

# COURSE SYLLABUS



COURSE TITLE: MATH-100: Calculus 1

CLASS SECTION: 001

TERM: Fall 2023

COURSE CREDITS: 4

DELIVERY METHOD(S): LEC

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: Laura Shepherd

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

OFFICE: E258

HOURS: M,W-F 10:30 am - 11:20 am & M-F 12:30 pm – 1:20 pm

## CALENDAR DESCRIPTION

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For mathematics and science students. Topics include: limits, derivatives of algebraic, trigonometric, logarithmic and exponential functions, applications of differentiation and the Fundamental Theorem of Calculus. Students will complete some assignments using Maple.

## PREREQUISITE(S):

One of:

B in Pre-calculus 12; B in MATH 097; A in MATH 107; B in MATH 115; A in MATH 173

## CO-REQUISITE(S):

Not Applicable

## EXCLUSION(S):

Notes: Only one of MATH 100 or MATH 108 may be used towards a Camosun College credential.

## COURSE LEARNING OUTCOMES / OBJECTIVES

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

1. Find the limit of elementary functions as the independent variable approaches some finite value or approaches infinity.
2. Define continuity.

3. Find the derivative of simple functions using the definition.
4. Find the derivative of functions (polynomial, trigonometric, logarithmic and exponential functions) using the product, quotient and chain rule.
5. Find the derivative using implicit differentiation.
6. Solve problems involving rates of change.
7. Find relative and absolute extrema of functions.
8. Sketch graphs of functions identifying such features as relative extrema, intervals where the function is increasing and decreasing, points of inflection, intervals where the function is concave up and concave down, and asymptotes.
9. Solve problems that involve maximizing or minimizing some variable associated with the problem.
10. Solve equations using Newton's method.
11. Find the area under a curve using the limit of the area of a set of approximating rectangles.
12. Evaluate a definite and an indefinite integral of polynomial, trigonometric, logarithmic and exponential functions using the Fundamental theorem of Calculus.
13. Use the Mean Value Theorem of integrals to find the mean value of a continuous function.
14. Evaluate integrals using the method of substitution.
15. Evaluate definite integrals using the trapezoidal rule and Simpson's rule.
16. Solve elementary differential equations using the method of separation of variables.

#### REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

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**Textbook:** Calculus (12<sup>th</sup>. Edition) by Larson & Edwards

**Calculator:** SHARP EL-531 Scientific Calculator

#### EVALUATION OF LEARNING

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DESCRIPTION	WEIGHTING
In Class Questions: Once a week (not week 1), during the first 5 minutes of class, there will be a question based on the previous lectures content.	5%
Term Tests: There will be 3 term tests. There are no make-up tests.	55%
Final Exam: Students must be available to write the exam during the scheduled date, time and place.	40%
<b>TOTAL</b>	<b>100%</b>

#### COURSE GUIDELINES & EXPECTATIONS

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MATH 100 is a very difficult course. Success in the course will require a lot of your time, approximately 3 hours of studying each and every day. Besides learning the course material through the lessons, it's important that you work diligently through numerous homework problems so as to reinforce your understanding, not to mention prepare yourself for the in class questions, tests and the final exam. Be sure to keep up with the course material and do not let yourself fall behind.

## SCHOOL OR DEPARTMENTAL INFORMATION

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The Camosun Math Help Center is located in E224. This is a drop in centre where you can get help with your homework. The hours will be posted on door.

## 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>

**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.

**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.