

## **MATH 1001 Quantitative Reasoning**

Course Description: This course emphasizes quantitative reasoning skills needed for informed citizens to understand the world around them. Topics include basic probability, data analysis, and modeling from data.

- A. Uniform Requirements: Between 60% and 80% of class time will be spent covering the following topics:
1. Basic Probability (including Venn Diagrams)
  2. Data Analysis
    - Basic Descriptive Statistics (Mean, Median, Mode, Standard Deviation)
    - Correlation, Causality, and Inferences
    - Interpreting Graphical Displays
    - Sampling and Randomness
  3. Modeling from Data
    - Function Concepts (Definition, Notation)
    - Scatter Plots
    - Linear Models and Regression Lines
    - Quadratic Models
    - Exponential Models
  4. Mathematics of Finance (Compound interest, annuities, and/or loan payments)
  5. Dimensional Analysis, Measurement and Unit Conversion
- B. Optional Topics: 20% to 40 % of the course will cover topics from:
1. Logic
  2. Applications
    - a. Mathematics and the Arts (Symmetry, perspective, tessellations, and/or fractals)
    - b. Mathematics and Politics (Voting methods and/or apportionment)
    - c. Mathematics and Business (Graph theory, networks, and/or linear programming)
    - d. Mathematics and Allied Health
- C. Review Topics: Upon entering Quantitative reasoning, the student is expected to possess an understanding of Introductory and Intermediate Algebra. The following topics should be covered but as embedded components in other applied concepts as appropriate.
1. Geometry (Calculating Lengths, Areas, Perimeters, and Volumes)
  2. Ratio and Proportion
  3. Approximation (Round-off error, significance and accuracy)
  4. Percentages
  5. Relative Value
  6. Computations with Formulae

For suitable textbooks, please consult the texts spreadsheet on the ACMS website

Date: March 2020