Common Course Outline for: MATH 0630 Survey of Algebra

A. Course Description
1. Number of credits: 3
2. Lecture hours per week: 3 hours
   Lab hours per week: None
3. Prerequisites: Eligible for MATH 0630
4. Co-requisites: None
5. MnTC Goals: None

Note: Only for students intending to take MATH 1020, MATH 1050, or MATH 1080 as their next mathematics course. This course does NOT satisfy the prerequisites for MATH 1100. Topics include linear and quadratic equations, graphs of linear equations, exponents and polynomials, linear and quadratic functions, introduction to exponential and logarithmic functions.

B. Date last reviewed: (January 2018)

C. OUTLINE OF MAJOR CONTENT AREAS
1. Solving Linear Equations
2. Graphing Linear Equations
3. Exponents and Polynomials: Operations and Factoring
4. Solving Quadratic Equations
5. Functions: Linear and Quadratic
6. Intro to Exponential and Logarithmic Functions

D. LEARNING OUTCOMES
Upon successful completion of MATH 0630, students will be able to:
1. Apply laws of real numbers and order of operations to simplify algebraic expressions.
2. Solve linear equations in one and two variables.
3. Plot points and graph lines from tables of values and x- and y- intercepts.
4. Determine linear equations given two points or given one point and the slope.
5. Determine the slope of a line from its graph, equation, or two points on the line.
6. Apply the rules for exponents and solve problems using scientific notation.
7. Manipulate polynomials using addition, subtraction, multiplication.
8. Factor polynomials
9. Solve formulas involving linear, fractional and/or radical expressions for given variables.
10. Solve quadratic equations using factoring and the quadratic formula.

11. Graph basic quadratic functions.
12. Convert between logarithmic and exponential functions.
13. Apply the properties of logarithms.
14. Graph of exponential and logarithmic functions and solve basic exponential and logarithmic equations.
15. Convert verbal expressions into algebraic form.
16. Use a calculator appropriately in all Major Content Areas.
17. Solve applied problems in all Major Content Areas.

E.   METHODS FOR EVALUATION OF STUDENT LEARNING
The instructor will choose from among various evaluation techniques including – but not limited to – in-class testing, take-home testing, assignments, quizzes, attendance, group or individual projects, and research. The instructor will also choose a method for end-of-the-semester evaluation.

F.   SPECIAL INFORMATION
1. A calculator (scientific or graphing) is required. Calculators with symbolic manipulation capabilities (e.g. TI-89, TI-92) are NOT allowed.
2. Internet access is highly recommended as content, learning aids, and homework is available online.
3. A-F is the default grading method with P/NC grading option upon request.