

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: MATHEMATICS
Code No.: MTH 219-4 (FORMERLY MTH 251-4)
Program: ELECTRICAL AND ELECTRONIC TECHNICIANS
Semester: THREE
Date: APRIL 1988
Author: K. G, CLARKE

New:

Revision: X

APPROVED:


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Chairperson

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Date

CALENDAR DESCRIPTION

ELECTRICAL & ELECTRONIC TECHNICIANS
MATHEMATICS

MTH 219-4

COURSE NAME

COURSE NUMBER

PHILOSOPHY/GOALS;

The course begins with a brief review of part of the algebra from the first year courses. It continues with the following algebra topics: Determinants, Quadratic Equations, Ratio, Proportion and Variation, Non- Linear Equations and Exponential and Logarithmic Functions.

METHOD OF ASSESSMENT (GRADING METHOD);

The student's progress will be assessed by periodic written tests. The student's final grade is based upon a weighted average of the test results. A separate handout will include a schedule of tests, a description of the method used to find the weighted average and a number of requirements and suggestions with regard to tests. ATTENDANCE AT ALL TESTS IS REQUIRED. Unexcused absence from a test will result in a mark of zero for that test. A student may be prevented from attending a test by illness or bereavement. Upon return to classes, the student must see the instructor at the end of the first mathematics class attended to arrange a time and place for a make up test. In addition, if the absence is due to illness the student must present a note from the student's doctor or from the College nurse.

Make up tests will not be made available in this course in any circumstances other than those described above.

As in any other subject the student is preparing to be a technologist or technician as well as studying the subject. Hence, on tests the student is expected to produce neat, legible, well laid out solutions which show clearly how the answer was obtained. If anything less is required, this will be indicated in the test. Failure to show such solutions may render correct answers worthless. As happens in the workplace if anything you put on paper cap be misread it will be. In addition to loss of marks on individual questions, up to 25% of the marks available on a test can be subtracted as a penalty for untidiness. Marks lost in such penalties can be redeemed by a student willing to put forth the required effort. Proper solutions as

described above should be produced for all your assigned work. Such practice will make it easier for you to produce the required quality of work on tests. If when you look at a page of your work it makes you feel proud of its appearance, than you are probably on target.

Marks allotted to each question on a test are usually shown. Please enquire if they are not. The questions on a test do not necessarily have equal values.

TEXTBOOK(S):

Washington: Basic Technical Mathematics with Calculus

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 page(s):

ENTRY TO COaRSE

The prerequisite for this course is second semester technician or technology mathematics.

If certain conditions have been met, a student who failed second semester technology mathematics by a small margin, may be admitted to this course (third semester technician mathematics). The conditions are:

1. Good attendance.
2. All tests written.
3. Course average 45% or better.

If the student then fails the semester III course, he will have two "R" grades on his transcript and he will have to take and pass a second semester mathematics course in order to again be admitted to this course. If he is successful on his first try at this course he will receive his grade in this course and a credit in semester II mathematics. The "R" grade in semester II technology mathematics will remain on the student's transcript. This will enable the student to enter the fourth semester technician mathematics course.

TOPIC NO	NO. OF PERIODS	TOPIC DESCRIPTION	ASSIGNMENTS	REFERENCES
		RADICALS		
		Exponents Simplification of Radicals	Text Ex. 10-1 to 10-7	Text Chapter 10
		GRAPHS OF TRIG FUNCTIONS		
		The graph $\sin x$ and $\csc x$ The graph $\cos x$ and $\sec x$ The graph of $\tan x$ Polar co-ordinates Applications Composite curves	Ex, 9-1 to 9-7 and MSS	Text Chapter 9 and MSS
		DETERMINANTS		
		Two unknowns Three unknowns More unknowns Simplifying determinants	Ex.4-5, 4-7 plus MSS	Part of Chapter 4 plus MSS
		QUADRATIC EQUATIONS		
		Graphical solution Solution by factoring Completing the square Review solution by formula	Ex. 6-1, 6-2, 6-3 and part of 6-5	Chapter 6
		<u>RATIO, PROPORTION AND VARIATION</u>		
		Ratios Proportions Variation Constant of proportionality	Ex. 17 1 to 17-3	Chapter 17

TOPIC NO.	NO. OF PERIODS	TOPIC DESCRIPTION	ASSIGNMENTS	REFERENCES
		<u>NON-LINEAR EQUATIONS</u>		
		(including power trig, log and exponential functions)		MSS
		Graphical solution Solution by trial Factor theorem		