

**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 (as it should appear in the catalog)**

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  $\frac{1}{4}$  semester.

**General Course Purpose**

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

**Course Objectives** (Each item should complete the following sentence.)

Upon completing the course, the student will be able to:

1. Evaluate the product or quotient of two exponential expressions.
2. Evaluate the power of a power of an exponential expression.
3. Evaluate exponential expressions that contain negative exponents.
4. Evaluate exponential expressions that contain combinations of products, quotients, power of a power, and negative exponents.
5. Multiply and divide numbers in scientific notation.
6. Identify an expression as a monomial, binomial, trinomial, or polynomial.
7. Add, subtract, multiply, and divide monomials using the rules of exponents.
8. Add, subtract, and multiply binomials, trinomials, and combinations of binomials and trinomials.
9. Find the greatest common factor from a list of terms and from a polynomial.
10. Factor a polynomial by grouping.
11. Factor trinomials of the form  $x^2 + bx + c$
12. Factor trinomials of the form  $ax^2 + bx + c$ ,  $a \neq 1$
13. Factor a difference of squares.
14. Factor a sum or difference of two cubes.
15. Solve polynomial equations using factoring techniques.
16. Solve application problems involving polynomial equations and factoring.

**Major Topics to be Included**

1. Exponents
2. Operations on Polynomials
3. Factoring of Polynomials
4. Polynomial Equations
5. Polynomial Applications

**Effective Date of Course Content Summary (Month, Date Year):** January 2, 2012