SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE MARIE, ON

COURSE OUTLINE

Course Titie: Mathematics

CodeNo.: MTH153   **Semester: Two**

Program: Heavy Equipment Diesel

Authon The Mathematics Department

Date: January 1999   Previous Outline Dated: June 1997

Approvedi
                fj   Dean/   '^   Date

Total Credits: 3   **Prerequisite(s): None**

Length of Course: 3 hrsJweek   **Total Credit Hours: 48**

I.   COURSE DESCRIPTION:

This course will increase the studenfs accuracy and skill in perfomning the mathematical calculations encountered in the Heavy Equipment profession. Emphasis will be placed on practical problem solving. Topics include mathematical fundamentals, percent and percentages, measurement, ratio and proportion, powers and roots, and formula applications.

II.   LEARNING OUTCOMES

The basic objectives are that the student develop and understanding of the methods studied, demonstrate 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 exercise. 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 below.

III.   TOPICS.

1. Fundamental Math Operations   16 periods
2. Percent and Percentages   9 periods
3. Measurement   9 periods
4. Ratio and Proportion   5 periods
5. Powers and Roots   5 periods
6. Formula Applications   7 periods

IV.   LEARNING ACTIVITIES

TOPIC NUMBER	TOPIC DESCRIPTION
1.0	**Whole Numbers**
1.1	Whole Numbers
1.2	Common fractions
1.3	Decimal fractions
2.0	**Percent and Percentages**
2.1	Percentage
2.2	Grades (Inclines)
2.3	Discounts
2.4	Interest and Taxes
2.5	Percent of Error and Averages

IV.   LEARNING ACTIVITIES

TOPiC NUMBER	TOPIC DESCRIPTION
3.0	**Measurement**
3.1	British-SI Metric Gonversions
3.2	Circular Measurements
3.3	Angular Measurement
3.4	Area and Volume
3.5	Time and Speed Calculations
4.0	**Ratio and Proportion**
4.1	Ratio
4.2	Proportion
5.0	**Powers and Roots**
5.1	Powers
5.2	Roots
6.0	**Formula Applications**
6.1	Fonnulae for Mechanical Application
6.2	Cylindrical Volume Measurement
6.3	Ohms Law

V.   REQUIRED RESOURCES / TEXTS / MATERIALS:

1. Text: <u>Vocational - Technical Mathematics</u> (Third Edition), Robert D. Smith, (Nelson)
2. Calculator; **(Recommended)** Sharp Scientific calculator EL-531 L. *The use of some kinds of calculators may be æstricted during tests.*

VI.   EVALUATION PROCESS/GRADING SYSTEM:

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

At the discretion of the instructor, there may be a mid-term exam and there may be a final exam, each of which can contribute up to 30% of the overall mark.

The instructor will provide you with a list of test dates. Tests may be scheduled out of regular dass time.

VI.   EVALUATION PROCESS/GRADING SYSTEM (cont^d):

ATTENDANCE
It is your responsibility to attend all classes during the semester. Research indicates there is a high correlation between attendance and student success.

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

Unexcused absence from a **test may result in a mark of zero ("0").** Absence may be excused on compassionate grounds such as verified illness or bereavement. On retum from an excused absence, you should ask your instructorto Schedule the writing of a make-up test. Failure to do so will be considered as an unexcused absence.

METHOD OF ASSESSMENT {GRADING METHOD)

A+	Consistently outstanding	(90% -100%)
A	Outstanding Achievement	(80% - 89%)
B	Consistently above average achievement	(70% - 79%)
C	Satisfactory or acceptable achievement in all areas subject to assessment	(55% - 69%)
X or R	A temporary grade, limited to situations With extenuating circumstances. giving a student additional time to complete course requirements **(See below)**	(45% - 54%)
R	Repeat - The student has not achieved the objectives of the course, and the course must be repeated	(0% - 44%)
GR	Credit exemptlon	

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.

Make-Up Test (if applicabie)
An "X" grade may be assigned at the end of the regular semester if you have met **_ALL_** of the following criteria:

- an overall average between 45% and 54% was achieved
- at least 50% of the tests were passed
- at least 80% of the scheduled classes were attended
- all of the topic tests were written

VI.   EVALUATION PROCESS/GRADING SYSTEM (cont^d):

If you are assigned an "X" grade, you may convert it to **a** "C" grade by writing a make-up test on topics agreed to by the instructor. This test will be available at the time agreed to by your instructor.

At the end of the regular term, it is your responsibility to obtain your results from your instnjctor and, in the event of an "X" grade, to inquire when the make-up test will be available.

The score you receive on this make-up test will replace your original test score and be used to re-calculate your weighted average. If the re-calculated average is 55% or greater, a "C" grade will be assigned. If the re-calculated average is 54% or less, an "R" grade will be assigned.

VI.   EVALUATION PROCESS/GRADING SYSTEM (Continued):

"R" and "X" Grades at the end of the Seinester
If an *X" grade is not cleared by the specified date, it will bécome an "R" grade. Except for extenuating ctrcumstances, an "X" grade in Math will not be carried 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.

VII.   SPECIAL NOTES:

Students with special needs (e.g. physical limitations, visual impairments, hearing impairments, leaming disabilities), are encouraged to discuss required accommodations with the professor and/or contact the Special Needs Office.

Advanced Standing
Students who have completed an equivalent post-secondary course must bring relevant documents to the Coordinator, Mathematics Department:

- a copy of course outline
- a copy of the transcript verifying successfui completion of the equivalent course

Note: A copy of the transcript must be on file in the Registrar's Office.

VIII,   PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the
instructor or the Prior Learning Assessment Office (E2203).