

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

COURSE OUTLINE

COURSE TITLE: MATHEMATICS
CODE NO.: MTH113-4 SEMESTER: ONE
PROGRAM: FORESTRY TECHNICIAN
AUTHOR: JOHN GIGUERE
DATE: JULY 1993 PREVIOUS OUTLINE DATED: AUGUST 1991

APPROVED: *Z*
DEAN

John Giguere Z/1/92
DApT

MATHEMATICS

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TOTAL CREDIT HOURS: 4 8

PREREQUISITE^): Grade 11 Technical Mathematics (MTT3G)

I. PHILOSOPHY/GOALS:

The objectives of this course include a survey of plane and solid geometry that will enable the student to determine areas, volumes and mass for a variety of forms including cylinders, cones and pyramids and other common bodies. Also included are a review of the basic operations on algebraic expressions and the solutions to systems of linear equations.

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:

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|----------------------------------|------------|
| 1. a) Estimation | 8 periods |
| b) Dimensional Analysis | |
| c) The Metric and British System | |
| 2. Plane Geometry | 8 periods |
| 3. Solid Mensuration | 12 periods |
| 4. Elementary Algebra | 18 periods |

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IV. LEARNING ACTIVITIES:

REQUIRED RESOURCES:

1.0 Estimation, Dimensional
Analysis and Units of
Measure

1.1 Approximate numbers and
rounding off procedures

Ch. 3, p. 48

1.2 Dimensional Analysis for
conversion between systems
of measure and within
systems

Ch. 6, p. 91

1.3 The. "SI" metric system and
the British Engineering
System

Ch. 6, p. 85
Class Notes

2.0 Plane Geometry

2.1 Definitions and theorems
involving triangles and
other polygons

Ch. 26, p. 497 to Ch. 28, p. 53f

2.2 Definitions and theorems of
the circle

Ch. 29, p. 537

2.3 Mensuration of plan figures

Calculator, scales

2.4 Basic construction if time
permits

Protractor, metric scale
Drafting compass

3.0 Solid Mensuration

3.1 Mensuration of solid
figures (cubes, cylinders,
pyramids, cones, spheres,
and other solid figures)

Ch. 30 - 33, pp. 459 - 584

3.2 Applications and formulae

Calculator

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

4.0 Review of Elementary Algebra

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|--|-----------------------|
| 4.1 Operations with signed numbers | Ch. 8, p. 123 |
| 4.2 Basic Operations monomial | Ch. 9, p. 141 |
| 4.3 Operations involving algebraic expressions and fractions (polynomials) | Ch. 10, p. 150 |
| 4.4 Solutions and properties of linear equations | Ch. 11, p. 173 |
| 4.5 Applied word problems and formulae manipulation | Ch. 12, p. 188 |
| 4.6 Special Products and factoring | Ch. 13, p. 209 |

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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: "Essentials of Mathematics", Fifth Edition (or most current edition), by: Person, R.V. and Person, V.J.
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 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.