



## Mathematics 137-002 Algebra and Triangle Trigonometry Winter, 2014

**Instructor:** Cathy Frost

**Lansdowne Office:** Ewing 250

**Timetable:**

Ph#: 250-370-3404

**E-mail:** frost@camosun.bc.ca

**Website:** <http://online.camosun.ca>

Time	Monday	Tuesday	Wed	Thursday	Friday
10:30am - 12:30pm	Math 137 E346	Math 137 E346	Math 137 E346	Math 137 E346	
12:30-1:30pm	Office Hour	Office Hour	Office Hour	Office Hour	
1:30-2:30pm	Office Hour		Office Hour		
2:30-4:20pm	Math 137 E346	Math 137 E346	Math 137 E346	Math 137 E346	
Additional Office Hours by Appointment					

**Important Dates:**

Jan 6	First day of classes for Winter term
Jan 20	Fee Deadline
Feb 10	Family Day Holiday- College closed
Feb 13-14	Reading Break
Mar 10	Withdrawal Deadline
Apr 18 and 21	Good Friday/Easter Holidays – College closed
Apr 12	Last day of classes for Winter term
Apr 14-17, 22-25	Final Exam Period

### 1. 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>

### 2. Course Materials and Support

**Required Materials:** a) M.L. Bittinger, *Intermediate Algebra*, 11<sup>th</sup> Edition, Addison-Wesley, Boston, 2011

b) The only calculator allowed on tests and the final exam is the Sharp EL-531W scientific calculator.

**Supplementary Materials:**

- a) Math 137 Course Pack, Frost
- b) Student's Solutions Manual, Judith Penna (for sale at the bookstore, reference library)
- c) Videotapes and CD's covering each section of the text in the library viewing room (free-3 day loan)
- d) MathXL (online text, tutorials, videos, and self-testing)  
- The access code can be purchased online at [www.mathxl.com](http://www.mathxl.com) . Once you're registered choose 'Independent Study' and then your textbook.



## 5. Course Content

Section		Section	
	<b>Review of Basic Algebra</b>		<b>Rational Expressions, Equations, and Functions</b>
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
<b>Test Chap R</b>		5.8	Variation and Applications
	<b>Solving Linear Equations and Inequalities</b>		<b>Radical Expressions, Equations, and Functions</b>
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
	<b>Graphs, Functions, and Applications</b>	6.7	Applications Involving Powers and Roots
2.1	Graphs of Equations	6.8	The Complex Numbers
2.2	Functions and Graphs	<b>Test Chap 5&amp;6</b>	
2.3	Finding Domain and Range		<b>Quadratic Equations and Functions</b>
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
<b>Test Chap 1&amp;2</b>		7.4	More on Quadratic Equations
	<b>Systems of Equations</b>	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		<b>Trigonometry</b>
		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
	<b>Polynomials and Polynomial Functions</b>	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	<b>Test Chap 7 and Trig</b>	
4.3	Introduction to Factoring	Final Cumulative Exam	
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		
<b>Test Chap 3&amp;4</b>			

## 6. Pacing Schedule (tentative)

Wk		Monday	Tuesday	Wednesday	Thursday	Friday
1	Jan 6-10	Intro, R.1, R.2	R.3,R.4,R.5	R.6,R.7	R.7,1.1	
2	Jan 13-17	1.2,1.3 <i>Asst #1 due</i>	1.4, 1.5	1.6	<b>Test #1</b> (R.1-R.7)	
3	Jan 20-24	2.1 Fee deadline	2.2	2.3,2.4	2.5, 2.6	
4	Jan 27-31	2.6	3.1,3.2	3.3 Comparing Methods	3.4a ,3.7ab <i>Asst #2 due</i>	
5	Feb 3-7	4.1,4.2	<b>Test #2</b> (1.1-2.6)	4.3,4.4	4.5	
6	Feb 10-14	HOLIDAY	4.6	4.7	Reading Break	Reading Break
7	Feb 17-21	4.8	5.1	5.2	5.3,5.4 <i>Asst #3 due</i>	
8	Feb 24-28	5.5	<b>Test #3</b> (3.1-4.8)	5.6	5.7, 5.8	
9	Mar 3-7	6.1, 6.2	6.3	6.4	6.5	
10	Mar 10-14	6.6 Withdrawal deadline	6.7	6.8	7.1 <i>Asst #4 due</i>	
11	Mar 17-21	7.2	<b>Test #4</b> (5.1-6.8)	7.3	7.4	
12	Mar 24-28	7.5	7.6	7.7	5.1*	
13	Mar 31-Apr4	5.2*,5.3*	5.3*,7.1*	7.1*,7.2*	Trig Applications <i>Asst #5 due</i>	
14	Apr 7-11	Trig Exercise Review	Review	<b>Test #5</b> (7.1-7.7, Trig)	Exam Review	
Final exam period: Apr 14-17, 22-25						

