



**CAMOSUN COLLEGE**  
**School of Access**  
**Department of Mathematics & Statistics**

**Math 073**  
**Advanced Mathematics 2**

**COURSE OUTLINE, Fall 2017**

**Instructor:** Cathy Frost

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**Websites:** <http://online.camosun.ca - course materials/grades> <http://pearsonmylabandmastering.com> -  
online assts

Time	Monday	Tuesday	Wed	Thursday	Friday
1:30-2:20pm				Office Hour	
2:30-4:20pm	Math 137-002 E346	Math 137-002 E346	Math 137-002 E346	Math 137-002 E346	
4:20-5:20pm	Office Hour	Office Hour	Office Hour	Office Hour	
5:30-7:50pm	Math 072/073 S01 E346		Math 072/073 S01 E346		
Additional Office Hours by Appointment					

## 2. Intended Learning Outcomes

Upon successful completion of the course the student will be able to:

1. Use basic mathematical operations (& factoring) to simplify polynomial expressions and solve polynomial equations and word problems.
2. Perform mathematical operations on rational algebraic expressions and solve equations and word problems involving rational algebraic equations.
3. Divide polynomials using long and synthetic division.
4. Perform mathematical operations on complex numbers.
5. Simplify and perform mathematical operations on square roots (and other roots) involving variables and solve radical equations.
6. Use rational exponents when working with radical expressions to aid in simplifying these expressions.
7. Solve quadratic equations, and solve practical problems involving quadratic type equations using the methods of completing the square, factoring, square root property, and the quadratic formula.
8. Graph and analyze quadratic functions, including finding the vertex, intercepts, axis of symmetry, and maximum or minimum values of the function.
9. Use the definitions of the basic trigonometric functions to find ratios, angles (degree measure only), and solve practical problems involving right triangles.
10. Find the trigonometric ratios of special triangles (exact values), and find the trigonometric function values of any angle in standard position using a scientific calculator.
11. Solve basic trigonometric equations.
12. Use the Law of Sines and the Law of Cosines to solve non-right triangles (oblique), and practical problems involving these triangles.

After completion of Math 072 **and** 073, 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](http://www2.gov.bc.ca/assets/gov/education/post-secondary-education/adult-education/2016-17_abe_guide.pdf)

### 3. Required Materials

- (a) **Required Textbook:** Intermediate Algebra, 12<sup>th</sup> edition, M. L. Bittinger. You may choose to purchase either the print textbook or a code for access to the digital textbook (which also allows access to the solution manual, extra practice questions, and video lessons). The book store sells bundles with various combinations of the text and/or solutions manual and/or digital code.
- (b) **Calculator:** The only calculator allowed on tests and the final exam is the Sharp EL-531 scientific calculator.

### 4. Course Content and Schedule

Math 073 covers Chapter 4 through Chapter 7 in the textbook plus a trigonometry section available on D2L:

Unit 1:	Ch 4	Polynomials and Polynomial Functions	4.1-4.8
Unit 2:	Ch 5	Rational Expressions, Equations, Functions	5.1-5.8
Unit 3:	Ch 6	Radical Expressions, Equations, Functions	6.1-6.8
Unit 4:	Ch 7	Quadratic Equations and Functions	7.1-7.7a
Unit 5:	Trig	Trigonometry	6.1*-6.3*, 8.1*-8.2*

A suggested schedule for completing the course in one semester is available as a handout and on D2L.

Since this is a self-paced course, there will not be a lecture during class time. Instead, class time is a time for you to study at your own pace and ask any questions that have come up since the last time you were in class. You are encouraged to come to each class (it will help you stay on track with your studies), but you will also need to spend a considerable amount of time outside of class studying.

### 5. Basis of Student Assessment (Weighting)

#### (a) Term Tests – 50%

There are five (equally-weighted) unit tests in Math 073. When you feel you are prepared to take a unit test, please talk to your instructor to obtain a test permission slip. This gives you permission to write your test in the Math Help Centre (E342) within one week of the slip's issue date. You can write your tests any time the Math Help Centre is open (not just on class days!).

