CLOUD COUNTY COMMUNITY COLLEGE

Our Mission: Cloud County Community College prepares students to lead successful lives and enhances the vitality of our communities.

**GENERAL INFORMATION**

**Course Number and Title:** MA 110 Intermediate Algebra

**Term and Year:**Academic Year 2022-2023

**Credit Hours**: 3

**Course Description**: This course is designed for students who are inadequately prepared for College Algebra. Topics covered will include linear equations and inequalities, functions, systems of linear equations, polynomials, exponents, rational expressions, radical expressions, and quadratic equations. Prerequisite: appropriate test scores or Elementary Algebra with a grade of C or better or its equivalent.

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****Division:**** Mathematics, Science, and Technical Programs     
**Department:** Mathematics and Engineering

**STUDENT LEARNING OUTCOMES AND ASSESSMENT**

**Course Learning Outcomes**

For this course, students are expected to demonstrate the skills associated with the course learning goals as described by the student learning outcomes below:

1. Demonstrate the ability to perform arithmetic and algebraic manipulation by

a) Factor expressions completely using various techniques.

b) Performing addition, subtraction, multiplication, and division on rational expressions.

c) Simplifying complex fractions.

d) Applying the laws of exponents to simplify expressions containing rational exponents.

e) Applying the laws of radicals to perform addition, subtraction, and multiplication on expressions involving radicals and rationalizing denominators containing radicals.

f) Simplifying radicals containing negative radicands and performing arithmetic operations on complex numbers.

g) Evaluating functions using function notation.

2. Solve equations and inequalities

a) Solve linear equations in one variable.

b) Solve linear inequalities in one variable showing solutions both on the real number line, in interval notation, and in set-builder notation.

c) Solve literal equations.

d) Solve systems of linear equations in two variables.

e) Solve equations by factoring and quadratic formula.

f) Solve equations containing rational expressions.

g) Solve equations involving radicals.

h) Develop and solve mathematical models such as variation, mixture, motion, work, and geometrical applications.

3. Produce graphs on a coordinate plane by

a) Graphing linear equations and inequalities.

b) Graphing functions, including linear and quadratic.

4. Analyze equations and graphs to

a) Determine an equation of a line given sufficient information such as point and slope, two points, point and a perpendicular/parallel line.

b) Calculate the distance between two points.

c) Distinguish between functions and relations using the Vertical Line Test.

d) Identify the domain and range of a function.

The learning outcomes detailed in this syllabus meet or exceed the learning outcomes specified by the Kansas Core Outcomes Project for this course as sanctioned by the Kansas Board of Regents to ensure transfer between Kansas colleges and universities. Systemwide Transfer (SWT) Code: MAT0990

In class, students are assessed on the mastery of these outcomes using the learning management system. Student names will not be used when reporting results. Outcomes-based assessment is used to improve the instructional planning, design, and quality of student learning throughout the college

**General Education Outcomes**

For this course, students are expected to demonstrate the skills associated with the college wide learning goals as described by the general education/program outcomes below:

GEM1. Recognize the mathematical concepts that are applicable to a scenario.

GEM2. Apply technology in analysis.

GEM3. Accurately interpret, validate, and communicate the result.

Artifacts of student work are collected from general education course and reviewed by a faculty committee to assess general education outcomes. Artifacts may also be reviewed by a professional outside the college. Student names will not be used when reviewing artifact nor reporting results. Program accomplishment is partially measured through performance on program outcomes. Outcomes-based assessment is used to improve the instructional planning, design, and quality of student learning throughout the college.

**Institutional Learning Outcomes**

For this course, students are expected to demonstrate the skills associated with the college wide learning outcomes as described below.

*Employment*

**Employment:**

ILO\_Em1. Demonstrate knowledge of norms and expectations of professional environments.

ILO\_Em2. Demonstrate skills in working with others in a professional and constructive manner.

In class, students are assessed on the mastery of these outcomes. Student names will not be used when reporting results. Outcomes-based assessment of the institutional learning outcomes is used to ensure we are meeting the mission of the college, following the guiding values and enhance instructional planning, design, and quality of student learning throughout the college.