



School of Access
Community Learning Partnerships

Mathematics 073 D19
Advanced Mathematics 2
Winter 2012 Course Outline

This course outline is available online at <http://faculty.camosun.ca/martinbuck/courses/>

Ω Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records.

Calendar Description

See the Mathematics Course Descriptions and Prerequisites at <http://camosun.ca/learn/calendar/2011/web/math.html>

Course Materials:

- (a) An Access Code for our online classroom based on *Intermediate Algebra*, 10th or 11th edition, Marvin Bittinger and *Trigonometry* (excerpt from *Trigonometry and Algebra*), 2nd or 3rd Edition, Addison-Wesley, Boston, J.A. Beecher, J.A. Penna, and M.L. Bittinger This access code is available for purchase online at the publisher's website -- <http://mathxl.com>.

NOTE: The Access Code also provides access to a plethora of textbook publisher online resources including animations, videos, podcasts and digital pages of the textbook. A hard copy of the text book is optional.

- a) Unrestricted access to an Internet connected computer. See Computer System Requirements at <http://mathxl.com/support/system.htm>.
- b) Scientific calculator. If you're headed for higher levels of math, the Sharp EL 531W model is the only calculator allowed for math department courses at Camosun.

NOTE: More details on the MathXL registration process are available at <http://faculty.camosun.ca/martinbuck/gaining-access/>

Important Dates

See <http://camosun.ca/learn/calendar/current/important-dates.html>

Instructor Information

Instructor -- Martin Buck

- a) Office hours: 24 hours a day and seven days a week. See the contact info below. Expect a response within one school day. Skype and phone appointments with the instructor are also available by prior arrangement.
- b) Location: The online classroom is located at <http://mathxl.com>.
- c) Instructor's website: <http://faculty.camosun.ca/martinbuck>
Students are invited to join my math circle at Google + by clicking on this link <https://plus.google.com/i/1k-fvVjrv38:mjHUmLBAeN0>
- (b) E-mail: martin@lwebs.ca
Skype: [mbuck_skype](https://www.skype.com/people/mbuck_skype)

Course Information

This mastery learning and fixed paced course is designed to be completed in one term or less. Depending on your beginning level of math skills, motivation, learning rate, and how much time you can actually devote to learning math; you may be able to complete more than one level per term.

Your first task is to ensure your browser is properly configured. Click on the [Browser Check](#) button and follow the instructions there. Then click on the [How to Enter Answers](#) link for information about entering math notation. Then log into <http://mathxl.com>.

The course homepage will list the assignments due next. The **Calendar** button will show the whole course schedule of assignment due dates. Plan on completing each assignment several days ahead of the due date. If you devote at least 15 – 20 hours per week to the course, you should have no problem completing in one term or less. As soon as you complete one course, I can move you on to the next. To complete each unit, follow the steps below:

- (a) Login and click on the **Homework and Tests** button. Your first assignment is the unit pre-test. NOTE: The pre-test is NOT a formal test. It's a tool to help us figure out the gaps in your math learning. Take as much time as you need. As long as you do NOT submit the pre-test, you can close it down and then return to it later. Beside each question you will see a number of tutorial buttons to help you master each question. Be sure to use these to help you master each question. You can exit out of the pre-test and return later as long as you do not hit the Submit button. Once you have submitted the pre-test, the online system will mark it and allow you to review your results.
- (b) To review your test results, click on the **Results** button. Figure out where you went wrong and why. With the unit pre-test reviewed, return to the **Homework and Tests** area. You will be assigned exercises based on your pre-test results. Move on to the Section Homework and complete the assigned homework exercises to the 100% level. If you need more practice, click on the **Study Plan** button. While there are hundreds of exercises there, the ones to focus on are those with the pencil icon beside them. You can also see a list of just the assigned exercises by clicking on the **Show What I Need to Study** button. For each question, make use of the Tutorial Buttons to help you master each question.
- (c) With all the section homework assignments successfully completed, return to the **Homework and Tests** area. Complete the Unit Post-test assignment. Like the pre-test, there is no need to complete this in one sitting. However, this review will be completed without benefit of the tutorial buttons. If you score of 80% or better, you may move right along to the Unit Final Test. Otherwise, return to the Study Plan area to complete the assigned exercises for this unit. Once you have completed the assigned Study Plan exercises, contact your instructor for permission to write the Unit Final.
- (d) Complete the unit by writing the Unit Final Test. The unit final tests must be completed in one sitting. While they are designed to be completed in less than an hour, you will have two hours. You will NOT be allowed to exit out and return later. NOTE: You will need a stable, wired (not wireless) Internet access to complete the Unit Exams. If you find you are being denied access to complete a unit exam, we will have to make arrangements for you to write in one of our math labs or other supervised (invigilated) location with stable Internet access. As long as you score 75% or better, you will be able to proceed to the next unit. If you score less than 75% you will be allowed to rewrite each Unit Test *once* (for a total of two times) to achieve mastery. Note: All test scores count towards your final grade for the course.

Repeat the above process for the remaining units. For a visual guide to how the online system works, visit http://faculty.camosun.ca/martinbuck/files/2011/07/MathXL_Visual_Learning.pdf.

