**Foundations and Pre-Calculus Mathematics 12 Fall 2022**

**Teacher: Mr. Schroeder**

**Course Description:**

*Pre-Calculus 12* - This pathway is designed to provide students with the mathematical understandings and critical-thinking skills identified for entry into post-secondary programs. Students who successfully complete this course choose from the Calculus pathway (post-secondary study in math, science, engineering, medicine, and commerce) in university.

*Chapter 4 Trigonometry and the Unit Circle*

4.1 Angles and Angle Measure

4.2 The Unit Circle

4.3 Trigonometric Ratios

4.4 Introduction to Trigonometric Equations

*Chapter 5 Trigonometric Functions and Graphs*

5.1 Graphing Sine and Cosine Functions

5.2 Transformations of Sinusoidal Functions

5.3 The Tangent Function

5.4 Equations and Graphs of Trigonometric Functions

*Chapter 6 Trigonometric Identities*

6.1 Reciprocal, Quotient, and Pythagorean Identities

6.2 Sum, Difference, and Double-Angle Identities

6.3 Proving Identities

6.4 Solving Trigonometric Equations and Using Identities

*Chapter 7 Exponential Functions*

7.1 Characteristics of Exponential Functions

7.2 Transformations of Exponential Functions

7.3 Solving Exponential Equations

*Chapter 8 Logarithmic Functions*

8.1 Understanding Logarithms

8.2 Transformations of Logarithmic Functions

8.3 Laws of Logarithms

8.4 Logarithmic and Exponential Equations

*Chapter 1 Function Transformations*

1.1 Horizontal and Vertical Translations

1.2 Reflections and Stretches

1.3 Combining Transformations

1.4 Inverse of a Relation

*Chapter 3 Polynomial Functions*

3.1 Characteristics of Polynomial Functions

3.2 The Remainder Theorem

3.3 The Factor Theorem

3.4 Equations and Graphs of Polynomial Functions

*Chapter 9 Rational Functions*

9.1 Exploring Rational Functions Using Transformations

9.2 Analysing Rational Functions

9.3 Connecting Graphs and Rational Equations

*Chapter 10 Function Operations*

10.1 Sums and Differences of Functions

10.2 Analysing Rational Functions

10.3 Composite Functions

*Sequence and Series*

Arithmetic Sequences

Arithmetic Series

Geometric Sequences

Geometric Series

Infinite Geometric Series

Final Exams January 9-13