MATH 063CAMOSUN COLLEGE
Mathematics Department
Course Outline
MATH 174A Mathematics for Electronics 3

Instructor: Stan Toporowski
Office: CBA 158 Interurban Campus
Phone: 370-4495
email: toporowski@camosun.bc.ca
web page: http://www.camosun.bc.ca/~toporows

Description: This course is one of the first year components of the Engineering Technology Program. Topics include an introduction to matrices, determinants, vectors and oblique triangles, complex numbers, the differential calculus and applications of derivatives. Review material includes the binomial theorem, graphs of trigonometric functions, exponential and logarithmic functions and trigonometric functions of any angle,

Classes: Monday to Thursday 9:30 am – 10:20 am in Tec 173.

Prerequisite: Math 12, by assessment or one of Math 173, Math 115, Math 105, Math 176 or Math 179.

Exit Grade: Students need a C in MATH 174A to continue into MATH 174B.

Textbook: Basic Technical Mathematics with Calculus, Metric Version, 7th edition by Washington. Many students will already have the textbook from having taken Math 173.

Calculator Policy: You will need a scientific calculator (Sharp EL520 recommended) for this course. Only ordinary scientific calculators (i.e. non-graphing and non-programmable) are permitted.

Grade Calculation: The final grade will be calculated as follows:
Term work (consisting of four term tests): 50%
Final Exam:
50%
The final exam will cover the entire course and will be 3 hours long. It will be written during the week following the end of classes. The time and place will be scheduled by the College. If your final exam grade is better than your term work grade and your term work is judged to be satisfactory, then the final exam grade may count for 100% of your grade.

Grade Scale:

%	Grade	Grade Point Value	Description
95 – 100			

90 – 94
85 – 89A+
A
A-9
8
7Exceptional, outstanding or excellent performance. Student shows initiative and an insightful grasp of theory and technique.
80 – 84
75 – 79
70 - 74B+
B
B-6
5
4Very good or good performance. Student shows a good overall grasp of theory and technique or an excellent grasp in some areas balanced by a satisfactory grasp in others.
65 – 69
60 - 65C+
C3
2Satisfactory performance. Student shows a satisfactory grasp of theory and technique. Students may experience some difficulty being successful in courses for which this course is a prerequisite.
50 –59D1Marginal performance. Student has a weak grasp of theory and technique, which is insufficient to take courses for which this course is a prerequisite.
0 - 49F0Unsatisfactory performance. Student should either repeat the course or consider taking a course at a lower level.

Attendance: It is very difficult to be successful if you miss many classes. If you must miss classes due to illness or other reasons, let me know and I can give you an idea of what work was covered. If you must miss a test due to illness, it is very important that you contact me by phone or e-mail so that we can make appropriate accommodations.

Resources: Math Lab, TEC 142. This is a drop-in centre where you can get help with your math homework. The hours will be posted on the door. I will also post regular office hours, check my office door or my current timetable for the times. Set up a regular study schedule !! You will probably have to do between 5 and 10 hours of homework a week to keep up.

Course Content and Time Line:

HrsSectionTitleComments

Chapter 5Systems of Linear Equations
.55-1Linear Equations
.55-2 Graphs of Linear Equations
1.05-3Solving 2X2 Systems Graphically
1.05-4Solving 2X2 Systems Algebraically
1.05-5Solving 2X2 Systems by Determinants
2.05-7Solving 3X3 Systems by Determinants

Chapter 16Determinants and Matrices

1.016-1Determinants: Expansion by Minors
1.016-2Some Properties of DeterminantsCut off for Test 1
1.016-3Matrices: Definitions and Basic Operations
1.016-4Multiplication of Matrices
2.016-5Finding the Inverse of a Matrix
1.016-6Matrices and Linear Equations

Chapter 12Complex Numbers
1.012-1 & 12-2Basic Definitions and Basic Operations
0.512-3Graphical Representation
0.512-4 & 12-5Polar and Exponential Forms
1.012-6Products, Quotients, Powers and Roots
1.012-7Alternating Current (ac) CircuitsCut off for Test 2

Chapter 9Vectors and Oblique Triangles
1.09-5Oblique Triangles, the Law of SinesReview basic trig
1.09-6The Law of Cosines

Chapter 20Additional Topics in Trigonometry
1.020-1Fundamental Trigonometric Identities
1.020-1The Sum and Difference Formulas
1.020-3Double Angle Formulas
1.020-4Half Angle Formulas
1.020-5Trigonometric Equations
2.020-6Inverse Trigonometric FunctionsCut off for Test 3

Chapter 23The Derivative
1.023-1Limits
1.023-2The Slope of a Tangent to a Curve
2.023-3The Derivative
1.023-4Instantaneous Rate of Change
1.023-5Derivatives of Polynomials
1.023-6Derivatives of Products and Quotients
2.023-7Derivative of a Power of a Function
2.023-8Differentiation of Implicit FunctionsCut off for Test 4

Chapter 19Sequences and Series
0.519-1Arithmetic Sequences
0.519-2Geometric Sequences
1.019-3Infinite Geometric Series
39.0

Return to Math 174A homepage