SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE: **MATHEMATICS** II

CODE NO.: **MTH259-3**   SEMESTER: **THREE**

PROGRAM: MECHANICAL ENGINEERING TECHNICIAN - MACHINING

[AUTHOR: JOHN GIGUERE

DATE: AUGUST 1991   PREVIOUS OUTLINE DATED: JULY **1988**

APPROVED: _____
             DEAN

DATE _____

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TOTAL CREDIT HOURS: 48

PREREQUISITE(S): MTH151-3

I. PHILOSOPHY/GOALS:

The objectives of this course is to introduce the student to a number
of fundamental concepts including, measurement within the different
systems, linked with precision and accuracy. Different areas of
mathematics will be introduced with their applications in the machinist
profession. Topics will include algebra, geometry and trigonometry.

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 below.

III. TOPICS TO BE COVERED:

1. Technical Measurement   6 periods

2. Algebra   15 periods

3. Plane and Solid Geometry   15 periods

4. Introduction to Trigonometry   9 periods

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IV. LEARNING ACTIVITIES: **REQUIRED RESOURCES:**

1.0 <u>Technical Measurement</u>   Calculator

1.1 Introduction to Measurement Ch. 6, p. 74

1.2 The "SI" metric system and   Ch. 6, p. 74-76
     the British Engineering   Class notes
     System.

1.3 Conversion between the   p. 82
     British and the Metric
     systems

1.4 Precision and Accuracy and
     applications   p. 86-90

2.0 <u>Algebra</u>

2.1 Introduction to Algebra   Ch. 8, p. 102

2.2 Addition and subtraction of Ch. 9, p. 112
     signed numbers

2.3 Simple equations   Ch. 10, p. 123

2.4 Multiplication of signed   Ch. 11, p. 132
     numbers

2.5 Division of signed numbers   Ch. 12, p. 142
     and factoring

2.6 Algebraic fractions   Ch. 13, p. 162

2.7 Advanced equations   Ch. 14, p. 175

2.8 Equations and applications   Ch. 15, p. 185

2.9 Quadratic equations   Ch. 19, p. 255

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IV. LEARNING ACTIVITIES: (cont'd) **REQUIRED RESOURCES:**

3.0 <u>Geometry</u>

3.1 Polygons and the calculation Ch. 22, p. 295
    of their areas

3.2 Triangles and their   Ch. 23, p. 304
    properties

3.3 The circle and its   Ch. 23, p. 322
    properties

3.4 Geometric solids and their   Ch. 24, p. 249
    properties

4.0 <u>Trigonometry</u>

4.1 Introduction to Trigonometry Ch. 26, p. 378

4.2 Trigonometric functions   Ch. 27, p. 387

4.3 Right triangles   Ch. 29, p. 414

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V.   METHOD OF EVALUATION:

As per the Mathematics Department Evaluation Guidelines distributed
separately.

Periodic tests and daily assignments based on material in the course
outline will be given during the semester. A final exam and a make-up
test will be given at the discretion of the professor.

The final mark will be based on the results of several unit tests.

Grading;

        A+ - 90-100%
        A - 80- 89%
        B - 65- 79%
        C - 55- 64%
        R - 0- 54%
A passing grade will be based on a minimum average grade of 55%.
Students obtaining an average grade of 45-55% may be allowed to write a
supplementary examination; for eligibility, please consult the
Mathematics Department Evaluation Guidelines.

VI. REQUIRED STUDENT RESOURCES:

1.   Text: "Practical Mathematics", Seventh Edition (or most current
     edition), by Palmer, C. I. and Mrachek, L.A.

2.   Calculator: Recommended; SHARP Scientific calculator EL-531H

     NOTE: Any good Scientific Calculator is acceptable but some
     difficulties have been encountered with other types. Also, more
     advanced calculators have created problems for many of the students
     resulting in lost time in tests.

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**VII. ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY
     BOOK SECTION:**

1. College Library:

    The library has many comparable textbooks which may give you
    another perspective on a particular topic.

    Under the Library of Congress Catalogue System section: QA

2. The Learning Assistance Center:

    The Learning Assistance Center (L.A.C.) has a <u>PEER TUTORIAL</u> system
    in place for those who feel they need tutoring"! The L.A.C. also
    has some Computer based Math tutorial programs available to the
    student.

VIII. 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
or with the SPECIAL NEEDS COUNSELLOR.

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