

# COURSE SYLLABUS



COURSE TITLE: STAT-218: Intro to Probability and Statistics 1

CLASS SECTION: B01

TERM: Winter 2023

COURSE CREDITS: 3

DELIVERY METHOD(S): Blended

Camosun College campuses are located on the traditional territories of the Lək̓ʷəŋən and W̱SÁNEĆ peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here.

Learn more about Camosun's [Territorial Acknowledgement](#).

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For COVID-19 information please visit <https://camosun.ca/about/covid-19-updates>.

*Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable explanation in advance, you will be removed from the course and the space offered to the next waitlisted student.*

## INSTRUCTOR DETAILS

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NAME: Susan Chen

EMAIL: [chen@camosun.bc.ca](mailto:chen@camosun.bc.ca)

OFFICE: E242/Zoom

HOURS: Tuesday 10:30 – 11:20, Wednesday 11:30 – 12:20

Thursday 9:30 – 10:00, 13:00 – 14:00, or by appointment

*As your course instructor, I endeavour to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me. Camosun College is committed to identifying and removing institutional and social barriers that prevent access and impede success.*

## CALENDAR DESCRIPTION

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Examples from a variety of disciplines will be used to introduce the mathematical foundations of statistical inference. Topics: descriptive statistics; elementary probability theory, random variables, discrete and continuous probability distributions, expectations, joint, marginal and conditional distributions; linear functions of random variables; sampling distribution; point and interval estimation; significance testing.

### PREREQUISITE(S):

One of:

- C in MATH 100
- C in MATH 108

### CO-REQUISITE(S):

Not Applicable

### EXCLUSION(S):

Not Applicable

## COURSE LEARNING OUTCOMES / OBJECTIVES

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Upon completion of this course a student will be able to:

1. Compute and interpret descriptive statistics.
2. Compute and interpret probability and conditional probability.
3. Compute probability, expectation and variance of a single discrete random variable, or a single continuous random variable. Perform calculations involving Binomial, Poisson, normal, or exponential probability distributions.
4. Perform calculations involving joint probability distributions of two discrete random variables, or random samples.
5. Derive and compute maximum likelihood estimates.
6. Compute and interpret interval estimate for the population mean, population proportion, and determine sample size.
7. Compute and interpret interval estimate for a difference of two means.
8. Test hypotheses about a mean, a proportion, and the difference of two means.

## REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

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(a) Texts

- 1) Textbook: Probability and Statistics for Engineers and the Sciences by Devore, any edition 5<sup>th</sup> and up. The 9<sup>th</sup> edition is sold in the Camosun Bookstore at Lansdowne.
- 2) STAT 218 skeleton notes, either purchase from Camosun Bookstore or print your own from D2L.
- 3) STAT 218 R Lab Manual, available in D2L.

(b) Other

A Sharp EL-531 scientific calculator. No other calculators are allowed for tests and the final exam.

## COURSE SCHEDULE, TOPICS, AND ASSOCIATED PREPARATION / ACTIVITY / EVALUATION

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The following schedule and course components are subject to change with reasonable advance notice, as deemed appropriate by the instructor.

Lectures: Thursday 10:30 - 12:20 in E346

This *blended* class requires 2-4 hours outside lecture time to study the lecture videos.

WEEK & DATE RANGE	Sections from the Textbook. Complete the videos and notes of the sections BEFORE class.	LABS due Fri D2L HW due in class	TESTS Thursdays, in class
#1, Jan 9 – 13	Day 1 intro, 2.1, 2.2		
#2, Jan 16 – 20	2.3, 2.4, 2.5, 1.1, 1.2	Lab Intro	Quiz 1 (2.1-2.5, 1.1, 1.2)
#3, Jan 23 – 27	1.3, 1.4, 3.1, 3.2	HW1 (ch2)	Quiz 2 (1.3-1.4, 3.1-3.2)
#4, Jan 30 – Feb 3	3.3, 3.4, 3.6, 4.1	Lab 1 HW2 (ch1, 3.1-3.2)	Quiz 3 (3.3, 3.4, 3.6)
#5, Feb 6 – 10	Review 1		<b>Midterm 1 (ch1-3)</b>
#6, Feb 13 – 17	4.2, 4.3, 4.4, 4.6,	Lab 2	Quiz 4 (ch4)
#7, Feb 20 – 24	Family Day & Reading Break.		
#8, Feb 27 – Mar 3	5.1 - 5.5	Lab 3	Quiz 5(ch5))
#9, Mar 6 – 10	6.1, 7.1, 7.2	HW3 (ch4-5)	Quiz 6 (6.1, 7.1, 7.2)
#10, Mar 13 – 17	Review 2	Lab 4	<b>Midterm 2 (ch4-5, 6.1)</b>
#11, Mar 20 – 24	7.3, 8.1 – 8.4	HW4 (6.1,7.1-7.2)	Quiz 7 (7.3, 8.1-8.4)
#12, Mar 27 – 31	9.1-9.3, 10.1	Lab 5 HW5 (7.3, ch8)	Quiz 8 (9.1-9.3, 10.1)
#13, Apr 3 – Apr 7	Review 3	EDI assignment (due Fri in D2L)	<b>Midterm 3 (ch7-9)</b>
#14, Apr 10 – 14	12, 14.3, Final Review	Lab Final (due Fri inD2L)	Quiz 9 (ch12, 14.3)

