

SPRING 2015 - STAT 460 D100

BAYESIAN STATISTICS (3)*Class Number: 2860 Delivery Method: In Person***COURSE TIMES + LOCATION:**

Mo 10:30 AM – 12:20 PM

AQ 5016, Burnaby

We 10:30 AM – 11:20 AM

AQ 5016, Burnaby

EXAM TIMES + LOCATION:

Apr 23, 2015

3:30 PM – 6:30 PM

AQ 5018, Burnaby

INSTRUCTOR:

Tim Swartz

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Office: SCK-10539

PREREQUISITES:

Prerequisite: : STAT 330 and 350.

Description

CALENDAR DESCRIPTION:

The Bayesian approach to statistics is an alternative and increasingly popular way of quantifying uncertainty in the presence of data. This course considers comparative statistical inference, prior distributions, Bayesian computation, and applications. Quantitative.

COURSE DETAILS:**Course Outline:****1. The basics:**

- the Bayesian paradigm
- comparative statistical inference

2. Priors:

- conjugate priors
- prior elicitation
- reference priors
- improper priors
- discrete mass priors

3. Computations:

- quadrature
- importance sampling
- Markov chain Monte Carlo

4. Other topics as time permits:

- testing via Bayes factors
- interval and point estimation

elementary decision theory

hierarchical models

Dirichlet process

5. Applications

Grading

Participation	10%
Assignments	20%
Midterm 2	20%
Final Exam	50%

NOTES:

All grading is subject to change.

Materials

RECOMMENDED READING:

-*Bayes and Empirical Bayes Methods for Data Analysis (Carlin & Louis)*

-*Bayesian Data Analysis (Gelman, Carlin, Stern & Rubin)*

DEPARTMENT UNDERGRADUATE 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

Tutor Requests:

Students looking for a Tutor should send an email to stat@sfu.ca with "Tutor Request" in the subject line. Please only include information that you would like forwarded to our tutors mailing list (contains people external to the University). We accept no responsibility for the consequences of any actions taken related to tutors.

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