Course at a Glance

Plan

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 five days each week for a full academic year.
- Progression of topics within each unit.

Teach

MATHEMATICAL PRACTICES

- 1 Procedural and Symbolic Fluency
- 2 Multiple Representations
- 3 Communication and Reasoning

Required Course Content

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

Assess

Assign the Progress Checks—either as homework or in class—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.

UNIT 1 Polynomial and Rational Functions

6–8 weeks | **30–40% AP Exam Weighting**

2, 3	1.1 Change in Tandem
2, 3	1.2 Rates of Change
3	1.3 Rates of Change in Linear and Quadratic Functions
2, 3	1.4 Polynomial Functions and Rates of Change
1, 2	1.5 Polynomial Functions and Complex Zeros
3	1.6 Polynomial Functions and End Behavior
1, 3	1.7 Rational Functions and End Behavior
1	1.8 Rational Functions and Zeros
2	1.9 Rational Functions and Vertical Asymptotes
3	1.10 Rational Functions and Holes
1, 3	1.11 Equivalent Representations of Polynomial and Rational Expressions
1, 3	1.12 Transformations of Functions
2, 3	1.13 Function Model Selection and Assumption Articulation
1, 3	1.14 Function Model Construction and Application

Progress Check Unit 1 Part 1: Topics 1.1–1.6
Multiple-choice: 18
Free-response: 2

Progress Check Unit 1 Part 2: Topics 1.7–1.14
Multiple-choice: 24
Free-response: 2

UNIT 2 Exponential and Logarithmic Functions

6–9 weeks | **27–40% AP Exam Weighting**

1, 3	2.1 Change in Arithmetic and Geometric Sequences
1, 3	2.2 Change in Linear and Exponential Functions
3	2.3 Exponential Functions
1, 3	2.4 Exponential Function Manipulation
1, 3	2.5 Exponential Function Context and Data Modeling
2, 3	2.6 Competing Function Model Validation
1, 2	2.7 Composition of Functions
1, 2	2.8 Inverse Functions
1	2.9 Logarithmic Expressions
1, 2	2.10 Inverses of Exponential Functions
3	2.11 Logarithmic Functions
1, 3	2.12 Logarithmic Function Manipulation
1	2.13 Exponential and Logarithmic Equations and Inequalities
1, 3	2.14 Logarithmic Function Context and Data Modeling
2, 3	2.15 Semi-log Plots

Progress Check Unit 2 Part 1: Topics 2.1–2.8
Multiple-choice: 24
Free-response: 2

Progress Check Unit 2 Part 2: Topics 2.9–2.15
Multiple-choice: 24
Free-response: 2

UNIT 3 Trigonometric and Polar Functions

7–10 weeks | **30–35%** AP Exam Weighting

2 3	3.1	Periodic Phenomena
2 3	3.2	Sine, Cosine, and Tangent
2 3	3.3	Sine and Cosine Function Values
2 3	3.4	Sine and Cosine Function Graphs
2 3	3.5	Sinusoidal Functions
1 2	3.6	Sinusoidal Function Transformations
1 3	3.7	Sinusoidal Function Context and Data Modeling
2 3	3.8	The Tangent Function
1 2	3.9	Inverse Trigonometric Functions
1 2 3	3.10	Trigonometric Equations and Inequalities
2 3	3.11	The Secant, Cosecant, and Cotangent Functions
1 3	3.12	Equivalent Representations of Trigonometric Functions
1 2	3.13	Trigonometry and Polar Coordinates
2 3	3.14	Polar Function Graphs
3	3.15	Rates of Change in Polar Functions

Progress Check Unit 3 Part 1: Topics 3.1–3.7

Multiple-choice: 21
Free-response: 2

Progress Check Unit 3 Part 2: Topics 3.8–3.15

Multiple-choice: 24
Free-response: 2

UNIT 4 Functions Involving Parameters, Vectors, and Matrices

7 weeks | **0%** AP Exam Weighting

1 2	4.1	Parametric Functions
3	4.2	Parametric Functions Modeling Planar Motion
3	4.3	Parametric Functions and Rates of Change
1	4.4	Parametrically Defined Circles and Lines
2 3	4.5	Implicitly Defined Functions
1 2	4.6	Conic Sections
1 2	4.7	Parametrization of Implicitly Defined Functions
2 3	4.8	Vectors
3	4.9	Vector-Valued Functions
1 3	4.10	Matrices
1 3	4.11	The Inverse and Determinant of a Matrix
1	4.12	Linear Transformations and Matrices
1 2 3	4.13	Matrices as Functions
1 3	4.14	Matrices Modeling Contexts

Progress Check Unit 4 Part 1: Topics 4.1–4.7

Multiple-choice: 24
Free-response: 2

Progress Check Unit 4 Part 2: Topics 4.8–4.14

Multiple-choice: 21
Free-response: 2