Students registered with the Centre for Accessible Learning (CAL) who complete quizzes, tests, and exams with academic accommodations have booking procedures and deadlines with CAL where advanced noticed is required. Deadlines scan be reviewed on the [CAL exams page](http://camosun.ca/services/accessible-learning/exams.html). <http://camosun.ca/services/accessible-learning/exams.html>

#### EVALUATION OF LEARNING

DESCRIPTION	WEIGHTING
R Labs	9%
Quizzes	9%
Equity, Diversity and Inclusion Assignment (EDI)	2%
Homework	10%
Midterms	30%
Lab Final	10%
Final Exam	30%
<b>TOTAL</b>	<b>100%</b>

If you have a concern about a grade you have received for an evaluation, please come and see me as soon as possible. Refer to the [Grade Review and Appeals](http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf) policy for more information <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf>

## COURSE GUIDELINES & EXPECTATIONS

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### Attendance

*Attendance is necessary.* Showing up to classes is the easiest and most important thing you can do to help you succeed the course. If you feel yourself falling behind at any point during the term, then please do not hesitate to come to speak to me.

**Homework:** *"I hear and I forget. I see and I remember. I do and I understand."* The homework for this course will include 1) worksheets and 2) R lab assignments. *It is essential to review notes and do homework each week and to keep up consistently. Cramming does not work for this course.*

### Missed Tests

All tests must be written in class during the scheduled times. In the event that you missed a test due to a family emergency or illness, the weight of the test will be put on other exams of the same category or the final exam *provided* the instructor is notified *before* the test. There will not be any rewrites of tests.

**Quizzes:** A quiz will be written in the last 10 minutes of each week's class. Quiz problems will be mostly modified examples from the notes. This requires you to study all videos for the specified sections of the textbook and complete the skeleton notes before class.

**R Labs:** This course includes R lab sessions designed to familiarize students with the use of a statistical software to perform data analysis and the procedure of reporting data analysis results. You will follow a lab manual for each lab. The required lab manual is available in D2L along with a video clip for each lab session. A lab assignment follows each lab session. Lab assignments are to be submitted to the D2L Assignments folder before the due date. Late labs will not be accepted.

### Desire2Learn (D2L)

This class has the assistance of D2L. All course related materials and announcements will be available in D2L. Lab assignments will be submitted in D2L. It is your responsibility to subscribe to the *notifications in D2L* or check it regularly.

**Math Lab E224:** You can get **free tutoring** from our instructional assistants (IA) the Math Lab. Lab hours can be viewed at <http://camosun.ca/services/help-centres/>

## STUDENT RESPONSIBILITY

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Enrolment at Camosun assumes that the student will become a responsible member of the College community. As such, each student will display a positive work ethic, assist in the preservation of College property, and assume responsibility for their education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting expectations concerning attendance, assignments, deadlines, and appointments.

## SUPPORTS AND SERVICES FOR STUDENTS

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Camosun College offers a number of services to help you succeed in and out of the classroom. For a detailed overview of the supports and services visit <http://camosun.ca/students/>.

