



## 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:	<a href="http://wrean.disted.camosun.bc.ca/math187/">http://wrean.disted.camosun.bc.ca/math187/</a>		

### 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 a student will be able to:

1. Integrate algebraic, exponential, logarithmic and trigonometric functions. Use integral calculus to determine the area under a curve.
2. Use the trapezoidal rule and Simpson's Rule to approximate a definite integral.
3. Use integration to find the area between curves, volumes of solids of revolution, moments of area and mass, centroids and centres of mass and moments of inertia.
4. Use techniques of integration, including integration by parts, trigonometric substitution, and partial fractions.
5. Find the Maclaurin and Taylor series of functions and use these expansions to evaluate integrals.
6. Find partial derivatives of functions.
7. Evaluate double integrals using both Cartesian and polar coordinates and use double integration to calculate volumes under three-dimensional surfaces.

### 3. Required Materials

- (a) Texts: Allyn J. Washington, Basic Technical Mathematics with Calculus, SI version, 9<sup>th</sup> edition, Pearson Education Canada. (The 8<sup>th</sup> 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). The use of other electronic devices such as cell phones, MP3 players, iPods, electronic translators, etc., during exams is not allowed.

### 4. Course Content and Schedule

Chapter 25: Integration

- 25.1 Antiderivatives
- 25.2 The Indefinite Integral
- 25.3 The 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:	45%
Assignments:	5%
Final Exam:	50%

If your final exam grade is higher than your term grade and your term work is **50% or higher**, 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:** There will be three term tests. If a student is absent for one of these tests for any reason, the student will write a make-up test on the last day of classes. If more than one quiz is missed for documented excuses, the weight of the missed quizzes 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](http://camosun.ca) for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete:</i> 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	<i>In progress:</i> 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 3 <sup>d</sup> course attempt or at the point of course completion.)
CW	<i>Compulsory Withdrawal:</i> 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](http://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).