CAMOSUN COLLEGE	*School of Access* *MATHEMATICS DEPARTMENT* **MATH 172 – All Sections** **Basic Technical Mathematics 1** **2012 – Q1**

COURSE OUTLINE

The Approved Course Description is available on the web @
http://camosun.ca/learn/calendar/current/web/math.html#MATH172

⚚   *Please note: this outline will be electronically stored for five (5) years only.*
   It is strongly recommended students keep this outline for your records.

1. Instructor Information

(a)	Instructor:	Patricia Wrean (Pat)	
(b)	Office Hours:	Posted on office door and website	
(c)	Location:	CBA 153	
(d)	Phone:	(250) 370-4542	Alternative Phone:
(e)	Email:	wrean@camosun.bc.ca	
(f)	Website:	http://wrean.disted.camosun.bc.ca/math172/	

2. Intended Learning Outcomes

Upon successful completion of this course a student will be able to:

1.   Demonstrate basic numeracy by performing arithmetic without a scientific calculator.
2.   Use set notation to find the union and intersection of two or more sets. Define and identify real, rational, irrational, integer, whole, and natural numbers. Graph intervals of real numbers on the number line. Use the properties of real numbers to perform arithmetic operations and evaluate expressions.
3.   Solve linear equations and inequalities in one variable. Solve and graph compound inequalities. Solve and graph absolute value equations and inequalities. Solve word problems involving linear equations in one variable.
4.   Graph linear equations and inequalities in two variables. Calculate the slope and y-intercept of a line. State the equation of a line in point-slope, slope-intercept, and standard form.
5.   Solve systems of linear equations in two and three variables by graphing, substitution, and the addition method. Solve word problems involving systems of linear equations.
6.   Express real numbers in scientific notation. Use the power rules to evaluate expressions with integral exponents. Define the term polynomial and multiply polynomials together. Factor polynomials, and solve equations and word problems involving factoring.
7.   Use the properties of rational expressions to simplify terms. Perform arithmetic operations on rational expressions. Simplify complex fractions. Divide polynomials using long division. Solve equations and word problems involving rational expressions.
8.   Perform arithmetic operations with radicals. Take quotients and powers of terms involving radicals and rational exponents. Rationalize denominators. Solve equations with radicals and exponents. Perform arithmetic operations on complex numbers, including rationalizing the denominator.
9.   Solve quadratic equations by factoring, by completing the square, and by using the quadratic formula. Solve word problems involving quadratic equations.

3. Required Materials

(a) Textbook: M. Dugopolski, *Intermediate Algebra*, 7th Edition, McGraw-Hill, Boston, 2012. (Earlier editions are also acceptable.)

(b) Calculator policy: No calculators are permitted. Also, the use of other electronic devices such as cell phones, MP3 players, iPods, electronic translators, etc., during exams is not allowed.

4. Course Content

<div align="center">(the hours given are approximations only)</div>

Chapter 1 – The Real Numbers

Section 1.1: Sets	2 hours
Section 1.2: The Real Numbers	1 hour
Section 1.3: Operations on the Set of Real Numbers	1 hour
Section 1.4: Evaluating Expressions	1 hour
Section 1.5: Properties of the Real Numbers	1 hour
Section 1.6: Using the Properties	1 hour

Chapter 2 – Linear Equations and Inequalities in One Variable

Section 2.1: Linear Equations in One Variable	2 hours
Section 2.2: Formulas and Functions	1 hour
Section 2.3: Applications	2 hours
Section 2.4: Inequalities	1 hour
Section 2.5: Compound Inequalities	1 hour
Section 2.6: Absolute Value Equations (omit inequalities)	1 hour

Chapter 3 – Graphs and Functions in the Cartesian Coordinate System

Section 3.1: Graphing Lines in the Coordinate Plane	1 hour
Section 3.2: Slope of a Line	1 hour
Section 3.3: Three Forms for the Equation of a Line	1 hour
Section 3.4: Linear Inequalities and Their Graphs	1 hour

Chapter 4 – Systems of Linear Equations:

Section 4.1: Solving Systems by Graphing and Substitution	1 hour
Section 4.2: The Addition Method	1 hour
Section 4.3: Systems of Linear Equations in Three Variables	2 hours

