CAMOSUN COLLEGE
School of Arts & Science
Department of Mathematics & Statistics

MATH-107-003
Applied Precalculus
Fall 2018

COURSE OUTLINE

The course description is online @ http://camosun.ca/learn/calendar/current/web/math.html

✷ *Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.*

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1. Instructor Information

(a) Instructor	Amanda Malloch		
(b) Office hours	Mon/Wed 1:00-2:00 and Tues/Thus 11:00-12:00, or by appointment		
(c) Location	Ewing 342A		
(d) Phone	250-370-3303	**Alternative:**	
(e) E-mail	MallochA@camosun.bc.ca		
(f) Website	D2L (online.camosun.ca)		

2. Intended Learning Outcomes

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

- 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.
- 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.
- 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.
- 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.
- Solve word problems involving arithmetic and geometric sequences and series.

3. Required Materials

Coursepack

Available on D2L

Calculator

As per department policy, the only calculator permitted for use on tests and the final exam is the Sharp EL-531 (or EL-510R) scientific calculator. No other electronic devices may be used.

*The textbook *Algebra and Trigonometry*, Sullivan, 10th Edition, will be **optional** for this offering of the course. The coursepack includes practice problems taken from the textbook, and answers will be posted on D2L.

4. Course Content and Schedule

Chapter R: Review
- R.5: Factoring Polynomials
- R.6: Synthetic Division
- R.7: Rational Expressions
- R.8: *n*th Roots; Rational Exponents

Chapter 1: Equations and Inequalities
- 1.1: Linear Equations
- 1.2: Quadratic Equations
- 1.4: Radical Equations; Equations Quadratic in Form; Factorable Equations
- 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

Chapter 11: Analytic Geometry
- 11.3: The Ellipse

Chapter 3: Functions and Their Graphs
- 3.1: Functions
- 3.2: The Graphs of a Functions
- 3.3: Properties of Functions
- 3.4: Library of Functions; Piecewise-defined Functions
- 3.5: Graphing Techniques; Transformations
- 3.6: Mathematical Models; Building Functions

Chapter 4: Linear and Quadratic Functions
- 4.1: Properties of Linear Functions and Linear Models
- 4.3: Quadratic Functions and Their Properties
- 4.4: Building Quadratic Models from Verbal Descriptions and from Data
- 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: Logarithmic and Exponential Equations
- 6.7: Financial Models
- 6.8: Exponential Growth and Decay Models; Newton's Law; Logistic Growth and Decay Models

Chapter 7: Trigonometric Functions
- 7.1: Angles and Their Measure
- 7.2: Right Triangle Trigonometry
- 7.3: Computing the Values of Trigonometric Functions of Acute Angles
- 7.4: Trigonometric Functions of Any Angle
- 7.5: Unit Circle Approach; Properties of the Trigonometric Functions
- 7.6: Graphs of the Sine and Cosine Functions
- 7.7: Graphs of the Tangent, Cotangent, Cosecant, and Secant Functions
- 7.8: Phase Shift; Sinusoidal Curve Fitting

Chapter 8: Analytic Trigonometry
- 8.1: The Inverse Sine, Cosine, and Tangent Functions
- 8.2: The Inverse Trigonometric Functions (Continued)
- 8.3: 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; Geometric Series

5. Basis of Student Assessment (Weighting)

(a) In-class Assignments: 14%

You are expected to participate in short weekly assignments and quizzes during class, which will be submitted for marks.

(b) Tests: 36% (12% each)

There will be 3 tests written in class, tentatively scheduled for Tuesday, October 2nd, Tuesday, October 30th, and Tuesday, November 27th. If you miss a test for a reason such as illness, accident, or family affliction, please notify me as soon as possible and provide supporting documentation. In the event of an excused absence, your mark or ranking on the final exam will replace the missing test.

(b) Final Exam: 50%

A comprehensive, 3-hour final exam will take place during the final exam period of December 10th – 18th. You must write the final exam at the scheduled time as per Camosun College's policy on final examinations. See camosun.ca/learn/calendar/current/procedures.html#academic.

6. Grading System

[X] Standard Grading System (GPA)

[ ] Competency Based Grading System

7. Recommended Materials to Assist Students to Succeed Throughout the Course

Math Lab: There is an instructional assistant in Ewing 224 who can answer questions about the content of the course. The lab will normally be open Monday to Friday from 9:00am until 4:30pm.

8. College Supports, Services and Policies

Immediate, Urgent, or Emergency Support
If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), **SEEK HELP**. Resource contacts @ http://camosun.ca/about/mental-health/emergency.html or http://camosun.ca/services/sexual-violence/get-support.html#urgent

College Services
Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the **STUDENT SERVICES** link on the College website at http://camosun.ca/

College Policies
Camosun strives to provide clear, transparent, and easily accessible policies that exemplify the college's commitment to life-changing learning. It is the student's responsibility to become familiar with the content of College policies. Policies are available on the College website at http://camosun.ca/about/policies/. Education and academic policies include, but are not limited to, Academic Progress, Admission, Course Withdrawals, Standards for Awarding Credentials, Involuntary Health and Safety Leave of Absence, Prior Learning Assessment, Medical/Compassionate Withdrawal, Sexual Violence and Misconduct, Student Ancillary Fees, Student Appeals, Student Conduct, and Student Penalties and Fines.

A. GRADING SYSTEMS *http://camosun.ca/about/policies/index.html*

The following two grading systems are used at Camosun College:

1. Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3
60-64	C		2
50-59	D		1
0-49	F	Minimum level has not been achieved.	0

2. Competency Based Grading System (Non GPA)

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes

Grade	Description
COM	The student has met the goals, criteria, or competencies established for this course, practicum or field placement.
DST	The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement.
NC	The student has not met the goals, criteria or competencies established for this course, practicum or field placement.

B. Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at http://camosun.ca/about/policies/index.html for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	*Incomplete*: A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	*In progress*: A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
CW	*Compulsory Withdrawal*: A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.

9. Important Dates:

Sept 4th: First day of class

Sept 18th: Add/Drop date and Fee deadline

Oct 8th: Thanksgiving Day (no class)

Nov 7th: Last day to drop without academic penalty

Nov 12th: Remembrance Day (no class)

Dec 7th: Last day of class

Dec 10th – 18th: Exam Period