NOTE: Before starting unit one, you must complete a review unit to demonstrate basic arithmetic skills. This Review Unit is not used in the calculation of your final grade. If you have difficulty with this unit, you will need to complete more extensive review. If you recently completed Math 072, you may be eligible for advanced credit for this unit. Contact your instructor for more information.

Assignments

The due dates for the pre-tests as well as the homework assignments and unit tests will be found under the **Calendar** button on the course homepage at <http://mathxl.com>. You are responsible for regularly checking the website and completing the assignments ahead of the due dates. Please note that the MathXL system keeps track of how much time you devote to each of the assignments. If you miss a due date for a pre-test, a score of zero will be applied and you will be allowed to move on to the Homework Assignments. Late penalties of 10% per day will be applied to those who miss Homework Assignment, post-test and unit final test due dates. In any event the last day to submit assignments except for the final exam will be last day of instruction for the term as listed at the [college website](#).

Tips for Success

The secret to success in math is practice, practice and practice. Plan on spending 15 to 20 hours each week on your math. Do your homework every day. Work several days ahead of assignment due dates. This is a course you cannot put on the back burner. While the use of the multimedia materials of animations, podcasts and videos is optional, they can explain things in an easy to understand way. You will find links to these under the **Homework and Tests** button in the online classroom.

Grade Calculation:	*Online Pre and Post-tests	10%
	*Online Homework Assignments	10%
	Study Plan Exercises	10%
	**Five Unit Tests	30%
	***Final Exam	40%

*The goal for each pre and post-test is 80% or better.

**If you score less than 75% on a unit test, you will need to rewrite the test before you continue.

Note: Tests can only be rewritten once for a total of two times and all test scores are averaged to calculate a final mark.

***Based on the average of **all** final exam scores

Standard Grading System (GPA)

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
<50	F	0

Academic Policies

For information on Camosun College's academic policies including student conduct, grading and academic progress, see the webpage at

<http://camosun.ca/learn/becoming/policies.html>

Chapter	MATH 073 course content
	Unit 0 – Review of Basic Algebra (does not count towards final grade)
	Unit 0 (Review) Pre-test
R.1	The set of real numbers
R.2	Operations with real numbers
R.3	Exponential notation and order of operations
R.4	Introduction to algebraic expressions
R.5	Equivalent algebraic expressions
R.6	Simplifying algebraic expressions
R.7	Properties of exponents and scientific notation
	Chapter Review
	Unit 0 (Review) Post-test
	Unit 0 (Review) Final
	Unit 1 Polynomials and Polynomial Functions
	Unit 1 Pre-test
4.1	Introduction to polynomials and polynomial functions
4.2	Multiplication of polynomials
4.3	Introduction to factoring
4.4	Factoring trinomials: $x^2 + bx + c$
	Mid-Chapter Review
4.5	Factoring trinomials: $ax^2 + bx + c, a \neq 1$
4.6	Special factoring
4.7	Factoring: a general strategy
4.8	Applications of polynomial equations and functions
	Chapter Review
	Unit 1 Post-test
	Unit 1 Final
	Unit 2–Rational Expressions, Equations, & Functions
	Unit 2 Pre-test
5.1	Rational expressions and functions: multiplying, dividing, and simplifying
5.2	LCMs, LCDs, addition, and subtraction
5.3	Division of polynomials
5.4	Complex rational expressions
	Mid-Chapter Review
5.5	Solving rational equations
5.6	Applications and proportions (omit section b)
5.7	Formulas and applications
5.8	Variation and applications
	Chapter Review
	Unit 2 Post-test
	Unit 2 Final

Text	MATH 073 course content
	Unit 3 Radical Expressions, Equations, & Functions
	Unit 3 Pre-test
6.1	Radical expressions and functions
6.2	Rational numbers as exponents
6.3	Simplifying radical expressions
6.4	Addition, subtraction, and more multiplication
	Mid-Chapter Review
6.5	More on division of radical expressions
6.6	Solving radical equations
6.7	Applications involving powers and roots
6.8	The complex numbers
	Chapter Review
	Unit 3 Post-test
	Unit 3 Final
	Unit 4 – Quadratic Equations and Functions
7.1	The basics of solving quadratic equations
7.2	The quadratic formula
7.3	Applications involving quadratic equations
7.4	More on quadratic equations
	Mid-Chapter Review
7.5	Graphing $f(x) = a(x - h)^2 + k$
7.6	Graphing $f(x) = ax^2 + bx + c$
7.7a	Mathematical modeling with quadratic functions
	Chapter Review
	Unit 4 Post-test
	Unit 4 Final
	*Unit 5 – Trigonometry (located in different online classroom)
	Unit 5 Pre-test
6.1	Trigonometric functions of acute angles
6.2	Applications of right triangles
6.3	Trigonometric functions of any angle
	Mid-Chapter Review
8.1	The law of sines
8.2	The law of cosines
	Chapter Review
	Unit 5 Post-test
	Unit 5 Final
	Final Exam
	MATH 073 Final Pre-test
	MATH 073 Final Post-test
	MATH 073 Final Exam

*Contact your instructor for information on how to access the trigonometry online classroom.