



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

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|-----|---------------|---|
| (a) | Instructor: | Gilles Cazalais |
| (b) | Office Hours: | http://pages.pacificcoast.net/~cazelais/schedule.html |
| (c) | Location: | CBA 158 |
| (d) | Phone: | 250-370-4495 |
| (e) | Email: | cazelais@camosun.bc.ca |
| (f) | Website: | http://pages.pacificcoast.net/~cazelais/187.html |

2. Intended Learning Outcomes

Upon completion of this course the 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) Textbook: *Basic Technical Mathematics with Calculus (10th Edition)* by Allyn J. Washington.
- (b) Calculator: Any scientific, non-graphing, non-programmable calculator. The *Sharp EL-531X* is recommended.

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 Certain Operations with Series
 - 30.4 Computation by Use of Series Expansion
 - 30.5 Taylor Series

5. Basis of Student Assessment (Weighting)

Test Dates **Test 1 – January 27** **Test 2 – February 17** **Test 3 – March 10**

- (a) Three tests 50%
- (b) Final exam 50%*

*If your final exam grade is higher than your term grade and your term work is complete and 50% or higher, then your final exam grade will count as 100% of your final grade.

6. 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 | <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. |

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| 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. <i>(For these courses a final grade will be assigned to either the 3rd course attempt or at the point of course completion.)</i> |
| 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.

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.