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 TECHNOLOGY

Semester: TWO

Date: JANUARY 1988

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New   Revision:

APPROVED: _____   *(]ir^ 2-0 fdb*

Chairperson   Date

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CALENDAR DESCRIPTION

MATHEMATICS   MTH 220-4
                                               WRT/PPE SEM II

        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 Simultaneous and Quadratic Equations, Exponents,
Radicals, Exponential and Logarithmic Functions, Ratio, Proportion and
Variation. The Trigonometry starts with basics and progreses 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.

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 other
circumstances 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 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/ 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);

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 SEM II

TOPIC NO.	NO. OF PERIODS	TOPIC DESCRIPTION	REFERENCES
		Algebra review (continued) Functions and graphs Simultaneous equations	Text, Ch. 14, 15
		<u>Quadratic Equations</u> Factoring, completing the square, formula	Text, Ch. 18
	10	<u>Exponents and Radicals</u> Integral and fractional exponents Simplest radical form Addition, subtraction, multiplication and division of radicals Radical equations	Text, Ch. 16, 17
		<u>Exponential and Logarithmic</u> Functions 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.	Text, Ch. 33-35

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-

TOPIC NO.	NO. OF PERIODS	TOPIC DESCRIPTION	REFERENCES
	4	Ratio, Proportion, Variation	Text, Ch. 23
	12	Review of Basic Trigonometry	Text, Ch. 36-39, 42, 44

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 require areas.

| | 12 | Analytic Geometry | Ch. 21 and any analytic geom. manuscript |

Definitions, straight line,
circle, parabola, translation
of axes, general second degree
equation. Graphical and algebraic
solutions of systems of second
degree equations.