Mathematics 137-002
Algebra and Triangle Trigonometry
Fall, 2013

Instructor: Cathy Frost **E-mail:** frost@camosun.bc.ca
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Timetable:

Time	Monday	Tuesday	Wed	Thursday	Friday
10:30am - 12:30pm	Math 137 E346	Math 137 E346		Math 137 E346	Math 137 E346
12:30pm-1:30pm	Office Hour	Office Hour		Office Hour	
5:00pm - 6:00pm		Office Hour		Office Hour	
6:00pm - 7:50pm		Math 135 E201		Math 135 E201	
Additional Office Hours by Appointment					

Important Dates:

Sep 3	First day of classes for Winter term
Sep 17	Fee Deadline
Oct 14	Thanksgiving Holiday- College closed
Nov 4	Withdrawal Deadline
Nov 11	Remembrance Day – College closed
Dec 7	Last day of classes for Winter term
Dec 9-14, 16, 17	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*, 11th 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 . Once you're registered choose 'Independent Study' and then your textbook.

Study Tips: It is recommended that approximately 8-12 hours per week be spent studying for this course outside of class time. Find a study buddy to discuss math problems and get notes if you have to miss class.

> **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/learn/programs/math/labs.html

> **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://camosun.ca/

3. Prerequisites and Exit Grade

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

Exit Grade and Course Options:
     B for Math 115   C+ for Math 105, 107, 109   C for Math 112
Note that Math 137 cannot be used by BBA students to satisfy the UT math requirement although it can satisfy the pre-requisites.

4. Basis of Student Assessment (Grading)

Assignments: There are 5 assignments which are based on questions from your textbook and will help prepare you for the tests. **Submit your homework assignments on the templates provided in class or print them from the website on legal paper.** Each question should be written with a full solution, not just the answer.

Assignments are due **by 1:00pm** on the designated day (see pacing schedule) and assignment keys will be posted on the website shortly afterwards. Late assignments will NOT be accepted. I'll count the best four assignments.

Quick Quizzes: To give you more practice between tests, I may give a quick quiz in any class. It will consist of one or two questions from the Recommended Practice Problems. I'll count the best 10 quick quizzes so that you will not be penalized if you have to miss a class or two for illness or other reasons. As a result, there will be no make-up quizzes.

Tests: There are 5 in class tests. The dates and topics are on the pacing schedule. If you miss a test for any reason (including illness, sleeping in, getting called into work etc.) a zero will be assigned, however, I'll count the best four tests. If you must miss more than one test due to illness contact me via e-mail before the test to make alternate arrangements.

Grade Calculation: The final grade will be calculated according to the following breakdown:
         5 Assignments and quick quizzes   10%*
         5 Tests   40%*
         Comprehensive Final Exam: 50%
         *The lowest of the five test marks and the lowest of the five assignment marks will be dropped.

Grade Scale:

0-49	50-59	60-64	65-69	70-72	73-76	77-79	80-84	85-89	90-100
F	D	C	C+	B−	B	B+	A−	A	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: The College has an academic progress policy geared mainly toward "at risk" students, the stated intention for which is to improve a student's likelihood of success. To view the policy, see the webpage http://camosun.ca/about/policies/education-academic/e-1-programming-&-instruction/e-1.1.pdf

5. Course Content

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	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		
Test Chap 3&4			

6. Pacing Schedule (tentative)

Wk		Monday	Tuesday	Wednesday	Thursday	Friday
1	Sep 3-6	HOLIDAY	Intro, R.1, R.2		R.3,R.4,R.5	R.6,R.7
2	Sep 9-13	R.7,1.1	1.2,1.3 *Asst #1 due*		1.4, 1.5 Review	**Test #1** (R.1-R.7) 1.6
3	Sep 16-20	2.1	2.2 Fee deadline		2.3,2.4	2.5, 2.6
4	Sep 23-27	2.6	3.1,3.2 *Asst #2 due*		3.3 Review	**Test #2** (1.1-2.6) 3.4a
5	Sep 30- Oct 4	3.7ab ,4.1	4.2, 4.3		4.4	4.5, 4.6
6	Oct 7-11	4.7	4.8		5.1	5.2 *Asst #3 due*
7	Oct 14-18	HOLIDAY	5.3 Review		*10:15-11 Shake Out* 5.4	**Test #3** (3.1-4.8)
8	Oct 21-25	5.5	5.6		5.7, 5.8	*6.1*
9	Oct 28-Nov 1	6.2	6.3		6.4	6.5
10	Nov 4-8	6.6 Withdrawal deadline	6.7		6.8	7.1 *Asst #4 due*
11	Nov 11-15	HOLIDAY	7.2 Review		**Test #4** (5.1-6.8)	7.3,7.4
12	Nov 18-22	7.5	7.6		7.7, 5.1*	5.1*,5.2*
13	Nov 25-29	5.3*	7.1*		7.2*	7.2* *Asst #5 due*
14	Dec 2-6	Review	**Test #5** (7.1-7.7, Trig)		Trig Exercise and Exam Review	Exam Review

Final exam period: Dec 9-14,16,17

7. Recommended Homework and Assignments

Text: *Intermediate Algebra*, 11th 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: Sep 10	R.1	3, 11, 15, 17, 23, 33, 39, 41, 45, 49, 51, 59, 63	**4, 40, 54**
	R.2	5, 15, 23, 51, 53, 71, 75, 77, 87, 89, 95, 103, 109, 113	**52, 88, 104**
	R.3	1, 5, 13, 15, 25, 29, 31, 33, 35, 37, 41, 45, 55, 59, 67, 85, 97, 105, 107	**32, 50, 76, 106**
	R.4	1, 3, 13, 15, 17, 23, 25, 31, 35, 37, 41, 45	**22, 26, 40**
	R.5	1, 7, 11, 19, 21, 25, 31, 35, 37, 41, 45, 47, 53, 59	**12, 36, 52**
	R.6	11, 15, 21, 23, 27, 35, 41, 43, 47, 53, 57, 67	**22, 48, 54,64**
	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	**16, 56, 62, 82, 110**
Assignment 2 Due: Sep 24	1.1	9, 11, 23, 35, 37, 43, 47, 51, 55, 59, 61, 63, 69, 73, 77, 79	**78, 80**
	1.2	1, 5, 9, 13, 17, 19, 21, 23, 27, 29, 37	**18, 30**
	1.3	1, 5, 7, 9, 13, 15, 21, 23	**10, 14**
	1.4	3, 5, 7, 9, 11, 13, 17, 27, 35, 37, 41, 43, 47, 55, 59, 63, 71, 73, 77, 85	**52, 82**
	1.5	1, 5, 13, 17, 21, 29, 41, 45, 47, 51, 59, 61	**20, 46**

	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: Oct 11	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: Nov 8	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: Nov 29**	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	15,9,13,15,19,2325,29,39, 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**