



School of Arts & Science
MATHEMATICS DEPARTMENT
MATH 172-01
Basic Technical Mathematics 1
2006Q1

COURSE OUTLINE

The Approved Course Description is available on the web @ _____

Ω 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 on website.		
(c)	Location:	CBA 153		
(d)	Phone:	370-4542	Alternative Phone:	
(e)	Email:	wrean@camosun.bc.ca		
(f)	Website:	http://wrean.disted.camosun.bc.ca/		

2. Intended Learning Outcomes

(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO for approval.)

Upon completion of this course the student will be able to:

1. 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 involving real numbers.
2. 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.
3. 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.
4. Solve systems of linear equations in two variables by graphing, substitution, and the addition method. Solve word problems involving systems of linear equations.
5. 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.
6. 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.

7. 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.
8. 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)	Texts	M. Dugopolski, <i>Intermediate Algebra</i> , 5 th Edition, McGraw-Hill, Boston, 2006. (4 th edition is also acceptable.)
(b)	Other	No calculators are permitted.

4. Course Content and Schedule

(Can include: class hours, lab hours, out of class requirements and/or dates for quizzes, exams, lectures, labs, seminars, practicums, etc.)

Prerequisites: B in MATH 053 or Math 10 by assessment.

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).

Study Time: It is recommended that between 5 and 10 hours per week (or more for students with a weak background) be spent studying for this course outside of class time.

Course Content:

Chapter 1 – The Real Numbers		
Section 1.1: Sets	2 hours	(times are approximate)
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	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 and Inequalities (optional)	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	1 hour
Chapter 5 – Exponents and Polynomials:	
Section 5.1: Integral Exponents and Scientific Notation	2 hours
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	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)	2 hours
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 8.4: More on Quadratic Equations	1 hour

5. Basis of Student Assessment (Weighting)

(Should be linked directly to learning outcomes.)

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

Quizzes (6):	40%
Assignments (7):	10%
Final Exam:	50%

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.

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 on page 39, “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. Holidays or scheduled flights are not considered to be emergencies.

Late Policy: Late assignments will be given a penalty of 25% per week

6. Grading System

(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO for approval.)

Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
95-100	A+		9
90-94	A		8
85-89	A-		7
80-84	B+		6
75-79	B		5
70-74	B-		4
65-69	C+		3
60-64	C		2
50-59	D		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 camosun.ca or information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete:</i> 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	<i>In progress:</i> A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
CW	<i>Compulsory Withdrawal:</i> 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.

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 E-1.5 at camosun.ca for information on conversion to final grades, and for additional information on student record and transcript notations.

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 **which includes plagiarism**. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, at Student Services and on the College web site in the Policy Section.

ADDITIONAL COMMENTS AS APPROPRIATE OR AS REQUIRED