Course Description

Algebra 1 takes the student beyond the basic mathematics skills learned at lower level classes of mathematics and introduces them to topics that explore higher mathematic principles and skills. The student will investigate and solve problems that use both real numbers and variables. The skills learned will be used to solve real life problems to help students function better in the world around them. An emphasis will be placed on solving equations, including linear, quadratic, inequalities, multistep, and variations. Factoring and graphing will be used to solve a variety of equations and systems of equations. Also, skills related to exponents, statistics, and probability will be explored and related to practical application.

Rationale

In order to function in the real world, a basic knowledge of mathematics is essential for being successful in a variety of fields and occupations. Every day we use mathematics to solve everything from balancing a checkbook to determining the amount of shingles needed for a roof to the angle of elevation when surveying property for road improvements. Algebra 1 offers applicable math skills and practice to solve problems we encounter in the real world both at the personal and global level.

Prerequisite

Pre-Algebra or appropriate score on Math assessment test

Measurable Learning Outcomes

A. Real Numbers, Order of Operations, and Simplifying Expressions
B. Solving Equations, Percent, and Inequalities
C. Linear Functions, Sequences, and Rate of Change
D. Slope-Intercept, Point-Slope, and Solving Systems of Equations by Substitution and Elimination
E. Linear Inequalities – Graphing and Solving
F. Exponents and Polynomials
G. Factoring Methods and Quadratic Functions and Equations
H. The Quadratic Formula, Probability, and Graphing Data
I. Exponential, Radical and Rational Functions
J. Solving Rational Equations – Multiplying, Dividing, Adding and Subtracting
Materials List

Please see the [Supply List](#) and [System Requirements](#) pages on LUOA’s website as well as the [Digital Literacy Requirements](#) page for general supplies and requirements with LUOA curriculum. This course does not require any materials beyond those required by all LUOA courses.

Digital Tools

This course makes use of third-party digital resources to enhance the learning experience. These resources have been curated by LUOA staff and faculty and can be safely accessed by students to complete coursework. Please ensure that internet browser settings, pop-up blockers, and other filtering tools allow for these resources to be accessed. This course uses content and assessments from:

- Thinkwell

Course Grading Policies

The students’ grades will be determined according to the following grading scale and assignment weights. The final letter grade for the course is determined by a 10-point scale. Assignments are weighted according to a tier system, which can be referenced on the Grades Page in Canvas. Each tier is weighted according to the table below. Items that do not affect the student’s grade are found in Tier 0.

<table>
<thead>
<tr>
<th>Grading Scale</th>
<th>Assignment Weights</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 90-100%</td>
<td>Tier 0 0%</td>
</tr>
<tr>
<td>B 80-89%</td>
<td>Tier 1 25%</td>
</tr>
<tr>
<td>C 70-79%</td>
<td>Tier 2 35%</td>
</tr>
<tr>
<td>D 60-69%</td>
<td>Tier 3 40%</td>
</tr>
<tr>
<td>F 0-59%</td>
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</tbody>
</table>

Course Policies

Students are accountable for all information in the Student Handbook. Below are a few policies that have been highlighted from the Student Handbook.

Types of Assessments

To simplify and clearly identify which policies apply to which assessment, each assessment has been categorized into one of four categories: Lesson, Assignment, Quiz, or Test. Each applicable item on the course Modules page has been designated with an identifier chosen from among these categories. Thus, a Quiz on the American Revolution may be designated by a title like “1.2.3 Quiz: The American Revolution.” These identifiers were placed on the Modules page to help students understand which Honor Code and Resubmission policies apply to that assessment (see the Honor Code and Resubmission policies on the page to follow for further details).
• **Lesson:** Any item on the Modules page designated as a “Lesson”
These include instructional content and sometimes an assessment of that content. Typically, a Lesson will be the day-to-day work that a student completes.

• **Assignment:** Any item on the Modules page designated as an “Assignment”
Typical examples of Assignments include, but are not limited to, papers, book reports, projects, labs, and speeches. Assignments are usually something that the student should do their best work on the first time.

• **Quiz:** Any item on the Modules page designated as a “Quiz”
This usually takes the form of a traditional assessment where the student will answer questions to demonstrate knowledge of the subject. Quizzes cover a smaller amount of material than Tests.

• **Test:** Any item on the Modules page designated as a “Test”
This usually takes the form of a traditional assessment where the student will answer questions to demonstrate knowledge of the subject. Tests cover a larger amount of material than Quizzes.

