CAMOSUN COLLEGE	***School of Arts & Science*** ***MATHEMATICS DEPARTMENT*** **MATH 100-HS** **Calculus 1** **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. Text & Instructor Information

Text: Larson, Hostetler, Calculus, 7th Edition

Instructors: Carolyn Parkes
carolyn_parkes@sd63.bc.ca
250-658-5221 ext 252

Wayne Matthews
matthewww@camosun.bc.ca
250-370-3107

Website: www.camosun.ca/math.

2. Intended Learning Outcomes

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. Define continuity.
3. Find the derivative of simple functions using the definition.
4. Find the derivative of functions (polynomial, trigonometric, logarithmic and exponential functions) using the product, quotient and chain rule.
5. Find the derivative using implicit differentiation.
6. Solve problems involving rates of change.
7. Find relative and absolute extrema of functions.
8. 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.
9. Solve problems that involve maximizing or minimizing some variable associated with the problem.
10. Solve equations using Newton's method.
11. Find the area under a curve using the limit of the area of a set of approximating rectangles.
12. Evaluate a definite and an indefinite integral of polynomial, trigonometric, logarithmic and exponential functions using the Fundamental theorem of Calculus.
13. Use the Mean Value Theorem of integrals to find the mean value of a continuous function.
14. Evaluate integrals using the method of substitution.
15. Evaluate definite integrals using the trapezoidal rule and Simpson's rule.
16. Solve elementary differential equations using the method of separation of variables.

3. Course Content and Schedule

This course is a comprehensive introduction to the methods and theory of differential and integral calculus for students in mathematics and the sciences. The course covers most of the material in the first six chapters of the textbook and includes the following topics: limits, derivatives of algebraic, trigonometric, logarithmic and exponential functions, applications of differentiation and the Fundamental Theorems of Calculus. Students will also be introduced to Maple, which is a software package for doing symbolic mathematical calculations.

UNIT	SECTIONS
1. Introduction to Calculus	
• Are you ready for Math 100?	Package
• Limits and Continuity	1.1 to 1.5
• Derivatives and Derivative Rules	2.1 to 2.4
	Test #1
2. Applications of the Derivative	
• Implicit Differentiation, Related Rates	2.5 to 2.6
• Extrema, Concavity, Curve Sketching, Optimization	3.1 to 3.7
	Test #2
3. Integration	
• Newton's Method, Differentials	3.8 to 3.9
• Integration	4.1 to 4.6
• Logarithmic, Exponential Functions	5.1 to 5.6 (and a bit of 5.7)
	Test #3

4. Basis of Student Assessment (Weighting)

1. Assignments (one per unit) are due two days before the test date for that unit.
2. There are no restrictions on technological aids in class or on tests, except for the final exam. (Although for full marks, work MUST be shown.)
3. Need extra help? Make arrangements with Mrs. Parkes or Mr. Matthews or see the math tutors the math lab (Ewing 224 at Camosun College).
4. If you improve on the final exam, that mark will become your mark for the course.
5. Tests must be written on or before the announced test day.
6. Evaluation: Labs & assignments (10%), Tests (40%), Final (50% or 100%)
7. You can receive credits for both Math 100 and Calculus 12.

5. 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.

6. 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.