		School of Arts & Science
		MATHEMATICS DEPARTMENT
		MATH 163 – All
		Mathematics For Computing
		2013 – Q1

COURSE OUTLINE

The Approved Course Description is available on the web @
http://camosun.ca/learn/calendar/current/web/math.html#MATH163

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 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/math163/	

2. Intended Learning Outcomes

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

1. Use truth tables to define the logical connectives "and", "or", and "not." Determine whether two logical expressions are equivalent using truth tables.
2. State the laws of logic and use them to simplify logical expressions and prove logical equivalence. State the laws of Boolean algebra and use them to simplify Boolean expressions. Use the relationships between the laws of logic, the algebra of sets, and Boolean algebra to define membership tables for sets and draw the associated Venn diagrams.
3. Use the conditional and related logical forms to translate English expressions into logical symbols.
4. Determine the appropriate commands for querying a database using the fundamental operations of relational algebra.
5. Solve trigonometry equations and problems involving right triangles. Solve problems and equations involving trigonometric functions of any angle.
6. Simplify exponential and logarithmic expressions. Sketch graphs of desired exponential and logarithmic functions. Solve equations and word problems involving exponents and logarithms, specifically problems involving exponential growth and decay.
7. Analyse and calculate general formulas for sequences and series, with emphasis on recursive definitions. Evaluate sums for arithmetic and geometric series.
8. Represent a data set using a stem-and-leaf plot, a histogram, and a pie chart.
9. Calculate probabilities for events using counting techniques and/or rules for conditional probability.
10. Evaluate the mean, standard deviation (sample and population), median, and mode for a discrete data set. Perform calculations involving the mean and standard deviation for both the binomial and normal distributions.

3. Required Materials

(a) Texts - All course materials are online and available at the course website.

(b) Calculator - Only ordinary scientific calculators (non-graphing, non-programmable) are permitted. Also, calculators that manipulate radicals in exact form, such as the Casio FX-300ES, are specifically not allowed. The use of other electronic devices such as cell phones, MP3 players, iPods, electronic translators, etc., during exams is not allowed.

4. Course Content (the hours given are approximations only)

Logic **(14 hours)**

Section 1.1:	Sets	0.5 hour
Section 1.2:	Subsets	1 hour
Section 1.3:	Operations on Sets	1.5 hours
Section 1.4:	Venn Diagrams	1 hour
Section 1.5:	Intro to Logic	1 hour
Section 1.6:	Logical Equivalence	1 hour
Section 1.7:	Algebra of Sets	1 hour
Section 1.8:	Boolean Algebra	1 hour
Section 1.9:	Laws of Logic	1 hour
Section 1.10:	More Laws of Logic	2 hours
Section 1.11:	The Conditional	2 hours
Section 1.12:	The Biconditional	1 hour

Relational Algebra **(3 hours)**

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

Sequences & Series **(7 hours)**

Supplement:	Review of Solving Linear Equations	1 hour
Supplement:	Review of Solving Linear Systems	1 hour
Section 3.1:	Sequences and Series	2 hours
Section 3.2:	Arithmetic Series	1 hour
Section 3.3:	Geometric Series	2 hours

Trigonometry **(8 hours)**

Supplement:	Review of Radicals	1 hour
Section 4.1:	Trigonometric Functions of Acute Angles	2 hours
Section 4.2:	Solving Right Triangles	1 hour
Section 4.3:	Applications in Computer Graphics	2 hours
Section 4.4:	Radians and Trig Functions of Any Angle	2 hours

Exponents and Logs **(8 hours)**

Supplement:	Review of Exponents	1 hour
Section 5.1:	Exponential Functions	1 hour
Section 5.2:	Logarithmic Functions	2 hours
Section 5.3:	Properties of Logs	1 hours
Section 5.4:	Solving Equations	1 hour
Section 5.5:	Applications	2 hours

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

Section 6.1:	Counting Techniques	1 hour
Section 6.2:	Combinations and Permutations	2 hours
Section 6.3:	Probability	2 hours
Section 6.4:	Statistical Quantities	1 hour
Section 6.5:	The Empirical Rule	2 hours

5. Basis of Student Assessment (Weighting)

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

Tests:	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.

Tests: There will be three term tests. If a student is absent for one of these tests for any reason, the student will be given the opportunity to write a make-up test on the last day of classes. Students who write all three tests may rewrite one of the three on the last day instead, but with the following two conditions: the student must notify the instructor verbally or by email at least 3 days in advance of their intention to write, and the mark from the rewrite test will replace the original mark **whether or not the new mark is better** than the old one.

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."

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: 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.

7. Grading System

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.

8. 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.

Math Lab: Tech 142, phone: (250) 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).