



Division:	Science/Mathematics	Area:	Mathematics
Course Number:	MATH 154	Course Name:	Mathematics Explorations
Prerequisite:	MATH 150 or higher or qualifying score on ACT or COMPASS test		
Corequisite:	NONE		
Hours Required:	Class: 60	Lab: 0	Credits: 4 (four)

Course Description/Purpose

This is a college-level mathematics course designed primarily for non-math and non-science transfer majors with the purpose of introducing them to the nature of mathematics as it applies to both the practical and the abstract. Students will gain understanding in the areas of sets, logic, probability, statistics, algebra, geometry and math as they apply to the present modern world. The history and the future of mathematics will be interspersed throughout the course as they apply to each topic. Topics will be explored with the use of computers, problem solving, critical thinking and group/self-discovery.

Major Units

- Problem Solving
- Sets
- Logic
- Number Theory
- Relations, Functions, and Graphing
- Probability
- Statistics
- Geometry
- Math in the Modern World

Educational/Course Outcomes

Student learning will be assessed by a variety of methods, including, but not limited to, quizzes and tests, journals, essays, papers, projects, laboratory/clinical exercises and examinations, presentations, simulations, portfolios, homework assignments, and instructor observations.

- Cognitive** Each student will be expected to *Identify/Recognize* . . .
- relationships between sets;
 - validity in logic statements;
 - different subsets of the real numbers and their respective properties;
 - solutions to open algebraic sentences;

Cognitive Each student will be expected to *Identify/Recognize* . . . (continued)

- different types of two-dimensional graphs;
- counting techniques and principles as they relate to probability;
- measures of central tendency and dispersion;
- various geometric figures in 1, 2, or 3 dimensions;
- how pure math is used in the modern world.

Performance Each student will be expected to *Demonstrate/Practice* . . .

- strategies for problem solving;
- set operations;
- truth table construction;
- finding probabilities, sample spaces, odds, expectation, and ordered arrangements;
- statistical measures and correlations;
- computations involving interest, taxes, markups and markdowns, APR's, installment buying, life insurance, and mortgages;
- finding solutions to various algebraic sentences including using techniques such as modeling, graphing, calculators, and computers;
- finding perimeters, areas, and volumes;
- a knowledge of angle relationships as they apply to geometric figures;
- an understanding of various numeration systems;
- an understanding of mathematical history;
- an understanding of how mathematics is used in the modern world.