Course Acronym:	AHSD
Course Number:	511
Descriptive Title:	High School Pre-Algebra
Division:	Adult High School Diploma
Department:	Adult High School Diploma
Course Disciplines:	Adult High School Diploma
Catalog Description:	This noncredit high school level course provides an introduction to the structure and concepts of algebra, including variables, expressions, equations, absolute value, inequalities, and properties of real numbers. Techniques of algebra, including solving equations and inequalities, graphing linear equations, and solving word problems are also included. Successful completion of this course contributes to progress toward a high school diploma or equivalent. From 1-10 high school credits can be earned in 15-hour modules. Note: This course is open entry/open exit.
Prerequisite:	AHSD 510 or placement based on the math assessment process
Co-requisite:	
Recommended Preparation:	
Enrollment Limitation:	
Hours Lecture (per week):	.83 to 8.33
Hours Laboratory (per week):	0
Outside Study Hours:	1.66 to 16.66
Total Course Hours:	15 to 150
Course Units:	0
Grading Method:	Pass/No Pass/SP
Credit Status:	Noncredit
Transfer CSU:	No
Effective Date:	
Transfer UC:	No
Effective Date:	
General Education: ECC	
Term:	
Other:	
CSU GE:	
Term:	
Other:	
IGETC:	

Term:	
Other:	
Cal-GETC:	
Term:	
Other:	
Student Learning Outcomes:	Upon completion of the course, students will be able to: 1. use math skills to solve simple algebraic equations and inequalities. 2. construct linear equations in two variables. 3. develop strategies to solve word problems. 4. organize basic concepts of geometry.
Course Objectives:	1. Compute simple powers and roots of integers, fractions, and absolute values of real numbers. 2. Perform complex sets of arithmetic operations on expressions involving constants using order of operations. 3. Convert between scientific notation and decimal notation. 4. Distinguish factors from terms. 5. Discriminate between variables and constants. 6. Recognize and combine like terms. 7. Compare use of a variable as an unknown quantity versus as a varying quantity. 8. Solve one- and two-step equations and inequalities. 9. Solve one- and two-step absolute value equations and inequalities. 10. Evaluate expressions with variables. 11. Change the subject of a formula. 12. Order real numbers on a number line. 13. Construct axes for Cartesian coordinate system with appropriate scales. 14. Graph linear equations on Cartesian coordinate system. 15. Determine slope and intercept characteristics of linear equations. 16. Convert a linear equation to a graph and determine equation from a graph. 17. Convert among standard, slope/intercept, and point/slope forms of linear equations. 18. Identify English words which indicate use of a specific arithmetic operation.

	19. Identify question being asked. 20. Translate words into algebraic expressions and formulate and solve appropriate equations to answer word problems. 21. Develop strategies for solving various categories of word problems. 22. Classify angles and triangles. 23. Measure size of angles with protractor. 24. Construct equal angles with compass. 25. Compute area and perimeter (circumference) of triangles, rectangles, squares and circles.
Major Topics:	**I. Review basic math skills (lecture)** A. Fractions, decimals, percents, reciprocals B. Ratios, rates, proportions **II. Expand basic math skills (lecture)** A. Square roots of perfect squares and other positive integers and small integer powers of rational numbers B. Absolute value C. Prime numbers and factorization of composite numbers D. Reciprocal, opposite, inverse E. Simple sequences **III. Variables and expressions (lecture)** A. Uses of a variable as an unknown quantity and as a changing value B. Factors versus terms C. Recognition and combination of like terms D. Simplification and evaluation of expressions **IV. Equations and inequalities (lecture)** A. Solve one-step equations B. Solve two-step equations C. Solve simple absolute value equations algebraically and on a number line D. Order integers, fractions, and decimals on a number line E. Solve inequalities on a number line F. Solve inequalities algebraically

