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.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. Find the limit of elementary functions as the independent variable approaches some finite value or approaches infinity.
2. Find the derivative of simple functions using the definition of the derivative.
3. Find the derivative of functions (polynomial, trigonometric, logarithmic and exponential functions) using the product, quotient and chain rule.
4. Find the derivative using implicit differentiation.
5. Solve problems involving rates of change.
6. Find relative and absolute extrema of functions.
7. Sketch graphs of functions identifying such features as relative extrema, intervals where the function is increasing and decreasing, points of inflection, intervals where the function is concave up and concave down, and asymptotes.
8. Solve problems that involve maximizing or minimizing some variable associated with the problem.
9. Find the approximate area under a curve using the area of a set of approximating rectangles.
10. Evaluate a definite and an indefinite integral of polynomial, trigonometric, logarithmic and exponential functions using the Fundamental theorem of Calculus.
11. Evaluate integrals using the method of substitution.
12. Use integration to find the area between two curves.
13. Evaluate a definite and indefinite integral by the method of integration by parts.

14. Solve elementary differential equations using the method of separation of variables.
15. Solve problems using differential and integral calculus that involve applications from business and/or biological sciences.

3. Required Materials

(a)	Texts	Calculus with Applications Seventh, Eighth, or Ninth Edition Author - Lial, Greenwell and Ritchey
(b)	Other	

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.)

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CHAPTER 1: LINEAR FUNCTIONS

    #    Text     Time
    1    1.1       1      Slopes and Equations of Lines
    2    1.2       2      Linear Functions and Applications


CHAPTER 2: NONLINEAR FUNCTIONS

    #    Text     Time
    3    2.1       1      Properties of Functions
    4    2.2       3      Quadratic Functions; Translation and Reflection
    5    2.3       2      Polynomial and Rational Functions


CHAPTER 3: THE DERIVATIVE

    #    Text     Time
    6    3.1,3.2   1      Limits and Continuity
    7    3.3       1      Rates of Change
    8    3.4       1      Definition of the Derivative
    9    3.5       1      Graphical Differentiation


CHAPTER 4: CALCULATING THE DERIVATIVE

    #    Text     Time
   10    4.1       2      Techniques for Finding Derivatives
   11    4.2       1      Derivatives of Products and Quotients
   12    4.3       1      The Chain Rule
                   1         TEST 1, Lessons 1 to 12
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CHAPTER 5: GRAPHS AND THE DERIVATIVE

    #    Text     Time
   13    5.1       1      Increasing and Decreasing Functions
   14    5.2       1      Relative Extrema
   15    5.3       2      Higher Derivatives; Concavity; The Second
                              Derivative Test
   16    5.4       2      Asymptotes and Curve Sketching


CHAPTER 6+12: APPLICATIONS OF THE DERIVATIVE
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   #      Text     Time
  17      6.1       1       Absolute Extrema


              COURSE OUTLINE FOR MATH 108, page 2

   #      Text     Time
  18      6.2       2       Applications of Extrema
  19      6.3       1       A Further Applications from Business: Economic
Lot Size
  20      6.4       1       Implicit Differentiation
  21      6.5       2       Related Rates
  22     12.6       1       Newton's Method for Solving Equations
  23      6.6       1       Differentials: Linear Approximation
                    1          TEST 2, Lessons 13 to 22
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EXPONENTIAL AND LOGARITHMIC FUNCTIONS

   #      Text     Time
  24      2.4       1       Exponential Functions
  25      2.5       2       Logarithmic Functions
  26      2.6       2       Applications: Growth and Decay; Finance
  27      4.4       .5      Derivatives of Exponential Functions
  28      4.5       .5      Derivatives of Logarithmic Functions


CHAPTER 7: INTEGRATION

   #      Text     Time
  29      7.1       1       Antiderivatives
  30      7.2       1       Integration by Substitution
  31     Notes      1       Area
  32      7.4      1.5      The Fundamental Theorem of Calculus
  33      7.5      1.5      The Area Between Two Curves
                    1          TEST 3, Lessons 23 to 32
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MORE INTEGRATION

   #      Text     Time
  34      8.1       2       Integration by Parts; Tables of Integrals
  35     10.1       1       Solutions of Elementary and Separable
Differential Equations


CHAPTER 13: THE TRIGONOMETRIC FUNCTIONS

   #      Text     Time
  36     13.1       2       Definitions of the Trigonometric Functions
  37   13.2-13.3    2       Calculus with Trigonometric Functions
                    1          TEST 4, Lessons 33 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 14-21, 2009. 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.

ADDITIONAL COMMENTS AS APPROPRIATE OR AS REQUIRED