



School of Access  
Community Learning Partnerships  
**MATH 057 S17**  
Intermediate Math for Trades  
**Course Outline – Winter 2013**



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<b>Class Hours:</b> Mo & Fr 9:30-11:20; We 1:00-2:50		<b>Office Hours:</b> Mo, Fr: 8:30-9:30

### Calendar Description

This course covers the algebra from MATH 053 plus modules on trigonometry and vectors, which provide the skills required for further study in Electrical Foundations, advanced-level mathematics, and any course or program that requires Math 10. Topics include: real numbers, algebraic expressions, equations, inequalities, graphing, polynomials, trigonometry, and vectors.

**Prerequisite(s):** MATH 052 or Assessment.

<http://camosun.ca/learn/calendar/current/web/math.html>

### Required Materials

- textbook: *Developmental Mathematics*, 6<sup>th</sup>/7<sup>th</sup>/8<sup>th</sup> edition, Marvin Bittinger/Judith Beecher
- module: Trigonometry (*ABE Intermediate Mathematics* module 14), British Columbia
- module: Vectors (Camosun College)
- scientific calculator (Sharp EL-531X or EL-531W for next level MATH 072 or 135)

### Grade Calculation<sup>1</sup>:

(a) Tests: 75% of the course grade is based on the average of all unit final test scores for units 1–6 (including both passing and failing test scores)

(b) Exams: 25% of the course grade is based on the average of all final exam scores (including both passing and failing exam scores)

Note:

Students with a record of poor attendance OR poor progress may be restricted from re-registering in Academic and Career Foundations Department courses.

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<sup>1</sup> As this is a mastery-based course, the goal for each test is 75% or better. If you scored less than 75% then you will need to rewrite the test before you continue. Note: Tests can only be rewritten once for a total of two times and all test scores are averaged to calculate a final mark.

## Grading System

Percentage	Grade	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
<50%	F	0
In Progress	IP	N/A

For information on Camosun College's grading policy, see the webpage <http://camosun.ca/about/policies/education-academic/e-1-programming-&-instruction/e-1.5.pdf>

## Academic Progress

There is an Academic Progress Policy designed to enhance a learner's likelihood of success. Students should become familiar with the content of this policy. The policy is available in each School Administration Office, Registration, and on the College web site in the Policy Section.

<http://camosun.ca/about/policies/education-academic/e-1-programming-&-instruction/e-1.1.pdf>

## Intended Learning Outcomes

(complete ABE Intermediate Mathematics learning outcomes at ABE Articulation Handbook website <http://www.aved.gov.bc.ca/abe/handbook.pdf>)

1. At the end of the course, students will be able to:
2. Use mathematics at an ABE Intermediate level with competence
3. Demonstrate knowledge and skills in using the language, principles, and operations of introductory algebra and trigonometry
4. Apply a variety of strategies in solving math-related problems
5. Apply knowledge and skills in introductory algebra and trigonometry to solve problems
6. Use knowledge of introductory algebra and trigonometry as a basis for further study in the Electrical ELT program, Advanced-level mathematics, and other courses and programs

## Course Content and Schedule

### Self-paced Instructions

The course completion time will vary for each student, depending on a number of factors, including your current level of math skills, motivation, learning rate, and how much time you have to study math, either at the college or at home. Students generally need to spend 5–15 hours of study time per week to complete each math course within 4 months.

- (a) before starting unit 1, students must pass a competency test to demonstrate that they can add, subtract, multiply, and divide whole numbers, fractions, and decimals without the use of a calculator (calculators are not allowed for parts of MATH 072 and 172) – use the Arithmetic Review booklet to review these operations before writing the competency test
- (b) review your final test results with the instructor, and proceed to the next unit if you score 75% or better, or rewrite the final test if you score less than 75% (all test scores count)

