

# MAT 110 Mathematical Measurement and Literacy

## COURSE DESCRIPTION:

Prerequisite(s): Take One Set:

Set 1: DMA-010, DMA-020, and DMA-030

Set 2: DMA-025

Set 3: MAT-003

Set 4: BSP-4003

Corequisite(s): MAT 010

This course provides an activity-based approach that develops measurement skills and mathematical literacy using technology to solve problems for non-math intensive programs. Topics include unit conversions and estimation within a variety of measurement systems; ratio and proportion; basic geometric concepts; financial literacy; and statistics including measures of central tendency, dispersion, and charting of data. Upon completion, students will demonstrate the use of mathematics and technology to solve practical problems, and to analyze and communicate results.

Course Hours Per Week: Class, 2. Lab, 2. Semester Hours Credit, 3.

## LEARNING OUTCOMES:

Upon completing requirements for this course, the student will be able to:

1. Demonstrate estimation skills and justify results
2. Use dimensional analysis to convert units of measurement
3. Employ fractions, percentages and proportions to solve contextual problems
4. Compute geometric measurements of perimeter, area, volume and angles
5. Use technology to analyze and interpret elements of personal finance
6. Compare and contrast measures of center and measures of dispersion
7. Interpret tables, charts, and graphs and communicate results

## OUTLINE OF INSTRUCTION:

- I. Working with Numbers
  - A. Large Numbers and Rounding
  - B. Estimation
- II. Descriptive Statistics
  - A. Tables and Graphs
  - B. Measures of Central Tendency: Mean and Median
  - C. Measures of Dispersion: Range and Standard Deviation
  - D. Percentiles
- III. Proportional Reasoning
  - A. Sales and Property Tax
  - B. Percent Increase and Decrease
  - C. Applications of Ratio and Proportion
- IV. Measurement and Units

- A. Unit Conversions
- B. The Metric System

V. Geometry

- A. Rectangles and parallelograms
- B. Angles
- C. Triangles
- D. Other polygons
- E. Circles
- F. Surface area
- G. Volume

VI. Personal Finance

- A. Budgeting
- B. Interest
- C. Credit cards
- D. Mortgages
- E. Income tax

VII. Dosage calculations for oral medications

- A. The apothecary system
- B. One-step problems--unit conversion method
- C. Multistep problems
- D. Dosages based on body weight or surface area

**REQUIRED TEXTBOOK AND MATERIAL:**

The textbook and other instructional material will be determined by the chair/instructor.