

**Northwest Arkansas Community College**  
(Science and Mathematics Division)

**Discipline Code**

MATH

**Course Number**

1203R

**Course Title**

College Algebra with Review

**Catalog Description**

This course covers the same content as Math 1203, but at a slower pace with additional class time for review or supplemental tutoring. In addition, students may be required to spend up to 15 hours (spread throughout the semester) outside of class receiving external tutoring in the math center or another instructor-approved location.

**Prerequisites**

MATH 0103 (Intermediate Algebra) or MATH 0214 (Foundations of Algebra: STEM) with a grade of "C" or better OR appropriate placement test scores.

**Credit Hours**

3 credit hours

**Contact hours**

45 lecture contact hours; 15 lab contact hours

**Load hours**

3.67 load hours

**Semesters Offered**

Fall, Spring

**ACTS Equivalent**

MATH1103 College Algebra

**Grade Mode**

A-F

## Learning Outcomes

Upon successful completion of MATH 1203R students should be able to do the following, using appropriate vocabulary and incorporating technology where applicable:

- 1) Solve Equations and Inequalities  
quadratic equations, radical equations, rational equations, exponential equations, logarithmic equations, systems of linear equations with matrices, quadratic inequalities, systems of inequalities
- 2) Solve Applications  
linear, quadratic, exponential, systems of equations
- 3) Analyze Functions and/or their Graphs  
transformations of functions, quadratic functions, rational functions, absolute value functions, exponential functions, logarithmic functions, polynomial functions
- 4) Perform Function Operations  
arithmetic operations, difference quotient, composition of functions, inverse functions, domain and range of functions, function values

## General Education Outcomes Supported

- Students can achieve mathematical literacy.

## Standard Practices

### Topics list

- Relations and functions and their graphs
- Characteristics and key attributes of functions and their graphs
- Function transformations
- Operations and compositions with functions, including the difference quotient
- Inverse functions and graphs
- Slopes and rates of change
- Equations of lines
- Linear function applications
- Piecewise functions and graphs
- Systems of linear equations with matrices
- Systems of linear inequalities
- Quadratic equations
- Characteristics and key attributes of quadratic functions and their graphs
- Quadratic function applications
- Quadratic inequalities
- Characteristics and key attributes of higher-order polynomial functions and their graphs
- Zeros and graphs of higher-order polynomial functions
- Rational equations
- Characteristics and key attributes of rational functions and their graphs
- Radical equations
- Characteristics and key attributes of root functions and their graphs
- Characteristics and key attributes of exponential functions and their graphs
- Characteristics and key attributes of logarithmic functions and their graphs
- Properties of logarithms
- Exponential and logarithmic equations
- Exponential function applications

## **Assessments**

- Each instructor will include a set of departmental final exam questions on their final exam. Approval to include the questions on another end-of-semester assessment tool may be granted if inclusion on the final exam is not possible.
- These questions will be in direct support of the Learning Outcomes. Department-wide results for these questions will be reported when final grades are submitted.
- Results from a subset of these questions will be used in the General Education Outcomes report.

## **Grading guidelines**

- At least 70% of the student's final course grade should come from proctored work.