

EASTERN ARIZONA COLLEGE

Intermediate Algebra

Course Design
2017-2018

Course Information

Division Mathematics
Course Number MAT 120
Title Intermediate Algebra
Credits 4
Developed by Cliff Thompson
Lecture/Lab Ratio 4 Lecture/0 Lab

Transfer Status

ASU	NAU	UA
Non Transferable	Non Transferable	MATH Departmental Elective

Activity Course No
CIP Code 27.0101
Assessment Mode Pre/Post Test (25 Questions/100 Points)
Semester Taught Fall and Spring
GE Category AAS degree only
Separate Lab No
Awareness Course No
Intensive Writing Course No

Prerequisites

MAT 077 with a grade of "C" or higher or placement test score as established by District policy

Educational Value

This course is designed for continuing algebra students, or anyone who needs a refresher algebra course in preparation for Precalculus Algebra.

Description

A continuation of Elementary Algebra. Topics include functions, inequalities, equations, systems of equations, polynomials, and rational expressions and functions.

Supplies

Scientific calculator

Competencies and Performance Standards

1. Apply techniques to identify, evaluate, graph, and combine functions.

Learning objectives

What you will learn as you master the competency:

- a. Use function notation.
- b. Perform the basic operations with functions: addition, subtraction, multiplication, division.
- c. Sketch the graphs of basic algebraic functions.
- d. Determine if a graph represents the graph of a function.
- e. Determine the domain and range of a function given the graph of the function
- f. Graph linear functions using slope and y-intercept.
- g. Graph linear functions using intercepts.
- h. Determine the slopes of parallel and perpendicular lines.

Performance Standards

You will demonstrate your competence:

- on assigned activities
- on written exams
- on a two-hour cumulative final exam

Your performance will be successful when:

- learner identifies, evaluates, graphs, and combines functions

2. Apply techniques to simplify, evaluate, and combine rational expressions.

Learning objectives

What you will learn as you master the competency:

- a. Simplify rational expressions.
- b. Add, subtract, multiply, and divide rational expressions.
- c. Simplify complex fractions.
- d. Solve equations involving rational expressions.

Performance Standards

You will demonstrate your competence:

- on assigned activities
- on written exams
- on a two-hour cumulative final exam

Your performance will be successful when:

- learner simplifies rational expressions
- learner adds, subtracts, multiplies, and divides rational expressions
- learner simplifies complex fractions
- learner solves equations involving rational expressions

3. Apply techniques to solve equations and inequalities.

Learning objectives

What you will learn as you master the competency:

- a. Solve and graph linear inequalities.
- b. Solve compound inequalities.
- c. Solve absolute value inequalities.
- d. Solve inequalities in two variables graphically.
- e. Use either interval notation or set notation.
- f. Find unions and intersections.
- g. Solve formulas for a given variable.

Performance Standards

You will demonstrate your competence:

- on assigned activities
- on written exams
- on a two-hour cumulative final exam

Your performance will be successful when:

- learner solves inequalities
- learner solves linear equations

4. Apply systems of equations.

Learning objectives

What you will learn as you master the competency:

- a. Solve systems of equations using substitution.
- b. Solve systems of equations using elimination.
- c. Solve a system of three equations.
- d. Translate a word problem into a system of equation.
- e. Solve a system of inequalities in two variables graphically.

Performance Standards

You will demonstrate your competence:

- on assigned activities
- on written exams
- on a two-hour cumulative final exam

Your performance will be successful when:

- learner solves a system of equations in two variables using both substitution and elimination
- learner translates a word problem into a system of equations and solves it
- learner solves a system of equations in three variables
- learner solves a system of inequalities in two variables graphically

5. Simplify polynomial expressions.

Learning objectives

What you will learn as you master the competency:

- a. Identify expressions that are polynomials.
- b. Add polynomials.
- c. Subtract polynomials.
- d. Multiply polynomials.
- e. Divide polynomials by monomial or binomial.

Performance Standards

Competence will be demonstrated:

- o on assigned activities
- o on written exams
- o on a two-hour cumulative final exam

Criteria - Performance will be satisfactory when:

- o learner adds, subtracts, multiplies, and divides polynomials

6. Factor polynomial expressions.

Learning objectives

What you will learn as you master the competency:

- a. Factor out the Greatest Common Factor. (GCF).
- b. Factor by grouping.
- c. Factor the difference of two squares.
- d. Factor trinomials.
- e. Use a general strategy for factoring polynomials.
- f. Use factoring to solve equations.

Performance Standards

Competence will be demonstrated:

- o on assigned activities
- o on written exams
- o on a two-hour cumulative final exam

Criteria - Performance will be satisfactory when:

- o learner factors the GCF
- o learner factors by grouping
- o learner factors trinomials with a lead coefficient of 1
- o learner factors trinomials with a lead coefficient other than 1
- o learner solves equations by factoring

Types of Instruction

Classroom Presentation

Grading Information

Grading Rationale

Each instructor has the flexibility to develop evaluative procedures within the following parameters.

1. Written exams must represent at least 60% of the final course grade
2. Final exam must represent at least 20% of the final course grade.
3. The Post Test is to be embedded in the final exam and must represent at least 10% of the final course grade.
4. Other activities may represent at most 20% of the final course grade.

Grading Scale

A	90%-100%
B	80%-89%
C	70%-79%
D	60%-69%
F	Below 60%