Northwest Arkansas Community College
(Science and Mathematics Division)

Discipline Code
MATH

Course Number
0053

Course Title
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.

Prerequisite/Co-requisite:
Co-Requisite: Foundations of Beginning Algebra (MATH 0022),
or
Prerequisite: Pre-Algebra (MATH 0013) with a grade of C or better,
or appropriate placement scores (see math placement chart in the NWACC catalog).

Credit Hours
3 credit hours, none counting toward any degree requirement

Contact hours
45 lecture contact hours

Load hours
3 load hours

Semesters Offered
Fall, Spring & Summer

ACTS Equivalent
No ACTS Equivalent

Grade Mode
A-F

Learning Outcomes
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 and graph the solution on a real number line. State the solution set in interval notation.
 d) Recognize functionality, and find a function's domain and range (via its graph).
 e) Evaluate and graph functions.
 f) Graph the solution set of a system of linear inequalities in two variables.
 g) Evaluate perfect nth roots and simplify square root expressions.
 h) Perform addition, subtraction, and multiplication on polynomials.

General Education Outcomes Supported
- Students can achieve mathematical literacy.

Standard Practices
Topics list
- Solving linear equations and inequalities,
- Solving proportion and percent problems,
- Graphing lines in a plane, finding and using slope, writing the equation of a line,
- Functions: finding domain and range, recognizing functionality, evaluating, graphing,
- Solving systems of equations and inequalities in two variables,
- Exponential properties,
- Radicals – introduction to nth root, simplifying square roots,
- Polynomial operations, and
- Applications of most topics above.

Learning activities
- Courses must, at a minimum, cover the core learning outcomes for each topic. Faculty may add to these outcomes, but may not omit any of them.

Assessments
- Each instructor will include a set of departmental final exam questions on their final exam.
- Approval to include the questions on another end-of-semester assessment tool may be granted if inclusion on the final exam is not possible.
- These questions will be in direct support of the Learning Outcomes. Department-wide results for these questions will be reported when final grades are submitted.

Grading guidelines
- At least 70% of the grade should come from proctored work.

Revised – June 2022