

## Course Outcomes Guide (COG)

**Directions:** Please complete this form to document your progress toward improving student learning. For each item, indicate your progress and your anticipated next steps. Thank you!

**Course Title:** MAT 098 Elementary Algebra

**Date:** June 2012

**Course Team:** Math Faculty

### Expected Learning Outcomes

#### STUDENT LEARNING OUTCOMES:

**Upon successful completion of this course students will be able to:**

1. Use computational techniques and algebraic skills essential for success in an academic, personal, or workplace setting (Computational and Algebraic Skills).
2. Use visualization, spatial reasoning, as well as geometric properties and strategies to model and solve problems (Geometric Skills).
3. Collect, organize, and display data as well as use appropriate statistical methods to analyze data and make inferences and predictions (Statistical Skills).
4. Use technology, where appropriate, to enhance and facilitate mathematical understanding, as well as an aid in solving problems and presenting solutions (Technological Skills).
5. Communicate and understand mathematical statements, ideas and results, both verbally and in writing, with the correct use of mathematical definitions, terminology and symbolism (Communication Skills).
6. Work collaboratively with peers and instructors to acquire mathematical understanding and to formulate and solve problems and present solutions (Collaborative Skills).

**Assessment** (How do or will students demonstrate achievement of each outcome? Please attach a copy of your assessment electronically.)

All MAT 098 Pre-Algebra students complete the same homework, quizzes, and tests. We use MyMathLab to run the course and all instructors are using the same assignments. Additionally, all students take a five question pre-test and take the same five questions again as a post-test that is incorporated into the final exam.

**Validation** (What methods have you used or will you use to validate your assessment?)

We are using a 2-point rubric to grade the five question pre/post-test and all other tests in the course. Spring 2012 is the first semester for this assessment, but as we collect data over a few semesters, we will then compare results from semester to semester.

**Results** (What do your assessment data show? If you have not yet assessed student achievement of your learning outcomes, when is assessment planned?)

We are in the process of analyzing the SLOA data from our first semester (Spring 2012). The assessment will continue unchanged for the summer semester in all classes. Once the analysis is complete, changes might be implemented for Fall 2012.

**Follow-up** (How have you used or how will you use the data to improve student learning?)

Because the 12/SP semester was the first semester of MAT 098 redesign, minimal changes will be made for the upcoming academic year. Time is needed to collect data and analyze the results of the new curriculum and assessment tools.

**Budget Justification** (What resources are necessary to improve student learning?)

**Attachments:**

1. Pre/post-test (common assessment),
2. Grading rubric

NAME: \_\_\_\_\_

**Pre/Post-Assessment for MAT 098 Pre-Algebra**

**Please answer the following questions. Do your work in the space provided and place your final answer in the answer column.**

**Answers:**

1. \$ \_\_\_\_\_      1. **Find the average amount of unclaimed prizes in dollars and write your answer in standard notation.**

| <b>State</b>      | <b>Unclaimed Prizes<br/>(in millions of dollars)</b> |
|-------------------|--|
| <b>New York</b>   | <b>73.2</b>  |
| <b>Texas</b>      | <b>58.7</b>  |
| <b>Florida</b>    | <b>48.1</b>  |
| <b>Ohio</b>       | <b>33.5</b>  |
| <b>California</b> | <b>29.6</b>  |

Length = \_\_\_\_\_

2. Width = \_\_\_\_\_

2. **The state of Colorado is roughly the shape of a rectangle whose perimeter is 1320 miles. The length is 100 miles more than the width. Find the dimensions in miles.**



$x + 100$

3. \_\_\_\_\_

3. Simplify. Write your answer as an integer.

$$3 \cdot 4 + 2^3 - (3^2 - 12 \div 2)$$

4. \_\_\_\_\_

4. Simplify. Write your answer as a simplified fraction (proper, improper, or mixed).

$$\frac{1}{3} - 4\frac{1}{2} \cdot \frac{6}{7} \div \frac{9}{7} + \frac{2}{5}$$

5. \_\_\_\_\_

5. A lawn requires 300 gallons of water for every  $700 \text{ ft}^2$ .  
What is the rate in gallons per square feet?  
Round your answer to the nearest tenth.

## Grading Rubric for Developmental Mathematics

This general scale is to be used for all Tests and Final Exams in MAT 098, MAT 099, and MAT 100.

All questions are worth 2 points.

|            |   |
|------------|---|
| 2 points   | Answer is completely correct, including any necessary units.  |
| 1.5 points | Work is approximately 75% correct. Examples include: <ul style="list-style-type: none"><li>• missing a negative</li><li>• missing units</li><li>• simple arithmetic errors (unless arithmetic is what is being tested!)</li></ul> |
| 1 point    | Work is approximately 50%-75% correct.  |
| 0.5 point  | Work is approximately 25%-50% correct AND some basic understanding of the concept is demonstrated.  |
| 0 points   | Work is roughly less than 25% correct OR no basic understanding is demonstrated.  |