



COURSE OUTLINE

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

⚡ Please note: the College electronically stores this outline for five (5) years only.
It is **strongly recommended** you keep a copy of this outline with your academic records.
You will need this outline for any future application/s for transfer credit/s to other colleges/universities.

1. Instructor Information

Instructor:	Raymond Lai
Office Hours:	<ul style="list-style-type: none">Monday to Friday: 12:30am – 1:20pmDrop in, and by appointment
Office Location:	CBA 152
Phone:	250-370-4491
Email:	lai@camosun.bc.ca
Website:	http://faculty.camosun.ca/raymondlai/

2. Intended Learning Outcomes

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

1. Demonstrate basic numeracy by performing arithmetic without a scientific calculator.
2. Use set notation to find the union and intersection of two or more sets. Define and identify real, rational, irrational, integer, whole and natural numbers. Graph intervals of real numbers on the number line. Use the properties of real numbers to perform arithmetic operations and evaluate expressions.
3. Solve linear equations and inequalities in one variable. Solve and graph compound inequalities. Solve and graph absolute value equations and inequalities. Solve word problems involving linear equations in one variable.
4. Graph linear equations and inequalities in two variables. Calculate the slope and y-intercept of a line. State the equation of a line in point-slope, slope-intercept, and standard form.
5. Solve systems of linear equations in two and three variables by graphing, substitution and the addition method. Solve word problems involving systems of linear equations.
6. Express real numbers in scientific notation. Use the power rules to evaluate expressions with integral exponents. Define the term polynomial and multiply polynomials together. Factor polynomials, and solve equations and word problems involving factoring.
7. Use the properties of rational expressions to simplify terms. Perform arithmetic operations on rational expressions. Simplify complex fractions. Divide polynomials using long division. Solve equations and word problems involving rational expressions.
8. Perform arithmetic operations with radicals. Take quotients and powers of terms involving radicals and rational exponents. Rationalize denominators. Solve equations with radicals and exponents. Perform arithmetic operations on complex numbers, including rationalizing the denominator.

9. Solve quadratic equations by factoring, by completing the square, and by using the quadratic formula. Solve word problems involving quadratic equations.

3. Required Materials

Textbook: M. Dugopolski, *Intermediate Algebra*, 7th edition, McGraw-Hill, Boston 2012.
(Earlier editions are acceptable – copies of the 7th edition are on reserve in the library.)

Calculator policy: No calculators are permitted. This extends to any other electronic devices as well.

4. Course Content and Schedule

Chapter 1 – The Real Numbers

- 1.1 Sets
- 1.2 The Real Numbers
- 1.3 Operations on the Set of Real Numbers
- 1.4 Evaluating Expressions
- 1.5 Properties of the Real Numbers
- 1.6 Using the Properties

Chapter 2 – Linear Equations and Inequalities in One Variable

- 2.1 Linear Equations in One Variable
- 2.2 Formulas and Functions
- 2.3 Applications
- 2.4 Inequalities
- 2.5 Compound Inequalities
- 2.6 Absolute Value Equations (omit inequalities)

Chapter 3 – Graphs and Functions in the Cartesian Coordinate System

- 3.1 Graphing Lines in the Coordinate Plane
- 3.2 Slope of a Line
- 3.3 Three Forms for the Equation of a Line
- 3.4 Linear Inequalities and Their Graphs

Chapter 4 – Systems of Linear Equations

- 4.1 Solving Systems by Graphing and Substitution
- 4.2 The Addition Method
- 4.3 Systems of Linear Equations in Three Variables

Chapter 5 – Exponents and Polynomials

- 5.1 Integral Exponents and Scientific Notation
- 5.2 The Power Rules
- 5.3 Polynomials and Polynomial Functions
- 5.4 Multiplying Binomials
- 5.5 Factoring Polynomials
- 5.6 Factoring $ax^2 + bx + c$
- 5.7 Factoring Strategy
- 5.8 Solving Equations by Factoring

Chapter 6 – Rational Expressions

- 6.1 Properties of Rational Expression and Functions
- 6.2 Multiplication and Division
- 6.3 Addition and Subtraction
- 6.4 Complex Fractions
- 6.5 Division of Polynomials (likely omitting synthetic division)
- 6.6 Solving Equations Involving Rational Expressions
- 6.7 Applications

