

Math 126S-Precalculus I: College Algebra with Integrated Support

1. Course Description

- Math 126S is a College Algebra course that includes intermediate algebra support to assist students that may not have intermediate algebra recency. The integrated intermediate algebra support is seamlessly interwoven with Math 126. The support components of this course are taught strategically throughout the semester to provide a "just in time" instruction of prerequisite skills needed to master concepts in Math 126.

2. Topics Covered

- The math integrated support topics include a review of computational skills developed in intermediate algebra: factoring, operations on rational and radical expressions, absolute value equations and inequalities, exponential and logarithmic expressions and equations, conic sections, functions including composition and inverses, in-depth focus on quadratic functions, and a review of geometry. The college algebra content (Math 126) covers advanced algebra topics including functions and their properties. Students in this course study a variety of different types of functions (linear, quadratic, polynomial, rational, exponential, and logarithmic). Each type of function is studied in depth including their graphs and applications. Students in this course also study inverse functions, systems of equations, and polynomial and rational inequalities. Concepts are covered with the expectation that students are preparing to take Calculus I (Math 150) and beyond.

3. What to expect?

- **Time:** The most common term lengths are listed below; others would be proportionate. Outside of class time is studying, completing homework, reviewing, etc.

Length of term	In-class time	Out-of-class time (typical)	Total hours/wk (typical)	Total Term hours (typical)
17 weeks	5 hrs/wk	10 hrs/wk	15	255

- Technology: The class requires a graphing calculator. The TI-83/84 is recommended. No prior knowledge of using a graphing calculator is needed.
- Grading: Students who earn a grade of C or higher in Math 126S will pass this course and can take the next Math class that they need for their major.

4. Who should enroll?

- This pre-calculus course with integrated support is recommended for any student who majors in STEM, but may be lacking intermediate algebra recency. Students that do not have intermediate algebra recency may also want to consider enrolling in Math 112 or even noncredit Algebra Essentials II before taking Math 126S.
- Students who are majoring in STEM will take Math 131 after successfully completing this course.

5. What prior knowledge students need to know to be successful?

- Polynomials
 - Addition, subtraction, and multiplication of polynomials
 - Factoring
- Solving Equations and Inequalities

- Solving linear equations in one variable
- Solving linear inequalities in one variable, and graphing the solution set on the number line
- Solving quadratic equations by factoring
- Rules of Exponents
 - Multiplying and dividing like bases
 - Raising a term involving an exponent to a power
 - Negative exponents
 - Zero exponents
- Rectangular Coordinate System
 - Plot points (x, y)
 - Graph a line
 - Find x- and y-intercepts
- Applied Problems
 - Use algebra to model a real-life situation
 - Solve a formula for a particular variable
- Rational Expressions
 - Reducing to lowest terms
 - Multiplying and dividing
 - Finding the least common denominator