Mathematics Department
Brooklyn College, City University of New York

Math 1026 (Precalculus B) Syllabus
3 hours lecture, 1 hour recitation; 2 credits

Math 1026 is the second semester in a two-semester sequence for precalculus. Math 1026 follows Math 1021 which is the first semester in this sequence. Alternatively, students may complete precalculus in one semester in Math 1011.

Trigonometric Functions

- Angle Measure--Degrees and Radians, Angles in Standard Position, the Unit Circle, Length of Circular Arc,
- Trigonometry of Right Triangles--Trigonometric Ratios, Trigonometric Functions of Angles—
- Trigonometric Identities, Inverse Trigonometric Functions and Right Triangles, Laws of Sines and Cosines,
- Trigonometric Graphs—Graphs of Sine, Cosine, Tangent, Cotangent, Secant and Cosecant,
- Inverse Trigonometric Functions and their Graphs

Analytic Trigonometry

- Simplifying Trigonometric Expressions, Proving Trigonometric Identities, Sum and Difference of two Angles, Double Angle, Half Angle,
- Solving Basic Trigonometric Equations, Equations with Trigonometric Functions of Multiples of Angles

Conic Sections

- Parabolas—Geometric Definition of a Parabola, Equations and Graphs of Parabolas
- Ellipses-- Geometric Definition of an Ellipse, Equations and Graphs of Ellipses, Eccentricity of an Ellipse
- Hyperbolas—Geometric Definition of a Hyperbola, Equations and Graphs of Hyperbolas
- Shifted Conics—Shifting Graphs of Equations, Shifted Parabolas, Shifted Ellipses, Shifted Hyperbolas,
- General Equation of a shifted Conic

The Binomial Theorem

- Expanding $(a+b)^n$, the Binomial Coefficients, the Binomial Theorem, General Term of the Binomial Expansion