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SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO


COURSE OUTLINE

Course Title: MATHEMATICS
Code No.: MTH 120-4
Program: **ELECTRICAL** AND ELECTRONIC TECHNICIANS
Semester: 1 (4 hours/week)
Date: JUNE, 1985
Author: K. CLARKE

New:

Revision:

APPROVED:



Chairperson

Date //

CALENDAR DESCRIPTION

MATHEMATICS

MTH 120-4

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 topics 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 in this subject matter.

METHOD OF ASSESSMENT (GRADING METHOD):

The students will be assessed by written tests, including major periodic tests based upon large blocks of the subject matter and some unannounced short quizzes on current work, the latter being given at the discretion of the instructor. A final test on the whole course may also be included. A letter grade will be based upon a student's weighted average of all his test results. See also the mathematics department's annual publication "THE MATHEMATICS STUDENT" for further details. This publication is made available to the students early in each academic year.

TEXTBOOK(S):

Calter: "Technical Mathematics with Calculus" - Prentice Hall

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.

ENTRY TO COURSE

All incoming students will write our mathematics pre-test. Results will be supplied to major subject instructors who will interview the students. Some will be advised to take technician mathematics (MTH 120). Any students who plan to take a technician program may take either technician or technology mathematics in the first semester. Once a student elects to take MTH 120, he is committed for the duration of the semester.

ENTRY TO SUBSEQUENT COURSES

Entry to Semester Two Technician Mathematics (MTH 220) is earned by passing First Semester Math (MTH 120 or MTH 413).

A student who takes Technician Mathematics in the first semester and subsequently decides to take a technology program will be permitted to take Second Semester Technology Mathematics if certain conditions are met:

1. A or B grade in MTH 120.
2. The student is accepted into the technology program by the department concerned.

A student who fails MTH 120 generally must repeat and pass MTH 120 before being admitted to Semester Two Math (MTH 220). Occasionally, an otherwise good student who meets certain conditions is permitted to take both MTH 120 and MTH 220 during Semester Two after failing MTH 120 in the First Semester. Such special permission is based upon an analysis of a student's overall situation. Each request for such permission is considered individually. The following conditions might be considered as a general guide in assessing the suitability of granting permission:

1. 45% or better in MTH 120.
2. Good attendance (80% or better)
3. All MTH 120 tests written.
4. All other First Semester subjects clear.
5. GPA of 2.5 or better;
6. The Chairman and/or instructors or the student's major subject area support the proposal.

A student who desires such permission should approach his program Chairman. In consultation with the MTH 120 and MTH 220 instructors, the Chairman may grant permission.

Whenever MTH 120 and MTH 220 are taken in parallel, MTH 120 is considered to be a co-requisite. Hence, if MTH 120 is failed, both courses will have to be repeated. It is the responsibility of the student to arrange to have his MTH 220 instructor officially informed of his grade in MTH 120. If in doubt, the MTH 220 instructor should submit an "X" grade pending the results of MTH 120.

MTH 120
ELECTRICAL AND ELECTRONIC TECHNICIANS
SEMESTER I

TOPIC NO.	PERIODS	TOPIC DESCRIPTION	REFERENCE	
	2	Numerical Computation The real numbers, Exact and Approximate Numbers. Addition and Subtraction. Multiplication, division, reciprocals, powers, roots. Combined Operations. Units of measure. Substituting into formulas. Scientific notation. Percentage. Solving percentage problems. Percent change and percent difference. Percent error . Percent concentration. Percent efficiency. Common and natural logarithms.	Ex. 1-1 to 1-12 Ex. 17-4 #1 to 24 only Ex. 17-5 #1 to 24 only	Ch. 1
	12	Review of Elementary Algebra Algebraic expressions. Addition and subtraction of algebraic expressions. Integral exponents. Multiplication of algebraic expressions. Division of algebraic expressions. Equations.	Text Ex. 3-1 to 3-7 & 4-1	Text Ch. 3 plus sections 1 & 2 of Ch. A
	10	Factoring Common factors. Difference of Two Squares. Factoring trinomials. Trinomials with a leading coefficient other than one. The perfect square trinomial. Sum or difference of two cubes. Factoring by grouping. Literal equations.	Text Ex. 7-1 to 7-7 (odd numbered questions only)	Text Ch. 7

MTH 120
ELECTRICAL AND ELECTRONIC TECHNICIANS
SEMESTER I

TOPIC NO,	PERIODS	TOPIC DESCRIPTION	REFERENCE	
	10	Fractions Definitions. Manipulation of fractions. Multiplication and division of fractions. Addition and subtraction of fractions. Complex fractions. Fractional equations. Ratio and proportion.	Text Text Ex. 8-1 to 8-5 & 8-7 (odd numbered questions only)	Text Text Ch. 8 omitting section 8-7
		Systems of Linear Equations and Determinants Systems of linear equations. Systems of fractional, non-linear and literal equations, Determinants. Systems of three or more equations.	Text Text Ex. 9-1,2, 3,5 (omit word problems)	Text Text Ch. 9 omitting word problems
	10	Right Triangles and Basic Trigonometry Angles and their measures 187. Solution of right triangles 199. 6-2 The trigonometric functions. 6-4 Vectors.	Text Text Ex. 6-1 to 6-4	Text Text Ch. 6