Chapter 5 – Exponents and Polynomials:

Section 5.1: Integral Exponents and Scientific Notation	1 hour
Section 5.2: The Power Rules	1 hour
Section 5.3: Polynomials and Polynomial Functions	1 hour
Section 5.4: Multiplying Binomials	1 hour
Section 5.5: Factoring Polynomials	1 hour
Section 5.6: Factoring $ax^2 + bx + c$	1 hour
Section 5.7: Factoring Strategy	1 hour
Section 5.8: Solving Equations by Factoring	1 hour

Chapter 6 – Rational Expressions:

Section 6.1: Properties of Rational Expressions and Functions	1 hour
Section 6.2: Multiplication and Division	1 hour
Section 6.3: Addition and Subtraction	1 hour
Section 6.4: Complex Fractions	1 hour
Section 6.5: Division of Polynomials (synthetic division optional)	1 hour
Section 6.6: Solving Equations Involving Rational Expressions	1 hour
Section 6.7: Applications	2 hours

Chapter 7 – Rational Exponents and Radicals:

Section 7.1: Radicals	2 hours
Section 7.2: Rational Exponents	1 hour
Section 7.3: Operations with Radicals	1 hour
Section 7.4: Quotients, Powers, and Rationalizing Denominators	1 hour
Section 7.5: Solving Equations with Radicals and Exponents	2 hours
Section 7.6: Complex Numbers	1 hour

Chapter 8 – Quadratic Equations and Inequalities:

Section 8.1: Factoring and Completing the Square	1 hour
Section 8.2: The Quadratic Formula	1 hour
Section 8.3: More on Quadratic Equations	1 hour

5. Basis of Student Assessment (Weighting)

Grade Calculation: The final grade will be calculated according to the following breakdown:

Quizzes:	40%
Assignments:	10%
Final Exam:	50%

If your final exam grade is higher than your term work grade and your term work is **50% or higher**, then your final exam grade will count as 100% of your final grade.

Final Exam: The final exam will cover the entire course and will be 3 hours long. As stated in the current college calendar, "students are expected to write tests and final examinations at the scheduled time and place." Exceptions will only be considered due to **emergency** circumstances as outlined in the calendar. The calendar specifically states that "holidays or scheduled flights are not considered to be emergencies."

Quizzes: The lowest quiz grade will be dropped when calculating the average of your quizzes. This allows a student to be absent on any one quiz day for any reason, including illness, without penalty. There is no provision for "making up" a missed quiz.

Assignments: The lowest assignment grade will be dropped when calculating the average of your assignments. This allows a student to miss any one assignment for any reason, including illness, without penalty.

Late Policy: Assignments that are late will be given a 25% penalty if the solutions have not yet been posted to the course website. Once the solutions have been posted, late assignments will not be accepted.

Collaboration Policy: Students are encouraged to collaborate (work together) on assignments. However, you must be prepared to answer similar questions on your own for the quizzes, so it is vital that you yourself understand all of the assigned questions and work that you turn in.

6. Grading System *http://www.camosun.bc.ca/policies/policies.php*

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	Minimum level of achievement for which credit is granted; a course with a "D" grade cannot be used as a prerequisite.	1
0-49	F	Minimum level has not been achieved.	0

Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at http://camosun.ca/about/policies/education-academic/e-1-programming-&-instruction/e-1.5.pdf for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	*Incomplete*: A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	*In progress*: A temporary grade assigned for courses that, due to design may require a further enrollment in the same course. No more than two IP grades will be assigned for the same course. *(For these courses a final grade will be assigned to either the 3rd course attempt or at the point of course completion.)*
CW	*Compulsory Withdrawal:* A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.

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, at Student Services or the College web site at camosun.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/education-academic/e-2-student-services-&-support/e-2.5.pdf

ACADEMIC PROGRESS POLICY

There is an Academic Progress Policy designed to enhance a learner's likelihood of success. Students should 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/education-academic/e-1-programming-&-instruction/e-1.1.pdf

Math Room: Technologies Centre (TEC) 142 (phone: 370-4492): This drop-in centre is freely available for your use to work on math homework and to seek help from the tutor on staff (see hours posted on door).