Before studying precalculus, all students should develop proficiency in topics typically found in the Algebra 1-Geometry-Algebra 2 (AGA) content sequence. Students should have developed the following:

- Proficiency with the skills and concepts related to linear and quadratic functions, including algebraic manipulation, solving equations, and solving inequalities
- Proficiency in manipulating algebraic expressions related to polynomial functions, including polynomial addition and multiplication, factoring quadratic trinomials, and using the quadratic formula
- Proficiency in solving right triangle problems involving trigonometry
- Proficiency in solving systems of equations in two and three variables
- Familiarity with piecewise-defined functions
- Familiarity with exponential functions and rules for exponents
- Familiarity with radicals (e.g., square roots, cube roots)
- Familiarity with complex numbers
- Familiarity with communicating and reasoning among graphical, numerical, analytical, and verbal representations of functions

Technology should be used throughout the course as a tool to explore concepts. In AP Precalculus, students should specifically practice using technology to do the following:[1]

- Perform calculations (e.g., exponents, roots, trigonometric values, logarithms)[1]
- Graph functions and analyze graphs[1]
- Generate a table of values for a function[1]
- Find real zeros of functions[1]
- Find points of intersection of graphs of functions[1]
- Find minima/maxima of functions[1]
- Find numerical solutions to equations in one variable[1]
- Find regression equations to model data (linear, quadratic, cubic, quartic, exponential, logarithmic, and sinusoidal) and plot the corresponding residuals[1]
- Perform matrix operations (e.g., multiplication, finding inverses)[1]

It is important to note that technology should not replace the development of symbolic manipulation skills. When algebraic expressions and equations are accessible with precalculus-level algebraic manipulation, students are expected to find zeros, solve equations, and calculate values without the help of technology. Most of the AP Exam will need to be completed without the use of technology. However, selected multiple-choice and free-response questions will require students to use a graphing calculator to complete the tasks delineated above.[1]

Course at a Glance

The Course at a Glance provides a useful visual organization for the AP Precalculus curricular components, including:

- Sequence of units, along with approximate weighting and suggested pacing. Please note, pacing is based on 45-minute class periods, meeting ǪĀve days each week for a full academic year.
- Progression of topics within each unit.

MATHEMATICAL PRACTICES

Each topic contains required Learning Objectives and Essential Knowledge Statements that form the basis of the assessment on the AP Exam.

Assign the Progress Checks ² either as homework or in class ² for each unit. Each Progress Check contains formative multiple-choice and free-response questions. The feedback from the Progress Checks shows students the areas where they need to focus.