Mathematics 137-003
Algebra and Triangle Trigonometry
Winter, 2012

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

Timetable:

Time	Monday	Tuesday	Wednesday	Thursday	Friday
8:30am -9:50am		Math 135 CBA101		Math 135 TEC181	
10:00am -11:00am		Office Hour		Office Hour	
1:30pm -2:30pm		Office Hour		Office Hour	
2:30-4:20pm	Math 137 E346	Math 137 E346	Math 137 E346	Math 137 E346	
4:30pm -5:30pm	Office Hour		Office Hour		
Additional Office Hours by Appointment					

Important Dates:

Jan 9	First day of classes for Winter term
Jan 23	Fee Deadline
Feb 16 & 17	Reading Break
Mar 13	Withdrawal Deadline
Apr 6 & 9	Holidays
Apr 14	Last day of classes for Winter term
Apr 16-21, 23, 24	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 2011/2012 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) Student's Solutions Manual, Judith Penna (for sale at the bookstore, reference library)
b) Videotapes and CD's covering each section of the text in the library viewing room (free-3 day loan)
c) 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

4. Basis of Student Assessment (Grading)

Assignments: The Review Assignment is a handout that has been e-mailed to you and is available from your teacher. It is due on the 2nd day of class. Please note that the purpose of Asst R is to help determine if you have the pre-requisite knowledge for the course, it does not prepare you for all the content in Test 1.

There are 4 other assignments which are based on questions from your textbook and will help prepare you for Tests 2-5. The assignment questions are listed in this outline. Submit your homework assignments in a duo-tang or file folder with your name on it. Clearly state the section number and question number eg. 1.5 # 4. Each question should be written out along with a full solution, not just the answer.

Assignments are due **by 5:00pm** on the designated day (see pacing schedule) and assignment keys will be posted on the website shortly afterwards.
Late assignments will NOT be accepted. All assignments count.

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. 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:	10%
5 Tests	40%*
Comprehensive Final Exam:	50% or 100%**

All assignments count.

*The lowest of the five test marks will be dropped when calculating the test average.

**If your term average is at least 50% and if your final exam mark is higher than your term average, then your final course grade will be based 100% on your final exam mark.

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 Functi**ons
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	Jan 9-13	Intro R.1	R.2, R.3	R.3 *Asst R due*	R.4, R.5	
2	Jan 16-20	R.6, R.7	1.1 Review	**Test #1** (R.1-R.7)	1.2, 1.3	
3	Jan 23-27	1.4, 1.5 Fee deadline	1.6	2.1	2.2, 2.3	
4	Jan 30-Feb 3	2.4, 2.5	2.6	3.1,3.2 *Asst #2 due*	3.3 Review	
5	Feb 6-10	**Test #2** (1.1-2.6)	3.4a, 3.7ab	4.1, 4.2	4.3, 4.4	
6	Feb 13-17	4.5, 4.6	4.6, 4.7	4.8	Reading Break	Reading Break
7	Feb 20-24	5.1 *Asst #3 due*	5.2 Review	**Test #3** (3.1-4.8)	5.3	
8	Feb 27- Mar 2	5.4	5.5	5.6	*5.7,5.8*	
9	Mar 5-9	6.1, 6.2	6.2, 6.3	6.3	6.4	
10	Mar 12-16	6.5 Withdrawal deadline	6.6	6.7, 6.8	7.1 *Asst #4 due*	
11	Mar 19-23	7.2 Review	**Test #4** (5.1-6.8)	7.3	7.4	
12	Mar 26- 30	7.5	7.6	7.7	5.1*	
13	Apr 2-6	5.2*	5.3*	7.1*, 7.2*	7.2* *Asst #5 due*	Good Friday
14	Apr 9-13	Easter Monday	Review	**Test #5** (7.1-7.7, Trig)	Exam Review	
Final exam period: Apr 16-21, 23, 24						

7. Recommended Homework and Assignments

Text: *Intermediate Algebra*, 11th edition, Marvin Bittinger

Assignment	**Sec.**	Recommended Practice Problems (not to be handed in)	**Required Problems (HAND IN)**
Assignment R Due Sept 8			**Handout**
No assignment for this section - do lots of the recommended problems.	R.1	3, 11, 15, 17, 23, 33, 39, 41, 45, 49, 51, 59, 63	
	R.2	5, 15, 23, 51, 53, 71, 75, 77, 87, 89, 95, 103, 109, 113	
	R.3	1, 5, 13, 15, 25, 29, 31, 33, 35, 37, 41, 45, 55, 59, 67, 85, 97, 105, 107	
	R.4	1, 3, 13, 15, 17, 23, 25, 31, 35, 37, 41, 45	
	R.5	1, 7, 11, 19, 21, 25, 31, 35, 37, 41, 45, 47, 53, 59	
	R.6	11, 15, 21, 23, 27, 35, 41, 43, 47, 53, 57, 67	
	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	
Assignment 2 Due: Feb 1	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: 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 15	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 5	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, 94
	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