## 7. Recommended Homework and Assignments

Text: *Intermediate Algebra*, 11<sup>th</sup> edition, Marvin Bittinger

Assignment	Sec.	Recommended Practice Problems (not to be handed in)	Required Problems (use the template handed out in class)
Assignment 1 Due: Jan 13	R.1	3, 11, 15, 17, 23, 33, 39, 41, 45, 49, 51, 59, 63	<b>4, 40, 54</b>
	R.2	5, 15, 23, 51, 53, 71, 75, 77, 87, 89, 95, 103, 109, 113	<b>52, 88, 104</b>
	R.3	1, 5, 13, 15, 25, 29, 31, 33, 35, 37, 41, 45, 55, 59, 67, 85, 97, 105, 107	<b>32, 50, 76, 106</b>
	R.4	1, 3, 13, 15, 17, 23, 25, 31, 35, 37, 41, 45	<b>22, 26, 40</b>
	R.5	1, 7, 11, 19, 21, 25, 31, 35, 37, 41, 45, 47, 53, 59	<b>12, 36, 52</b>
	R.6	11, 15, 21, 23, 27, 35, 41, 43, 47, 53, 57, 67	<b>22, 48, 54,64</b>
	R.7	1, 5, 9, 13, 17, 21, 25, 29, 37, 41, 49, 53, 57, 61, 69, 71, 79, 81, 87, 89, 93, 97, 103, 105	<b>16, 56, 62, 82, 110</b>
Assignment 2 Due: Jan 30	1.1	9, 11, 23, 35, 37, 43, 47, 51, 55, 59, 61, 63, 69, 73, 77, 79	<b>78, 80</b>
	1.2	1, 5, 9, 13, 17, 19, 21, 23, 27, 29, 37	<b>18, 30</b>
	1.3	1, 5, 7, 9, 13, 15, 21, 23	<b>10, 14</b>
	1.4	3, 5, 7, 9, 11, 13, 17, 27, 35, 37, 41, 43, 47, 55, 59, 63, 71, 73, 77, 85	<b>52, 82</b>
	1.5	1, 5, 13, 17, 21, 29, 41, 45, 47, 51, 59, 61	<b>20, 46</b>

