

## MATH 1510 - College Algebra

### Fall 2026 Syllabus, Section 08, CRN 41303,

Credit hours: 4

## Instructor

Alice Omare

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## Public Instructor Information

**Instructor Title:** Graduate Assistant

**Instructor Professional Qualifications:** B.Ed. (Science) in Mathematics and Physics, Kenyatta University; M.S. in Mathematics and Statistics, Youngstown State University (in progress)

**Instructor Office Location:** Cafaro Hall Room 614

**Instructor Office Phone:** 330-941-3302

## Course Description

1510. College Algebra. This course is primarily intended to prepare STEM students (along with MATH 1511) for MATH 1552, 1570 or 1571. Topics include real numbers, equations and inequalities, linear, quadratic, polynomial, exponential, and logarithmic functions, graphing techniques, systems of equations, and applications. The course fulfills the general education requirements for mathematics. Prereq.: YSU Math Placement Level 35 or higher . 4 s.h.

## Course Readings

| Group    | Title                            | Author                                     | ISBN          |
|----------|----------------------------------|--------------------------------------------|---------------|
| Required | College Algebra and Trigonometry | Julie Miller & Donna Gerken with ALEKS 360 | 9781265173159 |

### • Inclusive Access

This course is part of the Inclusive Access program; you should NOT purchase any course materials as they are part of your course registration. In the event you drop this course from your schedule on or prior to the last day of DROP/ADD period, your account will be fully refunded automatically.

### • Opt-out

By default, students are opted into the content. If the student decides at that time, they do not want their required course materials to be delivered in this program at the low cost offered, they have the option to OPT-OUT. We highly encourage students not to opt-out. If you choose to opt-out, you will be responsible for obtaining the appropriate course materials/textbook/connect at the full price.

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

## Schedule of Topics and Assignments

| Week of | Reading(s)     | Proposed Topic                                                                                                                                                                          | Due/To Prepare for Class |
|---------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 8/24    | 1.1, 1.3 – 1.7 | Linear equations & applications, rational equations, complex numbers, quadratic equations & applications, absolute value and radical equations, linear and absolute value inequalities. |                          |
| 8/31    | 1.1, 1.3 – 1.7 | Linear equations & applications, rational equations, complex numbers, quadratic equations & applications, absolute value and radical equations, linear and absolute value inequalities. |                          |

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|-------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9/7   | 1.1, 1.3 – 1.7 | Linear equations & applications, rational equations, complex numbers, quadratic equations & applications, absolute value and radical equations, linear and absolute value inequalities.                                                                                                                                                                                                                                     |
| 9/14  | 2.1 – 2.8      | Rectangular coordinate system, distance and midpoint, intercepts, parallel and perpendicular lines, formulas, circles, functions and relations, parent functions (linear, quadratic, cubic, square root, cube root and absolute value) and their transformations, domain and range, piecewise-defined functions and the algebra of functions, symmetry, difference quotient, operation of functions, composition functions. |
| 9/21  | 2.1 – 2.8      | Rectangular coordinate system, distance and midpoint, intercepts, parallel and perpendicular lines, formulas, circles, functions and relations, parent functions (linear, quadratic, cubic, square root, cube root and absolute value) and their transformations, domain and range, piecewise-defined functions and the algebra of functions, symmetry, difference quotient, operation of functions, composition functions. |
| 9/28  | 2.1 – 2.8      | Rectangular coordinate system, distance and midpoint, intercepts, parallel and perpendicular lines, formulas, circles, functions and relations, parent functions (linear, quadratic, cubic, square root, cube root and absolute value) and their transformations, domain and range, piecewise-defined functions and the algebra of functions, symmetry, difference quotient, operation of functions, composition functions. |
| 10/5  | 2.1 – 2.8      | Rectangular coordinate system, distance and midpoint, intercepts, parallel and perpendicular lines, formulas, circles, functions and relations, parent functions (linear, quadratic, cubic, square root, cube root and absolute value) and their transformations, domain and range, piecewise-defined functions and the algebra of functions, symmetry, difference quotient, operation of functions, composition functions. |
| 10/12 | 3.1-3.6        | Quadratic functions and applications polynomial functions, division of polynomials, synthetic division, zeros of polynomials, asymptotes, rational functions, polynomial, and rational inequalities.                                                                                                                                                                                                                        |

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|-------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10/19 | 3.1-3.6     | Quadratic functions and applications<br>polynomial functions, division of<br>polynomials, synthetic division, zeros of<br>polynomials, asymptotes, rational functions,<br>polynomial, and rational inequalities. |
| 10/26 | 4.1 – 4.6   | Inverse functions, exponential and<br>logarithmic functions and their graphs,<br>properties of logarithms, solving exponential<br>and logarithmic equations, growth, and<br>decay models.                        |
| 11/2  | 4.1 – 4.6   | Inverse functions, exponential and<br>logarithmic functions and their graphs,<br>properties of logarithms, solving exponential<br>and logarithmic equations, growth, and<br>decay models.                        |
| 11/9  | 4.1 – 4.6   | Inverse functions, exponential and<br>logarithmic functions and their graphs,<br>properties of logarithms, solving exponential<br>and logarithmic equations, growth, and<br>decay models.                        |
| 11/16 | 4.1 – 4.6   | Inverse functions, exponential and<br>logarithmic functions and their graphs,<br>properties of logarithms, solving exponential<br>and logarithmic equations, growth, and<br>decay models.                        |
| 11/23 | 9.1 and 9.4 | Solve linear and non-linear systems of<br>equations graphically, and solving systems<br>of equations using substitution and<br>elimination.                                                                      |
| 11/30 | 9.1 and 9.4 | Solve linear and non-linear systems of<br>equations graphically, and solving systems<br>of equations using substitution and<br>elimination.                                                                      |
| 12/7  | Final Exam  | Final Exam: Wednesday, December 9<br>3:15-5:15                                                                                                                                                                   |

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.