STUDYWALKS · COURSE SYLLABUS

College Algebra — High School Course with CLEP Preparation

College Algebra is a gateway course. It reviews first-year algebra quickly and assumes it; start with Algebra 1 if you have not taken first-year algebra. Comes after: Algebra 2. In a high school plan it is a CLEP option after Algebra 2, a quick college-pace review of the same algebra.

CREDIT LABEL	HOURS GOAL	STUDYWALKS LEARNING HOURS	SUGGESTED OFFLINE HOURS
0.5 credit	**60 h**	**12 h**	**48 h**
high school, with the study plan	the 0.5-credit convention	measured runtime plus assessment time	reading, review and writing

12 h StudyWalks (2.6 h of lessons, 5 h of lectures, 4.6 h of quizzes and exams) + **48 h** suggested offline study = **60 h**. 263 lessons in 9 units; prepares for the CLEP College Algebra exam.

High school credit is granted by the homeschool parent under the state's rules. StudyWalks supplies the record: hours, scores and this syllabus. The credit label is a suggestion; the parent makes the final call.

Course contents

Unit	Title and lecture topics	Lessons	Lecture
1	**Real Numbers, Exponents, and Radicals** The number sets · Classifying one · Notation and order · The properties · Multiplying and dividing powers · Powers of powers · Zero and negative exponents · Powers of products and quotients · Putting them together · Very large and very small · Distance from zero · Square roots, and the bars · Splitting a root · Simplifying · Adding roots · Clearing the denominator · Beyond square roots · The capstone	41	47 min (2 parts)
2	**Polynomials, Factoring, and Rational Expressions** What a polynomial is · Adding and multiplying · Two patterns, and the error between them · Factoring, and the first move · Factoring trinomials · Two-term patterns · Choosing a strategy · Fractions of polynomials · Multiplying, dividing, adding · Splitting a fraction, and fractions inside fractions · The capstone	31	34 min
3	**Linear Equations, Models, and Inequalities** The plane · Two formulas from one theorem · Equations in one variable · Equations with fractions · Slope · Two forms of a line · Relations between lines · Naming a set of numbers · Inequalities, and the one law that differs · Compound inequalities, and distance · Absolute value inequalities · The capstone	33	34 min
4	**Complex Numbers and Quadratic Equations** A new number · Arithmetic with them · Roots of negatives, and the cycle · Quadratics, and the first method · Two roots that get lost · The general method · When the discriminant is negative · Radical equations · Three more equation types · The capstone	28	32 min

Unit	Title and lecture topics	Lessons	Lecture
5	**Functions: Definition, Domain, Graphs, Transformations** Relations and functions · Feeding in a sum · One-to-one, and reading graphs · Domain and range · Functions in pieces · Reading a graph's behaviour · Combining functions · Moving a graph · Stretching a graph · Inverses · The capstone	36	35 min
6	**Linear and Quadratic Functions as Models** The line as a function · Building a linear model · Two lines, and one zero · The parabola · Two forms · Converting · What the vertex gives you · Two procedures · The capstone	19	25 min
7	**Polynomial and Rational Functions** Power functions and end behaviour · Zeros, and how many turns · Sketching · Two ways to divide · Two theorems · Rational functions · The other asymptote · Analysing one · Radicals, and earning an inverse · Variation · The capstone	24	29 min
8	**Exponential and Logarithmic Functions** Exponential functions · Money, and a number · The graph · The inverse · Working with the two forms · Three laws, and three errors · Using them · Solving exponential equations · Solving logarithmic equations · An application · The capstone	28	34 min
9	**Systems, Counting, the Binomial Theorem + Capstones** Systems of two equations · Three outcomes · From a story · Three variables · When one curves · Counting · Binomials · The unit's capstone · The course's capstones	23	34 min

Assessment and grading

- **Unit quizzes.** 9 quizzes, 10 questions each, checked as the student goes, each answer with the lesson to review. Untimed; retakes are unlimited.
- **Mid exam.** 50 questions on units 1–5, drawn fresh each time and scored at the end with a breakdown by content area. Untimed; retakes are unlimited.
- **Final exam.** 60 questions, 90 minutes, on the whole course. Scored 20–80; 50 passes (40 of 60 correct, about 67%). Retakes are unlimited with a 24-hour wait, each a fresh draw.

Suggested composite grade

Part	Weight
Unit quizzes (average of best scores)	20%
Mid exam (best score)	20%
Final exam (percent correct)	60%

Suggested letter scale

Letter	Composite
A	90–100
B	80–89
C	70–79
D	60–69
F	below 60

Suggested; the parent sets the grade. A passing final is the completion standard for the course record.

Study plan

The 48 offline hours are spread over the units in proportion to each unit's StudyWalks time. For each unit: read the matching sections of *College Algebra 2e (OpenStax)*, review the unit quiz misses, and

write a one-page unit summary. Log the time as you go.

Unit	Title	StudyWalks	Offline, suggested	Unit total
1	Real Numbers, Exponents, and Radicals	1 h 11 min	7 h 25 min	8 h 36 min
2	Polynomials, Factoring, and Rational Expressions	52 min	5 h 25 min	6 h 17 min
3	Linear Equations, Models, and Inequalities	54 min	5 h 35 min	6 h 29 min
4	Complex Numbers and Quadratic Equations	49 min	5 h 5 min	5 h 54 min
5	Functions: Definition, Domain, Graphs, Transformations	57 min	5 h 55 min	6 h 52 min
6	Linear and Quadratic Functions as Models	37 min	3 h 50 min	4 h 27 min
7	Polynomial and Rational Functions	44 min	4 h 35 min	5 h 19 min
8	Exponential and Logarithmic Functions	50 min	5 h 10 min	6 h
9	Systems, Counting, the Binomial Theorem + Capstones	48 min	5 h	5 h 48 min
Lessons and lectures		**7 h 42 min**	**48 h**	**55 h 42 min**
Quizzes, mid exam and final (stated time)		**4 h 36 min**	**—**	**4 h 36 min**

Unit times are the unit's lecture runtime plus its lessons at the course's measured average lesson length; totals can differ from the learning hours by rounding.

Sources

- **Anchor:** OpenStax, *College Algebra 2e*, senior contributing author Jay Abramson (Arizona State University). Rice University, 2026; first published 2021. Digital ISBN 978-1-951693-41-1.

CC BY-NC-SA 4.0

StudyWalks finals are modeled on the CLEP exam blueprint in scope, format, and rigor. Scores are StudyWalks scores, not CLEP scores, and are not affiliated with or recognized by the College Board.

StudyWalks is a private educational site and is not affiliated with, endorsed by, or connected to any government agency, the College Board, DSST, ACT, Inc., the National Center for Competency Testing (NCCT), or any testing or licensing body.

College credit for CLEP and DSST exams is set by each college. CLEP is administered by the College Board; DSST is administered by Prometric.

studywalks.com/c/college-algebra/syllabus/