On each unit test: if you score at least 65%, you can move on to the next unit. If you do not score at least 65%, you must re-study and re-take the test. A maximum of two re-tests are allowed. All test marks will count towards your final mark.

You will need approximately 1.5 hours to complete each term test.

*Note:* If you have completed Math 072 within the last year, you may be able to use your Math 072 Unit 5 test score as your Math 073 Unit 1 test score. See your instructor for details.

#### (b) Final Exam – 50%

There is a cumulative final exam for Math 073. It covers all of the material from Chapter 4 to Chapter 7 in the text as well as the material from the trigonometry supplement. After completing all of the unit tests, obtain a test permission slip from your instructor and write the final exam in the Math Help Centre. There are no rewrites for the final exam.

You will need approximately 3 hours to write the final exam.

## 6. Grading System

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		1
0-49	F	Minimum level has not been achieved.	0

If you need more than one semester to complete the course, you must finish 3 units or have 75% attendance to receive an IP grade. You may only receive two IP grades for a course; the third time you register for the course, you will be assigned an F if you do not complete the course.

To re-register for the course for one extra term, you must have at least 75% of the work done or at least have 75% attendance.

## 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, Student Services or the College web site at <http://www.camosun.bc.ca>

### STUDENT CONDUCT POLICY

There is a Student Conduct Policy. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, Registration, and on the College web site in the Policy Section.  
<http://camosun.ca/about/policies/>

### 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.

8. Suggested Exercises from *Intermediate Algebra*, 12<sup>th</sup> edition, M. L. Bittinger

Section	Topic	Problems (answers in back of text)
<b>Chapter 4</b>	<b>Polynomials and Polynomial Functions</b>	
4.1	Introduction to Polynomials and Polynomial Functions	1, 5, 7, 19, 21, 25, 29, 35, 41, 51, 55, 67, 73, 79
4.2	Multiplication of Polynomials	1, 5, 11, 13, 15, 21, 23, 27, 33, 41, 51, 55, 65, 71, 77, 81, 85, 91
4.3	Introduction to Factoring	1, 5, 9, 11, 17, 21, 25, 29, 33, 37, 43, 47, 49, 55
4.4	Factoring Trinomials: $x^2 + bx + c$	1, 5, 7, 11, 13, 19, 21, 23, 25, 27, 29, 33, 35
4.5	Factoring Trinomials: $ax^2 + bx + c$	1, 5, 9, 19, 25, 29, 33, 41, 45, 51
4.6	Special Factoring	1,5,11,17,25,33,35,39,43,47,53,61,63,69,71,75,79,89,95
4.7	Factoring: A General Strategy	1,3,5,7,11,17,19,23,25,29,31,35,43,49,51
4.8	Applications of Polynomial Equations	1, 5, 9, 13, 17, 21, 29, 33, 37, 39, 41, 47, 51, 53, 55, 63, 65, 69, 71, 73,75, 77, Translating for Success p. 387
	Review	Summary and Review p.308-314
	Practice Test	Chapter Test p. 399
	Unit 1 Test (Chapter 4)	
<b>Chapter 5</b>	<b>Rational Expressions, Equations, and Functions</b>	
5.1	Rational Expressions, Functions: Mult./Div.	1, 3, 5, 7, 13, 15, 19, 21, 25, 27, 29, 31, 35, 37, 41, 45, 49, 51, 55, 57, 65
5.2	LCMs, LCDs, Addition and Subtraction	3, 11, 13, 19, 23, 27, 31, 33, 35, 39, 45, 49, 55, 63, 67, 71, 77
5.3	Division of Polynomials	1, 5, 9, 11, 15, 19, 21, 23, 29, 31, 33
5.4	Complex Rational Expressions	1, 5, 9, 13, 17, 19, 21, 23, 27, 29
5.5	Solving Rational Equations	1, 5, 9, 11, 15, 19, 23, 25, 27, 33, 35, 41, 43
5.6	Uniform Motion Applications	7, 9, 17, 19, 21, 25, 27, 29, 31
5.7	Formulas and Applications	1, 3, 7, 11, 15, 17, 23
5.8	Variation and Applications	1, 5, 7, 9, 15, 17, 21, 25, 29, 31, 39, 41, 55
	Review	Summary and Review p. 481-486
	Practice Test	Chapter Test p. 487
	Unit 2 Test (Chapter 5)	
<b>Chapter 6</b>	<b>Radical Expressions, Equations, and Functions</b>	
6.1	Radical Expressions and Functions	7, 9, 11, 13, 15, 19, 23, 27, 29, 35, 43, 45, 51, 53, 61, 63, 65, 67, 69, 71
6.2	Rational Numbers as Exponents	3, 7,15, 21, 29, 33, 39, 41, 43, 45, 49, 51, 53, 55, 59, 63, 69, 71, 73, 75, 79
6.3	Simplifying Radical Expressions	1, 3, 5, 9, 13, 17, 21, 25, 29, 33, 39, 41, 49, 53, 55, 59, 67, 71, 75,79, 83, 87, 89
6.4	Addition, Subtraction, and More Multiplication	1, 5, 9, 13, 17, 19, 23, 33, 37, 43, 47, 51, 57, 61, 67, 71, 73, 81
6.5	More on Division of Radical Expressions	1, 5, 9, 13, 17, 21, 25, 29, 31, 33, 39, 41
6.6	Solving Radical Equations	1, 5, 9, 17, 19, 21, 27, 29, 33, 37, 41, 47, 53, 55, 57
6.7	Applications Involving Powers and Roots	1, 5, 7, 11, 13, 17, 19, 21, 23, Translating for Success p. 545
6.8	The Complex Numbers	1, 5, 13, 17, 19, 27, 31, 35, 39, 47, 71, 77, 81, 87, 99, 111
	Review	Summary and Review p. 561-566
	Practice Test	Chapter Test p. 567
	Unit 3 Test (Chapter 6)	

