Data. No prior computer programming experience required. Examples will draw from the social sciences. This course may not be used to satisfy the upper division requirements of the Statistics honours, major, or minor programs. Students who have taken STAT 240, STAT 440, or any 200-level or higher CMPT course first may not then take this course for further credit. Quantitative.

COURSE DETAILS:

Welcome to STAT 310/311! This course will introduce you to essential concepts and methods in data science. Each week new modules will be uploaded to the website. To practice the new material, you will work through laboratory exercises using the R statistical computing language. We will reinforce new concepts by regularly participating in Kaggle competitions. At the end of the semester you will (1) be familiar with the R statistical language, (2) understand the basics of several modern methods in data science, and (3) be prepared to continue learning topics in data science.

The course features asynchronous and synchronous components. You will be responsible for viewing lecture on your own. Additionally, the laboratory tutorials will also be delivered and completed asynchronously. Each week, we will have online office hours. This will be an opportunity to ask questions and meet your classmates. You are encouraged to form study groups and collaborate with one another. Finally, we will attempt to get everyone together to present a final project. To ensure everyone's safety, we will book a very large room on campus. If this is not possible, we will present remotely via a recorded zoom session.

This syllabus is tentative and will be updated as we progress!

- A. Prediction, explanation and exploration
- B. Supervised, Unsupervised, and Semi-supervised learning
- C. Probability as a way to express uncertainty

<https://www.kaggle.com/c/no-labels>

BC Ferries Data

- A. A different approach to learning
- B. How to build a tree
- C. The pros and co c

B. Kernel Density Estimation

Grading

Lab write-ups, Kaggle competitions, and assignments	80%
Quiz 1 (Date: TBD)	10%
Quiz 2 (Date: TBD)	10%
Project Presentation and Writeup (In Person, Date:TBD)	0%

NOTES:

Above grade **o**

DEPARTMENT UNDERGRADUATE NOTES:

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

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