

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

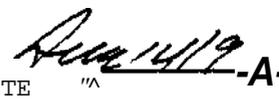
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MATHEMATICS II

MTH259-3

COURSE NAME

COURSE NUMBER

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 |

MATHEMATICS II

MTH259-3

COURSE NAME

COURSE NUMBER

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 the British Engineering System.	Ch. 6, p. 74-76 Class notes
1.3	Conversion between the British and the Metric systems	p. 82
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 signed numbers	Ch. 9, p. 112
2.3	Simple equations	Ch. 10, p. 123
2.4	Multiplication of signed numbers	Ch. 11, p. 132
2.5	Division of signed numbers and factoring	Ch. 12, p. 142
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

MATHEMATICS II

MTH259-3

COURSE NAME

COURSE NUMBER

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

3.0 Geometry

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

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

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

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

4.0 Trigonometry

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

MATHEMATICS II

MTH259-3

COURSE NAME

COURSE NUMBER

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.

MATHEMATICS II

MTH259-3

COURSE NAME

COURSE NUMBER

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 PEER TUTORIAL 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.