Chapter 7 – Rational Exponents and Radicals

- 7.1 Radicals
- 7.2 Rational Exponents
- 7.3 Operations with Radicals
- 7.4 Quotients, Powers and Rationalizing Denominators
- 7.5 Solving Equations with Radicals and Exponents
- 7.6 Complex Numbers

Chapter 8 – Quadratic Equations and Inequalities

- 8.1 Factoring and Completing the Square
- 8.2 The Quadratic Formula
- 8.3 More on Quadratic Equations

Lectures, Reviews, Help Sessions	Tests	Holiday	Total
59 hours	5 hours	2 hours	66 hours

5. Basis of Student Assessment (Weighting)

Your numerical percentage grade will be computed using the following three components, which is then converted to a letter grade using the standard Camosun grade scale (see Grading System (6) below).

- Five Assignments (total 10%):

	Assignment 1	Assignment 2	Assignment 3	Assignment 4	Assignment 5
Due Date	1 Oct	15 Oct	29 Oct	12 Nov	26 Nov

The lowest assignment grade will be dropped when calculating the average of your assignments.

This allows a student to miss any one assignment for any reason, including illness, without penalty.

Assignments that are late will receive a 25% penalty if the solutions have not yet been posted to the course website. Once solutions have been posted, late assignments will not be accepted under any circumstance.

- Five 50-minute quizzes (total 40%), tentatively on Thursdays of week 2, 4, 6, 8, and 10.

	Quiz 1	Quiz 2	Quiz 3	Quiz 4	Quiz 5
Tentative Date (and week)	2 Oct (week 2)	16 Oct (week 4)	30 Oct (week 6)	13 Nov (week 8)	27 Nov (week 10)
Tentative Coverage	1.1 – 1.6	2.1 – 2.6, 3.1	3.2 – 3.4, 4.1 – 4.3, 5.1 – 5.3	5.4 – 5.8, 6.1 – 6.5	6.6 – 6.7, 7.1 – 7.5

- Thorough understanding of the examples discussed in class and diligent practices on solving suggested assignment and practice questions will be essential for success in the term quizzes.
- The lowest quiz grade will be dropped when calculating the average of your quizzes.
This allows a student to be absent on any one quiz day for any reason, including illness, without penalty. There is no provision for “making up” missed quizzes.

- Comprehensive 3-hour Final Exam (50%)

- During 7 December – 13 December
- As stated in the college calendar, “Students are expected to write tests and final examinations at the scheduled time and place. ... Exceptions, due to emergency circumstances, such as unavoidable employment commitments, health problems, or unavoidable family crisis, require approval of the appropriate instructor. Holidays or scheduled flights are not considered to be emergencies. The student may be required to provide verification of the emergency circumstances.”

If your final exam grade is higher than your term work grade and your term work is 50% or higher, then your final exam grade will count as 100% of your final grade.

6. Grading System

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	Minimum level of achievement for which credit is granted; a course with a "D" grade cannot be used as a prerequisite.	1
0-49	F	Minimum level has not been achieved.	0

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 E-1.5 at camosun.ca for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete:</i> 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	<i>In progress:</i> A temporary grade assigned for courses that, due to design may require a further enrollment in the same course. No more than two IP grades will be assigned for the same course. (For these courses a final grade will be assigned to either the 3 rd course attempt or at the point of course completion.)
CW	<i>Compulsory Withdrawal:</i> 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.

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

LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College calendar, at Student Services, or the College web site at camosun.ca.

STUDENT CONDUCT POLICY

There is a Student Conduct Policy **which includes plagiarism**. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, at Student Services, and the College web site in the Policy Section.

How to do well in the course and where to get help

1. Do not skip classes.
2. Start working on the exercises as soon as we finish a section.
3. It is important to understand the principles involved rather than to memorize a method of solution – try variations of questions.
4. Collaboration and studying in groups is an efficient way to learn mathematics. However, you must be prepared to answer questions on your own for the quizzes. I recommend discussing the questions with your peers, but writing your final solutions on your own, to ensure you are familiar with the material.
5. Extra help available from assistant at the Math Lab located at Technologies Centre (TEC) Room 142 (phone: 370-4492). This drop-in centre is freely available for your use to work on math homework and to seek help from the tutor on staff (see hours posted on the door).