SAULT COLLEGE OF *APPLIED ARTS & TECHNOLOGY*

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE: MATHEMATICS II

CODE NO.: MTH 259

PROGRAM: MECHANICAL ENGINEERING TECHNICIAN - MACHINING

SEMESTER: THREE

DATE: AUGUST 1986

AUTHOR: G. DISANO

NEW: x *REVISION:*

APPROVED: *&yt iff**

Chairperson *Date*

Mathematics II — MTH 259

Course *Name* — *Course* Number

PHILOSOPHY/GOALS: The objective of this course is to introduce the student to a number of fundamental concepts of geometry, trigonometry and algebra which should prove useful to the machine shop technician student.
Every effort should be made by the instructor not to dwell on the theory of these concepts, but rather to stress their practical applications through the solution of relevant problems.

METHOD OF *ASSESSMENT (GRADING METHOD):*

See attached sheet titled GRADE REQUIREMENTS

TEXTBOOK(S): Practical Mathematics, Seventh Edition
by Palmer and Mrachek

OBJECTIVES:

GRADE REQUIREMENTS

MTH259

MATHEMATICS II

(Mechanical Engineering Technician - Machining)

Your final grade in MTH259 will be determined on the basis of four tests to be administered during the semester. Each test will examine your knowledge of a number of topics and will be administered within a week of completing those topics. The topics covered in each of the four tests are as follows:

Test #1	Topic Number I
	Topic Number II
	Topic Number III
Test #2	Topic Number IV
	Topic Number V
	Topic Number VI
Test #3	Topic Number VII
Test #4	Topic Number VIII

The four tests are of equal weight (i.e. each of the four tests is worth 25% of your final grade). As a result your final grade will simply be an average of your four test results. In order to obtain your letter grade the following percentage-letter grade equivalents will be used:

A	76% - 100%
B	66% - 75%
C	55% - 65%
X or R	0% - 54%

If your final grade is below 55% whether you receive an X (Incomplete) or an ~R (Repeat) grade is entirely up to the instructor's discretion. The decision will be based upon your final average (i.e. 32% would result in an R grade while 50% might result in an X grade), your attendance during the semester, your attitude while in the classroom, your perceived level of effort during the semester, etc..
In any case, should you find yourself with an X grade at the end of the semester, in order to upgrade your mark to a passing grade you will be required to write a make-up examination covering the entire course content. Should you receive a passing grade on the make-up examination (55% or higher) your X grade will be upgraded to a C grade. The best you can do after receiving an X grade is a CM

Prior to administering any test, you will be notified a full week in advance. Should you for any reason not be able to be in attendance on a day for which a test has been scheduled it is your responsibility to notify the instructor prior to the test! If your reasons are acceptable a date will be set during which you may write a substitute test for the one you have missed.

G. Disano, August 1986

COURSE OUTLINE

MTH259

MATHEMATICS II

(Mechanical Engineering Technician - Machining)

Reference Text: Practical Mathematics, 7th edition
by Palmer and Mrachek

Topic Number	Periods Lecture-Lab	Topic Description	Reference Chapters
I		**Technical Measurement**	6
		- introduction to the metric system - S.I. prefixes and their abbreviations - base units of measurement - the English system of measurement - conversion of units - precision of measurements - accuracy of measurements - significant figures	
II		Introduction to Algebra	8,9,10
		- general numbers - signs of operation and grouping - algebraic expressions - coefficients - terms - signed numbers - addition and subtraction of signed numbers - solution of simple equations	
III		Operations With Signed Numbers	11,12
		- multiplication of signed numbers - exponents - multiplication of monomials and polynomials - division of signed numbers - the law of exponents - division of monomials and polynomials - factoring	
IV		Algebraic Fractions	13
		- addition of algebraic fractions - subtraction of algebraic fractions - multiplication of algebraic fractions - division of algebraic fractions	

continued ....

V	Equations and Applications	14,15
	- solution of equations - formulas - setting up equations - equations having practical applications	
VI	Quadratic Equations	19
	- the quadratic formula - solutions of quadratic equations	
VII	Fundamentals of Geometry	22,23,24,2
	- area of a rectangle - area of a parallelogram - area of a triangle given base & height - area of a triangle given three sides - the right triangle - practical application: tapers - isosceles and equilateral triangles - circumference of a circle - area of a circle - area of a ring (annulus) - belts, pulleys & gears - surface area of a cylinder - volume of a cylinder - volume of a hollow cylinder - surface area of a cone - volume of a cone - surface area of a sphere - volume of a sphere	
VIII	Introduction to Trigonometry	26,27,29
	- the six trigonometric functions - determining values of trigonometric functions from a calculator - solving right-triangle problems	

G. Disano, August 1986