

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE, MARIE, ONTARIO

COURSE OUTLINE

**COURSE TITLE** MATHEMATICS

**CODE NO. :** MTH128-4 **SEMESTER:** II

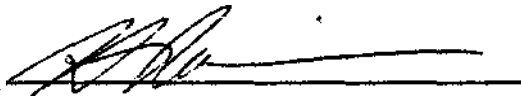
**PROGRAM:** ELECTRICAL/ELECTRONICS


**AUTHOR:** JOHN MCGAULEY

**DATE:** JUNE 1991 **PREVIOUS OUTLINE DATED:** NEW

APPROVED

DEAN



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DATE



MATHEMATICS

MTH 128<sup>4</sup>

**COURSE NAME**

**COURSE NUMBER**

**TOTAL CREDIT HOURS: 48**

**PREREQUISITE(S):** MTH 119-4

**I. PHILOSOPHY/GOALS:**

This course will introduce the student to complex numbers which provides a basis for calculations and problem solving in major subjects. The balance of the course extends the knowledge of algebra, mensuration and trigonometry to a more advanced level.

**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. Complex Numbers (10 hours)
2. Mensuration (10 hours)
3. Trigonometry (15 hours)
4. Algebra Review (10 hours)

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**IV. LEARNING ACTIVITIES:**

**REQUIRED RESOURCES:**

<b>1.0</b>	Complex Numbers	Pgs. 315-328, 332-348
<b>1.1</b>	Basic Definitions	Exercises 11-1. to 11-4
1,2	Basic Operations with Complex Numbers	11-6, 11-7
1.3	Graphical Representation of Complex Numbers	
1.4	Polar Form of a Complex Number	
1.5	Products, Quotients, Powers and Roots of Complex Numbers	
<b>1.6</b>	Application to Alternating Current Circuits	
<b>1.7</b>	Chapter Review	Review Exercises
<b>2.0</b>	Mensuration	Appendix C, pgs. A-18 to A-25
2,1	Principles of Plane Geometry	Exercises for Appendix C
2.2	Areas and Perimeters of Plane Figures	pgs. A-22 to A-25 and assigned exercises by instructor
2.3	Surface Areas and Volumes of Solid Shapes	
<b>3.0</b>	Trigonometry	pgs. 205-221
3.1	Trigonometric Functions of Any Angle	pgs. 247-257 pgs. 261-275
3.2	Radian Measure and Arc Length	Exercises 7-1 to 7-4
3.3	Oblique Triangles, the Law of Sines	8-5 to 8-6 9-1 to 9-4
3.4	The Law of Cosines	
3.5	Graphs of the Trigonometric Functions	
<b>4.0</b>	Algebra	Pgs. 54-83
4.1	Functions and Graphs	pgs. 149-204
4.2	Factoring and Fractions	Pgs. 109-148
4.3	Quadratic Equations	Pgs. 423-435
4.4	Systems of Linear Equations	Exercises 2-1 to 2,7 5-1 to 5.8
<b>4.5</b>	Determinants	6-1 to 6.5 4-1 to 4.8 15-1 to 15-2

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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:**

Text:

"Basic Technical Mathematics with Calculus" Fifth Edition (Metric Version). Washington. (Benjamin/Cummings)

**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.

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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.