SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE: MATHEMATICS

CODE NO.: MTH120-4   **SEMESTER:**

PROGRAM: ENVIRONMENTAL ENG./PULP & PAPER/WATER RESOURCES/
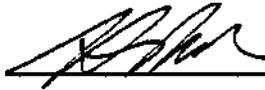ARCHITECHTURAL/CIVIL ENGINEERING

AUTHOR: **K.** CLARKE

DATE: JUNE 1991   JUNE 1989
          PREVIOUS OUTLINE DATED:

APPROVED: _____   ?7/? *f*
          DEAN   **DATE**

MATHEMATICS   MTH 120-4

Course Name   Course Number

TOTAL CREDIT HOURS: 64

PREREQUISITE(S): Grade 12 advanced mathematics or Grade 12 technical general mathematics

I.   PHILOSOPHY/GOALS

An introduction to technical calculations, including conversion of units, estimating, use of approximate numbers and scientific notation. Following this, there is a review of geometry and mensuration, giving the successful student an ability to deal with plane and solid shapes, including an ability to calculate distances, areas and volumes. The course concludes with a review of secondary school algebra.

II.   STUDENT PERFORMANCE OBJECTIVES:

The basic objectives are that the student develop an understanding of the methods studied, demonstrate a knowledge of the facts presented and show an ability to use these in the solution of problems. To accomplish these objectives, exercises are assigned. Test questions will be of near equal difficulty to questions assigned in the exercises. 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:

MATHEMATICS   MTH 120-4

Course Name   Course Number

III. TOPICS TO BE COVERED:

TOPIC MO.	NO. OF PERIODS	TOPIC DESCRIPTION	REFERENCES
		<u>PRACTICAL CALCULATING</u>	Ch. 6
			Ch. 18 Section 10
		Conversion of units, estimating, approximate numbers, scientific notation, calculators	Appendix: p.A-13 to A-24
	20	<u>GEOMETRY AND MENSURATION</u>	Ch. 26 to 33
		Principles of geometry. Pythagorean theorem. Mensuration of plane figures: triangle, rectangle, square, parallelogram, trapezoid, circle, regular hexagon Mensuration of solid shapes: cubes, prisms, cylinders, pyramids, cones, spheres, truncated pyramids and cones, and composite shapes.	
	30	<u>ALGEBRA REVIEW ONE</u>	Ch. 8 to Ch. 15
		Fundamentals, zeros, exponents, roots and radicals, addition, subtraction, multiplication and division of algebraic expressions, elementary equations and their application Special products and factoring Algebraic fractions Fractional equations Formula manipulation	

MATHEMATICS

Course Name

MTH 120-4

Course Number

IV. LEARNING ACTIVITIES;

The student will be expected to attend all classes punctually and do all the assigned work.

Work will be assigned from the following exercises in the textbook:

Ex. 6-1, 6-2, 6-3, 6-4, 6-5,
18-5
26-1, 26-2,
27-1/ 27-2,
28-1
29-1,
30-1,
31-1
32-1,
33-1,
8-11,
9-1, **8-2, 8-3, 8-4, 8-5, 8-6,**
10-1, 10-2, 10-3, 10-4,
11-1, 11-2, 11-3,
12-1, 12-2, 12-3, 12-4, 12-5,
13-6, 12-7,
13-I, 13-2, 13-3, 13-4, 13-5,
13-6, 13-7, 13-8, 13-9, 13-10,
13-II, 13-12, 13-13, 13-14,
14-15, 13-16,
15-1, 14-2, 14-3, 14-4,
15-1, 15-2, 15-3, 15-4, 15-5,
6, 15-7

At the discretion of the instructor, other exercises in the textbook may be used and work may be assigned from handouts supplied by the instructor.

REQUIRED RESOURCES:

Textbook:

"ESSENTIALS OF MATHEMATICS", Person, Russel P., 5th Ed., Wiley

Protractor, scale, compass, eraser, sharp pencils, k'' grid paper

MATHEMATICS   MTH 120-4

Course Name   Course Number

V.   EVALUATION METHODS:

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. 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.

If, at the end of the semester, a student has an average between 45%
and 54%, the instructor will consider permitting the student to do
make up work in hope of raising his/her standing to a passing level.
If a student has not written all the topic tests, or if the student
has attended fewer than 80% of the scheduled classes, or if the
student has not done all of the assigned work during the semester,
then the make up privilege will not be granted. At the discretion of
the instructor a student who is granted the make up privilege may be
required to write one topic test in hope of raising his/her average or
he/she may be required to write an examination on the whole course.
Such tests and examinations are not provided for the purpose of
obtaining grades higher than "C".

Due to circumstances beyond the control of the instructor, the time
available for the student to prepare for the make up test or
examination is usually so limited that the student has little
opportunity to improve. Hence, the student should make diligent
efforts to avoid any need for make up privileges.

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.

MATHEMATICS   MTH 120-4

Course Name   Course Number

V. **EVALUATION METHODS:** (cont'd)

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.

AVERAGE	GRADE
90% to 100%	A+
80% to 89%	A
65% to 79%	B
55% to 65%	C
0% to 54%	R

VI. **REQUIRED STUDENT RESOURCES:**

TEXTBOOK(S):

Person - "Essentials of Mathematics", Fifth Edition, Wiley

VII. **SPECIAL NOTES:**

Students with special needs (e.g. physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students.