	1.6	1, 5, 11, 15, 21, 31, 35, 37, 43, 51, 53, 57, 59, 63, 67	12, 52, 62
	2.1	1, 5, 15, 17, 25, 31, 33, 41, 45, 47, 49, 51	36, 46
	2.2	1, 5, 7, 9, 19, 21, 23, 27, 35, 43, 47, 49, 53, 55, 57, 59, 61	22, 42
	2.3	1, 5, 7, 9, 11, 15, 19, 23, 27, 33, 37	2, 6, 30, 36
	2.4	1, 5, 9, 13, 19, 19, 23, 27, 31, 33	12, 20, 32
	2.5	1, 5, 9, 13, 17, 19, 23, 29, 31, 39, 43, 45, 51, 55, 71, 75, 77	12, 30, 50
	2.6	1, 5, 9, 11, 19, 25, 29, 31, 33, 41, 45, 51	28, 44, 52
Assignment 3 Due: Feb 20	3.1	3, 5, 13, 15, 17, 19 (omit consistency and dependence part)	4, 14
	3.2	1, 7, 11, 15, 17, 19, 21	4, 14, 20
	3.3	3, 5, 9, 11, 15, 17, 27, 31	10,28
	3.4a	1, 5, 7, 9, 13, 17, 19	8, 18
	3.7ab	1, 5, 11, 13, 17, 19, 21	14, 22
	4.1	1, 5, 7, 21, 25, 29, 35, 41, 51, 55, 67, 73, 79	4, 76
	4.2	1, 5, 11, 13, 15, 21, 23, 27, 33, 41, 51, 55, 65, 71, 77, 81, 85, 91	30,80,90 $f(a+h) - f(a)$ only
	4.3	1, 5, 9, 11, 17, 21, 25, 29, 33, 37, 43, 47, 49	8, 48
	4.4	1, 5, 7, 11, 13, 19, 21, 23, 25, 27, 29, 33	22, 30
	4.5	1, 5, 9, 19, 25, 29, 33, 41, 45, 51	20, 32, 44
	4.6	1,5,11,17,25,33,35,39,43,47,53,61,63,69,71,75,79,89,95	26,42,62,84
4.7	1,3,5,7,11,17,19,23,25,29,31,35,43,49,51	38,47	
4.8	1, 5, 9, 13, 17, 21, 29, 33, 37, 39, 41, 47, 51, 53, 55, 63, 65, 69, 71, 73,75, 77	38, 66, 80	
Assignment 4 Due: Mar 13	5.1	1, 3, 5, 7, 13, 15, 19, 21, 25, 27, 29, 31, 35, 37, 41, 45, 49, 51, 55, 57	36, 54
	5.2	3, 11, 13, 19, 23, 27, 31, 33, 35, 39, 45, 49, 55, 63, 67, 71	58, 64
	5.3	1, 5, 9, 11, 15, 19, 21, 23, 29, 31, 33	18, 32
	5.4	1, 5, 9, 13, 17, 19, 21, 23, 27, 29, 31	8, 26
	5.5	1, 5, 9, 11, 15, 19, 23, 25, 27, 33, 35, 41, 43	26, 38
	1.3(b)	27, 29	n/a
	3.4(b)	21, 23, 28, 29, 31	n/a
	5.6	25, 27, 29	26
	5.7	1-23 odd	4, 14
	5.8	1, 5, 7, 9, 15, 17, 21, 25, 29, 31, 39, 41	24, 30
	6.1	7, 9, 11, 13, 15, 19, 23, 25, 27, 29, 35, 43, 45, 51, 53, 61, 63, 65, 67, 69, 71	24, 28, 46, 54
	6.2	3, 7,15, 21, 29, 33, 39, 41, 43, 45, 49, 51, 53, 55, 59, 63, 69, 71, 73, 75, 79	24, 68, 72, 76, 80
	6.3	1,5, 9, 13, 17, 21, 25, 29, 33, 39, 41, 49, 53, 55, 59, 67, 71, 75,79, 83, 87, 89	40, 46, 64
	6.4	1, 5, 9, 13, 17, 19, 23, 33, 37, 43, 47, 51, 57, 61, 67, 71, 73	30, 70, 72
	6.5	1, 5, 9, 13, 17, 21, 25, 29, 31, 34	6, 20, 30
	6.6	1, 5, 9, 17, 19, 21, 27, 29, 33, 37, 41, 47, 53, 55, 57	18, 42, 56
	6.7	1, 5, 7, 11, 13, 17, 19, 21, 23, 29	18, 20
6.8	1, 5, 13, 17, 19, 27, 31, 35, 39, 47, 71, 77, 81, 87	12, 44, 94	
Assignment 5 Due: Apr 3	7.1	1, 5, 9, 13, 17, 21, 25, 33, 39, 43, 47, 49, 51, 55, 57	38, 44
	7.2	1, 3, 11, 17, 21, 29, 33, 35, 41	30, 34
	7.3	3, 5, 9, 11, 13, 19, 21, 25, 31, 35, 37, 39, 41, 43, 47	12, 30, 42
	7.4	1, 5, 9, 15, 17, 21, 23, 29, 31, 33, 35, 37, 39, 43, 47, 49, 55	8, 24, 34, 46
	7.5	1, 5, 9, 13, 17, 19, 21, 23	12, 20
	7.6	1, 5, 7, 9, 15, 19, 21	8, 16
	7.7	1,3,7	6
	5.1	1-29 odd, 37, 49, 55, 61, 69, 71, 79-91 odd, 97	14, 28, 80, 92
	5.2	1, 3, 9, 13, 15, 17, 21, 27, 29, 31	16, 20, 24, 30
	5.3	15,9,13,15,19,23,25,29,39, 41,45,47,51,61,75, 83, 87, 93, 97	14, 40, 48, 100,102
	7.1	1, 3, 5, 9, 13, 15, 17, 21, 25, 27	2, 16
7.2	1, 3, 7, 9, 13, 17, 19, 21, 25, 31	2, 14	