MATH 172 Basic Technical Mathematics 1

Course Description
This course in intermediate algebra covers real numbers, linear equations and inequalities, exponents, polynomials, rational expressions, rational exponents and radicals, quadratic equations, linear equations and inequalities in two variables and systems of linear equations. [4 credits] (*Source*: Camosun College Calendar 2004 – 2005)

Prerequisites   B in ABMA 050 of Math 10 by assessment

Organization
In-class workload: 6 hours lecture per week
Out-of-class workload: 6 to 10 hours per week (or more for students with a weak background)

Textbook
M. Dugopolski, *Intermediate Algebra*, 4th Edition, McGraw-Hill, Boston, 2004. (3rd edition is also acceptable.)

Calculator Policy   No calculators are permitted.

Assignment
- Problems will be assigned for each class (they will be posted at the class's website); they are due at the beginning of the class on Tuesdays (starting 5 October 2004).
- Solutions should be presented in a neat and clear fashion and the paper should be well organized (and stapled if there is more than one page – penalty applies to "sloppy papers").
- Late assignments will be given a penalty of 25%.
- Complete solutions will be posted online at http://www.camosun.bc.ca/~lai.

Quizzes
- There will be a quiz every Friday, starting 8 October 2004 (last one on 3 December 2004).
- Complete understanding of the examples done in class and the exercises in the assignments will be essential for success on the 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.
- Complete solutions will be posted online at http://www.camosun.bc.ca/~lai.

Final Examination
- 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.
- Final examination period December 13 – 17 (specific date, time, and location TBA)

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

Quizzes (8 of 9):	40%
Assignments (10):	10%
Final Exam:	50%

If your final exam grade is higher than your term work grade <u>and</u> your term work is **60% or higher**, then your final exam grade will count as 100% of your final grade.

Percentage to Letter Grade Conversion (subject to the conditions above)

95 to 100 (A+)	90 to 94 (A)	85 to 89 (A-)
80 to 84 (B+)	75 to 79 (B)	70 to 74 (B-)
65 to 69 (C+)	60 to 64 (C)	
50 to 59 (D)	0 to 49 (F)	

Academic Conduct Policy
There is an Academic 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 at
http://www.camosun.bc.ca/divisions/pres/policy/2-education/2-5.html

Course Content
The course will follow the textbook fairly closely, covering the following topics:

<u>Chapter 1 – The Real Numbers</u>
- 1.1 Sets
- 1.2 The Real Numbers
- 1.3 Operations on the Set of Real Numbers
- 1.4 Evaluating Expressions
- 1.5 Properties of the Real Numbers
- 1.6 Using the Properties

<u>Chapter 2 - Linear Equations and Inequalities in One Variable</u>
- 2.1 Linear Equations in One Variable
- 2.2 Formulas
- 2.3 Applications
- 2.4 Inequalities
- 2.5 Compound Inequalities
- 2.6 Absolute Value Equations and Inequalities (if time permits)

<u>Chapter 3 – Graph and Functions in the Cartesian Coordinate System</u>
- 3.1 Graphing Lines in the Coordinate Plane
- 3.2 Slope of a Line
- 3.3 Three Forms for the Equation of a Line
- 3.4 Linear Inequalities and Their Graphs (includes "graphing compound inequalities" if time permits)

Chapter 4 - Systems of Linear Equations
    4.1   Solving Systems by Graphing and Substitution
    4.2   Solving Systems by The Addition Method
    4.3   Systems of Linear Equations in Three Variables

Chapter 5 - Exponents and Polynomials
    5.1   Integral Exponents and Scientific Notation
    5.2   The Power Rules
    5.3   Polynomials and Polynomial Functions
    5.4   Multiplying Binomials
    5.5   Factoring Polynomials
    5.6   Factoring $ax^2 + bx + c$
    5.7   Factoring Strategy
    5.8   Solving Equations by Factoring

Chapter 6 - Rational Expressions
    6.1   Properties of Rational Expressions and Functions
    6.2   Multiplication and Division
    6.3   Addition and Subtraction
    6.4.   Complex Fractions
    6.5.   Division of Polynomials (includes "synthetic division" if time permits)
    6.6.   Solving Equations Involving Rational Expressions
    6.7.   Applications

Chapter 7 - Rational Exponents and Radicals
    7.1   Radicals
    7.2   Rational Exponents
    7.3   Operations with Radicals
    7.4   Quotients, Powers, and Rationalizing Denominators
    7.5   Solving Equations with Radicals and Exponents
    7.6   Complex Numbers

Chapter 8 - Quadratic Equations and Inequalities
    8.1   Factoring and Completing the Square
    8.2   The Quadratic Formula
    8.4   More on Quadratic Equations

Instructor: Raymond Lai   **e-mail:**   lai@camosun.bc.ca
Phone No.: 370-4491   **Web site:**   http://www.camosun.bc.ca/~lai
Office: Centre for Business and Access (CBA) Room 152
Office hours: As announced in the first class (also posted on office door), or by appointment

	Monday	Tuesday	Wednesday	Thursday	Friday
07:30-08:20					
08:30-09:20					
09:30-10:20					
10:30-11:20					
11:30-12:20					
12:30-13:20	Class	Class	Class	Class	Class
13:30-14:20			Class		
14:30-15:20					
15:30-16:30					

First Lecture: Monday 27 September 2004
Last Lecture: Friday 10 December 2004
No class on: Monday 11 October 2004 (Thanksgiving Day), and
               Thursday 11 November 2004 (Remembrance Day)

How to do well in the course and where to get help
1. Do not skip classes.
2. Start working on the exercises as soon as they are assigned.
3. Studying in groups is an efficient way to learn mathematics; however, make sure you can solve problems yourself.
4. Extra help available from assistant at the Interurban Math Room: Technologies Centre (TEC) Room 142. 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).
5. 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, Registrar's Office or the College web site at http://www.camosun.bc.ca
6. Need a tutor/Want to become a tutor? Visit
   http://www.camosun.bc.ca/resources/ses/tutors_list.php

Name	Phone No.	Name	Phone No.