PRE-CALCULUS HONORS

I. Functions and Their Graphs
   A. Graphs of Equations
   B. Linear Equations in Two Variables
   C. Functions
   D. Analyzing Graphs of Functions
   E. A Library of Functions
   F. Shifting, Reflecting, and Stretching Graphs
   G. Combinations of Functions
   H. Mathematical Modeling

II. Polynomial and Rational Functions
   A. Quadratic Functions
   B. Polynomial Functions of Higher Degree
   C. Polynomial and Synthetic Division
   D. Complex Numbers
   E. Zeros of Polynomial Functions
   F. Rational Functions
   G. Partial Functions

III. Exponential and Logarithmic Functions
   A. Exponential Functions and Their Graphs
   B. Logarithmic Functions and Their Graphs
   C. Properties of Logarithms
   D. Exponential and Logarithmic Equations
   E. Exponential and Logarithmic Models

IV. Systems of Equations and Inequalities
   A. Solving Systems of Equations
   B. Two-Variable Linear Systems
   C. Multivariable Linear Systems
   D. Systems of Inequalities
   E. Linear Programming

V. Matrices and Determinants
   A. Matrices and Systems of Equations
   B. Operations with Matrices
   C. The Inverse of a Square Matrix
   D. The Determinant of a Square Matrix
   E. Applications of Matrices and Determinants

VI. Sequences, Series, and Probability
   A. Sequences and Series
   B. Arithmetic Sequences and Partial Sum
   C. Geometric Sequences and Series

D. Mathematical Induction

VII. Topics in Analytic Geometry

A. Lines

B. Introduction to Conics; Parabolas

C. Ellipses

D. Hyperbolas

E. Rotation of Conics