### Georgia Perimeter College
#### Common Course Outline

**Course Abbreviation & Number:** MATH 1001

**Course Title:** Quantitative Reasoning

**Credit Hours:** 3 semester hours

**Prerequisites:**
- Exit or exemption from Learning Support mathematics

**Co-requisites:**
- None

**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.

**NOTE:** This course is an alternative in Area A of the Core Curriculum and is not intended to supply sufficient algebraic background for students who intend to take Precalculus or the Calculus sequences for mathematics and science majors.

**Expected Educational Results:**
- As a result of completing this course students will be able to:
  1. Solve real-world application problems using ratio, proportion, and percent.
  2. Use geometric formulas and principles to solve applied problems.
  3. Use logic to recognize valid and invalid arguments.
  4. Apply fundamental counting principals and fundamental laws of probability to determine the probability of an event.
  5. Compute and interpret measures of central tendency and variation.
  6. Read and interpret data presented in various forms, including graphs.
  7. Solve application problems involving consumer finance.
  8. Students will create a scatter plot of data and determine if it is best modeled by a linear, quadratic, or exponential model.
  9. Students will create models for data that is exactly linear and use the model to answer input and output questions in the context of
10. Students will use the calculator to create models for data that is nearly linear, and use the model to answer input and output questions in the context of applications.
11. Students will use quadratic and exponential models to answer input and output questions.

General Educational Outcomes:

Demonstrate the ability to interpret and analyze quantitative information; to apply mathematical principles and techniques; and to use mathematical models to solve applied problems.

Course Content:

1. Applications of rates, ratios, and percent
2. Graphs and measurement
3. Basic Probability
4. Data Analysis
5. Modeling from Data

Assessment of Outcome Objectives

Course Grade:

The course grade will be determined by the individual instructor using a variety of evaluation methods. A portion of the course grade will be determined through the use of frequent assessment using such means as tests, quizzes, projects, or homework as developed by the instructor. Some of these methods will require the student to demonstrate ability in problem solving and critical thinking as evidenced by explaining and interpreting solutions. A portion of the evaluation process will require the student to demonstrate skill in writing both correct prose and correct mathematics. A comprehensive final examination is required. The final examination must count at least one-fifth and no more than one-third of the course grade. The final examination should include items which require the student to demonstrate problem solving and critical thinking.
This course will be assessed on a regular assessment schedule determined by the discipline. An appropriate assessment instrument will be determined by the Math 1001 committee.

**Use of Assessment Findings:**

The Math 1001 committee, or a special committee appointed by the Academic Group, will analyze the results of the assessment and determine implications for curriculum changes. The committee will prepare a report for the Academic Group summarizing its findings.

**Last Revised:**

EFFECTIVE DATE: August 2014  APPROVED DATE: May 2014
Reviewed by Committee: April 2015