G. Solve simple absolute value inequalities

V. Linear equations (lecture)

A. Equations in two variables

B. Points, lines, and Cartesian coordinate graphs

C. Slope and intercepts

D. Standard, slope/intercept, and point/slope forms of the equation of a line

E. Graphing linear equations

F. Determining an equation from a graph of a line

VI. Word problems (lecture)

A. Identify words in English which indicate use of specific arithmetic operations

B. Identify question being asked

C. Create appropriate equation for a word problem

D. Develop strategies for solution

E. Solve specific types of word problems

1. Rate, ratio, proportion

2. Distance

3. Area and perimeter

VII. Angles and triangles (lecture)

A. Measure and classify angles

B. Classify triangles

VIII. Data and statistics (lecture)

A. Numeric summaries of data

1. Measures of central tendency - mean, median, mode

2. Quartiles and 5-number summary as measures of spread

B. Graphic summaries of data

1. Stem and leaf plot, box plot

2. Bar charts, histogram, circle graph

C. Interpretation of graphs and statistical data presented in media and other external sources

	IX. Measurement (lecture) A. Metric system B. Conversions between English and metric systems
Total Lecture Hours:	15 to 150
Total Laboratory Hours:	0
Total Hours:	15 to 150
A.1. Primary Methods of Evaluation (Part 1 - CCN courses only):	
A.2. Primary Method of Evaluation (Part 2 - all courses; choose one):	
Typical Assignment Using Primary Method of Evaluation:	Complete Green Globs exercises to level 20, demonstrating your ability to determine the equation of a line given its graph. Print out your level 20 graph with equation to show that you have completed this project.
Critical Thinking Assignment 1:	On one sheet of paper, write six word problems (three area problems and three perimeter problems). Solve each problem, showing all work. Box the answer. Put your name on that sheet of paper. You will be graded on the interest, quality, and diversity of your questions and the completeness and accuracy of your solutions. On a second sheet, rewrite the problems only, and do not write your name. Paper clip the two sheets together and turn them in on Monday. On Tuesday we will have an in-class competition. Sheets are to be handed out to students with the problems only, being sure that no one gets her/his own. Everyone will have the same amount of time to solve the problems on the sheet that she/he has been given. The winners of the competition will be those students who solve the highest number of problems correctly. So, don't make your problems too easy!
Critical Thinking Assignment 2:	The first five rows of Pascal's Triangle were shown on the board in class. The triangle is generated recursively: the sides of the Triangle are 1's and the numbers between the 1's represent the sum of the two numbers diagonally above each. Working in teams of three, copy the first five rows of Pascal's Triangle and complete the next five rows. Research the history of the triangle and what its practical applications are. Find out what triangular numbers are and how they relate to the Triangle. As a team, write this work up in a two- to four-page paper, approximately 400-1000 words. Include a bibliography of the references you used in MLA format. Use at least one reference that is not from the Internet. Type the paper, including the names of the three team members, double-spaced, using Times New Roman 12-point font.
Other Evaluation Methods:	Homework Problems, Multiple Choice, Objective Exam, Quizzes, Written Homework
Instructional Methods:	Demonstration, Discussion, Group Activities, Lecture, Multimedia presentations
If other:	
Work Outside of Class:	Answer questions, Problem solving activity, Required reading, Skill practice, Study
If Other:	
Up-To-Date Representative Texts:	Martin-Gay, Elayne. *Prealgebra*, 8th Edition. Pearson, 2018 (Discipline Standard)
Alternative Texts:	

Required Supplementary Readings:	
Other Required Materials:	
Requisite:	Prerequisite
Category:	sequential
Requisite course(s): List both prerequisites and corequisites in this box.	AHSD 510 "Math Fundamentals"
Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).	
Requisite Skill:	
Requisite Skill and Matching Skill(s): Bold the requisite skill(s). If applicable	
Requisite course:	
Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).	**Practice the rules and applications of basic arithmetic calculations applied to integers, including rounding, comparing, and estimating.** AHSD 510 - Practice the rules and applications of basic arithmetic calculations applied to integers, including rounding, comparing, and estimating. **Perform the four basic arithmetic operations on fractions, decimals, and percents.** AHSD 510 - Perform the four basic arithmetic operations on fractions, decimals, and percents. **Calculate solutions in word problems.** AHSD 510 - Calculate solutions in word problems.
Requisite Skill:	
Requisite Skill and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s). If applicable	
Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	Matthew Kline
Date:	03/06/2024
Original Board Approval Date:	01/13/2025

Last Reviewed and/or Revised by:	Matt Kline
Date:	03/11/2026
Last Board Approval Date:	05/20/2026
Effective Term:	FA 2026