CAMOSUN COLLEGE
School of Access
Department of Mathematics & Statistics

Math 072
Advanced Mathematics 1

COURSE OUTLINE Fall 2017

Instructor: Cathy Frost   **Lansdowne Office:** Ewing 250   **Ph#**:250-370-3404
E-mail: frost@camosun.bc.ca
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. Demonstrate basic numeracy skills by performing mathematical operations on real numbers including absolute value and exponents, with and without scientific calculators.
2. Read and write mathematics at an Adult Basic Education Advanced Level.
3. Solve linear equations and equations involving absolute value. Use formulas and solve formulas for a given variable. Solve linear and compound inequalities and express answers in both set and interval notation.
4. Determine whether or not relations are functions. Evaluate functions. Determine the functions (quadratic, reciprocal and absolute value) using a table of values.
5. Graph linear equations using a variety of strategies. Determine equations of lines given two points or the slope and a point. Model simple real-life problems that require linear equations (for example, finding the size of a fish growing at a fixed rate, determining the cost of a job involving fixed and variable costs).
6. Solve systems of linear equations in two variables by graphing, substitution, and elimination.
7. Determine whether expressions are polynomials. Classify polynomials by degree and type. Add, subtract and multiply polynomials. Factor polynomials completely using a variety of strategies.
8. Use the laws of exponents to simplify expressions containing rational exponents. Convert expressions between radical and exponential form.
9. Solve applied problems including those involving geometry, mixture and money (simple interest, investment, % discount, buying/selling).

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

The calendar description is available on the web @   camosun.ca/learn/calendar/current

3. Required Materials

(a) **Required Textbook**: Intermediate Algebra, 12th edition, M. L. Bittinger. You may choose to purchase either the print textbook or a code for access to the digital textbook that also allows access to the solution manual, extra practice questions, and video lessons.

(b) **Calculator**: The only calculator allowed on tests and the final exam is the Sharp EL-531 scientific calculator. No calculator will be allowed on the Unit 1 test, the Unit 3 test, and part of the final exam.

4. Course Content and Schedule

Math 072 covers Chapter R through Chapter 4 in the textbook:

Unit 1:	Ch R	Review of Basic Algebra	R.1 - R.7
Unit 2:	Ch 1	Solving Linear Equations and Inequalities	1.1 - 1.6 (omit 1.6e)
Unit 3:	Ch 2	Graphs, Functions, and Applications	2.1 - 2.6
Unit 4:	Ch 3	Systems of Equations	3.1 - 3.4, 3.7ab
Unit 5:	Ch 4	Polynomials and Polynomial Functions	4.1 - 4.7

A suggested schedule for completing the course in one semester is available as a handout and on D2L. If you wish to complete both Math 072 and Math 073 in one semester, see D2L or your instructor for the suggested schedule.

The exercises to help you prepare for unit tests are 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 072. 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.

(b) **Final Exam – 50%**
There is a cumulative final exam for Math 072. It covers all of the material from Chapter R to Chapter 4 in the text. There is a non-calculator portion of the exam. 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://www.camosun.bc.ca/policies/policies.html

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.

Suggested Exercises from *Intermediate Algebra*, 12th edition, M. L. Bittinger.

