

# COURSE SYLLABUS



COURSE TITLE: MATH-107: Applied Precalculus

CLASS SECTION: 003

TERM: Winter 2024

COURSE CREDITS: 3

DELIVERY METHOD: face-to-face lectures

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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## INSTRUCTOR DETAILS

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NAME: Gilles Cazalais

EMAIL: [cazalais@camosun.ca](mailto:cazalais@camosun.ca)

OFFICE: CBA 158

HOURS: <https://sites.google.com/site/cazalais/home>

*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 life science, environmental studies, business, and social science will be prepared for applied calculus in their program of study. Students will: review algebra and study polynomial, rational, exponential, logarithmic, trigonometric and inverse trigonometric functions, sequences and series.

### PREREQUISITE(S):

One of:

C+ in Pre-calculus 11; C- in Pre-calculus 12; C+ in MATH 073; C+ in MATH 077; C in MATH 097; C+ in MATH 137; C in MATH 139

NOTES: It is recommended that students who have been away from algebra for more than two years should first enroll in MATH 073, MATH 077, MATH 137 or MATH 139.

### CO-REQUISITE(S):

Not Applicable

### EXCLUSION(S):

Only one of MATH 107 or MATH 115 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. Demonstrate proficiency in the fundamental concepts of Intermediate Algebra necessary to analyze and interpret single variable functions. This includes but is not limited to: factorization of polynomials and expressions with rational exponents, simplification of rational expressions, complex fractions and radicals, solving subsequent polynomial, radical, and rational equations, and single variable linear and quadratic inequalities.
2. Demonstrate the ability to understand and interpret visual 2-D representation of single variable relationships. This includes working with the basic concepts of graphing in the co-ordinate plane with an emphasis on linear equations, circles, and ellipses.
3. Work with analytic representations of single variable relationships and connect basic models to their visual representations. This includes building a foundation of understanding of terminology and notation for functions, including basic definitions and examples.
4. Work with more advanced functions to enable more complex modelling and analysis in follow-on courses. Examples include: quadratic, polynomial, rational, exponential, trigonometric and inverse trigonometric functions.
5. Solve word problems involving arithmetic and geometric sequences and series.

## TEXTBOOK

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Algebra & Trigonometry, Tenth Edition by Michael Sullivan. (Optional)

Coursepack for Math 107 (download it from the Math 107 website)

Math 107 Website: <https://sites.google.com/site/cazelais/home/math107>

## CHAPTERS AND SECTIONS

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Chapter R: Review

R.5: Factoring Polynomials

R.6: Synthetic Division

R.7: Rational Expressions

R.8: nth Roots; Rational Exponents

Chapter 1: Equations and Inequalities

1.1: Linear Equations

1.2: Quadratic Equations

1.4: Radical Equations; Equations Quadratic in Form

1.5: Solving Inequalities

Chapter 2: Graphs

2.1: The Distance and Midpoint Formulas

2.2: Graphs of Equations in Two Variables; Intercepts; Symmetry

2.3: Lines

2.4: Circles

11.3: The Ellipse

### Chapter 3: Functions and Their Graphs

3.1: Functions

3.2: The Graph of a Function

3.3: Properties of Functions

3.4: The Library of Functions; Piecewise Functions

3.5: Graphing Transformations

3.6: Mathematical Models: Building Functions

### Chapter 4: Linear and Quadratic Functions

4.1: Linear Functions and Their Properties

4.3: Quadratic Functions

4.4: Quadratic Models

4.5: Inequalities Involving Quadratic Functions

### Chapter 5: Polynomial and Rational Functions

5.1: Polynomial Functions and Models

5.2: Properties of Rational Functions

5.3: The Graph of a Rational Function

5.4: Polynomial and Rational Inequalities

5.5: The Real Zeros of a Polynomial Function

### Chapter 6: Exponential and Logarithmic Functions

6.1: Composite Functions

6.2: One-to-one Functions; Inverse Functions

6.3: Exponential Functions

6.4: Logarithmic Functions

6.5: Properties of Logarithms

6.6: Solving Logarithmic and Exponential Equations

6.7: Financial Models

6.8: Exponential Growth and Decay Models

### Chapter 7: Trigonometric Functions

7.1: Angles and Their Measure

7.2: Right Angle Trigonometry

7.3: Computing the Values of Trig Functions of Acute Angles

7.4: Trigonometric Functions of General Angles

7.5: Unit Circle; Properties of Trigonometric Functions

7.6: Graphs of the Sine and Cosine Functions

7.8: Phase Shifts

7.7: Graphs of the Tan, Cot, Csc and Sec Functions

## Chapter 8: Analytic Trigonometry

- 8.1: Inverse Trigonometric Functions
- 8.2: The Inverse Trigonometric Functions Continued
- 8.3: Solving Trigonometric Equations
- 8.4: Trigonometric Identities
- 8.5: Sum and Difference Formulas
- 8.6: Double-angle Formulas

## Chapter 13: Sequences

- 13.1: Sequences
- 13.2: Arithmetic Sequences
- 13.3: Geometric Sequences

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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 notice is required. Deadlines can 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	12%
Test 1 (February 9)	16%
Test 2 (March 8)	16%
Test 3 (April 5)	16%
Final Exam	40%
<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>

## MISSING TESTS

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No test extension or make-up test will be offered. If you are unable to write a test for a serious reason such as illness, then you must talk to me as soon as possible and the weight of the missed test will be added to the final exam.

## SCHOOL OR DEPARTMENTAL INFORMATION

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Interurban Math Lab (TEC 142)  
Services: Individual free tutoring and study space  
Schedule: posted on the door  
Format: Drop in – first-come first-served

Chair of the Math & Stats Department: Patrick Montgomery  
Phone: 250-370-3502  
Office: Ewing 268, Lansdowne Campus  
Email: [montgomeryp@camosun.ca](mailto:montgomeryp@camosun.ca)

## 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>

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Technology Support

<http://camosun.ca/its>

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Writing Centre

<http://camosun.ca/writing-centre>

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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](#) (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.