J. Sargeant Reynolds Community College
Course Content Summary

Course Prefix and Number: MTE 6   **Credits:** 1

Course Title: Exponents, Factoring, and Polynomial Equations

Course Description: Includes techniques of factoring polynomials and using these techniques to solve polynomial equations. Emphasizes applications using polynomial equations solved by factoring. Credits not applicable toward graduation. Prerequisite: placement recommendation or MTE 5. Lecture 4 hours per week for ¼ semester.

General Course Purpose: This course is designed to give the student understanding and practice in evaluating, combining, and factoring polynomials.

Course Prerequisites and Co-requisites:
Prerequisite: placement recommendation or MTE 5

Student Learning Outcomes:
Upon completing the course, the student will be able to
a. Evaluate the product or quotient of two exponential expressions;
b. Evaluate the power of a power of an exponential expression;
c. Evaluate exponential expressions that contain negative exponents;
d. Evaluate exponential expressions that contain combinations of products, quotients, power of a power, and negative exponents;
e. Multiply and divide numbers in scientific notation;
f. Identify an expression as a monomial, binomial, trinomial, or polynomial;
g. Add, subtract, multiply, and divide monomials using the rules of exponents;
h. Add, subtract, and multiply binomials, trinomials, and combinations of binomials and trinomials;
i. Find the greatest common factor from a list of terms and from a polynomial;
j. Factor a polynomial by grouping;
k. Factor trinomials of the form $x^2 + bx + c$;
l. Factor trinomials of the form $ax^2 + bx + c$, $a \neq 1$;
m. Factor a difference of squares;
n. Factor a sum or difference of two cubes;
o. Solve polynomial equations using factoring techniques; and
p. Solve application problems involving polynomial equations and factoring.

Major Topics to Be Included:
a. Exponents
b. Operations on polynomials
c. Factoring of polynomials
d. Polynomial equations
e. Polynomial applications

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