Mathematics 073 (Online)
Advanced Mathematics 2
Course Outline

This course outline is available online at
http://faculty.camosun.ca/martinbuck/files/2011/07/MATH073.pdf

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) Textbook: *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.. An Access Code for the online classroom 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 resources including animations, videos, podcasts and digital pages of the textbook.

(b) Computer System Requirements: See http://mathxl.com/support/system.htm.

(c) Scientific calculator: The Sharp EL 531W model is the only calculator allowed for this course and most math courses at Camosun. See http://sharp-world.com/contents/calculator/support/guidebook/pdf/Operation_Guide_EL-531W_ser.pdf for the operation guide.

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 your online classroom.

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 via the online classroom. Expect a response within one school day or less. Skype and phone appointments with the instructor are also available by prior arrangement.
b) Location: The online classroom is available to registered students at http://mathxl.com.
c) Instructor's website: http://faculty.camosun.ca/martinbuck
Facebook group: Camosun Math Online
d) E-mail: martin@lwebs.ca
Skype: mbuck_skype

Course Information

This mastery learning or competency based 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. If you devote at least 15 – 20 hours per week to the course following the steps below you should have no problem completing in one term or less.

(a) Log into http://mathxl.com. Be sure your browser is properly configured by clicking on the Browser Check button. You will also want to click on the How to Enter Answers tours and tip sheets for information about entering math notation. With that done, click on the **Homework and Tests** button. At the beginning of each unit are links to animations, podcasts, videos and digital pages of your text. Your first assignment for marks is the unit pre-test. 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 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 and allow you to review your results. You can also click on the **Results** button at any time to review the assignments you had trouble with and figure out where you went wrong.

(b) With the unit pre-test reviewed, return to the **Homework and Tests** area. Move on to the Section Homework and complete the assigned homework exercises. To demonstrate mastery, aim for a score of 80% or better on each homework assignment. Note: You will be assigned exercises that the pre-test identified as areas you need to work on. Be sure to keep up with the schedule identified on the course homepage and in the **Calendar** area. Work through all the online homework assignments. 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. The icon indicates you need more work in this area. You can also see a list of assigned exercises by clicking on the **Show What I Need to Study** button. For each question, make use of the resources available to help you master each question.

(c) With all the section homework assignments mastered at an 80% or better level, return to the **Homework and Tests** area to complete the Unit Review assignment. If you scored less than 80% on the homework assignments, 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 review should be completed without accessing any other resources. If you score of 80% or better, you may move right along to the Unit Test. Otherwise, return to the Study Plan area to complete the assigned exercises for this unit.

(d) Complete the unit by writing the Unit Test. If you scored less than 80% on the Unit Review, you will need to contact your instructor for permission to write. The unit final 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. 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. The final exam will three hours long and written online, but under invigilated conditions. Students taking the course at a distance may arrange for appropriate invigilation at a local learning centre, school, college or library. Email your instructor when you have found an appropriate invigilator. If you are ready to write the final exam before the end of the term, contact your instructor to set up a time and place to write.

NOTE: Before starting unit one, you must complete a review unit to demonstrate basic algebra 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 on the course homepage at http://mathxl.com. Click on the Calendar button for specific assignment due date information. You are responsible for regularly checking the website and completing the assignments on time. Please note that the MathXL system keeps track of how much time you devote to each of the assignments. Late penalties of 10% per day may be applied for those who do not devote enough time to meet the assignment due dates.

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. If you fall behind the schedule to complete this term, it will be very difficult to catch up. 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 at the beginning of each unit under the Homework and Test button in the online classroom.

Grade Calculation:	*Online Pre and Post-tests	20%
	*Online Homework and Study Plan Assignments	30%
	**Five Unit Tests	10%
	***Final Exam	40%

*The goal for each pre-test and homework assignment 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

Text	MATH 073 course content
	Unit 0 – Review of Basic Algebra
	Unit 0 (Review) Pre-test
0.1	The set of real numbers
0.2	Operations with real numbers
0.3	Exponential notation and order of operations
0.4	Introduction to algebraic expressions
0.5	Equivalent algebraic expressions
0.6	Simplifying algebraic expressions
0.7	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
	Unit 5 Pre-test
5.1	Trigonometric functions of acute angles
5.2	Applications of right triangles
5.3	Trigonometric functions of any angle
	Mid-Chapter Review
7.1	The law of sines
7.2	The law of cosines
	Chapter Review
	Unit 5 Post-test
	Unit 5 Final
	MATH 073 Final Pre-test
	MATH 073 Final Post-test
	MATH 073 Final Exam