

# COURSE SYLLABUS



COURSE TITLE: STAT-216: Applied Statistics

CLASS SECTION: 001

TERM: WINTER 2023

COURSE CREDITS: 4

DELIVERY METHOD(S): Lecture

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://legacy.camosun.ca/covid19/index.html>

*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: Bree Wilton

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

OFFICE: E246

HOURS: Mon - Thurs, and every other Fri 10-11am

*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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Students in first or second-year Biology, Business, Chemistry, Applied Chemistry and Biotechnology, Computer Science, and Environmental Technology will be prepared to conduct basic statistical analyses. Students will study descriptive statistics, probability, Binomial, Poisson and Normal distributions, hypothesis testing, confidence intervals, analysis of variance, correlation and linear regression, categorical data analysis. Students will also learn to use statistical software to perform statistical data analyses.

### PREREQUISITE(S):

One of:

C in Pre-calculus 12; C in MATH 097; C in MATH 107; C in MATH 109; C in MATH 115

### 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. Use descriptive statistical methods to display and describe distributions of data
2. Apply basic properties and concepts of probability to solve practical problems.
3. Use inferential statistical techniques to estimate and test hypotheses about parameters in both one population and two populations scenarios.
4. Conduct elementary regression analysis to solve real life problems.
5. Use Analysis of Variance (ANOVA) to make inferences about multiple populations.
6. Apply basic categorical data analysis techniques to solve practical problems.
7. Use statistical software (such as R) to perform basic statistical data analyses.

## REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

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1. Textbook: Introductory Statistics A Problem-Solving Approach by Kokoska, 3e.

You may buy the textbook from the bookstore either in

- loose-leaf format with Achieve (also includes the etext).
- etext with the Achieve.

You may choose to buy or rent the etext directly from the MacMillan textbook website at

<https://store.macmillanlearning.com/ca/product/Introductory-Statistics-A-Problem-Solving-Approach/p/1319049621>

Please note: if you purchase or rent the etext from the website there are NO RETURNS or exchanges.

2. Lab Tutorials: Available on D2L.

3. Sharp EL-531 Scientific Calculator. No other calculators are allowed for tests and the final exam.

We will be using the online homework system MyOpenMath for assignments for this course. It is highly recommended that you sign up as soon as possible at [myopenmath.com](http://myopenmath.com). You can find instructions for creating an account and linking to our course on our D2L page.

## 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.

| WEEK | TOPIC: Sections from the Textbook                     | DELIVERABLES                             |
|------|---|--|
| 1    | Chpt 1, 2.1-2.4                                       | HW1 due Friday                           |
| 2    | 2.4, 3.1-3.4                      Lab Intro Session   | HW2 due Friday                           |
| 3    | 4.1 – 4.4   | Lab Intro due Thursday<br>HW3 due Friday |
| 4    | 4.4, 4.5, 5.1, 5.2                      Lab 1 Session | HW4 due Friday                           |

| WEEK | TOPIC: Sections from the Textbook                                 | DELIVERABLES  |
|------|---|---|
| 5    | 5.3 – 5.5   | Lab 1 due Thursday<br><b>Test 1 Monday Feb 6<sup>th</sup></b> |
| 6    | 6.1 – 6.3, 7.1, 7.2                      Lab 2 Session            | HW5 due Friday  |
| 7    | READING BREAK   | HW6 due Friday  |
| 8    | 7.2, 7.3, 8.1                                      Lab 3 Session  | Lab 2 due Monday<br>HW7 due Friday                            |
| 9    | 8.2 – 8.4   | Lab 3 due Thursday<br><b>Test 2 Monday Mar 6<sup>th</sup></b> |
| 10   | 9.1, 9.3 – 9.6                                      Lab 4 Session | HW8 due Monday  |
| 11   | 9.2, 10.1 - 10.4  | Lab 4 due Thursday<br>HW9 due Friday                          |
| 12   | 13.1, 13.2, 11.1  | HW10 du Friday<br><b>LAB FINAL Friday Mar 31<sup>st</sup></b> |
| 13   | 11.1, 12  | <b>Test 3 Tuesday Apr 4<sup>th</sup></b>                      |
| 14   | 12, Review  |   |

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

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| DESCRIPTION                                | WEIGHTING    |
|--|--------------|
| Assignments                                | 10%          |
| Labs                                       | 5%           |
| Equity, Diversity and Inclusion Assignment | 2%           |
| Tests                                      | 33%          |
| Lab Final                                  | 10%          |
| Cumulative Final Exam                      | 40%          |
|  | <b>TOTAL</b> |
|  | 100%         |

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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**R Labs:** This course includes 6 lab sessions. You will need the lab tutorial for each lab. The lab tutorials are available on our D2L course page. The labs are designed to familiarize you with the use of a computer as a tool for statistical analysis. The computer software we use is R. Each lab session includes a lab assignment to be submitted for marking. Lab assignments must be handed in as a hard copy no later than **2:30pm** on the due date. Late labs will be accepted with a penalty of 20% per day until the on-time lab assignments have been handed back, after which I will no longer accept them. There will be a **lab final exam on March 31<sup>st</sup>**.

**Homework Assignments:** There will be online homework assignments to cover basic concepts. The deadline for online homework assignments is **11:59pm**. Late online assignments will not be accepted unless there is a documented medical or compassionate reason. There will also be a set of suggested problems from the textbook. ***In order to get a full understanding of the course materials you need to do both sets of homework.***

**Equity, Diversity and Inclusion Assignment:** See Equity, Diversity and Inclusion Assignment handout.

**Attendance:** Showing up to class is the easiest and most important thing you can do to help succeed the course. Keeping up is an essential part of any statistics course as much of the material builds on itself. If you feel yourself falling behind at any point during the term, then please do not hesitate to come speak to me.

**Missed Test Policy:** Students are expected to make every reasonable effort to write the test at the scheduled time. **A missed test usually counts as a 0**, so if for any reason it appears that you may miss a test,

- **before the test**, talk with the instructor about missing the test, unless an unforeseen emergency makes this impossible, in which case leave a comprehensive message.
- assuming that you qualify for a missed test (for instance, medical or compassionate leave), the weight of the test will be moved to the final exam. There will not be any rewrites of tests.

Please inquire if you have any questions or concerns about your particular situation.

### Desire2Learn (D2L)

This class has the assistance of D2L, an online course management system. Many course related materials will be available on D2L. It is your responsibility to subscribe to the notifications on D2L or check it regularly.

## SCHOOL OR DEPARTMENTAL INFORMATION

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**Math Lab:** Math lab E224 is staffed with math tutors available for free help. It is a great idea to do your homework there and get help whenever needed.

## 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/services/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.