



Course Name: MAT-110 College Algebra

Date Updated: 7/2023

Credit Hours/week: 3 hrs./wk. – 3 cr.

BEGINNING: FALL 2023

Catalog Description: An intensive course designed to prepare students for mathematics courses such as Calculus with Applications to Business and Economics, and Precalculus. It covers selected algebra topics including exponents, rational expressions, polynomials, radicals, relations and functions, exponential and logarithmic functions, and systems of equations.

Prerequisite: MAT 016 (grade of “C” or better) or equivalent

Text: Lial, Hornsby, McGinnis, Algebra for College Students, 9th ed. (Addison-Wesley/Pearson, 2020)

Supplementary Material: MyMathLab

Syllabus:

| Period | Text Sections | Topics |
|--------|--------------------|--|
| 1-2 | 1.1-1.4 | Solving linear equations, formulas, applications |
| 3 | 1.5-1.7 | Interval notation; solving linear inequalities, compound inequalities, absolute value equations, and absolute value inequalities |
| 4 | 2.1-2.3 | Slope, equation of lines |
| 5 | 2.5-2.6 | Relations and functions, linear functions |
| 6 | | Test 1 |
| 7-8 | 3.1-3.3 | Systems of equations with 2 and 3 variables, applications |
| 9-10 | 4.1, 4.3, 4.5, 4.6 | Integer exponents, operations on polynomials, long division |
| 11-12 | 5.1-5.5 | Factoring, solving equations by factoring |
| 13 | | Midterm Exam |
| 14-17 | 6.1-6.5 | Operations on rational expressions, complex fractions, rational equations, applications |
| 18-21 | 7.1-7.6 | Radicals, rational exponents, operations on radicals, radical equations |
| 22 | | Test 3 |
| 23 | 7.7 | Complex Numbers |
| 24-25 | 8.1-8.3 | Solving all quadratic equations |
| 26 | 9.1-9.3 | Function operation and composition, Quadratic functions and graphs |
| 27-28 | 10.2-10.3 | Introduction to exponential and logarithm functions, solving simple exponential and logarithmic equations |
| 29 | | Final Exam Review |
| 30 | | Final Exam |

Students are expected to adhere to the policies of the County College of Morris.

Statement of Expected Course LEARNING OUTCOMES

- **Identify, solve, and apply** linear, quadratic, rational, polynomial and square root equations
- **Recognize, classify, and apply** linear equations, linear inequalities and polynomials
- **Identify, describe, and illustrate** functions with emphasis on linear, quadratic, rational, constant and square root equations.
- **Manipulate and analyze** functions
- **Recognize and compare** logarithmic and exponential functions
- **Identify, classify, solve and apply** systems of linear equations in two and three variables
- **Communicate** accurate mathematical terminology and notation in written and/or oral form in order to identify function models to solve applications and interpret found solutions.