Georgia Perimeter College  
Common Course Outline

<table>
<thead>
<tr>
<th>Course Abbreviation &amp; Number:</th>
<th>MATH 0987</th>
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<tbody>
<tr>
<td>Course Title:</td>
<td>Foundations for Quantitative Reasoning</td>
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<tr>
<td>Credit Hours:</td>
<td>3 semester hours</td>
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<tr>
<td>Prerequisites:</td>
<td>Placement</td>
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<tr>
<td>Co-requisites:</td>
<td>None</td>
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<td>Course Description:</td>
<td>This is the first course in a year-long pathway leading to MATH 0997 and MATH 1001 in the second semester. This course is designed to prepare non-STEM major students for Math 1001 Quantitative Reasoning. Topics will include: signed number arithmetic, linear equations, problem solving involving linear equations as models, graphing linear equations in two variables, writing equations of lines, selected geometry concepts, and calculator usage.</td>
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| Expected Educational Results: | As a result of completing this course, the student will be able to do the following:  
1. Perform the four arithmetic operations with signed numbers.  
2. Perform the four arithmetic operations with fractions.  
3. Construct correct expressions and equations using algebraic symbols and notations from statements.  
4. Evaluate linear and quadratic expressions.  
5. Solve linear equations and applications for which linear equations are mathematical models.  
6. Perform the following activities with lines:  
   a. Graph linear equations in standard form and slope-intercept form.  
   b. Find the slope of a line.  
   c. Write the equation of a line.  
7. Understand real square roots.  
8. Understand order of operations.  
9. Understand scientific notation with the aid of a calculator. |
10. Solve geometric problems including area and perimeter of triangles, rectangles, and circles. Find the volume of a box.
11. Use the Pythagorean Theorem.
12. Recognize and apply angle relationships involving lines and triangles.
13. Use a calculator.

**General Educational Outcomes:**

1. Students produce well-organized communication that exhibits logical thinking and organization, use appropriate style for audience, and meet conventional standards of usage.
   - They use the logic of mathematics to manipulate expressions and perform calculations.
   - They write mathematics correctly and precisely.
2. Students demonstrate the ability to interpret and analyze quantitative information; apply mathematical principles and techniques; and to use mathematical models to solve applied problems.
3. Students demonstrate effective problem-solving and critical thinking skills through interpreting, presenting or evaluating ideas.
   - They solve application problems of several types.
   - They determine which method to use to solve various problems.
   - They read mathematics and understand its precise terminology.

**Course Content:**

1. Real numbers
2. Expressions and equations
3. Linear equations in one variable
4. Linear equations in two variables
5. Geometric concepts

**Assessment of Outcome Objectives**

**Course Grade:**

Evaluation methods may include, but are not limited to, computerized module assignments, module exams, a final exam, participation, and notebook grades. The departmental final exam will be developed by a committee of faculty. Relative weights of grade components will be determined by the committee.

**Course Assessment:**

The Mathematics, Computer Science, and Engineering Discipline Group will determine the assessment schedule. The assessment instrument will be designed by the college-wide Foundations
<table>
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<tr>
<th>Use of Assessment Findings:</th>
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<tr>
<td>The Foundations Mathematics course committee will discuss each assessment and recommend to the MCSE Discipline Group curriculum changes or instructional modifications to enhance student achievement of the desired education outcomes.</td>
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<th>Last Revised:</th>
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<tr>
<td>EFFECTIVE DATE: Fall 2015  APPROVED DATE: __________</td>
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<tr>
<td>Reviewed by Committee: __________</td>
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