



Mathematics 137-003
Algebra and Triangle Trigonometry
Winter, 2019

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Timetable:

Time	Monday	Tuesday	Wed	Thursday	Friday
9:30-11:20pm		Math 137-001 E346	Math 137-001 E346	Math 137-001 E346	Math 137-001 E346
11:30-12:30		Office Hour	Office Hour	Office Hour	
12:30-1:20pm		Office Hour		Office Hour	
1:30-3:20pm	Math 137-003 E346	Math 137-003 E346	Math 137-003 E346	Math 137-003 E346	
Additional office hours available upon request					

Important Academic Dates: Jan 21 Fee Deadline
Mar 13 Withdrawal Deadline
Apr 15-18, 23-26 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>
After completion of Math 137, students will meet the outcomes as identified in the Adult Basic Education Articulation Handbook found at http://www2.gov.bc.ca/assets/gov/education/post-secondary-education/adult-education/2016-17_abe_guide.pdf

2. Course Materials and Support

Required Materials:

- a) Math 137 Course Pack (Frost)
- b) Math 137 Exercise Set (homework)- hard copy at the bookstore or free on my website.
- c) Sharp EL-531W scientific calculator – this is the only calculator allowed on tests and the exam.
- d) OpenSource text – free on my website. Hard copies can be printed at the Camosun print shop for a charge.

Study Tips: Attend all classes. It's recommended that you spend 8-12 hours per week studying outside of class at which time you can review the class notes from the day, and do the recommended odd-numbered questions in the exercise set. Get a study buddy, use the math lab, and come for extra help often and early.

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 door or go to <http://camosun.ca/services/help-centres/math-access.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/> and at the **Centre for Accessible Learning** <http://camosun.ca/services/accessible-learning/>.

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 107 C for Math 112 or 109
Note that Math 137 cannot be used by BBA students to satisfy the UT math requirement.

4. Basis of Student Assessment (Grading)

Weekly Quizzes/Assignments: Most weeks, you'll be given a question or two from the homework to be done in class. There are no make-up quizzes, however, the best 8 will count. There is one in-class assignment. (see pacing schedule)

Tests: There are 4 in class tests. The dates and topics are on the pacing schedule. If you miss a test for any reason (including illness, getting called into work) a zero will be assigned, unless you contact me via e-mail before the test to make alternate arrangements. All tests count.

Final Exam: The final exam is worth 50% of your mark and is based on the entire course. Do not make holiday plans until you know the time of the exam as this is not negotiable.

Grade Calculation: The final grade will be calculated according to the following breakdown:

Quizzes	10%
Tests/Trig Asst	40%
Comprehensive Final Exam:	50%

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 Integrity: The Department of Mathematics and Statistics has prepared a handout called *Student Guidelines for Academic Integrity* to help you interpret college policies involving student conduct, academic dishonesty, plagiarism, etc. It is your responsibility to become familiar with the contents of the document and the college policies it references.

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

<p>2. Solving Linear Equations</p> <ul style="list-style-type: none"> 2.1. Use a General Strategy to Solve Linear Equations 2.2. Use a Problem Solving Strategy 2.3. Solve a Formula for a Specific Variable 2.5. Solve Linear Inequalities 2.6. Solve Compound Inequalities 2.7. Solve Absolute Value Equations <p>3. Graphs and Functions</p> <ul style="list-style-type: none"> 3.1. Graph Linear Equations in Two Variables 3.2. Slope of a Line 3.3. Find the Equation of a Line 3.4. Graph Linear Inequalities in Two Variables 3.5. Relations and Functions 3.6. Graphs of Functions <p>4. Systems of Linear Equations</p> <ul style="list-style-type: none"> 4.1. Solve Systems of Linear Equations with Two Variables 4.2. Solve Applications with Systems of Equations 4.3. Solve Mixture Applications with Systems of Equations <p>5. Polynomials and Polynomial Functions</p> <ul style="list-style-type: none"> 5.1. Add and Subtract Polynomials 5.2. Properties of Exponents and Scientific Notation 5.3. Multiply Polynomials 5.4. Dividing Polynomials <p>6. Factoring</p> <ul style="list-style-type: none"> 6.1. Greatest Common Factor and Factor by Grouping 6.2. Factor Trinomials 6.3. Factor Special Products 6.4. General Strategy for Factoring Polynomials 6.5. Polynomial Equations 	<p>7. Rational Expressions and Functions</p> <ul style="list-style-type: none"> 7.1. Multiply and Divide Rational Expressions 7.2. Add and Subtract Rational Expressions 7.3. Simplify Complex Rational Expressions 7.4. Solve Rational Equations 7.5. Solve Applications with Rational Equations <p>8. Roots and Radicals</p> <ul style="list-style-type: none"> 8.1. Simplify Expressions with Roots 8.2. Simplify Radical Expressions 8.3. Simplify Rational Exponents 8.4. Add, Subtract, and Multiply Radical Expressions 8.5. Divide Radical Expressions 8.6. Solve Radical Equations 8.7. Use Radicals in Functions 8.8. Use the Complex Number System <p>9. Quadratic Equations and Functions</p> <ul style="list-style-type: none"> 9.1. Solve Quadratic Equations Using the Square Root Property 9.2. Solve Quadratic Equations by Completing the Square 9.3. Solve Quadratic Equations Using the Quadratic Formula 9.4. Solve Quadratic Equations in Quadratic Form 9.5. Solve Applications of Quadratic Equations 9.6. Graph Quadratic Functions Using Properties 9.7. Graph Quadratic Functions Using Transformations <p>10. Trigonometry</p> <ul style="list-style-type: none"> Trig Functions of acute angles Applications of Right Triangles Trig Functions of Any Angles The Law of Sines The Law of Cosines
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Section numbers refer to an open source text that you can Download for free at <http://cnx.org/contents/02776133-d49d-49cb-bfaa-67c7f61b25a1@4.13>.

