



School of Arts & Science
MATHEMATICS DEPARTMENT
MATH 174A-001
Mathematics for Electronics 3
2008Q1

COURSE OUTLINE

The Approved Course Description is available on the web @
<http://leungc.disted.camosun.bc.ca/>

1. Instructor Information

(a)	Instructor:	Chi-Ming Leung		
(b)	Office Hours:	T W TH F 9:00-9:20, 10:30-11:00 T W 14:30-15:20		
(c)	Location:	CBA 147		
(d)	Phone:	4448	Alternative Phone:	
(e)	Email:	leungc@camosun.bc.ca		
(f)	Website:	http://leungc.disted.camosun.bc.ca/		

2. Intended Learning Outcomes

(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO for approval.)

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

1. Perform basic operations on matrices.
2. Evaluate determinants by using the definition or the properties of determinants.
3. Find inverses of matrices by the Gauss-Jordan method.
4. Solve linear system problems using the Cramer's Rule, the Gauss-Jordan Elimination Method and the Inverse Matrix Method.
5. Solve a triangle by using the Law of Sines and the Law of Cosines.
6. Simplify expressions by using trigonometric identities (including the sum and difference formula, the double angle formula, and the half-angle formula).
7. Simplify expressions involving trigonometric functions and/or inverse trigonometric functions.
8. Perform basic operations on complex numbers represented using graphical form, rectangular form, polar form and exponential form.
9. Find the powers and roots of complex numbers by using De Moivre's Theorem.
10. Solve problems related to alternating current series circuit by using complex numbers.
11. Evaluate finite arithmetic series.
12. Evaluate finite and infinite geometric series.
13. Evaluate limits.
14. Find the derivatives of functions by using the definition.
15. Find the derivatives of functions by applying the power rule, the power rule, and the quotient rule.
16. Perform implicit differentiation.
17. Solve problems related to applications of derivatives.

3. Required Materials

Text

Allyn J. Washington,
Basic Technical Mathematics with Calculus (Metric Version),
8th Edition, Addison-Wesley Publishing Company.

4. Course Content and Schedule

(Can include: class hours, lab hours, out of class requirements and/or dates for quizzes, exams, lectures, labs, seminars, practicums, etc.)

Hours	Chapter/Section	Introduction
0.5		Introduction
1.5	review	Exponents and Logs Review
	Chapter 12	Complex Numbers
1	12.1	Basic Definitions
1	12.2	Basic Operations with Complex Numbers
0.5	12.3	Graphical Representation of Complex Numbers
0.5	12.4	Polar Form of a Complex Number
1	12.5	Exponential Form of a Complex Number
1	12.6	Products, Quotients, Powers, and Roots of Complex Numbers
		Trigonometry Review
1	8.1-8.4	Review of Basic Trig Functions
1	10.1-10.3	Review of Sine and Cosine Graphs
1	20.1-20.3	Review of Trig Identities
1	20.5	Solving Trig Equations
	Chapter 22	Introduction to Statistics
1	22.1	Frequency Distributions
1	22.1	Relative Frequency Histograms and Polygons
1	22.2	Measures of Central Tendency
1	22.3	Standard Deviation
2	22.4	Normal Distributions
1	handout	Confidence Intervals
	Chapter 23	The Derivative
1	23.1	Limits
1	23.2	The Slope of a Tangent to a Curve
2	23.3	The Derivative
1	23.4	The Derivative as an Instantaneous Rate of Change
1	23.5	Derivatives of Polynomials
2	23.6	Derivatives of Products and Quotients of Functions
2	23.7	The Derivative of a Power of a Function
2	23.8	Differentiation of Implicit Functions
	Chapter 16	Matrices
2	review	Review of solving 2x2 systems algebraically
1	16.1	Definitions and Basic Operations
1	16.2	Multiplication of Matrices
1	16.3	Find the Inverse of a Matrix
2	16.4	Matrices and Linear Equations

5. Basis of Student Assessment (Weighting)

(Should be linked directly to learning outcomes.)

- (a) Assignments Weekly (solutions posted)
- (b) Quizzes 5 50% of Final Mark
- (c) Exams 50% of Final Mark
- (d) Other (e.g., Attendance, Project, Group Work)

6. Grading System

(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO 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. (For these courses a final grade will be assigned to either the 3 rd 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.

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.

ADDITIONAL COMMENTS AS APPROPRIATE OR AS REQUIRED