<b>Chapter 7</b>	<b>Quadratic Equations and Functions</b>	
7.1	Basics of Solving Quadratic Equations	1, 5, 9, 13, 17, 21, 25, 33, 39, 43, 47, 49, 51, 55, 57
7.2	The Quadratic Formula	1, 3, 11, 17, 21, 29, 33, 35, 41, 45, 59
7.3	Applications Involving Quadratic Equations	3, 5, 9, 11, 13, 19, 21, 25, 31, 35, 37, 39, 41, 43, 47
7.4	More on Quadratic Equations	1, 5, 9, 15, 17, 21, 23, 29, 31, 33, 35, 37, 39, 43, 47, 49, 55
7.5	Graphing $f(x) = a(x - h)^2 + k$	1, 5, 9, 13, 17, 19, 21, 23, 27
7.6	Graphing $f(x) = ax^2 + bx + c$	1, 5, 7, 9, 15, 19
7.7a	Mathematical Modeling with Quadratic Functions	1, 3, 7, 9, 11
	Review	Summary and Review p. 653-658 (omit 7.7b and 7.8)
	Practice Test	Chapter Test p. 658 #1-19, 25
	Unit 4 Test (Chapter 7)	
<b>Trigonometry*</b>	<b>Trigonometry*</b>	
6.1*	Trig Functions of Acute Angles	1-29 odd, 37, 49, 55, 61, 69, 71, 79-91 odd, 97
6.2*	Applications of Right Triangles	1, 3, 9, 13, 15, 17, 21, 25, 29, 31, 35
6.3*	Trig Functions of Any Angle	1,5,9,13,15,19,23,25,29,39, 41,45,47,51,61,75, 83, 87, 93, 97,105
8.1*	The Law of Sines	1, 3, 5, 9, 13, 15, 17, 21, 25, 27
8.2*	The Law of Cosines	1, 3, 7, 9, 13, 17, 19, 21, 25, 31
	Review	Review Exercises on D2L
	Practice Test	Practice test on D2L
	Unit 5 Test (Trigonometry)	
<b>Ch 4-Trig</b>	<b>Review</b>	Cumulative Review: p. 401 #1-25, 31-40, 47-48, 51, 52, 54, 55, 57, 58
	Practice Test	Practice Final Exam – ask instructor.
	Final Exam (Cumulative, Ch 4-7 + Trig)	

\* Trigonometry material posted on D2L (not in textbook).