

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: MATHEMATICS  
Code No.: MTH 220  
Program: CIVIL TECHNOLOGY  
Semester: TWO  
Date: MAY 26, 1983  
Author: K. G. CLARKE

New: Revision: X

APPROVED

  
Chairperson

Date ^

MATHEMATICS  
Course Name

MTH 220  
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 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	23	Algebra Reiview	Text Exercises 2-1 to 2-5 4-1 to 4-3 4-5, 4-7 5-1 to 5-8	Text Ch. 2 4, 5 omitting 4-4, 4-6
		Functions and Graphs Solution of systems of two or three Linear Equations Special Products and Factoring Algebraic Fractions Fractional Equations (Determinants may be omitted)		
		Quadratic Equations	Text Exercises 6-1 to 6-4 and 13-3	Text Ch. 6 and 13-
		Factoring, Completing the Square, Formula		
	10	Exponents and Radicals	Text Exercises 10-1 to 10-7 13-4	Text Ch. 1 and 13-4
		Integral and Fractional Exponents Simplest Radical Form Addition, Subtraction, Multiplication and Division of Radicals		
		Exponential and Logarithmic Functions	Text Exercises 12-1 to 12-5, 12-7, 12-8, parts of 12-10	Text Ch, 1 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		
		Ratios, Proportions, Variation	Text Exercises 17-1, 17-2 17-3	Text Ch. 17

<u>TOPIC NO.</u>	<u>PERIODS</u>	<u>TOPIC DESCRIPTION</u>	<u>ASSIGNMENTS</u>	<u>REFERENCE</u>
6	12	Review of Basic Trigonometry Angles, Trigonometric Functions, Rt. Triangles, Trig Functions of Any Angle, Radian Measure, Sine Law, Cosine Law, Areas, Applications. Note: Since the student is expected to have a scientific calculator, the use of tables should be omitted. Also the instructions in exercises should be amended to avoid the use of loose approximations (such as 3.14). For areas of triangles additional problems can be used or text exercises can be altered to require areas.	Text Exercises 3-1 to 3-6 7-1 to 7-5 8-4, 8-5 8-6 #17 on and additional problems	Text Ch. 3 7 8-4, 8-5