

NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
MTE 6 – EXPONENTS, FACTORING AND POLYNOMIAL EQUATIONS (1 cr.)

Course Description

Includes techniques of factoring polynomials and using these techniques to solve polynomial equations. Emphasizes applications using polynomial equations solved by factoring. 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 solving applications using polynomial equations solved by factoring.

Course Prerequisites/Corequisites

Prerequisite: MTE 5 or qualifying placement score

Course Objectives

Upon completing the course, students will be able to:

- 6.1 Perform operations on exponential expressions using the rules of exponents.**
 - 6.1.1 Evaluate the product of two exponential expressions.
 - 6.1.2 Evaluate the quotient of two exponential expressions.
 - 6.1.3 Evaluate the power of a power of an exponential expression.
 - 6.1.4 Evaluate exponential expressions that contain negative exponents.
 - 6.1.5 Evaluate exponential expressions that contain combinations of products, quotients, power of a power and negative exponents.
 - 6.1.6 Multiply and divide numbers in Scientific Notation.
- 6.2 Define, add, subtract, multiply and divide polynomials.**
 - 6.2.1 Identify an expression as a monomial, binomial, trinomial or polynomial.
 - 6.2.2 Add, subtract, multiply and divide monomials using the rules of exponents.
 - 6.2.3 Add, subtract, and multiply binomials.
 - 6.2.4 Add, subtract, and multiply trinomials.
 - 6.2.5 Add, subtract, and multiply combinations of binomials and trinomials.
- 6.3 Factor polynomials.**
 - 6.3.1 Find the greatest common factor from a list of terms.
 - 6.3.2 Find the greatest common factor from a polynomial.
 - 6.3.3 Factor a polynomial by grouping.
 - 6.3.4 Factor trinomials of the form $x^2 + bx + c$.
 - 6.3.5 Factor trinomials of the form $ax^2 + bx + c$, $a \neq 1$.
 - 6.3.6 Factor a difference of squares.
 - 6.3.7 Factor a sum of two cubes.
 - 6.3.8 Factor a difference of two cubes.
- 6.4 Solve polynomial equations using factoring techniques.**
- 6.5 Solve application problems involving polynomial equations and factoring.**

Major Topics to be Included

- 6.1. Operations on exponential expressions using the rules of exponents.
- 6.2. Defining, adding, subtracting, multiplying and dividing polynomials.
- 6.3. Factoring polynomials.
- 6.4. Solving polynomial equations using factoring techniques.
- 6.5. Solving application problems involving polynomial equations and factoring.