Section	Topic	Problems (answers in back of text)
Chapter R	**Review of Basic Algebra (No Calculator)**	
R.1	Set of Real Numbers	3, 11, 15, 17, 23, 33, 39, 41, 45, 49, 51, 59, 63, 71
R.2	Operations with Real Numbers	5, 15, 23, 25, 51, 53, 71, 75, 77, 87, 89, 95, 103, 109, 113, 141
R.3	Exponential Notation and Order of Operations	3, 5, 13, 19, 25, 29, 31, 33, 35, 37, 43, 47, 55, 57, 67, 83, 97, 103, 105, 107, 123, 127
R.4	Introduction to Algebraic Expressions	1, 3, 13, 15, 17, 23, 25, 31, 35, 37, 41, 57
R.5	Equivalent Algebraic Expressions	1, 7, 11, 19, 21, 25, 31, 35, 37, 41, 45, 47, 53, 59, 63, 65
R.6	Simplifying Algebraic Expressions	11, 15, 21, 23, 27, 35, 41, 43, 47, 53, 57, 67
R.7	Properties of Exponents and Scientific Notation	1, 5, 9, 13, 17, 21, 25, 29, 37, 41, 49, 53, 57, 61, 69, 71, 79, 81, 87, 89, 93, 97, 103, 105, 121
	Review	Summary and Review p. 65-68
	Practice Test	Chapter Test p. 69 (No Calculator)
	Unit 1 Test (Chapter R, No Calculator)	
Chapter 1	**Solving Linear Equations and Inequalities**	
1.1	Solving Equations	9, 11, 23, 35, 37, 43, 47, 51, 55, 59, 61, 63, 69, 73, 77, 79, 101
1.2	Formulas and Applications	1, 5, 9, 13, 17, 19, 21, 23, 27, 29, 37, 51
1.3	Applications and Problem Solving	1, 5, 7, 9, 13, 15, 21, 23, 27, 29, 35
1.4	Sets, Inequalities, and Interval Notation	3, 5, 7, 9, 11, 13, 17, 27, 33, 35, 37, 41, 43, 47, 55, 59, 63, 71, 73, 77, 85, Translating for Success p. 119 (answers on p. A-4)
1.5	Intersections, Unions, and Compound Inequalities	1, 5, 13, 17, 21, 29, 37, 41, 45, 47, 51, 59, 61, 75
1.6a-d (omit 1.6e)	Absolute-Value Equations	1, 5, 11, 15, 21, 31, 35, 37, 43, 51, 53, 57, 59, 63, 67
	Review	Summary and Review p. 149-154 (omit 1.6e)
	Practice Test	Chapter Test p. 155 (omit #43-46, 48)
	Unit 2 Test (Chapter 1)	
Chapter 2	**Graphs, Functions, and Applications**	
2.1	Graphs of Equations	1, 5, 15, 17, 25, 31, 33, 41, 45, 47, 49, 51
2.2	Functions and Graphs	1, 5, 7, 19, 21, 23, 27, 35, 43, 47, 49, 53, 55, 57, 59, 61, 73, 75
2.3	Finding Domain and Range	1, 5, 7, 9, 11, 15, 19, 23, 27, 31
2.4	Linear Functions: Graphs and Slope	1, 5, 9, 13, 19, 23, 25, 27, 31, 33, 41
2.5	More on Graphing Linear Equations	1, 5, 9, 13, 17, 19, 23, 29, 31, 39, 43, 45, 51, 55, 71, 75, 77
2.6	Finding Equations of Lines; Applications	1, 5, 9, 11, 19, 25, 29, 31, 33, 41, 45, 51, 59
	Review	Summary and Review p. 227-235
	Practice Test	Chapter Test p. 236
	Unit 3 Test (Chapter 2)	
Chapter 3	**Systems of Equations**	
3.1	Systems of Equations in Two Variables	3, 5, 13, 15, 17, 19
3.2	Solving by Substitution	1, 7, 11, 15, 17, 19, 23, 25
3.3	Solving by Elimination	3, 5, 9, 11, 15, 17, 27, 31, 35, 41
3.4a	Solving Applied Problems	1, 5, 7, 9, 13, 17, 19 Translating for Success p. 274
3.7ab	Inequalities in Two Variables	1, 5, 11, 13, 17, 19, 21, 25-30, Visualizing for Success p. 303

	Review	Summary and Review p. 308-314 (omit 3.4b, 3.5, 3.6, 3.7c)
	Practice Test	Chapter Test p. 315 #1-10, 12-13, 16-17, 21
	Unit 4 Test (Chapter 3)	
Chapter 4	**Polynomial and Polynomial Functions**	
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: $ax^2 + bx + c, \ a = 1$	1, 5, 7, 11, 13, 19, 21, 23, 25, 27, 29, 33, 35
4.5	Factoring Trinomials: $ax^2 + bx + c, \ a \neq 1$	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
	Review	Summary and Review p. 393-398
	Practice Test	Chapter Test p. 399
	Unit 5 Test (Chapter 4)	
Ch R-4	**Review**	Cumulative Review: p. 401 #1-9, 12-13, 18-28, 30-35, 37-41, 43 MyMathLab: Practice Final Exam
	Final Exam (Cumulative, Ch R-4)	*There is a non-calculator section of the final exam.