

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY  
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE: MATHEMATICS  
CODE NO., : MTH151-3 SEMESTER: ONE  
PROGRAM: IVLACHINE SHOP  
AUTHOR: JOE GLOWACKI  
DATE: AUGUST 1992 PREVIOUS OUTLINE DATED: JUNE 1989

APPROVED:   
AN

  
DATE

MATHEMATICS

MTH151-3

**COURSE NAME**

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**TOTAL CREDIT HOURS: 45**

**PREREQUISITE(S):** As per College Calendar.

**I. PHILOSOPHY/GOALS:**

In this course, emphasis will be placed on teaching mathematics at a level that will help the student in the Machine Shop trade. Some theoretical concepts and topics in algebra, geometry and trigonometry will be covered. These concepts and topics will be reinforced by the use of practical problems to make the current topic relevant to the students' needs.

**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. Arithmetic	9 periods
2. Measurements	12 periods
3. Business Math	5 periods
4. Applications	9 periods
5. Trigonometry	13 periods

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**IV, LEARNING ACTIVITIES:**

**REQUIRED RESOURCES:**

1.0 Arithmetic

1.1 Whole Numbers  
Rounding off procedures

Units 1-4, p. 1-11

1.2 Common fractions

Units 5-9, p. 12-28

1.3 Decimal fractions

Units 10-14, p. 29-45

2.0 Measurements

2.1 Direct measurements

Units 15-18, p. 45-69

2.2 Computed measurements  
including the introduction of  
trigonometric functions

Units 19-25, p. 70-89

2.3 Conversion between systems of  
measure and within systems.  
The "SI" metric system and  
the British Engineering  
System.

Units 26-27, p. 91-93

Class notes

3.0 Business Mathematics

3.1 Percentages

Units 28-29, p. 94-98

3.2 Graphs (Construction and  
reading)

Unit 30, p. 99-113  
Scales, graph paper

4.0 Applications

4.1 Ratio and Proportion

Units 30-32, p. 102-113

4.2 Shop Formulas

Units 33-36, p. 114-132

4.3 Powers and roots

Units 37-39, p. 133-141

5.0 Geometry and Trigonometry

5.1 Geometry forms and  
construction

Units 40-42, p. 142-164

5.2 Trigonometry applications

Units 43-49, p. 165-196

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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 make-up test will be 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 = 70- 79%  
C = 55- 69%

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 Problems in Mathematics for Machinists", by: Hoffman, Edward G.
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.

**VII. 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.

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