



School of Access  
Community Learning Partnerships

## **Mathematics 073 (Online)** *Advanced Mathematics 2* Course Outline

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This course outline is available online at

<http://faculty.camosun.ca/martinbuck/files/2010/05/MATH073.pdf>

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

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### **Calendar Description**

See the Mathematics Course Descriptions at <http://camosun.ca>

### **Prerequisite(s):**

C+ in MATH 072, or a C in Principles of Math 11, or by assessment.

### **Exit Grade:**

B+ (77%) or better is necessary to continue into MATH 115. C+ (65%) or better is necessary to continue into MATH 092, 105, 107 or 109. C (60%) or better is necessary to continue into MATH 112.

### **Course Requirements:**

- (a) Textbook: *Intermediate Algebra*, 10<sup>th</sup> edition, Marvin Bittinger and *Trigonometry* (excerpt from *Trigonometry and Algebra*), 2nd Edition, Addison-Wesley, Boston, 2005, J.A. Beecher, J.A. Penna, and M.L. Bittinger.
- (b) An Access Code for the online classroom at publisher's website at <http://mathxl.com>. This code is available purchase in the college bookstore either with the text or by itself. It can also be purchased online at the above website.  
NOTE: The Access Code also provides access to textbook publisher resources including pages of the electronic version of the textbook
- (c) Computer System Requirements: See <http://mathxl.com/support/system.htm>.
- (d) Scientific calculator: The Sharp EL 531W model will be the only calculator allowed for this course and most math courses at Camosun. See [this link for the operation manual](#).

### **Important Dates**

See <http://camosun.ca/learn/calendar/current/pdf/events.pdf>

### **Instructor Information**

- (a) Instructor -- Martin Buck
- (b) Office hours: Via the online classroom below, available 24 hours a day and seven days a week. Expect a response within one school day. Skype and phone appointments with the instructor are also available by prior arrangement.
- (c) Location: The online classroom is available to registered students at <http://mathxl.com>.
- (d) Instructor's website: <http://faculty.camosun.ca/martinbuck>
- (e) E-mail: [martin@lwebs.ca](mailto:martin@lwebs.ca)
- (f) Skype: [mbuck skype](#)
- (g) Facebook group: [Camosun Math Online](#)
- (h) Twitter: <http://twitter.com/lwebs>

NOTE: Contact your instructor by email when you have completed the signup procedures for MathXL. He will provide you with a course id code for entry to our online classroom.

## Course Information

This [mastery learning](#) or competency based course is designed to be completed in one term. However, it can be completed sooner. This depends on a number of factors including your beginning level of math skills, motivation, learning rate, and how much time you can actually devote to learning math. Plan on spending 15 – 20 hours per week on the course to complete it in 4 months. When you run into difficulties, be sure to ask your instructor for help. Do your best to work well ahead of the deadlines. If, despite your best efforts, you are unable to complete the course this term, you will be graded out with an IP (In Progress) grade. You may re-register in a mastery learning section for a second term and pick up where you left off. NOTE: The college has a grading policy that limits the number of times you may re-register in the same course. See <http://camosun.ca/about/policies/education-academic/e-1-programming-&-instruction/e-1.5.pdf> for details.

- (a) Start each unit by logging into <http://mathxl.com> to complete the pre-test assignment. You will find this under the **Homework and Tests** button. Take as much time as you need. As long as you do NOT submit the pre-test, you can close it down and then complete it later. Beside each question you will see a number of resources to help you master each question. Be sure to use these and any other resources, like your text, to help you master each question. Once you have submitted the pre-test, the online system will mark it. Under the **Results** button you will be able to review the questions you had trouble with and figure out where you went wrong. If you score 75% or better on the pre-test you can skip step (b) and move right on to the post-test.
- (b) Next go to the **Study Plan** and complete the assigned exercises. These are the ones with the pencil icon beside them. You can also see a list of assigned exercises by clicking on the **Show What I Need to Study** button. Work through the online homework assignments the pre-test identified for you to complete. Read the explanations, study the examples and complete the assigned exercises. If you do not understand something seek help right away. In addition to online resources, this help includes your instructor and even your family and friends.
- (c) Return to the **Homework and Tests** area to complete the online post-test. If you scored less than 75% on the pre-test, you will need to contact your instructor for permission to write. Like the pre-test, there is no need to complete this in one sitting. However, this quiz will be completed without access to any other resources. Once you have submitted the posttest, the online system will mark it. Under the **Results** button review the questions you had trouble with and figure out where you went wrong. If you score of 75% or better, you may move right along to the Unit Test. Otherwise, return to the Study Plan area to complete the assigned exercises.
- (d) Complete the unit by writing the Unit Test. If you scored less than 75% on the post-test, you will need to contact your instructor for permission to write. These tests will also be written online. However, they must be completed in one sitting. You will NOT be allowed to exit out and return later. While they are designed to be completed in less than an hour, you will have two hours. 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, you will have to make arrangements to write in one of our math labs or other supervised (invigilated) location with stable Internet access.
- (e) Email your instructor when you have completed the unit test and he will review your unit test for part marks and provide you with detailed feedback. 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 able to rewrite each Unit Test *once* (for a total of two times) to achieve this mastery level. Note: All test scores count.

Repeat the above process for the remaining units. The final exam will also be written online, but under invigilated conditions at the end of the term during final exam week. If you are ready to write the final exam before then, contact your instructor to set up a time and place to write.

NOTE: Before starting unit 1, students must pass a competency test to demonstrate that they can add, subtract, multiply, and divide whole numbers, fractions, and decimals **without the use of a calculator**. This Unit 0 test is not used to calculate your final grade. If you have difficulty with this unit, you will need to complete an appropriate review. If you recently completed Math 072, you may be eligible for advanced credit. Contact your instructor for more information.

