

COURSE OUTLINE

<u>MAT110</u>		<u>Elementary Technical Mathematics</u>			<u>3</u>
Course Number		Course Title			Credits
<u>3/Week</u>	<u>0/Week</u>	<u>0/Week</u>	<u>0/Week</u>	<u>15 Weeks</u>	
Class or Lecture	Laboratory Work Hours	Laboratory, Shop Studio or Clinic	Work Experience	Semester Length	
<u>Not Applicable</u>				<u>Not Applicable</u>	
Performance on An Examination/Demonstration				Telecourse	

Required Materials:

Reference Liberal Arts Division booklist.
Scientific Calculator Suggested

Catalog Description:

Designed for specific technology programs. Topics in arithmetic, geometry, algebra and elementary trigonometry are covered with emphasis upon their application to technology. Students in fields requiring subsequent mathematics courses should not take MAT110.

Latest Review: Spring 2006

Prerequisites: MAT034 with a minimum C grade or appropriate placement test score.

Co-requisites: None

Course Coordinator: Arthur E. Schwartz

GENERAL OBJECTIVES

This course is designed to give students in specific technology programs understanding in specific topics in arithmetic, geometry, algebra and elementary trigonometry.

Unit IA - OBLIQUE AND RIGHT TRIANGLES Chapter 13, Section 3

Mastery of this unit will allow the student to:

- a. Distinguish between oblique and right triangles.
- b. Label and name the parts of a right triangle
- c. Write and solve problems involving the Pythagorean Theorem.

$$a^2 + b^2 = c^2$$

Emphasis should be placed on examples 1, 2, 3 & 4 and on Exercises 1 through 16, 19, 25 to 31.

UNIT 1B RADIAN MEASURE Chapter 13, Section 6

Mastery of this unit will allow the student to:

- a. Measure angles in radian measure.
- b. Solve problems using radian measure.

Emphasis should be placed on Examples 1 and 2 and on Exercises 1 to 8.

UNIT 1C TRIGONOMETRY Chapter 14 - This chapter studies only the right triangle.

Mastery of this unit will allow the student to:

- a. Label right triangle properly (capital letters for angles, lower case letters for sides.)
- b. Solve problems involving the Pythagorean Theorem.
- c. Solve problems involving six trig ratios (sin, cos, tan, cot, sec & csc).
- d. Solve problems involving the missing parts of right triangles.
- e. Graph sin & cos functions.

UNIT IIA SYSTEMS OF LINEAR EQUATIONS Chapter 10

Mastery of this unit will allow the student to:

- a. solve pairs of linear equations by graphing.
- b. Solve pairs of linear equations by algebraic techniques.

UNIT IIB BASIC CONCEPTS
Chapter 1

Mastery of this unit will allow the student to:

- a. Solve problems involving signed numbers.
- b. Recast formulas (solve for other variables)
- c. Factor numbers and algebraic expressions into prime factors.

UNIT IIC DECIMAL FRACTIONS
Chapter 3

Mastery of this unit will allow the student to:

- a. Solve problems involving decimals
- b. Write numbers in scientific notation
- c. Solve problems involving percentages

UNIT IID THE METRIC SYSTEM
Chapter 4

Mastery of this unit will allow the student to:

- a. Make measurements in the metric system (length, mass, weight, temp, etc.)

UNIT IIE MEASUREMENTS
Chapter 5

Mastery of this unit will allow the student to:

- a. determine the precision and accuracy involved in making measurements
- b. determine the value and tolerance of resistors using the color code
- c. make readings using circular and uniform scale instruments

UNIT IIIA WORKING WITH FORMULAS
Chapter 7, Sections 8 & 9

Mastery of this unit will allow the student to:

- a. Substitute numbers for variables in formulas
- b. solve problems using reciprocal formulas
- c. recast (rearrange) formulas

UNIT IIIB GRAPHING LINEAR EQUATIONS
Chapter 9

Mastery of this unit will allow the students to:

- a. graph linear equations
- b. determine the slope and intercepts of a straight line
- c. determine the equation of a straight line

UNIT IIIC IMAGINARY NUMBERS
Chapter 12, Section 4

Mastery of this unit will allow the student to solve problems involving imaginary numbers.

UNIT IIID GRAPHS
Chapter 15, Sections 1, 2, 3 & 4

Mastery of this unit will allow the student to distinguish between and use bar, circle and broken line graphs.

TESTING:

Will be determined by the instructor.