CAMOSUN COLLEGE	**School of Arts & Science** **MATHEMATICS DEPARTMENT** **MATH 187** **Technical Mathematics 2** **Quarter 3, 2010**

COURSE OUTLINE

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

Ω *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:	Patricia Wrean (Pat)		
(b)	Office Hours:	Posted on office door and website		
(c)	Location:	CBA 153		
(d)	Phone:	(250) 370-4542	Alternative Phone:	
(e)	Email:	wrean@camosun.bc.ca		
(f)	Website:	http://wrean.disted.camosun.bc.ca/math187/		

2. Intended Learning Outcomes

(No changes are to be made to these Intended Learning Outcomes as approved by the Education Council of Camosun College.)

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

1. Calculate antiderivatives, indefinite integrals, and definite integrals; integrate natural logarithms and trigonometric functions, and use integral calculus to determine the area under a curve.
2. Use numerical integration techniques such as the trapezoidal rule and Simpson's Rule to approximate a definite integral.
3. Use integration in applications involving area between curves, volumes of revolution, moments of area and mass, centroids and centres of mass, and moments of inertia.
4. Evaluate integrals in basic logarithmic, exponential, trigonometric, and inverse trigonometric forms. Use techniques of integration, including integration by parts, trigonometric substitution, and partial fractions.
5. Calculate power-series expansions of functions, including Maclaurin and Taylor series, and use these expansions to evaluate integrals.
6. Compute integrals involving curves and surfaces in three dimensions.
7. Find partial derivatives of functions in more than one variable.
8. Evaluate double integrals using both Cartesian and cylindrical coordinates and use them to calculate volumes under three-dimensional surfaces.

3. Required Materials

(a) Texts: Allyn J. Washington, Basic Technical Mathematics with Calculus, SI version, 9th edition, Pearson Education Canada. (The 8th edition is also acceptable.)

(b) Calculator: Only regular scientific calculator (non-programmable, non-graphing) will be permitted for quizzes and exams. Also, calculators which simplify radicals into exact forms will not be permitted (particularly some Casio models).

4. Course Content and Schedule

Chapter 25: Integration

25.1 Antiderivatives
25.2 The Indefinite Integral
25.3 Area Under a Curve
25.4 The Definite Integral
25.5 Numerical Integration: The Trapezoidal Rule
25.6 Simpson's Rule

Chapter 26: Applications of Integration

26.1 Applications of the Indefinite Integral
26.2 Areas by Integration
26.3 Volumes by Integration
26.4 Centroids
26.5 Moments of Inertia
26.6 Other Applications

Chapter 28: Methods of Integration

28.1 The General Power Formula
28.2 The Basic Logarithmic Form
28.3 The Exponential Form
28.4 Basic Trigonometric Forms
28.5 Other Trigonometric Forms
28.6 Inverse Trigonometric Forms
28.7 Integration by Parts
28.8 Integration by Trigonometric Substitution
28.9 Integration by Partial Fractions: Nonrepeated Linear Factors
28.10 Integration by Partial Fractions: Other Cases

Chapter 29: Partial Derivatives and Double Integrals

29.1 Functions of Two Variables
29.2 Curves and Surfaces in Three Dimensions
29.3 Partial Derivatives
29.4 Double Integrals

Chapter 30: Expansion of Functions in Series

30.1 Infinite Series
30.2 Maclaurin Series
30.3 Operations with Series
30.4 Computations by Use of Series Expansions
30.5 Taylor Series

5. Basis of Student Assessment (Weighting)

The final grade will be calculated according to the following breakdown:

Quizzes:	40%
Assignments:	10%
Final Exam:	50%

If your final exam grade is higher than your term grade, then your final exam grade will count as 100% of your final grade.

Final Exam: The final exam will cover the entire course and will be 3 hours long. As stated in the current college calendar on page 33, "students are expected to write tests and final examinations at the scheduled time and place." Exceptions will only be considered due to **emergency** circumstances as outlined in the calendar. Holidays or scheduled flights are not considered to be emergencies.

Quizzes: The lowest quiz grade will be dropped when calculating the average of your quizzes. This allows a student to be absent on any one quiz day for any reason, including illness, without penalty. If more than one quiz is missed, the weight of the second missed quiz will be transferred to the final exam.

Assignments: The lowest assignment grade will be dropped when calculating the average of your assignments. This allows a student to miss any one assignment for any reason, including illness, without penalty.

Late Policy: Assignments that are late will be given a 25% penalty if the solutions have not yet been posted to the course website. Once the solutions have been posted, late assignments will not be accepted.

Collaboration Policy: Student are encouraged to collaborate (work together) on assignments. However, you must be prepared to answer similar questions on your own for the quizzes, so it is vital that you yourself understand all of the assigned questions and work that you turn in.

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.

Math Room: Technologies Centre (TEC) 142 (phone: 370-4492): This drop-in centre is freely available for your use to work on math homework and to seek help from the tutor on staff (see hours posted on door).