6. Pacing Schedule

#	Week	Monday	Tuesday	Wed	Thursday	Friday
1	Jan 7-11	Intro/2.1	2.2	2.3/2.5	2.6	
2	Jan 14-18	2.7	3.1/3.2	3.3/3.4	3.5/3.6	
3	Jan 21-25	4.1 <i>Fee Deadline</i>	4.2/4.3	5.1	Test #1 (Chap 2&3)	
4	Jan 28-Feb1	5.2	5.3	5.4	6.1	
5	Feb 4-8	6.2	6.3	6.4	6.5	
6	Feb 11-15	7.1	7.2	7.3	Test #2 (Chap 4,5 &6)	
7	Feb 18-22	Family Day	Reading Break			
8	Feb25-Mar1	7.4	7.5	7.5	8.1	
9	Mar 4-8	8.2	8.3	8.4	8.5	
10	Mar 11-15	8.6	8.7	8.8 <i>Drop Deadline</i>	Test #3 (Chap 7, 8.1-8.5)	
11	Mar 18-22	9.1	9.2	9.3	9.4	
12	Mar 25-29	9.5	9.7	9.6	9.6	
13	Apr 1-5	Trig	Trig	Trig	Test #4 (Chap 8.6-8.8, & 9)	
14	Apr 8-12	Trig	Trig In-Class Asst	Trig In-Class Asst	Exam Review	
Final Exam Period Apr 15-18, 23-26						

Unit	Section	Exercise Set Questions (hard copy from bookstore or on my website)
Unit 1	2.1	2,10,14,26,52,56,60,64,68,74
	2.2	104,110,112,116,140,150,156
	2.3	168,170,174,178,182,190,196,202,216,226
	2.5	312,316,322,344,348,362
	2.6	376,378, 382, 390, 398, 402,406, 414, 420
	2.7	434, 438, 440, 446, 452, 454
	3.1	2,8,12,18,26,30,34,38,44,52
	3.2	74,78,82,92,94,98,102,108,114,116,118,124,128,134, 136, 140, 150
	3.3	156,164,172,180,186,194,196,200,208,214
	3.4	238,244,250,252,262,264,268,278
	3.5	284,292,296, 300,304, 314, 324,332
	3.6	338,342,350,360,366,376,378,386
	Unit 2	4.1
4.2		88,102,106,110
4.3		126, 132, 142, 146,152,154
5.1		6,26,36,42,58,60,64,68
5.2		82,92,98,102,106,108,112,116,120,124,128,160 Sc. Not. 164,168,170
5.3		178,182,190,196,198,202,212,214,216,218,224,228,232,250,256,266,274
5.4		288,294,300,304,306,310,314,316,320,322,338
6.1		10,16,24,34,38,44,50,52,54,60
6.2		62,68,74,80,88,112,118,122,124,128,134,138,144,146,152,154
6.3		160,164,172,176,180,184,188,192,194,198,200,204,208,216,222,224,226
6.4		234,244,250,254,262,264,*267,270,272,*273
6.5		278,280,284,290,296,314,318,320,322,326,330,334
Unit 3		7.1
	7.2	92,96,108,114,118,120,128,132,140,142
	7.3	152,160,162,174,180,184
	7.4	198,206,208,214,228,234, Formula Rearranging: 236,238,250,252
	7.5	258,286,298,300,302,314,320,324,330
	8.1	2,12,16,24,28,30,40,46
	8.2	56,58,60,64,68ab,74ab,84ab,88ab,96,104ab,112ab
	8.3	Do parts a&b in all: 120,134,128,132,136,140,142,146,150,154,156,160
	8.4	Do parts a&b where applicable: 166,170,174,184,190,194,196,206,210
	8.5	250,256,260sbc,266c,270c,272,274,282
Unit 4	8.6	288,290,292,298,302,304,306,310,322 Two radicals: 324,330,338,340,346
	8.7	352ab,368,376,380,384
	8.8	410ab,414,418,424,430,438,442,452,458,468,470,474
	9.1	2,6,12,18,24,34,36,42,44
	9.2	72abc,76,84,86,100,108
	9.3	114,120,124,130,134,146 (all),150ab,152a
	9.4	156,158,164,172,180,184,188,190
	9.5	196,202,206,210,216,220,222
	9.6	234,238,240,242,246,256,260,264 Max/Min: 272,278,286,288
	9.7	294,302,310,316,318,320,326,328,332,338,350,358
Trigonometry		See the Exercise Sets in the Coursepack or on the website