CAMOSUN COLLEGE	***School of Arts & Science*** ***MATHEMATICS DEPARTMENT*** **MATH 115-section 001** **Pre-Calculus** **Semester/Year, 2008F**

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:	Nick Marsden		
(b)	Office Hours:	Monday-Friday 9:30-10:20am		
(c)	Location:	Ewing 258		
(d)	Phone:	250-370-3499	Alternative Phone:	
(e)	Email:	nmarsden@camosun.bc.ca		
(f)	Website:			

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. Evaluate functions, find the domain of functions, compose and decompose functions and find inverse functions.
2. Graph polynomial and rational functions using symmetry, intercepts, long run behaviour, asymptotes and a table of signs.
3. Prove the Remainder and Factor Theorems and use the theorems to factor polynomials and find their real and complex zeros.
4. Graph exponential and logarithmic functions and their transformations.
5. Prove the properties of logarithms and use these properties to simplify expressions, and solve equations and applied problems.
6. Graph the six trigonometric functions and their transformations and the three basic inverse trigonometric functions.
7. Use the unit circle definitions to derive the Pythagorean identities, the sum and difference formulas, and the double angle and half angle formulas. Use these identities to simplify expressions, solve equations and verify other identities.
8. Use trigonometric functions to model real-life problems involving cyclical patterns.
9. Evaluate limits, find derivatives using the definition, find equations of tangent lines and solve optimization problems using polynomial calculus.
10. Read and write mathematics at a level sufficient for entry into first year calculus.

3. Required Materials

(a)	Texts	Precalculus: A Concise Course, First Edition, by Larson & Hostetler
(b)	Other	Appendix A to the above text, which is available in the bookstore, on line, and in condensed form in class

4. Course Content and Schedule

(Can include: class hours, lab hours, out of class requirements and/or dates for quizzes, exams, lectures, labs, seminars, practicums, etc.)

CHAPTER A: APPENDIX A

#	Text	Time	
1	A.4	2	Rational Expressions
			TAKE-HOME TEST
2	A.5	1	Solving Equations
3	A.6, 2.7	2	Solving Inequalities in One Variable
			TAKE-HOME TEST

CHAPTER 1: FUNCTIONS AND THEIR GRAPHS

#	Text	Time	
4	1.4	2	Functions
5	1.5	1	Analyzing Graphs of Functions
6	1.6,1.7	4	Transformations of Functions and Conics
			TAKE-HOME TEST
7	1.8	1	Combinations of Functions
8	1.9	1	Inverse Functions
		1	TEST 1, Lessons 1 to 8

CHAPTER 2: POLYNOMIAL AND RATIONAL FUNCTIONS

#	Text	Time	
9	2.1	1	Quadratic Functions
10	2.2	1	Polynomial Functions of Higher Degree
11	2.3	1	Polynomial and Synthetic Division
12	2.5	2	Zeros of Polynomial Functions
13	2.6	2	Rational Functions
			TAKE-HOME TEST

CHAPTER 3: EXPONENTIAL AND LOGARITHMIC FUNCTIONS

#	Text	Time	
14	3.1	.5	Exponential Functions and Their Graphs
15	3.2	1.5	Logarithmic Functions and Their Graphs
16	3.3	1.5	Properties of Logarithms
17	3.4	1.5	Exponential and Logarithmic Equations
			TAKE-HOME TEST
18	3.5	3	Exponential and Logarithmic Models
		1	TEST 2, Lessons 9 to 18

CHAPTER 4: TRIGONOMETRY

#	Text	Time	
19	4.1	1	Radian and Degree Measure
20	4.3	1	Right Triangle Trigonometry
21	4.2+4.4	2	Trigonometric Functions: The Unit Circle
22	4.5	1	Graphs of Sine and Cosine Functions
			TAKE-HOME TEST
23	4.6	1	Graphs of Other Trigonometric Functions
24	4.7	1	Inverse Trigonometric Functions

CHAPTER 5: ANALYTIC TRIGONOMETRY

#	Text	Time	
25	5.1	2	Using Fundamental Identities
			TAKE-HOME TEST
26	5.2	1	Verifying Trigonometric Identities
		1	TEST 3, Lessons 19 to 26

27	5.3	2	Solving Trigonometric Equations
28	5.4	2	Sum and Difference Formulas
			TAKE-HOME TEST
29	5.5	2	Double and Half Angle Formulas
		1	TEST 4, Lessons 19 to 29

CALCULUS

#	Text	Time	
30	Notes	1	Limits
31	Notes	1	The Secant line; Average Velocity
32	Notes	1	The Tangent line
33	Notes	1	The Derivative Function
			TAKE-HOME TEST
34	Notes	2	Differentiation Rules for Polynomials; Instantaneous Velocity
35	Notes	1	Graphing Polynomial Functions
36	Notes	1	Max/Min Problems
		1	TEST 5, Lessons 30 to 36

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5. Basis of Student Assessment (Weighting)

(Should be linked directly to learning outcomes.)

(a)	Other (eg, Attendance, Project, Group Work)	See below
(b)	Assignments	See below
(c)	Term tests	50%. Will throw out worse test if class participation and assignments are satisfactory
(d)	Final exam	50%. or 100% if higher than term mark

1. TERM MARK. You will be doing a number of take-home tests. These can be done in consultation with other students in your class, but with the help of nobody else. They will be overdue if not handed in at the beginning of the class on the due date, but can be handed in up to one day late with only a one mark deduction.

   The term mark is the average of the scores on your in-class tests.

However, if the average of your take-home test scores is at least 70% AND your in-class participation is satisfactory, I will throw out your worst test before I calculate the average.

If you miss an in-class test for ANY reason, you will get a zero. There will be no make-ups. But with decent take-home test scores and class participation, that zero will be tossed out.

2. FINAL EXAM. The final exam for this course is to be written by all students on the day and time scheduled. The examinations for this term will be held Dec 8-16, 2008. Please make sure you are available during this period.

3. MARK FOR THE COURSE. Your course mark is the larger of:

   a) The average of your term percentage and your final exam percentage
   b) Your final exam percentage

The Math Department reserves the right to raise your course mark if it is judged that your in-class tests and final exam were more difficult than those in other years or other sections.

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 at **camosun.ca** or 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 are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
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.

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.

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.