Academic Advising	<a href="http://camosun.ca/advising">http://camosun.ca/advising</a>
Accessible Learning	<a href="http://camosun.ca/accessible-learning">http://camosun.ca/accessible-learning</a>
Counselling	<a href="http://camosun.ca/counselling">http://camosun.ca/counselling</a>
Career Services	<a href="http://camosun.ca/coop">http://camosun.ca/coop</a>
Financial Aid and Awards	<a href="http://camosun.ca/financialaid">http://camosun.ca/financialaid</a>
Help Centres (Math/English/Science)	<a href="http://camosun.ca/help-centres">http://camosun.ca/help-centres</a>
Indigenous Student Support	<a href="http://camosun.ca/indigenous">http://camosun.ca/indigenous</a>
International Student Support	<a href="http://camosun.ca/international/">http://camosun.ca/international/</a>
Learning Skills	<a href="http://camosun.ca/learningskills">http://camosun.ca/learningskills</a>
Library	<a href="http://camosun.ca/services/library/">http://camosun.ca/services/library/</a>
Office of Student Support	<a href="http://camosun.ca/oss">http://camosun.ca/oss</a>
Ombudsperson	<a href="http://camosun.ca/ombuds">http://camosun.ca/ombuds</a>
Registration	<a href="http://camosun.ca/registration">http://camosun.ca/registration</a>
Technology Support	<a href="http://camosun.ca/its">http://camosun.ca/its</a>
Writing Centre	<a href="http://camosun.ca/writing-centre">http://camosun.ca/writing-centre</a>

If you have a mental health concern, please contact Counselling to arrange an appointment as soon as possible. Counselling sessions are available at both campuses during business hours. If you need urgent support after-hours, please contact the Vancouver Island Crisis Line at 1-888-494-3888 or call 911.

## COLLEGE-WIDE POLICIES, PROCEDURES, REQUIREMENTS, AND STANDARDS

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### Academic Accommodations for Students with Disabilities

The College is committed to providing appropriate and reasonable academic accommodations to students with disabilities (i.e. physical, depression, learning, etc). If you have a disability, the [Centre for Accessible Learning](http://camosun.ca/accessible-learning/) (CAL) can help you document your needs, and where disability-related barriers to access in your courses exist, create an accommodation plan. By making a plan through CAL, you can ensure you have the appropriate academic accommodations you need without disclosing your diagnosis or condition to course instructors. Please visit the CAL website for contacts and to learn how to get started:

<http://camosun.ca/services/accessible-learning/>

### Academic Integrity

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.13.pdf> for policy regarding academic expectations and details for addressing and resolving matters of academic misconduct.

### Academic Progress

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.1.pdf> for further details on how Camosun College monitors students' academic progress and what steps can be taken if a student is at risk of not meeting the College's academic progress standards.

### Course Withdrawals Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <http://camosun.ca/learn/fees/#deadlines>.

### Grading Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf> for further details about grading.

### Grade Review and Appeals

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf> for policy relating to requests for review and appeal of grades.

### Mandatory Attendance for First Class Meeting of Each Course

Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable reason in advance, you will be removed from the course and the space offered to the next waitlisted student. For more information, please see the "Attendance" section under "Registration Policies and Procedures" (<http://camosun.ca/learn/calendar/current/procedures.html>) and the Grading Policy at <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf>.

### Medical / Compassionate Withdrawals

Students who are incapacitated and unable to complete or succeed in their studies by virtue of serious and demonstrated exceptional circumstances may be eligible for a medical/compassionate withdrawal. Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.8.pdf> to learn more about the process involved in a medical/compassionate withdrawal.

### Sexual Violence and Misconduct

Camosun is committed to creating a campus culture of safety, respect, and consent. Camosun's Office of Student Support is responsible for offering support to students impacted by sexual violence. Regardless of when or where the sexual violence or misconduct occurred, students can access support at Camosun. The Office of Student Support will make sure students have a safe and private place to talk and will help them understand what supports are available and their options for next steps. The Office of Student Support respects a student's right to choose what is right for them. For more information see Camosun's Sexualized Violence and Misconduct Policy: <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.9.pdf> and [camosun.ca/sexual-violence](http://camosun.ca/sexual-violence). To contact the Office of Student Support: [oss@camosun.ca](mailto:oss@camosun.ca) or by phone: 250-370-3046 or 250-3703841

### Student Misconduct (Non-Academic)

Camosun College is committed to building the academic competency of all students, seeks to empower students to become agents of their own learning, and promotes academic belonging for everyone. Camosun also expects that all students to conduct themselves in a manner that contributes to a positive, supportive, and safe learning environment. Please review Camosun College's Student Misconduct Policy at <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.pdf> to understand the College's expectations of academic integrity and student behavioural conduct.

**Changes to this syllabus:** Every effort has been made to ensure that information in this syllabus is accurate at the time of publication. The College reserves the right to change courses if it becomes necessary so that course content remains relevant. In such cases, the instructor will give the students clear and timely notice of the changes.