

## **Common Course Outline for: MATH 0700 Intermediate Algebra**

### **A. Course Description**

1. Credits: 0 credits
2. Lecture hours per week: 0 hours  
Lab Hours: None
3. Prerequisites: MATH 0601 or MATH 0602 or MATH 0603
4. Co-requisites: None
5. MnTC Goals: None

Proficiency course for Pre-College Math topics. ***Students cannot register for this course.*** Students who successfully demonstrate mastery of the learning objectives for Intermediate Algebra in MATH 0601 or MATH 0602 or MATH 0603 will be given a grade of P on their transcript for MATH 0700. The purpose of this course is to state for other programs and institutions that a student has mastered this level of mathematics material which is equivalent to eligibility for MATH 1100 (College Algebra).

### **B. Date last reviewed:** (January 2018)

### **C. Outline of Major Content Areas**

1. Graphs and Equations of Lines
2. Polynomials: Factoring
3. Quadratic Expressions and Equations
4. Functions: Linear and Quadratic
5. Functions: Exponential and Logarithmic
6. Problem Solving and Systems of Equations
7. Rational Expressions and Equations
8. Radical Expressions and Equations

### **D. Course Learning Outcomes**

Upon successful completion of MATH 0700, students will be able to:

1. Apply the commutative, associative, and distributive laws of real numbers.
2. Simplify algebraic expressions using the correct order of operations.
3. Solve linear equations and inequalities in one variable.
4. Convert verbal expressions into algebraic form; solve applied problems.
5. Plot points and graph lines from tables of values and x- and y-intercepts.
6. Determine slope of a line from its graph, equation, or two points on the line.
7. Graph linear equations given a point and the slope.
8. Apply the rules for exponents.

9. Solve problems using scientific notation.
10. Add, subtract, multiply, divide and factor polynomials.
11. Solve rational equations.
12. Solve a formula for a specific variable.
13. Simplify complex rational expressions.
14. Determine whether a relation is a function, identify its domain and range, and determine if it is one-to-one.
15. Find equations of lines and identify parallel and perpendicular lines.
16. Simplify expressions involving radicals and rational exponents.
17. Solve radical equations.
18. Perform basic arithmetic operations with complex numbers.
19. Solve quadratic equations using factoring, the principle of square roots, completing the square, and the quadratic formula, and use the discriminant to determine the nature of the roots (real, complex) of a quadratic equation.
20. Graph equations of the type  $y = a(x-h)^2 + k$ , finding the vertex, the line of symmetry, and the maximum or minimum value.
21. Find the inverse of a relation or function; find the composition of two functions.
22. Graph exponential and logarithmic functions.
23. Solve exponential and logarithmic equations.
24. Apply the properties of logarithms.
25. Convert between logarithmic and exponential functions.
26. Solve applied problems involving the following mathematical concepts: rational equations, proportion, variation, functions, linear functions, radical equations, quadratic equations, exponential functions, and logarithmic functions.
27. Use a calculator appropriately in all Major Content Areas.

**E. Methods for Assessing Student**

Students who successfully demonstrate mastery of the learning objectives for Intermediate Algebra in MATH 0601 or MATH 0602 or MATH 0603 will be given a grade of P on their transcript for MATH 0700, and be eligible for MATH 1100 (College Algebra).

**F. Special Information**

None