

MATH 1001 Quantitative Reasoning

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

- A. Review Topics: Upon entering Quantitative reasoning, the student is expected to possess an understanding of Introductory and Intermediate Algebra. At most 20% of class time will be spent reviewing the following topics in order to reinforce the students' understanding of them:
1. Sets and Set Operations
 2. Geometry (Calculating Lengths, Areas, Perimeters, and Volumes)
 3. Ratio and Proportion
 4. Approximation (Round-off error, significance and accuracy)
 5. Percentages
 6. Relative Value
 7. Computations with Formulae
- B. Uniform Requirements: Between 50% and 90% of class time will be spent covering the following topics:
1. Logic
Negations, Quantifiers, Conditional Statements, Converses
Inductive and Deductive Reasoning, Valid Arguments
 2. Basic Probability
 3. Data Analysis
Basic Descriptive Statistics (Mean, Median, Mode, Standard Deviation)
Correlation, Causality, and Inferences
Interpreting Graphical Displays
Sampling and Randomness
 4. Modeling from Data
Function Concepts (Definition, Notation)
Scatter Plots
Linear Models and Regression Lines
Quadratic Models
Exponential Models
- C. Optional Topics: 10% to 30 % of the course will cover topics from:
1. Mathematics and the Arts (Symmetry, perspective, tessellations, and/or fractals)
 2. Mathematics and Politics (Voting methods and/or apportionment)
 3. Mathematics and Business (Graph theory, networks, and/or linear programming)
 4. Mathematics of Finance (Compound interest, annuities, and/or loan payments)

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

Date: February, 2014