NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
MTE 3 – ALGEBRA BASICS (1 CR.)

Course Description

Includes basic operations with algebraic expressions and solving simple algebraic equations using signed numbers with emphasis on applications. Credit is not applicable toward graduation. Lecture 1 hour per week.

General Course Purpose

The purpose of this course is to develop competency necessary to succeed in 100-level math courses in operations and problem solving with algebraic expressions and simple algebraic equations using signed numbers.

Course Prerequisites/Co-requisites

Prerequisite: MTE 2 or qualifying placement score

Course Objectives

Upon completing the course, students will be able to:

3.1   Determine the absolute value of a number.
3.2   Demonstrate proper use of exponents.
    3.2.1   Express repeated factors using exponents.
    3.2.2   Evaluate powers of numbers.
3.3   Find the principal square root of a perfect square.
3.4   Simplify expressions involving signed numbers.
    3.4.1   Add and subtract signed numbers.
    3.4.2   Multiply and divide signed numbers.
    3.4.3   Use the proper order of operations to simplify expressions containing multiple operations on signed numbers, including powers and square roots.
3.5   Write numbers in scientific notation.
    3.5.1   Convert between integer powers of 10 and equivalent decimal numbers.
    3.5.2   Convert numbers between scientific notation and standard notation.
3.6   Simplify algebraic expressions.
    3.6.1   Identify the properties of real numbers (Commutative, Associative, Distributive, Identity and Inverse Properties).
    3.6.2   Simplify an algebraic expression by combining like terms.
    3.6.3   Simplify algebraic expressions using the order of operations.
3.7   Evaluate a formula or algebraic expression for given values of the variables.
3.8   Solve one-step equations using the addition and multiplication properties.
    3.8.1   Solve one-step equations using rational numbers.
    3.8.2   Solve one-step equations using percents.
3.9   Solve problems using proportions.
3.10   Solve application problems including finding perimeter, area and volume.

Major Topics to be Included

3.1   Determining the absolute value of a number.
3.2. Using exponents.
3.3. Finding the principal square root of a perfect square.
3.4. Simplifying expressions involving signed numbers.

3.5. Writing numbers in scientific notation.
3.6. Simplifying algebraic expressions.
3.7. Evaluating formulas and algebraic expressions for given values of the variables.
3.8. Solving one-step equations using the addition and multiplication properties.
3.9. Solving problems using proportions.
3.10 Solving application problems including finding perimeter, area and volume.