SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title:	CALCULUS
Code No.:	MTH 578-4
Program:	MECHANCIAL TECHNOLOGY
Semester:	IV
Date:	DECEMBER, 1988
Author:	W. MACQUARRIE

New   Revision

APPROVED; _____   *(AriUMkr "i//:h*

Chairperron   Date

P*mm*

CALENDAR DESCRIPTION

CALCULUS   MTH 578-4

COURSE NAME   COURSE NUMBER

PHILOSOPHY/GOALS;

Students studying mathematics at this level are those individuals where a
certain degree of originality, a sense of logic and an ability to learn
independently are required of them in their major subject area. This coui:
serves to exercise these three requirements and to also give them a theore
knowledge for their academic subjects-

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 th
in the solution of problems. For this purpose exercises are assigned. Te
will reflect the sort of work contained in other assignments. The level c
competency demanded is the level required to obtain an overall passing ave
in the tests. The material to be covered is listed on the following page.

MEHTOD OF ASSESSMENT (GRADING METHOD);

1, Three - four tests per semester.

2, Final Grade is a weighted average of these tests.

            90 - 100% = A+
            80 - 89% = A
            65 - 79% = B
            55 - 64% = C
             0 - 54% = X OR R

    All tests are scheduled in advance. Hence, attendance is mandatory.
    Unexcused absence from a test will result in a mark of zero for that
    test. If a student is prevented from writing a test by illness, the
    student must phone the instructor (759-6774) before the time of the
    test or leave a message for the instructor, stating the reason for
    absence. Upon return to class, the student must see the instructor
    immediately to arrange a time and place for a make-up test- The
    student must have a doctor's certificate or a note from the college
    nurse.

    There will be no rewrites (make-up tests) or supplemental exams
    during the semester, or at the end of the semester*

TEXTBOOK(S);

  Washington, Allan, J., <u>Basic Technical</u> Mathematics with Calculus

TOPIC NUMBER	PERIODS	TOPIC DESCRIPTION	REFERE1
	15	**Applications of Integration**	*Ch*

Applications of indefinite
   integral   **Ex. 1**
Areas by integration   **Ex. 2**
Volumes by integration   **Ex. 3**
Centroids   **Ex. 4**
Moments of Inertia   **Ex. 5**
Other applications   **Ex. 6**

| | 20 | **Differentiation of Transcendental Functions** | ch. : |

Derivatives of sine and cosine   Ex
   functions
Derivatives of other Trigonometric   Ex
   functions
Inverse Trigonometric Functions   Ex. 3
Applications   Ex- 4
Derivatives of logarithmic functions
Derivatives of exponential functions   Ex. 5
Applications   Ex. 6
Review exercise   Ex: 7 / Ex. 8

| | 21 | **Methods of Integration** | Ch. 2 |

General power formula   **Ex, 1**
Basic logarithmic forms   **Ex. 2**
The exponential form   **Ex. 3**
Trigonometric forms   **Ex. 4,**
Inverse trigonometric forms **Ex. 6**
Integration by parts   **Ex. 7**
Integration by trigonometic subst. Ex. 8