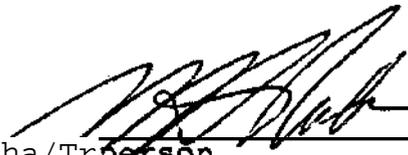


SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: MATHEMATICS
Code No.: MTH 220-4
Program: WATER RESOURCES/PULP AND PAPER ENGINEERING TECHNOLOG
Semester: TWO
Date: JULY, 1986
Author: K, CLARKE

New: Revision: X

APPROVED: 
/Cha/Tr person

D^'i^ ^ ^ ^ ^ ^'

CALENDAR DESCRIPTION

MATHEMATICS

MTH 220-4

Course Name

Course Number

PHILOSOPHY/GOALS;

The course consists of Algebra, Trigonometry and Analytic Geometry. The Algebra section takes more than half of the time in the course, and includes Simulaneous and Quadratic Eguations, Exponents, Radicals, Exponential and Logarithmic Functions, Ratio, Proportion and Variation. The Trigonometry starts with basics progresus to the solution of oblique triangles- In Analytic Geometry, straight lines and the conic sections are covered. The course prepares the student for calculus in the subsequent mathematics course.

METHODS 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/her test results. See also the Mathematics department's annual publication "TO THE MATHEMATICS STUDENT" for further details. This publication appears as the last two pages of this outline.

As in any other subject, the student in 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 can 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, then you are probably on target.

Marks allotted to each question on a test are usually shown. Please enquire if they are not.

TENTATIVE SCHEDULE OF INSTRUCTION AND TESTS

TOPIC NO.	NO* OF PERIODS	TENTATIVE TEST DATE	TOPIC WEIGHT
Tr 2	10	To be	30
3	10	announced	30
4, 5	12	early in	36
6	12	the term	36
7	12		36
		TOTAL	168

Before recording, test results will be adjusted to reflect the value indicated under "Topic Weight". The minimum total required for each letter grade is listed below for your convenience. Please note that in addition to a minimum total mark there are additional requirements to qualify for a grade of I or X.

LETTER GRADE	MINIMUM TOTAL REQ'D
A+	151
A.	134
B	109
C	92
I or X	75

The notes on the last two pages, entitled "To the Mathematics Student" are applicable to all mathematics courses at Sault College.

TEXTBOOK(S)!

Person - "ESSENTIALS OF MATHEMATICS" (Fourth Edition)

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.

MTH 220-4
WRT/PPE

TOPIC NO.	NO, OF PERIODS	TOPIC DESCRIPTION	REFERENCES
		Algebra review (continued) Functions and graphs Simultaneous equations	Text, Ch. 14,
		<u>Quadratic Equations</u>	Text, Ch, 18
		Factoring, completing the square, formula	
	10	<u>Exponents and Radicals</u>	Text, Ch. 16,
		Integral and fractional exponents Simplest radical form Addition, subtraction, multiplication and division of radicals Radical equations	
		<u>Exponential and Logarithmic Functions</u>	Text, Ch. 33-3
		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 may be omitted when interpolation experience is not required. Also the use of log trig functions is unnecessary. In Ex, 35-3 the instructions should be modified to reflect the use of calculators.

MTH 220-4
WRT/PPE

TOPIC NO.	NO. OF PERIODS	TOPIC DESCRIPTION	REFERENCES
		<u>Ratio, Proportion, Variation</u>	Text, Ch. 23
	12	<u>Review of Basic Trigonometry</u> Angles, trigonometric functions, rt. triangles, trig functions of any angle. Sine Law, Cosine Law, areas, applications. Also the instructions in exercises should be amended to avoid the use of loose approximations for (such as 3.14). For areas of triangles additional problems can be used or text exercises can be altered to required areas.	Text, Ch 36-39 42, 4
	12	<u>Analytic Geometry</u> Definitions, straight line, circle, parabola, translation of axes, general second degree equation- Graphical and algebraic solutions of systems of second degree equations.	Ch. 21 an any analy geom. manuscrip