

Precalculus BC Course Outline	
Unit	Concepts and Skills
1-Functions & Transformations	<ul style="list-style-type: none"> a) Characteristics b) Even/Odd Functions c) Scaling and reflecting d) Shifting e) Transforming equations f) Replacing the axes strategy
2-Sequences & Series	<ul style="list-style-type: none"> a) Gauss's Method for summing finite arithmetic series b) Euclid's Method for summing finite geometric series c) Summation Identities d) Bernoulli's closed-form rules e) Infinite Geometric sums f) Recursively defined formulas
3-Introduction to Trigonometry	<ul style="list-style-type: none"> a) Extending the domain of trig functions b) Pythagorean Identities c) Solving trig equations d) Angle Sum Identities e) SAS Area Formula f) Law of Sines/Cosines

4-Combinatorics	<ul style="list-style-type: none"> a) Strategies for counting b) Factorials, permutations, and combinations c) Binomial Theorem d) Pascal's Triangle
5-Analysis of Trigonometry	<ul style="list-style-type: none"> a) Trig in Radians b) Derivatives of Sine & Cosine functions c) Inverse trig functions d) Reciprocal trig functions e) Graphs of trig functions/ reciprocal trig functions/ inverse functions f) Sinusoidal Modeling
6-Complex Numbers & Polars	<ul style="list-style-type: none"> a) The Complex Plane (finding arguments and magnitudes) b) Trig notation vs. Rectangular coordinates c) Multiplication Property d) De Moivre's Theorem e) Polar Form of Complex coordinates f) Graphs of Polar Equations g) Parametrics

7-Analysis of Functions	<ul style="list-style-type: none"> a) Continuity b) Secant & Tangent lines of functions c) Taylor Expansion of Polynomials d) Graphs of Rational Functions e) Compound Interest & e f) Definitions of e^x and $\ln(x)$ g) Derivatives of polynomials using the Power Rule h) Derivatives of e^x, $b^x \ln(x)$, and $\log_b(x)$
8-Conic Sections	<ul style="list-style-type: none"> a) Conics at the origin b) Transformations applied to conics c) Eccentricity
9-Introduction to Calculus	<ul style="list-style-type: none"> a) Limits (graphically & algebraically) b) Limit Definition of a Derivative c) Derivative Techniques <ul style="list-style-type: none"> i) Power Rule ii) Chain Rule iii) Product Rule iv) Quotient Rule d) Derivatives of e^x, $b^x \ln(x)$, and $\log_b(x)$ e) Derivatives of all 6 trig functions