

Course Title & Number: _MAT*H146 Math for Liberal Arts_____

Competency Area: **QUANTITATIVE REASONING** (Goal: Students will learn to recognize, understand, and use the quantitative elements they encounter in various aspects of their lives. Students will develop a habit of mind that uses quantitative skills to solve problems and make informed decisions.)

Faculty submitting the Learning Outcomes: Katie Lozo, Jane Wampler, Harry Burt, Ruth Urbina-Lilback

Date: 2/14/13

[Instructions: *Please match the Learning Outcomes in the left hand column to those of the course you are submitting for Gen Ed approval. List the corresponding course outcomes in the right hand column to indicate a match.]*

BOR TAP's Learning Outcomes	Corresponding Outcomes for Course Named Above
1. Represent mathematical and quantitative information symbolically, graphically, numerically, and verbally.	<ul style="list-style-type: none">2. Graph Theory: Discuss principles of graph theory and networks to solve routing problems.3. Voting and Apportionment: Analyze such voting methods as plurality, Borda count, and pairwise comparison.5. Linear Programming: Graph a system of linear inequalities in two variables to model a situation involving linear constraints; use linear programming concepts to solve optimization problems.7. Linear and Exponential Applications: Recognize arithmetic and geometric patterns in the world as they relate to linear and exponential growth, respectively.
2. Apply quantitative methods to investigate routine and novel problems. This includes calculations/procedures, mathematical and/or statistical modeling, prediction, and evaluation.	<ul style="list-style-type: none">3. Voting and Apportionment: Analyze such voting methods as plurality, Borda count, and pairwise comparison.4. Introduction to Probability: Compute probabilities where outcomes are equally likely; calculate odds and expectations.5. Linear Programming: Graph a system of linear inequalities in two variables to model a situation involving linear constraints; use linear programming concepts to solve optimization problems.7. Linear and Exponential Applications: Recognize arithmetic and geometric patterns in the world as they relate to linear and exponential growth, respectively.

<p>3. Interpret mathematical and quantitative information and draw logical inferences from representations such as formulas, equations, graphs, tables, and schematics.</p>	<p>3. Voting and Apportionment: Analyze such voting methods as plurality, Borda count, and pairwise comparison.</p> <p>4. Introduction to Probability: Compute probabilities where outcomes are equally likely; calculate odds and expectations.</p> <p>5. Linear Programming: Graph a system of linear inequalities in two variables to model a situation involving linear constraints; use linear programming concepts to solve optimization problems.</p> <p>7. Linear and Exponential Applications: Recognize arithmetic and geometric patterns in the world as they relate to linear and exponential growth, respectively.</p>
<p>4. Evaluate the results obtained from quantitative methods for accuracy and/or reasonableness.</p>	<p>Evaluate the results obtained from quantitative methods for accuracy and/or reasonableness.</p>
	<p><i>Additional Outcomes</i></p> <p>1. Problem Solving and Critical Thinking Skills: Develop deductive and inductive reasoning skills, estimation skills, and problem-solving techniques.</p> <p>2. Patterns and Symmetry: Discuss basic rigid motions in a plane (reflection, rotation, translation); develop an understanding of tessellations (tilings).</p>