NORTH CENTRAL TEXAS COLLEGE
MATH 0305 – BEGINNING ALGEBRA
COURSE COMPETENCIES

1.0 To demonstrate competency in the operations of arithmetic on real numbers, the successful student should be able to:
- 1.1 Identify real numbers and their properties.
- 1.2 Simplify fractions.
- 1.3 Define exponents.
- 1.4 Use the order of operations.
- 1.5 Translate phrases into algebraic expressions.

2.0 To demonstrate competency in the operations with algebraic expressions and solving equations and inequalities, the successful student should be able to:
- 2.1 Solve linear equations using the addition and subtraction properties of equality.
- 2.2 Solve linear equations using the multiplication and division properties of equality.
- 2.3 Solve application problems containing percents.
- 2.4 Solve linear equations containing fractions.
- 2.5 Solve linear equations containing decimals.
- 2.6 Identify terms, like terms, and unlike terms.
- 2.7 Combine like terms.
- 2.8 Use the distributive property to remove parentheses.
- 2.9 Solve applications problems.
- 2.10 Use formulas to solve problems.
- 2.11 Solve a formula for one of its variables.
- 2.12 Solve an equation for one of its variables.
- 2.13 Graph solution sets on a number line.
- 2.14 Solve linear inequalities.
- 2.15 Solve application problems containing linear inequalities.

3.0 To demonstrate competency in graphing techniques, the successful student should be able to:
- 3.1 Define the rectangular coordinate system.
- 3.2 Plot a point on a graph.
- 3.3 Interpret information from a graph.
- 3.4 Determine whether an ordered pair is a solution.
- 3.5 Construct a table of values for a linear equation.
- 3.6 Graph a linear equation by plotting ordered pair solutions.
- 3.7 Graph linear equations by finding the intercepts.
- 3.8 Graph vertical lines.
- 3.9 Graph horizontal lines.

4.0 To demonstrate competency in solving systems of linear equations using different methods, the successful student should be able to:
- 4.1 Determine if an ordered pair is a solution to a given system.
- 4.2 Solve a system of equations using the graphing method.
- 4.3 Solve a system of equations using the substitution method.
- 4.4 Solve a system of equations using the addition method.
- 4.5 Solve applied problems using systems of linear equations.

5.0 To demonstrate competency in operations with exponents and polynomials, the successful student should be able to:
- 5.1 Evaluate exponential expressions.
- 5.2 Use the product rules for exponents.
- 5.3 Use the power rule for the product of exponents.
- 5.4 Use the power rule for the quotient of exponents.

5.5 Define a number raised to the 0 power.
5.6 Evaluate numbers raised to negative integer powers.
5.7 Simplify exponential expressions.
5.8 Write numbers in scientific notation.
5.9 Convert numbers from scientific notation to standard form.
5.10 Identify term, constant, polynomial, monomial, binomial, and trinomial, and the degree of a polynomial.
5.11 Review combining like terms.
5.12 Compute the sum of polynomials.
5.13 Compute the difference of polynomials.
5.14 Use the distributive property.
5.15 Compute the product of two binomials using the FOIL method.
5.16 Multiply a polynomial by a binomial.
5.17 Compute the square of a binomial.
5.18 Compute the quotient of polynomials.

6.0 To demonstrate competency in the different methods of factoring polynomials, the successful student should be able to:

6.1 Define factoring.
6.2 Perform prime factorization.
6.3 Find the greatest common factor of a list of terms.
6.4 Factor out the greatest common factor from a polynomial.
6.5 Factor a polynomial by grouping.
6.6 Factor the difference of two squares.
6.7 Factor trinomials of the form $x^2 + bx + c$.
6.8 Factor perfect square trinomials.
6.9 Factor trinomials of the form $ax^2 + bx + c$.
6.10 Determine the correct factoring strategy.
6.11 Solve quadratic equations by factoring.
6.12 Solve application problems with quadratic equation by factoring.