Alexandria Technical and Community College

MATH 1421: College Algebra

A. COURSE DESCRIPTION

Credits: 4
Lecture Hours/Week: 4
Lab Hours/Week: 0
OJT Hours/Week: *.*

Prerequisites:
This course requires any of these three prerequisites
- MATH 0421 - Bridge to College Algebra (Minimum grade: 2.0 GPA Equivalent and Number of Years Valid: 5)
- MATH 0431 - Intermediate Algebra (Minimum grade: 2.0 GPA Equivalent and Number of Years Valid: 5)
- A score of 2 on test Algebra

Corequisites: MATH 0421

MnTC Goals: Goal 04 - Mathematical/Logical Reasoning

This course is for learners with a solid foundation in algebra. Topics include algebraic expressions, linear equations, algebraic word problems, exponents, systems of linear equations, functions, graphs, and quadratic equations. The focus of this course is to develop algebraic math skills to the extent that the learner can apply these skills to solving practical real world problems. A graphing calculator is required. Prerequisite: College level math score on a placement test or concurrently taking the Bridge to College Algebra course MATH0421.

B. COURSE EFFECTIVE DATES: 03/16/2022 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Equations and inequalities
2. Complex numbers
3. Graphs of equations in the rectangular coordinate system
4. Functions and function notation
5. Quadratic and polynomial functions
6. Other functions and operations on functions
7. Remainder and synthetic division
8. Exponential functions
9. Logarithmic functions
10. Solving polynomial equations
11. Linear systems
12. Matrix algebra
D. LEARNING OUTCOMES (General)
   1. Given instruction on computation of polynomials, the learner will be able to add, subtract, multiply, divide, and factor algebraic expressions, providing the answer in simplest form.
   2. Given instruction on algebraic word problems, the learner will be able to solve the problems by applying a five-step systematic process.
   3. Given instruction on literal equations, the learner will be able to solve for an indicated variable.
   4. Given instruction on solving systems of equations, the learner will be able to solve by applying the Gaussian Elimination and Matrix methods.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
   Goal 04 - Mathematical/Logical Reasoning
   1. Illustrate historical and contemporary applications of mathematical/logical systems.
   2. Clearly express mathematical/logical ideas in writing.
   3. Apply higher-order problem-solving and/or modeling strategies.

F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted