



School of Access
MATHEMATICS DEPARTMENT
MATH 137-002
Algebra and Triangle Trigonometry
Winter 2015

COURSE OUTLINE

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

Ω 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.

Math 137 is a 5 credit course, offered in semester format of 8 lecture hours per week for 14 weeks.

Prerequisite: MATH 053 or MATH 135, or Principles of Math 10; or Foundations of Math & Pre-calculus 10, or "B" in Applications of Math 11; or Foundations of Math 11, or Applications of Math 12, or "C-" in either Principles of Math 11, or Pre-calculus 11; or assessment.

1. Instructor Information

(a)	Instructor:	Dr. Patrick Montgomery
(b)	Office Hours:	Monday, Tuesday, Wednesday and Thursday 2:30-3:20
(c)	Location:	Ewing 342B
(d)	Phone:	250-370-3303
(e)	Email:	montgomeryp@camosun.bc.ca
(f)	D2L Website:	https://online.camosun.ca

2. Intended Learning Outcomes This course provides a foundation for the further study of mathematics. Topics include linear equations and inequalities; function notation; linear functions; systems of linear equations in two variables; polynomial, rational and radical expressions and equations; quadratic functions and equations; and triangle trigonometry including the Sine and Cosine Laws. [5 Credits] Source: Camosun College Calendar
<http://camosun.ca/learn/calendar/current/web/math.html>

3. Required Materials

- (a) Texts – *Intermediate Algebra* 11th Edition by M.L. Bittinger,,: First Custom Edition for Camosun College, Pearson Learning Solutions, and
- (b) *Trigonometry*, an excerpt from *Algebra and Trigonometry*, 2nd ed, by Beecher, Penna and Bittinger.
- (c) Other – Sharp EL-531 calculator. Mathematics Department policy is that the only calculator permitted for use on tests and exams is this calculator. No other make or model of calculator is permitted, nor are other electronic devices such as cell phones, iPods, electronic translators, etc.
- (d) **Optional** – Student Solutions Manual by J.A. Penna

Both textbooks are on 2 hour reserve loan status in the library. The total cost at the bookstore for a new bundled package is \$237.50. The calculator sells at \$16.99

4. Course Content and Schedule

Section		Section	
	Review of Basic Algebra		Rational Expressions, Equations, and Functions
R.1	Set of Real Numbers	5.1	Rational Expressions, Functions: Mult./Div.
R.2	Operations with Real Number	5.2	LCMs, LCDs, Addition and Subtraction
R.3	Exponential Notation and Order of Operations	5.3	Division of Polynomials
R.4	Introduction to Algebraic Expressions	5.4	Complex Rational Expressions
R.5	Equivalent Algebraic Expressions	5.5	Solving Rational Equations
R.6	Simplifying Algebraic Expressions	5.6	Applications and Proportions
R.7	Properties of Exponents and Scientific Notation	5.7	Formulas and Applications
Test Chap R		5.8	Variation and Applications
	Solving Linear Equations and Inequalities		Radical Expressions, Equations, and Functions
1.1	Solving Equations	6.1	Radical Expressions and Functions

1.2	Formulas and Applications	6.2	Rational Numbers as Exponents
1.3	Applications and Problem Solving	6.3	Simplifying Radical Expressions
1.4	Sets, Inequalities, and Interval Notation	6.4	Addition, Subtraction, and More Multiplication
1.5	Intersections, Unions, and Compound Inequalities	6.5	More on Division of Radical Expressions
1.6	Absolute-Value Equations and Inequalities	6.6	Solving Radical Equations
	Graphs, Functions, and Applications	6.7	Applications Involving Powers and Roots
2.1	Graphs of Equations	6.8	The Complex Numbers
2.2	Functions and Graphs	Test Chap 5&6	
2.3	Finding Domain and Range		Quadratic Equations and Functions
2.4	Linear Functions: Graphs and Slope	7.1	Basics of Solving Quadratic Equations
2.5	More on Graphing Linear Equations	7.2	The Quadratic Formula
2.6	Finding Equations of Lines: Applications	7.3	Applications Involving Quadratic Equations
Test Chap 1&2		7.4	More on Quadratic Equations
	Systems of Equations	7.5	Graphing $f(x) = a(x-h)^2 + k$
3.1	Systems of Equations in Two Variables	7.6	Graphing $f(x) = ax^2 + bx + c$
3.2	Solving by Substitution	7.7	Mathematical Modeling with Quadratic Functions
3.3	Solving by Elimination		Trigonometry
		5.1*	Trig functions of Acute Angles
3.4a	Solving Applied Problems	5.2*	Applications of Right Triangles
3.7ab	Systems of Inequalities in Two Variables	5.3*	Trig Functions of Any Angles
	Polynomials and Polynomial Functions	7.1*	The Law of Sines
4.1	Introduction to Polynomials and Polynomial Functions	7.2*	The Law of Cosines
4.2	Multiplication of Polynomials	Test Chap 7 and Trig	
4.3	Introduction to Factoring	The * denotes that these sections are from the Trigonometry supplement provided with the course text	
4.4	Factoring Trinomials: $x^2 + bx + c$		
4.5	Factoring Trinomials: $ax^2 + bx + c$		
4.6	Special Factoring		
4.7	Factoring: A General Strategy		
4.8	Applications of Polynomial Equations		
Test Chap 3&4			

In general, we will cover 1 or two sections per class. An approximate pacing schedule is below, but may be amended by the instructor as the term progresses

Week	Monday	Tuesday	Wednesday	Thursday
1 – Jan 5-9	R1, R2	R3, R4	R5, R6	R7, 1.1
2 – Jan 12-16	1.2, 1.3	1.3	1.4, 1.5	1.6, 2.1
3 – Jan 19-23	2.2 Fee Deadline	2.3	2.4, 2.5	Test 1
4 – Jan 26-30	2.6	3.1, 3.2	3.3	3.4a, 3.7ab
5 – Feb 2-6	4.1	4.2, 4.3	4.4	Test 2
6 – Feb 9-13	Family Day	4.5	4.6	Reading Break
7 – Feb 16-20	4.7	4.8, 5.1	5.2	5.3, 5.4
8 – Feb 23-27	5.5	5.6, 5.7	5.8	Test 3
9 – Mar 2-6	6.1, 6.2	6.3	6.4, 6.5	6.6
10 – Mar 9-13	6.7, 6.8, Withdrawal Deadline	7.1	7.2	Test 4
11 – Mar 16-20	7.3	7.4	7.5	7.6
12 – Mar 23-27	7.7	5.1*	5.2*	Test 5
13 – Mar 30-Apr 3	5.3*	7.1*	7.2*	Review
14 – Apr 6-10	Easter Monday	Review	Review	Exam Prep

Final Exam period: April 13-21

5. Basis of Student Assessment (Weighting)

- (a) Assignments – 10%
- (b) In Class Tests – 40%
- (c) Exams – Comprehensive Final exam: 50%

Weekly assignments will be handed in by the end of class on Tuesdays, starting January 13th.

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. <i>(For these courses a final grade will be assigned to either the 3rd course attempt or at the point of course completion.)</i>
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.

Math Labs: Ewing 342 & 224 (LANS) and Tec142 (INT): These drop-in centres are available for you to work on math homework and to seek free help from the tutor on staff. See the hours posted on the math lab doors (most current) or go to <http://camosun.ca/services/help-centres/math-access.html>

Dr. Montgomery's Teaching Philosophy

I believe...	I will...	I expect you to...
education is important	<ul style="list-style-type: none"> - take teaching seriously - be prepared for classes - be available to help - look for answers to questions that I may not be able to answer promptly 	<ul style="list-style-type: none"> - be committed to learning - never give up, persevere
an organized class helps with learning	<ul style="list-style-type: none"> - start on time - inform you of changes promptly - maintain a course website 	<ul style="list-style-type: none"> - be in class and ready when we start - read the textbook - inform me if you are unable to complete an assignment or test on schedule
curiosity enhances learning	<ul style="list-style-type: none"> - ask questions to provoke thought - share stories and experiences - provide challenges to give you the opportunity to think deeply - be enthusiastic and excited about mathematics 	<ul style="list-style-type: none"> - foster your own lifelong enjoyment of learning - ask questions of me, your peers, and yourself - look outside the curriculum for connections - share your experiences with others
in an environment of personal respect	<ul style="list-style-type: none"> - at all times be courteous and polite - behave in a way that makes you feel at ease in the classroom 	<ul style="list-style-type: none"> - maintain behavior that does not disrupt learning - inform me of issues which are affecting your classroom learning
practice is key to performance	<ul style="list-style-type: none"> - assign homework - provide prompt and constructive feedback 	<ul style="list-style-type: none"> - complete your homework assignments on time - use my feedback to improve your skills