SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: MATHEMATICS

Code No,:   MTH 426

Program: COMPUTER ELECTRICAL & ELECTRONICS TECHNOLOGY

Semester: TWO

Date: JUNE, 1984

Author: K.G. CLARKE

                                New: Revision

APPROVED
            Chairperson   Date

CALENDAR DESCRIPTION

MATHEMATICS   MTH 426
Course Name   Course Number

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 instructor's
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"

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.

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NOTE:

The parallel mechanical technology mathematics course differs from this course in that the mechanical students omit "Number Systems and Boolean Algebra" at the start of the term and take "Analytic Geometry" at the end of the term. Hence, the two courses are out of step throughout the term.

ENTRY TO COURSES:

Prerequisite: MTH 413 or credit in MTH 413.

A student who has taken MTH 120 instead of MTH 413 may be admitted to MTH 426 if certain conditions are met:

> 1. The student has earned an "A" or "B" in MTH 120;
> 2. The student is entering a technology program.

AUDITING:

Computer, electrical, and electronics students who are taking the "Logic and Switching" course but who are not registered in MTH 426 will be permitted to audit the topic "Number Systems and Boolean Algebra".

ENTRY TO SUCCEEDING COURSES:

A student who successfully completes MTH 426 is admitted to the succeeding math course- If a student transfers to a related technician program his grade in MTH 426 will be accepted in lieu of the second semester technician math course (MTH 220).

A student who fails second semester technology math (MTH 426) and transfers to a related technician program may be granted a "C" in second semester technician math (MTH 220) and entry to third semester technician mathematics if he meets certain requirements:

> 1. Good attendance (80% or better);
> 2- MTH 426 average is 40% or better;
> 3. 50% or better in each algebra related topic in MTH 426 except "Progressions and Binomial Theorem";
> 4. Every test in MTH 426 has been written.

%	TOPIC NO-	PERIODS	<u>TOPIC DESCRIPTION</u>	<u>ASSIGNMENTS</u>	REFERENCE
1		**11**	<u>Number Systems and Boolean Algebra</u>		
			Binary, octal, hexadecimal Change of base, algebra of el eraents Addition and multiplication tables	Mss	Mss
			Definition of elements and operators Truth tables, derivation of simple identities: Negation - the not operator Applications to logic and switching circuits	Mss	Mss
			Variation	Text, Exercises 17-1 to 17-3	Text, Ch. 17
			Ratio and proportion Variation		
%			Quadratic Equations	Text, Exercises 6-1 to 6-4 and 13-3	Text, Ch, 6 and 13-3
			by factoring, completing the square, formula		
		10	Exponential and Logarithmic Functions	Text, Exercises 12-1 to 12-5, 12-7, 12-8, parts of 12-10	Text, Ch. 12 omit 12-6 and 12-9
			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		

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TOPIC NO,	PERIODS	TOPIC DESCRIPTION	ASSIGNNENTS	REFERENCE
5	8	Progressions and the Binomial Theorem	Text, Exercises 8-1 to 18-5	Text, Ch. 18
		Arithmetic progressions Geometric progressions Infinite geometric progressions The binomial theorem		
		Trigonometry: Large Angles, Oblique Triangles and GrapFs or 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 function		
	12	Trigonometric Identities and Equations	Text, Exercises 19-1 to 19-8	Text, Ch. 19
		Sum and difference, double angles, equations. Inverse functions		

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