**SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**

# COURSE OUTLINE

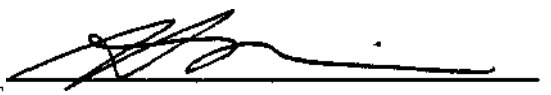
**COURSE TITLE:** MATHEMATICS II

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

**PROGRAM:** MECHANICAL ENGINEERING TECHNICIAN - MACHINING

**AUTHOR:** JOHN GIGUERE

**DATE:** JULY 1992 **PREVIOUS OUTLINE DATED:** AUGUST 1991

**APPROVED:** DEAfT   DATE

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**COURSE NAME** — **COURSE NUMBER**

**TOTAL CREDIT HOURS: 48**

**PREREQUISITE^)**: 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:** | **TIME FRAME:** |
|---|---|
| 1. Technical Measurement | 5 periods |
| 2. Algebra | 20 periods |
| 3. Plane and Solid Geometry | 16 periods |
| 4. Introduction to Trigonometry | 12 periods |

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| **IV. LEARNING ACTIVITIES:** | **REQUIRED RESOURCES:** |
|---|---|
| 1.0 Technical Measurement | Calculator |
| 1.1 Units of Measurement and the British Engineering System Measurement | Class notes |
| 1.2 The "SI" Metric System | Ch. 2 p. 64 - 70<br>Class notes |
| 1.3 Conversion between the British and the Metric Systems | p. 71 75 |
| 1.4 Approximate Numbers and Significant Digits | 76 - 80 |
| 1.5 Arithmetic Operations with Approximate Numbers | 11 - 89 |
| 2.0 Algebra | |
| 2.1 Signed Numbers | Ch. 3 p. 90 - 117 |
| 2.2 Introduction to Algebra | Ch. 4 p. 118 - 138 |
| 2.3 Simple Eguations and Inequalities | Ch. 5 p. 139 - 176 |
| 2.4 Basic Algebraic Operations | Ch. 7 p. 209 - 236 |
| 2.5 Factoring | Ch. 8 p. 237 - 263 |
| 2.6 Algebraic Fractions | Ch. 9 p. 264 - 301 |
| 2.7 Quadratic Equations | Ch. 11 p. 340 - 359 |

NOTE:

**Your professor reserves the right to modify the course as it is deemed necessary to meet the needs of students.**

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| **IV. LEARNING ACTIVITIES:** (cont'd) | **REQUIRED RESOURCES:** |
|---|---|
| 3.0 Geometry | |
| 3.1 Introduction to Geometry | Ch. 6 p. 177 - 208 |
| 3.2 Angles; Plane and Solid Geometry | Ch. 15 p. 466 - 514 |
| 4.0 Trigonometry | |
| 4.1 Trigonometry of Right Triangles | Ch. 16 p. 515 - 542 |
| 4.2 Trigonometry with any Angle | Ch. 17 p. 543 - 573 |

NOTE:

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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 = o- 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: "Introduction to Technical Mathematics". Fourth Edition (or most current edition) by Washington, A.J. and Triola, M.F.

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

   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 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.