Course Outline: Trigonometry

I.   Trigonometric Functions
   a. Functions and the Coordinate Plane
   b. The Distance Formula
   c. Angles in the Coordinate Plane
   d. Angle Measure in Degrees and Radians
   e. Cosine and Sine Functions
   f. The Trigonometric Functions
   g. Evaluation Trigonometric Functions

II. Graphing Trigonometric Functions
   a. Periodic Functions and Symmetry
   b. Graphs of the Sine and Cosine Functions
   c. Amplitude and Period
   d. Phase Shift and Vertical Shift
   e. Graphs of the Tangent and Cotangent Functions
   f. Graphs of the Secant and Cosecant Functions

III. Right Triangle Trigonometric and Basic Identities
   a. Solving Right Triangles
   b. Angles of Elevation and Depression
   c. Applications of Angles of Elevation and Depression
   d. Fundamental Identities
   e. Equivalent Trigonometric Expressions
   f. Proving Identities

IV. Oblique Triangles
   a. The Law of Sine
   b. The Law of Sine: The Ambiguous Case
   c. The Law of Cosines
   d. The Area of a Triangle
V.   Trigonometric Identities
   a. Cosine: Sum and Difference Identities
   b. Sine: Sum and Difference Identities
   c. Tangent: Sum and Difference Identities
   d. Double-Angle Identities
   e. Half-Angle Identities
VI. Inverse Trigonometric Functions
   a. Inverse Relations and Functions
   b. The Inverse Sine and Cosine Functions
   c. Other Inverse Trigonometric Functions

d. Solving Trigonometric Equations: Using Special Angles
e. Trigonometric Equations: Approximate Solutions

*As time permits
VII. Complex Numbers
a. Polar Coordinates
b. Graphs of Polar Equations
c. Sums and Differences of Complex Numbers
d. Products and Quotients of Complex Numbers
e. Complex Numbers in Polar Form
f. Multiplying and Dividing Complex Numbers in Polar Form
g. De Moivre's Theorem
h. Roots of Complex Numbers