**Assignments:** The due dates for the pre and post tests as well as the unit tests will be found in the online classroom at <http://mathxl.com>. You are responsible for regularly checking the website and completing the assignments on time. If you miss an assignment deadline, a late deduction of 10% will be applied.

<b>Grade Calculation:</b>	Online Pre and Post-tests	15%
	Online Study Plan Assignments	15%
	Five Unit Exams	30%
	Final Exam	40%

\* As this is a mastery-based course, the goal for each test is 75% or better. If you score less than 75%, then 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 (including both passing and failing 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
70-74	B-	4
65-69	C+	3
60-64	C	2
50-59	D	2

### Academic Policies

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

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

## Assignments

See your online course for due dates.

Text	MATH 073 course content	Required or Optional
	<b><i>Unit 0 – Review of Basic Algebra</i></b>	
	<b>Unit 0 (Review) Pre-test</b>	<b>Required</b>
<b>0.1</b>	The set of real numbers	As determined by the pre-test.
<b>0.2</b>	Operations with real numbers	As above.
<b>0.3</b>	Exponential notation and order of operations	As above.
<b>0.4</b>	Introduction to algebraic expressions	As above.
<b>0.5</b>	Equivalent algebraic expressions	As above.
<b>0.6</b>	Simplifying algebraic expressions	As above.
<b>0.7</b>	Properties of exponents and scientific notation	As above.
	Summary and review, Chapter Test	As above.
	<b>Unit 0 (Review) Post-test</b>	<b>Required</b>
	<b>Unit 0 (Review) Exam – Not Required</b>	<b>None</b>
	<b><i>Unit 1 Polynomials and Polynomial Functions</i></b>	
	<b>Unit 1 Pre-test</b>	<b>Required</b>
<b>4.1</b>	Introduction to polynomials and polynomial functions	As determined by the pre-test.
<b>4.2</b>	Multiplication of polynomials	As above.
<b>4.3</b>	Introduction to factoring	As above.
<b>4.4</b>	Factoring trinomials: $x^2 + bx + c$	As above.
<b>4.5</b>	Factoring trinomials: $ax^2 + bx + c, a \neq 1$	As above.
<b>4.6</b>	Special factoring	As above.
<b>4.7</b>	Factoring: a general strategy	As above.
<b>4.8</b>	Applications of polynomial equations and functions	As above.
	Summary and review, Chapter Test	As above.
	<b>Unit 1 Post-test</b>	<b>Required</b>
	<b>Unit 1 Exam</b>	<b>Required</b>
	<b><i>Unit 2–Rational Expressions, Equations, &amp; Functions</i></b>	
	<b>Unit 2 Pre-test</b>	<b>Required</b>
<b>5.1</b>	Rational expressions and functions: multiplying, dividing, and simplifying	As determined by the pre-test.
<b>5.2</b>	LCMs, LCDs, addition, and subtraction	As above.
<b>5.3</b>	Division of polynomials	As above.
<b>5.4</b>	Complex rational expressions	As above.
<b>5.5</b>	Solving rational equations	As above.
<b>5.6</b>	Applications and proportions (omit section b)	As above.
<b>5.7</b>	Formulas and applications	As above.
<b>5.8</b>	Variation and applications	As above.
	Summary and review, Chapter Test	As above.
	<b>Unit 2 Post-test</b>	<b>Required</b>
	<b>Unit 2 final test</b>	<b>Required</b>

Text	MATH 073 course content	Required or Optional
	<b>Unit 3 Radical Expressions, Equations, &amp; Functions</b>	
	<b>Unit 3 Pre-test</b>	<b>Required</b>
6.1	Radical expressions and functions	As determined by the pre-test.
6.2	Rational numbers as exponents	As above.
6.3	Simplifying radical expressions	As above.
6.4	Addition, subtraction, and more multiplication	As above.
6.5	More on division of radical expressions	As above.
6.6	Solving radical equations	As above.
6.7	Applications involving powers and roots	As above.
6.8	The complex numbers	As above.
	Summary and review, Chapter Test	As above.
	<b>Unit 3 Post-test</b>	<b>Required</b>
	<b>Unit 3 Exam</b>	<b>Required</b>
	<b>Unit 4 – Quadratic Equations and Functions</b>	
7.1	The basics of solving quadratic equations	As determined by the pre-test.
7.2	The quadratic formula	As above.
7.3	Applications involving quadratic equations	As above.
7.4	More on quadratic equations	As above.
7.5	Graphing $f(x) = a(x - h)^2 + k$	As above.
7.6	Graphing $f(x) = ax^2 + bx + c$	As above.
7.7a	Mathematical modeling with quadratic functions	As above.
	Summary and review, Chapter Test	As above.
	<b>Unit 3 Post-test</b>	<b>Required</b>
	<b>Unit 3 Exam</b>	<b>Required</b>
	<b>Unit 5 - Trigonometry</b>	
	<b>Unit 5 Pre-test</b>	<b>Required</b>
5.1	Trigonometric functions of acute angles	As determined by the pre-test.
5.2	Applications of right triangles	As above.
5.3	Trigonometric functions of any angle	As above.
7.1	The law of sines	As above.
7.2	The law of cosines	As above.
	<b>Unit 5 Post-test</b>	<b>Required</b>
	<b>Unit 5 Exam</b>	<b>Required</b>
	<b>MATH 073 review</b>	
	<b>MATH 073 Final Exam</b>	<b>Required</b>