CAMOSUN COLLEGE	**School of Arts & Science** **MATHEMATICS DEPARTMENT** **MATH 112** **Fundamentals of Math 1** **Quarter 1 / Fall 2012 (Sep-Dec)**

COURSE OUTLINE

The course description is online @ http://camosun.ca/learn/calendar/current/web/math.html

☐ *Please note: the College electronically stores this outline for five (5) years only.*
*It is **strongly recommended** you keep a copy of this outline with your academic records.*
You will need this outline for any future application/s for transfer credit/s to other colleges/universities.

1. Instructor Information

(a)	Instructor:	Jill Britton		
(b)	Office Hours:	9:30-10:30, 12:30-1:30 daily		
(c)	Location:	E246		
(d)	Phone:	250-370-3471	Alternative Phone:	250-652-6316
(e)	Email:	jbritton@camosun.bc.ca		
(f)	Website:	http://britton.disted.camosun.bc.ca		

2. Intended Learning Outcomes

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

1. Differentiate between inductive and deductive approaches to problem solving.
2. Identify and use classic problem solving strategies.
3. Use truth tables to establish the equivalence of compound propositions and to examine the validity of arguments.
4. Use Venn diagrams to solve counting and probability problems.
5. Use the multiplication principle to solve counting and probability problems.
6. Use permutations and combinations to solve counting and probability problems.
7. Solve probability problems involving independent events.
8. Use tree diagrams to solve probability problems involving events that are not independent with a visual extension to Bayes' rule.
9. Compute and interpret descriptive statistics.
10. Perform calculations involving binomial and normal distributions.
11. Solve binomial distribution questions using an appropriate normal distribution.
12. Research topics suitable to the elementary classroom.

3. Required Materials

(a) Texts: Finite Mathematics, 10th Edition (S.T. Tan)
(b) Other: Supplementary Material to Accompany Finite Mathematics, 10th Edition (Jill Britton)
(c) Materials card ($30)
 – purchase is mandatory
 – submit to your instructor by Friday September 14th
(d) **CASIO** model **fx-300MS** scientific calculator

Several assignments require access to a Windows computer. Although software that can be installed on your home computer will be made available, each student must have a Camosun account to access the computers in the General Purpose Labs. An account can be created while applying for a Student ID card in the Library or in the General Purpose Labs.

4. Course Content and Schedule

This course has been designed to enrich the mathematical background of students intending to pursue a degree in Elementary Education. The content is NOT directly related to the standard elementary mathematics curriculum. Attendance in classes in red italic text ("REC MATH") is mandatory. A portfolio of corresponding assignments will be collected on Nov 9. One mark will be deducted from the total grade on these assignments for each absence from the mandatory classes. The content of all other classes is subject to in-class testing and a cumulative 3-hour exam during the final exam period.

T	Sept 4	Introduction / Inductive Reasoning
H	Sept 7	Inductive Reasoning / Deductive Reasoning
T	Sept 11	Strategies for Problem Solving
H	Sept 12	**SYMBOLIC LOGIC**
		A1 (Propositions and Connectives)
		A2 (Truth Tables)
F	Sept 14	A2 / A3 (The Conditional and Biconditional Connective)
T	Sept 18	A4 (Laws of Logic)
H	Sept 20	A5 (Arguments) / Using Valid Argument Forms
T	Sept 25	Using Valid Argument Forms
		SETS AND COUNTING
		6.1 (Sets and Set Operations)
		6.2 (The Number of Elements in a Finite Set)
H	Sept 27	6.2 / 6.3 (The Multiplication Principle)
F	Sept 28	**TEST 1 [Symbolic Logic]** / 6.3
T	Oct 2	6.3 / 6.4 (Permutations and Combinations)
H	Oct 4	6.4
T	Oct 9	6.4
H	Oct 11	Sieve of Eratosthenes / Magic Squares / Clock (Mod) Arithmetic
F	Oct 12	Golden Ratio / Fibonacci Sequence
T	Oct 16	**TEST 2 [6.1 - 6.4] /** Donald in Mathmagic Land
H	Oct 19	Binary Sequence / Pascal's Triangle
T	Oct 23	The Conics / Moire Patterns
H	Oct 25	Line Designs / Curve Stitching / Curves of Constant Width
F	Oct 26	Cycloids / Fractals
T	Oct 30	**PROBABILITY**
		7.1 (Experiments, Sample Spaces and Events) / 7.2 (Definition of Probability)
H	Nov 1	7.3 (Rules of Probability) / 7.4 (Use of Counting Techniques in Probability)
T	Nov 6	7.4 / 7.5 (Conditional Probability and Independent Events)
H	Nov 8	7.5
F	Nov 9	7.5 **PORTFOLIO OF ASSIGNMENTS DUE**
T	Nov 13	**PROBABILITY DISTRIBUTIONS AND STATISTICS**
		8.1 (Distributions of Random Variables) / 8.2 (Expected Value)
H	Nov 15	**TEST 3 [7.1 – 7.5] /** 8.3 (Variance and Standard Deviation)
T	Nov 20	8.4 (The Binomial Distribution) / 8.5 (The Normal Distribution)
H	Nov 22	8.5
F	Nov 23	8.6 (Applications of the Normal Distribution)
T	Nov 27	8.6
H	Nov 29	Cleanup
T	Dec 4	**TEST 4 [8.1 – 8.6] / FINAL EXAMINATION DISCUSSION**
H	Dec 6	**REVIEW**
F	Dec 7	**SPARE**

5. Basis of Student Assessment (Weighting)

(a) 4 Class Tests (37.5%)
(b) Final Examination (37.5%)
(c) Portfolio and Attendance (25%)

Students will be awarded an A+, A, or A- in the course if and only if they would be awarded at least the same letter grade for their term mark, for the final exam, AND for the portfolio ... indicating a consistent performance. Students who do not meet this minimum requirement will be awarded a letter grade that is one category lower. A minimum of 50% on the final exam is necessary for grades of C or higher. Students will not be awarded a passing grade until they have submitted a satisfactory portfolio.

6. Grading System

(No changes are to be made to this section unless the Approved Course Description has been forwarded through the Education Council of Camosun College 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 the College web site in the Policy Section.