COURSE SYLLABUS

COURSE TITLE: MATH-100-Calculus 1
CLASS SECTION:002

TERM: 2025W

COURSE CREDITS: 3

DELIVERY METHOD(S): Lectures

Camosun College respectfully acknowledges that our campuses are situated on the territories of the Lək̓ʷəŋən (Songhees and Kosapsum) and WSÁNEĆ peoples. We honour their knowledge and welcome to all students who seek education here.

INSTRUCTOR DETAILS

NAME: NAME: Bogdan Verjinschi

EMAIL: Verjinschi @camosun.bc.ca

OFFICE: E244

HOURS: see below

	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9:30-10:20		M109-001 Y201		M109-001 Y201
10:30-11:20		M109-001 Y201		M109-001 Y201
11:30-12:20		OFFICE HOUR		OFFICE HOUR
12:30-1:20	M100-002 Y325		M100-002 Y316	M100-002 Y219
1:30-2:20	OFFICE HOUR		M100-002 Y316	M100-002 Y219
2:30-3:20			OFFICE HOUR	
3:30-5:20	**M109-002 Y217**		**M109-002 Y227**	
	M109-002 Y217		**M109-002 Y227**	

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

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

CO-REQUISITE(S):NA

EQUIVALENCIES:

COURSE LEARNING OUTCOMES / OBJECTIVES

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

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

Define continuity.

Find the derivative of simple functions using the definition.

Find the derivative of functions (polynomial, trigonometric, logarithmic and exponential functions) using the product, quotient and chain rule.

Find the derivative using implicit differentiation.

Solve problems involving rates of change.

Find relative and absolute extrema of functions.

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.

Solve problems that involve maximizing or minimizing some variable associated with the problem.

Solve equations using Newton's method.

Find the area under a curve using the limit of the area of a set of approximating rectangles.

Evaluate a definite and an indefinite integral of polynomial, trigonometric, logarithmic and exponential functions using the Fundamental theorem of Calculus.

Use the Mean Value Theorem of integrals to find the mean value of a continuous function.

Evaluate integrals using the method of substitution.

Evaluate definite integrals using the trapezoidal rule and Simpson's rule.

Solve elementary differential equations using the method of separation of variables.

REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

[INSERT TEXT HERE]

Textbook: Calculus (12th. Edition) by Larson & Edwards

Calculator: SHARP EL-531 Scientific Calculator

Test	Sections of Textbook	Test Date
TEST 1	P.1 Graphs and Models P.2 Linear Models and Rates of Change P.3 Functions and Their Graphs *P.4 Review of Trigonometric Functions* 1.1 A Preview of Calculus 1.2 Finding Limits Graphically and Numerically 1.3 Evaluating Limits Analytically 1.4 Continuity and One-Sided Limits…….. 1.5 Infinite Limits 2.1 The Derivative and the Tangent Line Problem 2.2 Basic Differentiation Rules and Rates of Change 2.3 Product and Quotient Rules and Higher-Order Derivatives 2.4 The Chain Rule	**TUESDAY** **February4**
TEST 2	2.5 Implicit Differentiation 2.6 Related Rates 3.1 Extrema on an Interval 3.2 Rolle's Theorem and the Mean Value Theorem 3.3 Increasing and Decreasing Functions and the First Derivative Test 3.4 Concavity and the Second Derivative Test 3.5 Limits at Infinity 3.6 A Summary of Curve Sketching 3.7 Optimization Problems 3.8 Newton's Method 3.9 Differentials	**TUESDAY** **March 4**
TEST 3	4.1 Antiderivatives and Indefinite Integration 4.2 Area 4.3 Riemann Sums and Definite Integrals 4.4 The Fundamental Theorem of Calculus 4.5 Integration by Substitution **8.6** Numerical Integration 5.1 The Natural Logarithmic Function: Differentiation 5.2 The Natural Logarithmic Function: Integration 5.3 Inverse Functions 5.4 Exponential Functions: Differentiation and Integration 5.5 Bases Other Than e and Applications	**TUESDAY** **April 8**
Assignment **practice only**	***The final exam will also cover the following sections***: 6.2 Differential Equations: Growth and Decay 6.3 Separation of Variables and the Logistic Equation	

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

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

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

WEEK	DATE	TU	TH1	TH2	F1	F2
1	**Jan 6-10**	Intro P1	P2 Rates of Change	P3 Functions and Their Graphs	P3	P4 Review of Trig Functions
2	**Jan 13-17**	P4 **Q1**	1.2 Limits Graphically Numerically	1.3 analytically	1.3	1.4 Continuity
3	**Jan20-25**	2.1 Derivative **Q2**	2.1	2.2 Basic Diff Rules	2.2	2.3 Product/ Quotient Rules
4	**Jan 27-31**	2.4 Chain Rule **Q3**	2.5 Implicit Differentiation	2.6 Related Rates	2.6	3.1 **Extrema**
5	**Feb 3-7**	**T1 [P1,2.6] TU Feb 4**	3.2 **Q4** **Rolle's** & **Mean Value** Theorem	33F' test	33	3.4 Concavity f''
6	**Feb10-15**	3.4 **Q5**	3.5 Limits at Infinity	3.5	3.6 Curve Sketching	3.6
7	**Feb17-22**	Reading Break	Reading Break	Reading Break	Reading Break	Reading Break
8	**Feb 24-28**	3.6 Q6	37 Optimization Problems	37	3.8 Newton's Method	3.9 Differentials
9	**March 3-7**	**T2 [3.1, 3.9] TU March 4**	4.14.1 Antiderivatives Q7	41	4.2	4.3 Definite Integrals
10	**March 10-15**	4.3 Riemann Sums and Definite Integrals **Q8**	4.3	44 The Fundamental Theorem of Calculus	4.5 Integration by Substitution	4.5
11	**March 17-22**	4.5 **Q9**	8.6 Numeric	5.1 y = ln x Differentiation	5.2 Integration	5.3 Inverse Functions
12	**March 24-29**	5.4 **Q10**	5.5 Bases Other Than e	5.5		
13	**March 31-Apr 5**	**T3 [4.1,5.5] TUApril 8**	**Q11**		6.2 D.E. Growth and Decay	6.2
14	**Apr7-11**	6.3 Separation of Variables	6.3, Logistic Equation	R A practice [6.2,6.3]	R	R

