SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE   MATHEMATICS

CODE NO.:   MTH 128-4   IX
                                        SEMESTER

PROGRAM: ELECTRICAL/ELECTRONICS/MECHANICAL

AUTHOR: JOHN McGAULEY

DATE: JANUARY 199 3   JULY 1992
                              PREVIOUS OUTLINE DATED:

APPROVED

DESJ   ^   **DATE**

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   TOTAL CREDIT HOURS: 64

   PREREQUISITE{S): MTH 119-4

   I.   PHILOSOPHY/GOALS:

   This course will introduce the student to plane analytic geometry whose
   basic principles provide 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
    xercises. 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. Mensuration (10 hours)

   2. Algebra (10 hours)

   3. Trigonometry (15 hours)

   4. Analytic Geometry (13 hours)

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IV, LEARNING ACTIVITIES

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REQUIRED RESOURCES

1.0 Mensuration	Appendix C, pgs. A-18 to A-25
1.1 Principles of Plane Geometry	
1.2 Areas and Perimeters of Plane Figures	Exercises for Appendix C pgs. A-22 to A-25 and assigned exercises by instructor.
1.3 Surface Areas and Volumes of Solid Shapes	

2.0 Algebra	Pgs. 54-83
2.1 Functions and Graphs	Pgs. 149-204
2.2 Factoring and Fractions	Pgs. 109-148
2.3 Quadratic Equations	Pgs. 423-435
2.4 Systems of Linear Equations	Exercises 2-1 to 2.7
	5-1 to 5.8
2.5 Determinants	6-1 to 6.5
	4-1 to 4.8
	15-1 to 15-2

3.0 Trigonometry	pgs. 205-226
3.1 Trigonometric Functions of Any Angle	pgs. 247-257
	pgs. 261-275
3.2 Radian Measure and Arc Length	
3.3 Oblique Triangles, the Law of Sines	Exercises 7-1 to 7-4
	8-5 to 8-6
3.4 The Law of Cosines	9-1 to 9-4
3.5 Graphs of the Trigonometric Functions	

4.0 Plane Analytic Geometry	pgs. 558-601, 608-612
4.1 Basic Definitions	Ex. 20.1 Odds 1-39
4.2 The Straight Line - Properties, Equations, Graphs	Ex. 20.2 Odds 1-39
4.3 The Circle - Properties, Equations, Graphs	Ex. 20.3 & 20.7
4.4 The Parabola - Properties, Equations, Graphs	Ex. 20.4 & 20.7
4.5 Translation of Axes	Done above (20.7)
	Ex. 20.8 1-27
4.6 The General Second Degree Equations	Ex. 20.11
4.7 Review Exercises	Instructor's Option

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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.

Grading;

$$
\begin{array}{rll}
A+ & = & 90\text{-}100\% \\
A & = & 80\text{-}\ 89\% \\
B & = & 65\text{-}\ 79\% \\
C & = & 55\text{-}\ 64\% \\
R & = & \ 0\text{-}\ 54\% \\
\end{array}
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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)

Calculator:
Recommended: Sharp Scientific Calculator EL-531P

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.