<b>MATH 057 Course Content</b>				
<b>8<sup>th</sup> Ed</b>	<b>7<sup>th</sup> Ed</b>	<b>Unit R – Arithmetic Review (no calculator)</b>		
R.1	R.1	Place value		
R.2	R.2	Comparing numbers		
R.3	R.3	Rounding numbers		
R.4	R.4	Adding and subtracting whole numbers and decimals		
R.5	R.5	Multiplying whole numbers and decimals		
R.6	R.6	Dividing whole numbers and decimals		
R.7	R.7	Order of operations		
R.8	R.8	Operations with fractions		
R.9	R.9	Equivalent fractions		
R.10	R.10	Adding and subtracting fractions		
R.11	R.11	Multiplying fractions		
R.12	R.12	Dividing fractions		
R.13	R.13	Converting fractions and decimals		
R.14	R.14	Estimation		
		Practice Test		
<b>Unit R final test (no calculator)</b>				
<b>8<sup>th</sup> Ed</b>	<b>7<sup>th</sup> Ed</b>	<b>Unit 1 – Real Numbers and Algebraic Expressions</b>		
7.1	7.1	Introduction to algebra		
7.2	7.2	The real numbers		
7.3	7.3	Addition of real numbers		
7.4	7.4	Subtraction of real numbers		
7.5	7.5	Multiplication of real numbers		
7.6	7.6	Division of real numbers		
7.7	7.7	Properties of real numbers		
7.8	7.8	Simplifying expressions; order of operations		
		Chapter test		
<b>Unit 1 final test</b>				

		<b>Unit 2 – Solving Equations and Inequalities</b>		
8.1	8.1	Solving equations: the addition principle		
8.2	8.2	Solving equations: the multiplication principle		
8.3	8.3	Using the principles together		
8.4	8.4	Formulas		
8.5	8.5	Applications of percent		
8.6	8.6	Applications and problem solving		
8.7	8.7	Solving inequalities		
8.8	8.8	Applications and problem solving with inequalities		
		Chapter test		
<b>Unit 2 final test</b>				
		<b>Unit 3 – Graphs of Linear Equations</b>		
9.1	9.1	Graphs and applications of linear equations		
9.2	9.2	More with graphing and intercepts		
9.3	9.3	Slope and applications		
		Summary and review		
		Chapter test		
<b>Unit 3 final test</b>				
		<b>Unit 4 – Polynomials: Operations and Factoring</b> (28 days)		
10.1	10.1	Integers as exponents		
10.2	10.2	Exponents and scientific notation		
10.3	10.3	Introduction to polynomials		
10.4	10.4	Addition and subtraction of polynomials		
10.5	10.5	Multiplication of polynomials		
10.6	10.6	Special products		
10.7	10.7	Operations with polynomials in several variables		
10.8	10.8	Division of polynomials		
11.1	11.1	Introduction to factoring		
11.2	11.2	Factoring trinomials of the type $x^2 + bx + c$		
		Chapter test		
<b>Unit 4 final test</b>				
<b>MATH 053 final exam</b>				
		<b>Unit 5 – Trigonometry</b> (supplementary module)		
5.1	5.1	The right triangle		
5.2	5.2	Angles and sides		
5.3	5.3	The Pythagorean theorem (more in 7e text p 1059, 8e text p 1087)		
5.4	5.4	The tangent ratio		
5.5	5.5	Using the tangent ratio		
5.6	5.6	The sine and cosine ratios		
5.7	5.7	Solving triangles		
		Practice test		
<b>Trigonometry final test</b>				
		<b>Unit 6 – Vectors</b> (supplementary module)		
p 10	p 10	Problem Sets		
<b>Vectors Final Test</b>				

## **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, Registrar's Office or the College web site at:

<http://www.camosun.ca>

### **STUDENT CONDUCT POLICY**

There is a Student Conduct Policy. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, Registration, and on the College web site in the Policy Section, or the College web site at:

<http://camosun.ca/about/policies/education-academic/e-2-student-services-&-support/e-2.5.pdf>

### **STUDENT GRADING POLICY**

A new student grading policy is in effect for students in the School of Access. This information is available in the College Calendar, Registrar's Office or the College web site at:

<http://camosun.ca/about/policies/education-academic/e-1-programming-&-instruction/e-1.5.pdf>

### **ACADEMIC PROGRESS POLICY**

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