SAULT COLLEGE OF APPLIED ARTS Se TECHNOLOGY

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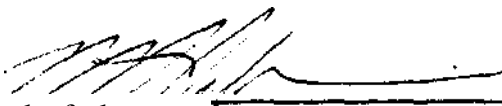

COURSE OUTLINE

Course Title: MATHEMATICS

Code No*:   MTH 220-4

Program: ARCHITECTURAL/CIVIL ENGINEERING TECHNICIAN

Semester: TWO

Date: DECEMBER, 1986

Author: K. CLARKE

New: Revision:

APPROVED

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CALENDAR DESCRIPTION

MATHEMATICS   MTH 220-4

Course Name   Course Number

PHILOSOPHY/GOALS;

The review of secondary school algebra which is started in the
previous math course is continued in this course. Coverage of
algebra then continues with Quadratic Equations, Exponents and
Radicals, Logarithms, and Ratio, Proportion and Variation. The
course concludes with a review of Trigonometry, including
analysis of right triangles and oblique triangles.

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 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 test
results. See also the Mathematics department•s annual
publication "To the Mathematics Student" which appears as the
last two pages of this course outline.

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 1
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
1	23	To be	46
2	6	announced	12
3	10	early	20
4,5	12	during	24
6	12	the term.	24
TOTALS	63		126

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+	113
A	101
B	82
C	69
I or X	57

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

TEXTBOOK(S):

Person, R» "Essentials of Mathematics", (4th Edition), Wiley

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.

TOPIC NO.	PERIODS	TOPIC DESCRIPTION	REFERENCE
1	23	ALGEBRA REVIEW	Text, Ch. 11-15
		Graphing, solution of systems of two or three linear equations Special products and factoring Algebraic fractions Fractional equations (Determinants may be omitted)	
2	6	QUADRATIC EQUATION	Text, Ch. 18
		Factoring, completing the square, formula	
3	10	EXPONENTS AND RADICALS	Text,-Ch. 16, 17
		Integral and fractional exponents Simplest radical form Addition, subtraction, multiplication and division of radicals	
4	8	LOGARITHMS	Text, Ch. 33-1 to 33-5, 33-1 Ch. 34(part) Ch. 35(part)
		Definition 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.	
5	4	RATIOS, PROPORTIONS, VARIATION	Text, Ch. 23

MTH 220-4
ARCHITECTURAL/CIVIL ENGINEERING TECHN.

TOPIC NO,	PERIODS	TOPIC DESCRIPTION	REFERENCE
6	12	REVIEW OF BASIC TRIGONOMETRY	Text Ch. 24-26, 36-39, 41, 44

AngleSf trigonometric functions,
rt. triangles, trig functions of
any angle, radian measure. Sine
Law, cosine Law, areas (optional),
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.

GRADES

Each Mathematics grade is based upon a weighted average of test scores on the following basis:

90-100%	A+
80%-89%	A
65%-79%	B
55%-64%	C
45%-54%	*I*, X, OR R (See #5 & 6)
0% -44%	R

First semester students who are proceeding into second semester Electrical, Electronic or Mechanical <u>Technician</u> Programs may have a different set of grade requirements which will be defined in class.

The method of calculating your weighted average will be defined by your instructor. Since grades are based upon averages, it follows that good marks in some tests can compensate for a failing mark in another test. If there are extenuating circumstances, an instructor can make an exception and assign an "I" or "X" grade even if the average is below 45%.

TESTS

While regular tests will normally be scheduled and announced beforehand, there can be an unannounced test on current work at any time. Such tests, at the discretion of the instructor, can be used for up to 30% of the overall mark.

At the discretion of the instructor," there can be a final test which can be used for up to 30% of the overall mark. Anything included in the work of the semester is fair game on such a final test.

ABSENCE FROM CLASS

If you are absent from class, it is your responsibility to find out from another student what work was covered and assigned and to complete this work before the next class. Your absence indicates your acceptance of this **responsibility.**

4. TEST ABSENCE

Unexcused absence from a scheduled test will result in a zero mark. Absence may be excused on compassionate grounds such as verified illness or bereavement. On return from an excused absence, you should ask your instructor about writing a make-up test.

If your instructor uses short unannounced tests, the following will apply. Unexcused absence from such a test will result in a zero mark. If absence from such a test is excused, then, at your request, the marks for that test will be excluded from the calculation of your course average.

5. MAKE-UP PERIOD (IF APPLICABLE)

An "X" grade may be assigned at the end of the regular semester if your have achieved an overall average between 45%-54% and your attendance and effort on the course have been satisfactory. Satisfactory attendance and effort will include writing all the topic tests and attending at least 80% of the scheduled classes. If you are assigned in ^" grade, you may convert it" to a "C" grade by passing a make-up test on the whole course. This test will be available only at the time specified by your instructor. At the end of the regular term, it is the student's responsibility to obtain his/her results from his/her instructor and, in the event of an "X" grade, to inquire when the make-up test will be available. At the discretion of the instructor, a topic make-up test may be used instead of an overall test in special circumstances. No student will be permitted more than one such topic make-up test.

6. "R" AND "X" GRADES - AT THE END OF THE SEMESTER

If an "X" grade is not cleared by the specified date, it will become an "R" grade. Except for extenuating circumstances, an "X" grade in Math will not carry on into the next semester.

"R" GRADES DURING THE SEMESTER

A student with a failing grade and poor attendance (less than 80% attendance) may be given an "R" at any time during the semester.