

## INTRODUCTION TO MATHEMATICAL STATISTICS (3)

Class Number: 3473 Delivery Method: In Person

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**COURSE TIMES + LOCATION:**

Mo 10:30 AM – 12:20 PM  
SSCC 9000, Burnaby

We 10:30 AM – 11:20 AM  
AQ 3154, Burnaby

**EXAM TIMES + LOCATION:**

Dec 14, 2015  
3:30 PM – 6:30 PM  
Burnaby

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**INSTRUCTOR:**

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

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**PREREQUISITES:**

Prerequisite: : STAT 285 and MATH 251.

### Description

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**CALENDAR DESCRIPTION:**

Review of probability and distributions. Multivariate distributions. Distributions of functions of random variables. Limiting distributions. Inference. Sufficient statistics for the exponential family. Maximum likelihood. Bayes estimation, Fisher information, limited distributions of MLEs. Likelihood ratio tests. Quantitative.

**COURSE DETAILS:**

**Outline:**

1. Review of Probability and Univariate Distributions
2. Multivariate Distributions
3. Distributions of Functions of Random Variables
4. Limiting Distributions
5. Inference. Sufficient Statistics for the Exponential Family.
6. Maximum Likelihood, Limiting Distributions
7. Bayes Estimation
8. Fisher Information
9. Likelihood Ratio Tests

### Grading

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Midterms (2 midterms)

30%

Final Exam

50%

**NOTES:**

***All grading is subject to change.***

Materials

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**REQUIRED READING:**

**Required Textbook:**

***Introduction to Mathematical Statistics (7th ed.)*** by R. Hogg, J. McKean, A. T. Craig. Publisher: Pearson

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**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](mailto:csdo@sfu.ca)

**Tutor Requests:**

Students looking for a Tutor should send an email to [stat@sfu.ca](mailto: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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**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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