![Camosun College logo]	***School of Arts & Science*** ***MATHEMATICS DEPARTMENT*** **MATH 161-all sections** **Mathematics for Computing 1** **2007Q1**

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 (section 1) & Leah Howard (section 2)	
(b)	Office Hours:	posted on course website (see below)	
(c)	Location:	CBA 153 and TBA	
(d)	Phone:	4542 and 884-8128	Alternative Phone:
(e)	Email:	wrean@camosun.bc.ca and howardl@uvic.ca	
(f)	Website:	wrean.disted.camosun.bc.ca/math161/	

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. Describe periodic events, including those represented by sinusoidal curves, using terms amplitude, period, maximum and minimum values vertical and horizontal shift.
2. Graph sine and cosine curves.
3. Use technology to generate and graph sequences that model real-life phenomena.
4. Use the properties of logarithms to develop and solve equations involving exponents and logarithms.
5. Demonstrate the ability to use the fundamental operations of relational algebra.
6. Express linear equations in point-slope, slope-intercept, and standard forms, and use these forms to sketch the graph of any given linear equation.
7. Write second and third order linear systems in standard form, state the geometric interpretations of linear systems, and use Cramer's rule to solve any given linear system.
8. Perform vector and matrix operations to simplify vector and matrix expressions.
9. Perform geometric addition and subtraction of vectors.
10. Calculate the inner product of vectors and use the result to determine projections, to calculate the area of a parallelogram, and perform matrix multiplication.
11. Express linear systems in matrix form, and solve linear systems in matrix form by the augmented matrix method, the Gauss-Jordan method, and the Inverse matrix solution method.

12. Identify and employ the matrices for reflection, projection, rotation (about the y axis in the plane and about the x, y and z-axes in space), dilation, and contraction in the plane and in three-space.
13. Determine the coordinate matrix for a three dimensional object, and use matrix operations to modify to coordinate matrix to represent scaling, translating, and rotating of the object.
14. Represent a given relationship between set members by using a graphs, trees, and dominance directed graphs.
15. Use trees to represent algebraic expressions and store data using binary search trees.

3. Required Materials

(a) Texts

The "Logic", "Relational Algebra", "Exponents and Logs", and "Probability and Statistics" course materials are online and available at the course website. The "Trigonometry/Sequences & Series" course materials are available at the bookstore.

(b) Other

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

4. Course Content and Schedule

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

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%

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.

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 by one day will be given a 25% penalty. After that, late assignments will not be accepted.

Collaboration Policy: Student 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
(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
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 E-1.5 at **camosun.ca** 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 **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.

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://www.camosun.bc.ca/about/policies/policies.html#programminginstruction

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Course Content: (the hours given are approximations only)

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Logic   **(12.5 hours)**

Section 1.1:	Sets	1 hour
Section 1.2:	Operations on Sets	1.5 hour
Section 1.3:	Venn Diagrams	1 hour
Section 1.4:	Intro to Logic	1 hour
Section 1.5:	Logical Equivalence	1 hour
Section 1.6:	Algebra of Sets	1 hour
Section 1.7:	Boolean Algebra	1 hour
Section 1.8:	Laws of Logic	1 hour
Section 1.9:	More Laws of Logic	2 hours
Section 1.10:	The Conditional	1 hour
Section 1.11:	The Biconditional	1 hour

Relational Algebra   **(3 hours)**

Section 2.1:	Relations	1 hour
Section 2.2:	Relational Algebra	2 hours

Trigonometry   **(7 hours)**

Supplement:	Review of Radicals	1 hour
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	3 hours

Sequences & Series   **(7 hours)**

Supplement:	Review of Solving Linear Equations	1 hour
Supplement:	Review of Solving Linear Systems	1 hour
Section 10.1:	Sequences and Series	2 hours
Section 10.2:	Arithmetic Series	1 hour
Section 10.3:	Geometric Series	2 hours

Exponents and Logs   **(8 hours)**

Supplement:	Review of Exponents	1 hour
Section 3.1:	Exponential Functions	1 hour
Section 3.2:	Logarithmic Functions	2 hours
Section 3.3:	Properties of Logs	1 hours
Section 3.4:	Solving Equations	1 hour
Section 3.5:	Applications	2 hours

Statistics and Probability Topics   **(8 hours)**

Section 4.1:	Counting Techniques	1 hour
Section 4.2:	Combinations and Permutations	2 hours
Section 4.3:	Probability	1 hour
Section 4.4:	Pictures of Data	1 hour
Section 4.5:	Statistical Quantities	1 hour
Section 4.6:	The Normal Probability Distribution	2 hours