**Resubmission Policy**
Students are expected to submit their best work on the first submission for every Lesson, Assignment, Quiz, and Test. However, resubmissions may be permitted in the following circumstances:

• **Lesson:** Students are automatically permitted two attempts on a Lesson. The student may freely resubmit for their first two attempts without the need for teacher approval.

• **Assignment:** Students are intended to do their best work the first time on all Assignments. However, any resubmissions must be completed before the student moves more than one module ahead of that Assignment. For example, a student may resubmit an Assignment from Module 3 while in Module 4, but not an Assignment from Modules 1 or 2. High School students may not resubmit an Assignment without expressed written permission from the teacher in a comment.

• **Quiz:** Students may NOT resubmit for an increased grade.

• **Test:** Students may NOT resubmit for an increased grade.

If a student feels that he or she deserves a resubmission on a Lesson, Assignment, Quiz, or Test due to a technical issue such as a computer crashing, the student should message his or her teacher to make the request, and that request will need to be approved by a Department Chair.

**Consequences for Violations to the Honor Code**
Every time a student violates the Honor Code, the teacher will fill out an Honor Code Incident Report, email the advisor, and carbon copy the Department Chair with the report. The advisor will verify which number offense this is and inform the teacher and parent. The
teacher will then leave a comment on the student’s assignment and award the appropriate consequences. Replies to any correspondence must be made within 24 hours of the last email received.

- **Warning:** This ONLY applies to high school Lessons and elementary/middle school Assignments and Lessons. These will be taken as a teaching moment for the student.
  - **Lessons:** A zero will be assigned for the question only.
  - **Elementary/Middle School Assignment:** The student must redo their work. However, they may retain their original grade.

- **1st Offense:**
  - **Lesson, Quiz, or Test:** The student will receive a zero on the entire assessment.
  - **Assignment:** The student will:
    - Receive a 0% or 80% of his or her original grade per the teacher’s discretion
    - Be required to complete the Plagiarism Workshop
    - Be permitted to retry for a higher grade on the next attempt at the teacher’s discretion

- **2nd Offense:** The student will receive a zero and be placed on Academic Probation.

- **3rd Offense:** The student will receive a zero and the Department Chair will determine the consequences that should follow, possibly including Academic Withdrawal from the course or expulsion from the academy.
Module 1: Real Numbers, Order of Operations, and Simplifying Expressions
   Week 1: Foundations for Algebra
   Week 2: Tools for Algebra
   Week 3: Simplifying Expressions and Introduction to Functions
   Week 4: Solving One and Two-Step Equations

Module 2: Solving Equations, Percents, and Inequalities
   Week 5: Solving Two-Step and Multi-Step Equations
   Week 6: Literal and Absolute Value Equations, Proportions
   Week 7: Percents
   Week 8: Inequalities

Module 3: Linear Equations, Sequences, and Rate of Change
   Week 9: Solving Inequalities
   Week 10: Linear Functions and Applications of Functions
   Week 11: Applications and Characteristics of Linear Functions
   Week 12: Rate of Change, Slope, the Midpoint and Distance Formulas

Module 4: Slope-Intercept, Point Slope, and solving Systems of Equations by Substitution and elimination
   Week 13: Finding Slope
   Week 14: Slopes of Parallel and Perpendicular Lines and Transforming Functions
   Week 15: Solving Systems of Equations by Substitution & Elimination
   Week 16: Solving and Applying Systems

Module 5: Linear Inequalities
   Week 17: Direct Variation and Systems of Inequalities
   Week 18: Semester Review and Exam

Module 6: Exponents and Polynomials
   Week 19: Properties of Exponents
   Week 20: Properties and Applications of Exponents
   Week 21: Polynomials
   Week 22: Monomials and Binomials

Module 7: Factoring Methods and Quadratic Functions and Equations
   Week 23: Factoring Methods
   Week 24: Applying Factoring Methods
   Week 25: Quadratic Functions
   Week 26: Solving Quadratic Equations

(Continued on next page)
Module 8: The Quadratic Formula, Probability and Graphing Data
Week 27: Working with Quadratic Equations and the Quadratic Formula
Week 28: Probability
Week 29: Graphing Data
Week 30: Data Analysis

Module 9: Exponential, Radical and Rational Functions
Week 31: Geometric Sequences and Exponential Functions
Week 32: Radical Functions, Expressions, and Equations
Week 33: Radical Expressions and Equations
Week 34: Variation, Rational Functions and Expressions

Module 10: Solving Rational Equations
Week 35: Solving Rational Equations
Week 36: Semester Review and Exam