required. Deadlines can be reviewed on the CAL exams page. https://camosun.ca/services/academic-supports/accessible-learning/academic-accommodations-exams

EVALUATION OF LEARNING

DESCRIPTION	WEIGHTING
10 Quizzes (best 10 of 11): weeks 2 to 14 (not inWeeks1,7 &13) 10min at the beginning of class	6%
3 Term Tests: all test count no make-up tests.	54%
Final Exam: 3h comprehensible Students must be available to write the exam during the scheduled date, time and place.	40%
TOTAL	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 policy for more information.

Quizzes Every TU at the begging of class. 1-2 question(s) based on the previous lectures content.

All tests count*. If you must miss one test due to illness or family affliction, contact me via e-mail, phone, or in person* ***before*** *the test to make alternate arrangements.*

If you don't provide a reason for a missed test, you may get a zero on that test.

There will be no "make-up" tests.

Final Exam: There will be a comprehensive three-hour final exam scheduled during the Final Exam Period Apr. 14 - 25 -

COURSE GUIDELINES & EXPECTATIONS

Have a good review of the material every weekend. Work at least 2h every day. Some of the sections covered in this course could be very difficult so please be sure you spend enough time to understand the concepts presented in class and that you can work the assigned problems (HW).

If you need help, please see me, my Office is E244, or go to The Camosun Math Help Center E224

SCHOOL OR DEPARTMENTAL INFORMATION

The Camosun Math Help Center in 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

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

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 camosun.ca/services.

Support Service	Website
Academic Advising	camosun.ca/services/academic-supports/academic-advising
Accessible Learning	camosun.ca/services/academic-supports/accessible-learning
Counselling	camosun.ca/services/health-and-wellness/counselling-centre
Career Services	camosun.ca/services/co-operative-education-and-career-services
Financial Aid and Awards	camosun.ca/registration-records/financial-aid-awards
Help Centres (Math/English/Science)	camosun.ca/services/academic-supports/help-centres
Indigenous Student Support	camosun.ca/programs-courses/iecc/indigenous-student-services
International Student Support	camosun.ca/international
Learning Skills	camosun.ca/services/academic-supports/help-centres/writing-centre-learning-skills
Library	camosun.ca/services/library
Office of Student Support	camosun.ca/services/office-student-support
Ombudsperson	camosun.ca/services/ombudsperson
Registration	camosun.ca/registration-records/registration
Technology Support	camosun.ca/services/its
Writing Centre	camosun.ca/services/academic-supports/help-centres/writing-centre-learning-skills

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

Academic Integrity

Students are expected to comply with all College policy regarding academic integrity; which is about honest and ethical behaviour in your education journey. The following guide is designed to help you understand your responsibilities: https://camosun.libguides.com/academicintegrity/welcome
Please visit https://camosun.ca/sites/default/files/2021-05/e-1.13.pdf for Camosun's Academic Integrity policy and details for addressing and resolving matters of academic misconduct.

Academic Accommodations for Students with Disabilities

Camosun College is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging appropriate academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a documented disability and think you may need accommodations, you are strongly encouraged to contact the Centre for Accessible Learning (CAL) and register as early as possible. Please visit the CAL website for more information about the process of registering with CAL, including important deadlines: https://camosun.ca/cal

Academic Progress

Please visit https://camosun.ca/sites/default/files/2023-02/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 https://camosun.ca/sites/default/files/2021-05/e-2.2.pdf for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit https://camosun.ca/registration-records/tuition-fees#deadlines.

Grading Policy

Please visit https://camosun.ca/sites/default/files/2021-05/e-1.5.pdf for further details about grading.

Grade Review and Appeals

Please visit https://camosun.ca/sites/default/files/2021-05/e-1.14.pdf for policy relating to requests for review and appeal of grades.

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 (see Medical/Compassionate Withdrawals policy). Please visit https://camosun.ca/services/forms#medical to learn more about the process involved in a medical/compassionate withdrawal.

Sexual Violence

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 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 Policy: https://camosun.ca/sites/default/files/2021-05/e-2.9.pdf and camosun.ca/services/sexual-violence-support-and-education.

To contact the Office of Student Support: oss@camosun.ca or by phone: 250-370-3046 or 250-370-3841

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 https://camosun.ca/sites/default/files/2021-05/e-2.5.pdf to understand the College's expectations of academic integrity and student behavioural conduct.

Looking for other policies?

The full suite of College policies and directives can be found here: https://camosun.ca/about/camosun-college-policies-and-directives

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.