CAMOSUN COLLEGE	***School of Arts & Science*** ***MATHEMATICS DEPARTMENT*** **MATH 113 – Sections 1 and 2** **Fundamentals of Mathematics 2** **2008W**

COURSE OUTLINE

Prerequisite: Math 112

Course Description

This course follows MATH 112. Topics include: linear equations, matrices, linear programming, calculus of polynomials, symmetry, tessellations and polyhedra. (T)

1. Instructor Information

(a)	Instructor:	Jill Britton		
(b)	Office Hours:	TBA		
(c)	Location:	E246		
(d)	Phone:	370-3471	Alternative Phone:	652-5316
(e)	Email:	jbritton@camosun.bc.ca		
(f)	Website:	http://britton.disted.camosun.bc.ca/index.html		

2. Intended Learning Outcomes

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

1. Solve linear system problems using the Gauss-Jordan Elimination Method and the Inverse Matrix Method.
2. Solve linear programming problems graphically.
3. Solve limits involving polynomial, rational, and radical functions.
4. Find derivatives and integrals of polynomial functions.
5. Sketch polynomial functions using differentiation.
6. Solve optimization problems requiring the differentiation of polynomial functions.
7. Solve area problems requiring the integration of polynomial functions.
8. Create tessellating artwork using manual techniques and by employing TesselMania! or Tessellation Exploration software.
9. Construct regular and semi-regular polyhedra by joining faces, using strut construction, and by assembling paper nets.
10. Build polyhedra by assembling folded paper units.
11. Build a 4-celled tetrahedral kite and a kaleidocycle.
12. Research math topics suitable to the elementary classroom and present results in portfolio form or as 3-D models. (Examples of such topics would be: symmetry, tessellations, and polyhedra.)

3. Required Materials

(a) Texts: Finite Mathematics, 8th Edition (S.T. Tan)
(b) Other: Supplementary Material (PART 2) to Accompany Finite Mathematics, 8th Edition (Jill Britton)
(c) Materials fee for **FUN WITH PATTERNS** ($40) – materials include manual

4. Course Content and Schedule

M	Jan 7	Introduction
T	Jan 8	**STRAIGHT LINES AND LINEAR FUNCTIONS** 1.1 (The Cartesian Coordinate System)
W	Jan 9	1.2 (Straight Lines)
H	Jan 10	1.2
F	Jan 11	**SYSTEMS OF LINEAR EQUATIONS AND MATRICES** 2.1 (Systems of Linear Equations – Introduction)
M	Jan 14	2.2 (Systems of Equations – Unique Solutions)
T	Jan 15	2.2
W	Jan 16	2.2
H	Jan 17	2.2
F	Jan 18	2.3 (Systems of Equations – Undetermined and Infinite Systems)
M	Jan 21	2.4 (Matrices)
T	Jan 22	2.5 (Multiplication of Matrices)
W	Jan 23	2.5
H	Jan 24	2.6 (The Inverse of a Square Matrix)
F	Jan 25	**TEST 1 [1.1 - 1.2, 2.1 - 2.3]**
M	Jan 28	2.6
T	Jan 29	2.6 / Cryptography
W	Jan 30	**LINEAR PROGRAMMING: A GEOMETRIC APPROACH** 3.1 (Graphing Systems of Linear Inequalities in Two Variables)
H	Jan 31	3.1
F	Feb 1	3.2 (Linear Programming Problems) 3.3 (Graphical Solution of Linear Programming Problems)
M	Feb 4	3.2 / 3.3 (Applications)
T	Feb 5	3.2 / 3.3 (Applications) **SYMMETRY AND POLYGONS** – Introduction
W	Feb 6	Symmetry / Polygons
H	Feb 7	Paper Polygons / Angle Measures / Tessellations
F	Feb 8	**TEST 2 [2.4 - 2.6, 3.1 - 3.3]**
M	Feb 11	More On Tessellations
T	Feb 12	Escher Film / Tessellating Template
W	Feb 13	Tessellating Rubber Stamp
H	Feb 14	**READING BREAK (College Closed)**
F	Feb 15	**READING BREAK (College Closed)**
M	Feb 18	Tessellating Ink Print
T	Feb 19	Pop-Up Sponge Jigsaw Puzzle / Tessellating Art
W	Feb 20	Tessellation Software
H	Feb 21	**CALCULUS** – Review of Functions

F Feb 22 Introduction to Limits / Theorems on Limits

M Feb 25 Limits Involving Quotients
T Feb 26 Limits Involving Quotients
W Feb 27 Tangent Lines
H Feb 28 Tangent Lines
F Feb 29 Derivative

M March 3 Derivative
T March 4 Basic Rules for Differentiation
W March 5 Basic Rules / Higher Order Derivatives
H March 6 Curve Sketching
F March 7 Curve Sketching

M March 10 **TEST 3 [TO END OF BASIC RULES]**
T March 11 Curve Sketching
W March 12 Curve Sketching / Max & Min Applications
H March 13 Max & Min Applications
F March 14 Max & Min Applications

M March 17 Max & Min Applications
T March 18 **TEST 4 [RULES, CURVE SKETCHING, MAX & MIN]**
W March 19 Antiderivatives and Indefinite Integrals
H March 20 Definite Integrals / Classic Graphs
F March 21 **GOOD FRIDAY (College Closed)**

M March 24 **EASTER MONDAY (College Closed)**
T March 25 Area
W March 26 Area
H March 27 Area
F March 28 Area / Final Exam Discussion

M March 31 **TEST 5 [MAX & MIN, INTEGRATION, AREA]**
T April 1 **POLYHEDRA** – Regular Polyhedra
W April 2 Euler's Formula / Materials / Applications
H April 3 Semi-Regular Polyhedra
F April 4 Polyhedra Recreations

M April 7 Unit Origami
T April 8 Unit Origami / Bubbles / Kite Introduction
W April 9 Tetrahedron Kite
H April 10 Globes / Geodesics / Buckyball / Kaleidocycles
F April 11 Elementary School Workshop Program Orientation

5. Basis of Student Assessment (Weighting)

(a) 5 Quizzes (37.5%)

(b) Final Examination (37.5%)

(c) Portfolio and Attendance (25%)

6. 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.

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.

Attendance is compulsory in the recreational portion of the course (Objectives 8 through 12).