

Mathematics 161: Mathematics for Computing 1
Q1, 2004-2005

Instructor: Patricia Wrean (Pat)
Office: CBA 153
Telephone: 370-4542
E-mail: wrean@camosun.bc.ca
Web site: <http://www.camosun.bc.ca/~wrean/>
Office Hours: Posted on office door and on website.

Course Description: This course is part of the Computer Systems Technology program. This course covers topics in trigonometry, sequences, logarithms, graphing, relational algebra, linear equations, linear systems, vectors, matrices, linear transformations, computer graphics, directed graphs and trees.

Prerequisites: B grade in Math 11 or Applications of MATH 12 or MATH 172 or a C+ grade minimum in Math 12 or assessment.

Textbook: Two sets of course materials, “Sets and Relational Algebra” and “Linear Algebra”, are available in the Interurban bookstore. Another set of course materials are required for the second part of the course, and should be available for purchase by the middle of October.

Calculator Policy: Only ordinary scientific calculators (non-graphing, non-programmable) are permitted.

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

Quizzes:	40%
Assignments:	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 judged satisfactory, 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.
- 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.
- Grade Scale:** Final letter grades are normally assigned as follows (subject to the conditions above):

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

Course Content: (the hours given are approximations only)

Sets and Relational Algebra

Chapter 1 – Truth Tables 1 hour

Chapter 2 – Sets and Relational Algebra

Section 2.1: Sets	1 hour
Section 2.2: Relations	2 hours
Section 2.3: Digraphs	1 hour
Section 2.4: Relational Databases	1 hour

Linear Algebra

Section 1.2 – Linear Equations in Two Variables 2 hours

Chapter 4 – Systems of Linear Equations

Section 4.1: Solving Systems by Graphing and Substitution	1.5 hours
Section 4.2: The Addition Method	1.5 hours
Section 4.3: Systems of Linear Equations in Three Variables	1 hour
Section 4.4: Solving Linear Systems Using Matrices	1 hour
Section 4.5: Determinants and Cramer's Rule	1 hour

Chapter 8 – Matrix Algebra

Section 8.2: Operations with Matrices	2 hours
Section 8.3: The Inverse of A Square Matrix	1 hour

Trigonometry, Logarithms, and Series**Chapter 5 – Systems of Linear Equations**

Section 5.1: Trigonometric Functions of Acute Angles	2 hours
Section 5.2: Applications of Right Triangles	1 hour
Section 5.3: Trigonometric Functions of Any Angle	2 hours
Section 5.4: Radians, Arc Length, and Angular Speed	1 hour
Section 5.5: Circular Functions: Graphs and Properties	1 hour
Section 5.6 : Graphs of Transformed Sine and Cosine Functions	1 hour

Chapter 6 – Vectors

Section 6.3: Vectors in the Plane	2 hours
Supplement: Rotations of Vectors	2 hours

Chapter 4 – Exponential and Logarithmic Functions

Section 4.1: Exponential Functions and their Applications	2 hours
Section 4.2: Logarithmic Functions and their Applications	2 hours
Section 4.3: Rules of Logarithms	2 hours
Section 4.4: More Equations and Applications	2 hours

Chapter 11 – Sequences and Series

Section 11.1: Sequences	2 hours
Section 11.2: Series	1 hour
Section 11.3: Geometric Sequences and Series	2 hours