COMMON COURSE OUTLINE:  Course discipline/number/title:  MATH 0083: Developmental Mathematics III

A.  CATALOG DESCRIPTION
   1.  Credits: 3
   2.  Hours/Week: 3
   3.  Prerequisites (Course discipline/number):  Successful completion of MATH 0082 or MATH 0098 or appropriate placement test score.
   4.  Co-requisites (Course discipline/number):  None
   5.  MnTC Goals (if any):  NA

This is a self-paced, skill mastery developmental mathematics course. It is an individualized learning experience. The instructor will provide individualized instruction, guidance, and monitor progress. Students who completed the minimum content in MATH 0082 may begin with the MATH 0083 content and continue progressing in the MATH 0080 series. The student will demonstrate a minimum level of mastery of 75% for the content areas in the MATH 0080 series required to complete their program requirements.

B.  DATE LAST REVISED (Month, year):  June, 2014

C.  OUTLINE OF MAJOR CONTENT AREAS:
   1.  Factoring Polynomials
   2.  Rational expressions and equations
   3.  Functions
   4.  Matrices
   5.  Radical expressions and equations
   6.  Quadratic functions and equations

D.  LEARNING OUTCOMES (GENERAL):  The student will be able to:
   1.  Factor polynomial completely (greatest common factor, trial-and-error method, and/or AC method, grouping, difference of two squares, perfect square trinomials)
   2.  Solve rational equations
   3.  Simplify and evaluate rational expressions
   4.  Add, subtract, multiply, divide, and simplify rational expressions, radical expressions and expressions involving rational exponents.
   5.  Graph absolute value equations
   6.  Solve absolute value equations, absolute value inequalities, and compound linear inequalities.
   7.  Evaluate functions.
   8.  Apply the algebra of functions (addition, subtraction, multiplication, division)
   9.  Graph functions
   10. Define and identify functions (from a set of points, a graph and/or an equation)
   11. Identify the domain and range of relations and functions.
   12. Solve systems of linear equations (two or more variables) by back substitution, matrices (Gauss-Jordan Elimination)
   13. Solve and graph equations with radicals (including rational exponents)
   14. Solve contextual problems (Pythagorean theorem, distance formula, and midpoint formula)
   15. Add, subtract, multiply, divide and simplify complex numbers.
   16. Find the conjugate and rationalize the denominator of a complex rational expression
   17. Solve quadratic equations (factoring, the square root method, completing the square, quadratic formula)
   18. Identify the characteristics of parabolas (vertex, direction, maximum, minimum, intercepts, axis of symmetry) and graph and apply concepts to conceptual problems (optimization of quadratic functions)

E.  LEARNING OUTCOMES (MNTC):  NA

F.  METHODS FOR EVALUATION OF STUDENT LEARNING:
   1.  Proctored computer/paper tests
   2.  Computer generated homework
   3.  Homework Notebooks/Attendance
G. RCTC CORE OUTCOME(S) ADDRESSED:
☑ Communication ☐ Civic Responsibility
☑ Critical Thinking ☑ Personal/Professional Accountability
☐ Global Awareness/Diversity ☐ Aesthetic Response

H. SPECIAL INFORMATION (if any): None