

MAT1010 - College Algebra – CORE OUTCOMES

Course Effective Date: Fall 2012

Outcome Approval Date: Fall 2021

Next Outcome Review Date: Fall 2026

Upon completion of this course, students will be able to:

Analysis and Graphing of Functions and Equations

1. Use functional notation, including finding arithmetic combinations and compositions of functions.
2. Recognize and distinguish between functions and relations (equations).
3. Use concepts of symmetry, intercepts, left- and right-hand behavior, asymptotes, and transformations to sketch the graph of various types of functions (constant, linear, quadratic, absolute value, piecewise-defined, square root, cubic, polynomial, rational, exponential, and logarithmic) or relations (circle) given in description.
4. Determine the domain and range of relations and functions.
5. Write the equation that describes a function (for types given above) or circle given its description.
6. Use graphs of functions for analysis.
7. Find the inverse of a function.

Solutions of Equations and Inequalities

1. Solve equations including literal equations, linear equations, quadratic equations by factoring and the quadratic formula, higher-order polynomial equations, equations involving rational expressions, equations involving radicals, and equations involving absolute value expressions, along with equations involving exponential or logarithmic functions.
2. Solve inequalities of the following types: linear (in one and two variables), polynomial, rational, absolute value.
3. Solve systems of inequalities by graphing.
4. Apply equations from #1 in this core outcome to real-world situations, such as depreciation, growth and decay, and max/min problems.
5. Examine and analyze data, make predictions/interpretations, and do basic modeling.
6. Solve systems of equations by various methods, including matrices.