MATH 15900 PRECALCULUS
List of Course Topics


Chapter 1: **Fundamental Concepts of Algebra**
1.1 Real Numbers
1.2 Exponents and Radicals
1.3 Algebraic Expressions
1.4 Fractional Expressions

Chapter 2: **Equations and Inequalities**
2.1 Equations
2.2 Applied Problems
2.3 Quadratic Equations
2.4 Complex Numbers
2.5 Other Types of Equations
2.6 Inequalities
2.7 More on Inequalities

Chapter 3: **Functions and Graphs**
3.1 Rectangular Coordinate Systems
3.2 Graphs of Equations
3.3 Lines
3.4 Definition of Function
3.5 Graphs of Functions
3.6 Quadratic Functions
3.7 Operations on Functions

Chapter 4: **Polynomial and Rational Functions**
4.1 Polynomial Functions of Degree Greater Than 2
4.2 Properties of Division

Chapter 5: **Exponential and Logarithmic Functions**
5.1 Inverse Functions
5.2 Exponential Functions
5.3 The Natural Exponential Function
5.4 Logarithmic Functions
5.5 Properties of Logarithms
5.6 Exponential and Logarithmic Equations

Chapter 11: **Topics From Analytic Geometry**
11.1 Parabolas
11.2 Ellipses (omit eccentricity)
11.3 Hyperbolas

Chapter 9: **Systems of Equations and Inequalities**
9.1 Systems of Equations
9.2 Systems of Linear Equations in Two Variables

Chapter 6: **The Trigonometric Functions**
6.1 Angles
6.2 Trigonometric Functions of Angles
6.3 Trigonometric Functions of Real Numbers
6.4 Values of the Trigonometric Functions
6.5 Trigonometric Graphs
6.7 Applied Problems (omit harmonic motion problems)

Chapter 7: **Analytic Trigonometry**
7.1 Verifying Trigonometric Identities
7.2 Trigonometric Equations
7.3 The Addition and Subtraction Formulas
7.4 Multiple-Angle Formulas
7.6 The Inverse Trigonometric Functions (omit graphs of $y = \cot^{-1} x$, $y = \sec^{-1} x$, $y = \csc^{-1} x$)

Chapter 8: **Applications of Trigonometry**
8.1 The Law of Sines
8.2 The Law of Cosines