



Yearly Overview AP PRECALCULUS

2023-2024

Semester 1

Term 1

- **Rates of Change**
 - Change in Tandem
 - Rates of Change in Linear and Quadratic Function
 - Rates of Change in Polynomial and Rational Functions
- **Polynomial Functions**
 - Polynomial Functions and Complex Zeros
 - Polynomial Inequalities
 - Polynomial Functions and End Behavior
- **Rational Functions**
 - Rational Functions and End Behavior
 - Rational Functions and Zeros
 - Rational Inequalities
 - Rational Functions and Vertical Asymptotes
 - Rational Functions and Holes
 - Equivalent Representations of Polynomial and Rational Functions
 - Binomial Theorem
- **Transformations and Models of Functions**
 - Transformations of Functions
 - Piecewise Functions
 - Modeling Linear, Quadratic, Cubic, Polynomial, and Piecewise Functions
- **Sequences and Sums**
 - Arithmetic and Geometric Sequences
 - Partial Sums
 - Infinite Sums

Term 2

- **Exponential Functions**
 - Exploring Common Differences and Common Ratios
 - Characteristics of Exponential Functions
 - Laws and Properties of Exponents
 - Modeling Exponential Functions
 - Linear, Quadratic, and Exponential Regressions
- **Compositions, Inverse, and Logarithmic Functions**
 - Compositions of Functions
 - Inverse Functions
 - Evaluating Logarithmic Expressions
 - Characteristics of Logarithmic Functions
 - Logarithmic Functions Manipulations
 - Exponential and Logarithmic Inequalities Semi-log Plots
- **Basic Trigonometry and Unit Circle**
 - Right Triangle Trig Review
 - Law of Sines and Cosines
 - Derive The Unit Circle
 - Sine, Cosine and Tangent Values
 - Rates of Change with Sin, Cos and Tan
- **Semester Exam and Review**



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SEMESTER 2

Term 3

- **Sine and Cosine Graphs**
 - Sinusoidal Functions
 - Transformations of Sinusoidal Graphs
 - Modeling Sinusoidal Functions
- **Tangent, Reciprocal and Inverse Trigonometric Functions**
 - Tangent Function and Graphs
 - Inverse Trig Functions and Graphs
 - Solving Trig Equations and Inequalities
 - Secant, Cosecant, and Cotangent
- **Polar Functions and Graphs**
 - Polar Coordinates
 - Converting Between Polar and Rectangular
 - Polar Graphs
 - Rates of Change in Polar Functions
- **Parametric Functions and Conic Sections**
 - Modeling Planar Motion
 - Rates of Change
 - Parametrically defined circles and line
 - Conic Sections
 - Implicitly Defined Functions

Term 4

- **Vectors and Matrices**
 - Vector Addition and Multiplication
 - Magnitude and direction
 - Applications of Vectors
 - Inverse and Determinant of a Matrix
 - Linear Transformations of matrices

- **AP Review and Exam (Exam is May 13 at 12:00 pm)**