ROCHESTER COMMUNITY AND TECHNICAL COLLEGE COMMON COURSE OUTLINE

Course discipline/number/title: MATH 0098: Elementary Algebra

A. CATALOG DESCRIPTION
1. Credits: 4
2. Hours/Week: 4
3. Prerequisites (Course discipline/number): MATH 0093, READ 0800
4. Other requirements: None
5. MnTC Goals (if any): NA

B. COURSE DESCRIPTION:
This course is designed to provide the fundamentals of algebra using the set of real numbers. The algebraic fundamentals include algebraic expressions, polynomials (including factoring), integer exponents, and equations and linear inequalities (one and two variables). The successful completion of this course prepares the student for Intermediate Algebra or Contemporary Concepts in Mathematics. Successful completion of MATH 0093 with a grade of C or higher or appropriate placement test score is equivalent to meeting course prerequisites.

C. DATE LAST REVISED (Month, year): November, 2018

D. OUTLINE OF MAJOR CONTENT AREAS:
1. Algebraic expressions, equations and inequalities
2. Graphs of linear equations and linear inequalities
3. Systems of linear equations and inequalities
4. Polynomial expressions and equations
5. Integer exponents

E. LEARNING OUTCOMES (GENERAL): The student will be able to:
1. Solve multi-step linear equations and inequalities in one variable, including proportions.
2. Apply graphing linear equation and linear inequality concepts.
   a) Determine the slope of a line.
   b) Graph linear equations and linear inequalities in two variables.
   c) Apply a formula (slope-intercept, point-slope) to find the equation of a line.
   d) Write equations for parallel or perpendicular lines.
3. Apply polynomial concepts.
   a) Perform operations and evaluate expressions.
   b) Factor polynomials completely (greatest common factor, trial-and-error method and/or AC method, grouping, difference of squares, perfect square trinomials).
4. Solve:
   a) Systems of linear equations in two variables by graphing, substitution, and addition/elimination methods.
   b) Systems of linear inequalities in two variables by graphing.
   c) Literal equations or formulas for specified variable.
   d) Quadratic equations by factoring.
5. Multiply and divide using scientific notation.
6. Apply problem-solving techniques to contextual problems (types selected from: number, geometry, uniform motion, mixture, investment, and Pythagorean Theorem problems.

F. LEARNING OUTCOMES (MNTC): NA

G. METHODS FOR EVALUATION OF STUDENT LEARNING: Methods may include but are not limited to:
1. Tests
2. Quizzes
3. Homework
4. Writing assignments
5. Activities/Portfolios/Projects

H. RCTC CORE OUTCOME(S) ADDRESSED: This course contributes to meeting the following RCTC Core Outcome(s):
Critical Thinking, Students will think systematically by integrating skills and using a variety of appropriate resources and methods. They will (1) gather relevant information, (2) make logical connections, (3) synthesize, analyze and evaluate information, (4) articulate and defend ideas, (5) use information to create innovative solutions, and (6) apply the Scientific Method.

I. SPECIAL INFORMATION (if any): None