

NorthWest Arkansas Community College
Division of Science and Mathematics

Course Number and Title

MATH 0053 Beginning Algebra

Catalog Description

This developmental algebra course covers solving linear equations and inequalities, graphing lines, slope, linear modeling, introduces function concepts including domain and range, function notation, and evaluating functions, solving systems of linear equations in two variables, exponential properties, polynomial operations, and interwoven modeling and problem solving.

Prerequisites

Pre-algebra (MATH 0013) with a grade of C or better, or Developmental Math (MATH 0023) with a grade of C-7 or better, or minimum placement score. Pre-algebra background is strongly recommended.

Credit hours/Contact hours/Load hours

3 credit hours/3 contact hours/3 load hours, none counting toward any degree requirements

Target Audience/Transferability

This course is intended for college students who have had little algebra, or for those students needing a review of elementary algebra concepts to strengthen skills in preparation for intermediate algebra or specialized AAS math study. Beginning Algebra is a non-transfer course.

Student Learning Outcomes

CORE:

A student successfully completing Beginning Algebra, MATH 0053, will demonstrate these primary competencies:

- 1) Find the solution of a linear equation.
- 2) Model a linear problem using algebraic process.
- 3) Graph a linear equation in two variables, including horizontal and vertical lines.
- 4) Write the equation of a line.
- 5) Solve a consistent system of two equations in two variables.
- 6) Simplify an exponential expression.

7) ADDITIONAL EMPHASIS:

A student successfully completing Beginning Algebra, MATH 0053, will also

- a) Solve formulas for a secondary variable.
- b) Solve percent and proportion problems.

- c) Solve a linear inequality in one variable (including compound) and graph the solution on a real number line. State the solution set in interval notation.
- d) Graph the solution set of a system of linear inequalities in two variables.
- e) Recognize functionality, and find a function's domain and range (via its graph).
- f) Evaluate and graph functions.
- g) Evaluate perfect n^{th} roots and simplify square root expressions.
- h) Perform addition, subtraction, and multiplication on polynomials.

Topics

- 1) Solving linear equations and inequalities,
- 2) Solving proportion and percent problems,
- 3) Graphing lines in a plane, finding and using slope, writing the equation of a line,
- 4) Functions: finding domain and range, recognizing functionality, evaluating, graphing,
- 5) Solving systems of equations and inequalities in two variables,
- 6) Exponential properties,
- 7) Radicals – introduction to n^{th} root, simplifying square roots,
- 8) Polynomial operations, and
- 9) Applications of most topics above.

Forms of Assessment

Each instructor will include a set of departmental final exam questions on his or her final exam. These questions will be in direct support of the Student Learning Outcomes. The questions will be graded according to a standard grading rubric. The results of these questions and overall student performance will be reported when final grades are turned in.

Last revised July 16, 2015, to take effect fall, 2015