

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title MATHEMATICS
Code No, : MTH 426
Program: COMPUTER, ELECTRICAL & ELECTRONICS TECH
Semester: II
Date: JUNE 1983
Author: K.G. CLARKE

New: Revision

APPROVED

Chairperson

Date

MATHEMATICS
Course Name

MTH 426
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PHILOSOPHY/GOALS:

When the student has successfully completed this course he will have demonstrated an acceptable ability to pass tests based upon the course contents as listed elsewhere. If, after completing the course, the student takes further courses (or employment) in which he is required to apply this material he should then, through practice, be able to develop a good command of this subject matter.

METHOD OF ASSESSMENT (GRADING METHOD)

The students will be assessed by tests. These tests will include periodic tests based upon blocks of subject matter and may, at the instructors discretion include unannounced surprise tests on current work and/or a final test on the whole course. A letter grade will be based upon a student's weighted average of his test results. See also the mathematics department's annual publication "To The Mathematics Student" which is presented to the students early in each academic year.

TEXTBOOK(S):

Washington - "Basic Technical Mathematics with Calculus"
- Benjamin Cummings

OBJECTIVES:

The basic objective is for the student to develop an understanding of the methods studied, knowledge of the facts presented and an ability to use these in the solution of problems. For this purpose exercises are assigned. Tests will reflect the sort of work contained in the assignments. The level of competency demanded is the level required to obtain an overall passing average on the tests. The material to be covered is listed on the following pages.

TOPIC NO.	PERIODS	TOPIC DESCRIPTION	ASSIGNMENTS	REFERENCE
1	5	Number Systems Binary, octal, hexadecimal Change of base, algebra of elements Addition & multiplication tables	Mss	Mss
2	6	Boolean Algebra Definition of 2 elements and 2 operators Truth tables, derivation of simple identities: Negation - the not operator Applications to logic and switching circuits	Mss	Mss
		Quadratic Equations by: Factoring, Completing the Square, Formula	Text Exercises 6-1 to 6-4 and 13-3	Text Ch. and 13-3
	10	Exponential and Logarithmic Functions Definitions, Graphs of Functions. Properties of Logarithms, Logarithms to Base 10 using a calculator, computations using Logarithms, Natural Logarithms using a calculator Logarithms to other bases. Exponential and Logarithmic Equations. Note: Since each student is expected to have a scientific calculator, the use of tables should be omitted. Also the use of log trig functions is unnecessary. In Ex. 12-7 the instructions should be modified to reflect the use of calculators-	Text Exercises 12-1 to 12-5, 12-7, 12-8, parts of 12-10	Text Ch. 12 omit 12-6 and 12-9

TOPIC NO. _	PERIODS	TOPIC DESCRIPTION	ASSIGNMENTS	REFERENCE
	8:	Progressions & the Binomial Theorem	Text Exercises 18-1 to 18-5	Text Ch, 18
		Arithmetic Progressions Geometric Progressions Infinite Geometric Progressions The Binomial Theorem		
		Trigonometry: Large Angles, Oblique Triangles & Graphs of Trig Functions	Text Exercises 7-1 to 7-5 8-4 to 8-6 9-1 to 9-4	Text Ch. 7, 8, 9
		Signs of functions Functions of any angle Radian Measure Sine Law Cosine Law Graphs of various trig functions		
	12	Trigonometric Identities and Equations	Text Exercises 19-1 to 19-8	Text Ch. 19
		Sum & Difference, Double Angles, Equations, Inverse Functions		
8	16	Analytic Geometry	Text Exercises 20-1 to 20-8 and 20-11 (part)	Text Ch. 20 omit 20-9
		The straight line, the circle, the parabola, the ellipse, the hyperbola, translation of axes, the second degree equation.		

It will likely be necessary to reduce the contents of topic #8, leaving the rest to be covered in the time vacated by "Number Systems" and "Boolean Algebra" in Semester III.