



COURSE OUTLINE

1. Instructor Information

(a)	Instructor:	Gilles Cazalais
(b)	Office Hours:	http://pages.pacificcoast.net/~cazalais/schedule.html
(c)	Location:	CBA 158
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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. Solve problems involving trigonometric functions, sine and cosine graphs, trigonometric identities and trigonometric equations. Solve equations involving exponential and logarithmic functions.
2. Perform basic operations on complex numbers in rectangular form. Represent complex numbers graphically, and in polar and exponential form. Compute products, quotients and powers of complex numbers in polar or exponential form.
3. Evaluate limits of functions. Find derivatives of simple functions using the definition. Calculate the derivative of algebraic functions using the product rule, quotient rule and generalized power rule. Use implicit differentiation. Demonstrate an understanding of the derivative as both the slope of a tangent line and an instantaneous rate of change. Solve electronic problems involving rates of change.
4. Perform standard matrix operations. Find the inverse of a matrix. Solve linear systems using Gauss-Jordan elimination and inverse matrices. Solve linear systems involving electric circuits and Kirchhoff's laws.
5. Plot and analyze frequency distributions, relative frequency polygons and histograms. Calculate the mean, median, and standard deviation for a data set. Perform calculations involving normal distributions.

3. Required Materials

Allyn J. Washington, *Basic Technical Mathematics with Calculus*, 9th Edition

4. Course Content

1. Review

Review of Basic Trigonometric Functions (sections 8.1-8.3)
Review of Sine and Cosine Graphs (sections 10.1-10.3)
Review of Trigonometric Identities (sections 20.1-20.3)
Solving Trigonometric Equations (section 20.5)
Review of Exponentials and Logarithms (sections 13.1-13.5)

2. Complex Numbers

Basic Definitions (section 12.1)
Basic Operations with Complex Numbers (section 12.2)
Graphical Representation of Complex Numbers (section 12.3)
Polar Form of a Complex Number (section 12.4)
Exponential Form of a Complex Number (section 12.5)
Products, Quotients, Powers, and Roots of Complex Numbers (section 12.6)

3. The Derivative

Limits (section 23.1)

The Slope of a Tangent to a Curve (section 23.2)
 The Derivative (section 23.3)
 The Derivative as an Instantaneous Rate of Change (section 23.4)
 Derivatives of Polynomials (section 23.5)
 Derivatives of Products and Quotients of Functions (section 23.6)
 The Derivative of a Power of a Function (section 23.7)
 Differentiation of Implicit Functions (section 23.8)
 Higher Derivatives (section 23.9)

4. Matrices; Systems of Linear Equations
 Definitions and Basic Operations (section 16.1)
 Multiplication of Matrices (section 16.2)
 Finding the Inverse of a Matrix (section 16.3)
 Matrices and Linear Equations (section 16.4)
 Gaussian Elimination (section 16.5)

5. Basis of Student Assessment (Weighting)

- Four term tests: 50%
- Comprehensive final exam: 50%

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	<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. <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.

