



**School of Arts & Science
MATHEMATICS DEPARTMENT**

**MATH 163 - all sections
Mathematics For Computing
2011 – 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.

4. Course Content

(the hours given are approximations only)

Logic		(13 hours)
Section 1.1:	Sets	0.5 hour
Section 1.2:	Subsets	1 hour
Section 1.3:	Operations on Sets	1.5 hour
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	1 hour
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		(7 hours)
Supplement:	Review of Radicals	1 hour
Section 4.1:	Trigonometric Functions of Acute Angles	2 hours
Section 4.2:	Applications of Right Triangles	1 hour
Section 4.3:	Trigonometric Functions of Any Angle	3 hours
Section 4.4:	Applications in Computer Graphics	1 hour
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 hour
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	1 hour
Section 6.4:	Pictures of Data	1 hour
Section 6.5:	Statistical Quantities	1 hour
Section 6.6:	The Normal Probability Distribution	2 hours

5. Course Policies – Blended and Lecture

X01 Lecture Section: students will have regularly scheduled assignments and quizzes. This is a traditional lecture-based course, and once the quizzes and assignments have been marked, they will be returned to the students. The final exams may be examined in the instructor's office, but will be kept on file by the instructor for a year as per Camosun policy.

B01 Blended Section: students will have the same assignments and the same **number** of quizzes as the lecture section. B01 students, however, will have the option of turning in assignments and writing the quizzes/final exam **early**.

Quiz/exam policies:

If a student in the blended section wants to write any quiz early, the quiz must be written during the B01 block on Friday, and the student must notify the instructor verbally or by email at least 3 days in advance. To ensure that nothing goes

astray, the student must also receive confirmation from the instructor of the early quiz date.

If an assignment has been turned in early or a quiz has been written early, students may examine that marked assignment or quiz during the tutorial hour or the instructor's office hours. Assignments will only be returned to the student once the lecture section's assignment has been marked and/or the solutions have been posted to the course website. Quizzes written early will not be returned to students but will remain on file in the instructor's office.

Students in the blended section B01 who choose not to write any quiz early **must** write that quiz in the B01 block the same day as the X01 section writes. Similarly, students in the blended section may choose to write the final exam early on dates announced by the instructor, or with the lecture section during exam week. Students may only **accelerate** the pace of the class – they may not write quizzes or the final exam **later** than the lecture section.

Students in the blended section B01 are responsible for monitoring the course website to find out due dates for assignments and dates for quizzes.

The Tuesday B01 timeslot is an optional drop-in session. The Friday B01 timeslot is for writing quizzes.

6. Basis of Student Assessment (Weighting)

Grade Calculation: The final grade for student in either the lecture section X01 or the blended section B01 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 34, "students are expected to write tests and final examinations at the scheduled time and place." Students in the lecture section, as well as any students in the blended section who have not written the final exam early, will write the exam during exam week on the date published in Camlink. 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	<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, 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 3 rd course attempt or at the point of course completion.)
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.

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).