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 108 Fundamentals of Mathematics II   **Date:** 9/9/11

Course Team: Joseph Mason

Expected Learning Outcomes

The student will:
- ✓ have the mathematical skills necessary to pass the mathematics portion of the Praxis examination.
- ✓ have a conceptual understanding of various topics taught in geometry.
- ✓ have a repertoire of mathematical techniques and ideas to introduce to future students.
- ✓ have an understanding of how to use technology, how it can enhance and facilitate mathematical understanding, and when it is appropriate to use technology.
- ✓ have an understanding of how to incorporate and use group work in a problem-solving environment.

The student will be able to:
- ✓ work flexibly with fractions, decimals, and percents to solve problems.
- ✓ compare and order fractions, decimals, and percents efficiently and find their approximate location on a number line.
- ✓ demonstrate an understanding for the use of percents in everyday life.
- ✓ demonstrate an understanding of probability and its connection to real world applications.
- ✓ use the different probability rules to find probabilities.
- ✓ use different counting techniques to find number of possible outcomes.
- ✓ formulate questions that can be addressed with statistical data.
- ✓ use appropriate methods for collecting, organizing, and displaying data.
- ✓ develop and evaluate inferences and predictions that are based on data.
- ✓ recognize and analyze geometric shapes, definitions and properties, including regular polygons, tessellations, and three-dimensional shapes.
- ✓ use and compare standard and non-standard units of measurement.
- ✓ demonstrate an understanding of formulas for length, area, surface area and volume.
- ✓ use basic Euclidean theorems, properties and postulates to solve a variety of problems, proofs and constructions.
- ✓ demonstrate an understanding of geometric transformations.
- ✓ note patterns, structure, or regularities in both real-world situations and symbolic objects.
- ✓ justify mathematical reasoning and procedures in a variety of ways.
- ✓ recognize and use connections among different mathematical ideas.

Assessment

Student achievement of outcomes will be assessed through classroom discussions, activities involving manipulatives, common exams, a common final, Praxis Exam scores, and feedback from students.

Validation

Results of the Praxis Exam and feedback from students on their experience with the Praxis Exam will be used to validate assessment.

Results

Praxis scores indicate that our students are getting a higher percent of questions correct in all four math categories on the math portion then other state institutions and on the national level. The percent correct in each of the four math categories has been increasing over the past several years while state and national percentages have remained nearly the same.

Follow-up

Information from the Yearly Institutional Summary Report is used to study the strengths and weakness of our students and thus modify course content. Student exam results have been used to evaluate understanding of material by students. Student feedback has been used by the instructor to self-evaluate his teaching and improve the quality of the course. Textbook has been changed and course content has been modified.

Budget Justification

Materials and manipulatives needed to keep current with the present education trends.