

Mathematics and Quantitative Reasoning

Learning Outcomes Approved 31 October 2005

Overview

Students are required to complete successfully one course that meets the Mathematics and Quantitative Reasoning learning outcomes (listed below). This course should extend and develop students' abilities in (i) problem solving and abstract reasoning and/or (ii) statistical analysis and reasoning.

Note: Students must demonstrate basic proficiency in mathematics prior to registering for a Mathematics and Quantitative Reasoning course. Proficiency may be demonstrated by any one of the following: (a) successful completion of three years of high school mathematics; (b) a math SAT score of 460 or a math ACT score of 16; or (c) previous college course work equivalent to MAT 097 or MAT 098 or beyond. If none of these requirements are met then MAT 097 or MAT 098 must be successfully completed prior to registering for a Mathematics and Quantitative Reasoning course.

Learning Outcomes

Students completing Mathematics and Quantitative Reasoning courses will meet the outcomes listed below in (i) or (ii).

(i) Problem Solving and Abstract Reasoning

Students will:

- a. represent and analyze known relationships¹ using algebraic and geometric models.
- b. represent phenomena of the physical world² in abstract, symbolic form.
- c. solve problems using appropriate methods through logical relationships and reasoning.

(ii) Statistical Analysis and Reasoning

Students will:

- a. describe and analyze sets of numerical data visually and quantitatively.
- b. draw valid and meaningful inferences and conclusions from data using appropriate methods.
- c. assess the validity of conclusions drawn from statistical methods.³

¹ "known relationships" refers to the existing collection of functions and formulas used to describe the world around us.

² "physical world" includes phenomena that we may encounter in the study of the

physical, life, and social sciences.

³ “statistical methods” includes research design, data collection, and data analysis