**Catalog Description:**
Functions: polynomial, rational, radical, exponential, and logarithmic. Introduction to right-angle trigonometry. Applications.

**Prerequisite:**
Math Placement Level N; C- or better in 1075; or credit for 104 or 148; or ACT math score $\geq 22$ or SAT math score $\geq 520$ (scores must be less than 2 years old).

**Exclusions:**
Not open to students with credit for 1144 or 1150 or higher, or for a quarter-system math course numbered 150 or higher.

**Purpose:**
College Algebra provides students a college level academic experience that emphasizes the use of algebra and functions in problem solving and modeling, where solutions to problems in real-world situations are formulated, validated, and analyzed using mental, paper-and-pencil, algebraic and technology-based techniques as appropriate using a variety of mathematical notation. Students should develop a framework of problem-solving techniques (e.g., read the problem at least twice; define variables; sketch and label a diagram; list what is given; restate the question asked; identify variables and parameters; use analytical, numerical and graphical solution methods as appropriate; determine the plausibility of and interpret solutions). – Adapted from the MAA/CUPM CRAFTY 2007 College Algebra Guidelines. This course is intended to satisfy the requirements of the Ohio Board of Regents TMM001 College Algebra course with learning outcomes specified in: http://regents.ohio.gov/transfer/otm/otm-learning-outcomes.php

**Text:**

**Technology:** All students are required to have a graphing calculator, TI-83 or TI-84. Note: Any calculators (including TI-89 and TI-92) that use a Computer Algebra System (CAS) are not permitted.
Sequencing Chart:

Topics List:
Week 1  Section 1.7 – Inequalities
         Section 2.1 – What is a function?  \textit{Ch 2 Functions}
Week 2  Section 2.2 – Graphs of functions
         Section 2.3 – Getting information from a function
Week 3  Section 2.4 – Average rate of change of a function
         Section 2.5 – Transformations of functions
Week 4  Section 2.6 – Combining functions
         Section 2.7 – One-to-one functions and their inverses
Week 5  Section 3.1 – Quadratic functions and models.  \textit{Ch 3 Rational Functions}
Week 6  Test 1
         Section 3.2 – Polynomial functions
         Section 3.3 – Dividing polynomials
Week 7  Section 3.5 – Complex Numbers
         Section 3.6 – Complex Zeros
Week 8  Section 3.7 – Rational functions
         Section 4.1 – Exponential functions.  \textit{Ch 4 Exponentials & logarithms}
Week 9  Section 4.2 – The natural exponential function
Week 10 Test 2
         Section 4.3 – Logarithmic functions
         Section 4.4 – Laws of logarithms
Week 11 Section 4.5 – Exponential and logarithmic equations
Week 12 Section 4.6 – Modeling with exponential and logarithmic equations; applications
         Test 3
         Section 10.1 – Linear systems (two variables)  \textit{Ch 10 Systems of equations}
         Section 10.2 – Linear systems in several variables
Week 13 Section 6.1 – Angle measure  \textit{Ch 6 Trigonometry}
         Section 6.2 – Right triangle trigonometry
Week 14 Section 6.3 – Trigonometric functions of angles
         Comprehensive review, Final Exam