The following list of topics is considered the core content for the course 110.105 Introduction to Calculus I. The current text for the course is:


Course Topics

- **Prerequisites (1- weeks)**
  - Chapter P

- **Equations, Inequalities, and Modeling (1+ weeks)**
  - 1.1 Equations in One Variable
  - 1.2 Constructing Models to Solve Problems
  - 1.3 Equations and Graphs in Two Variables
  - 1.4 Linear Equations in Two Variables
  - 1.6 Quadratic Equations
  - 1.7 Linear and Absolute Value Inequalities

- **Functions and Graphs (1+ weeks)**
  - 2.1 Functions
  - 2.2 Graphs of Relations and Functions
  - 2.3 Families of Functions, Transformations, and Symmetry
  - 2.4 Operations with Functions
  - 2.5 Inverse Functions

- **Polynomial and Rational Functions (2- weeks)**
  - 3.1 Quadratic Functions and Inequalities
  - 3.2 Zeros of Polynomial Functions
  - 3.3 The Theory of Equations
  - 3.4 Miscellaneous Equations
  - 3.5 Graphs of Polynomial Functions
  - 3.6 Rational Functions and Inequalities

- **Exponential and Logarithmic Functions (1 week)**
  - 4.1 Exponential Functions and Their Applications
  - 4.2 Logarithmic Functions and Their Applications
  - 4.3 Rules of Logarithms
  - 4.4 More Equations and Applications

- **The Trigonometric Functions (2- weeks)**
  - 5.1 Angles and Their Measurements
  - 5.2 The Sine and Cosine Functions
  - 5.3 The Graphs of the Sine and Cosine Functions
  - 5.4 The Other Trigonometric Functions and Their Graphs
  - 5.5 The Inverse Trigonometric Functions
  - 5.6 Right Triangle Trigonometry
• **Trigonometric Identities (2 weeks)**  
  - 6.1 Basic Identities  
  - 6.2 Verifying Identities  
  - 6.3 Sum and Difference Identities  
  - 6.4 Double-Angle and Half-Angle Identities  
  - 6.5 Product and Sum Identities  
  - 6.6 Conditional Trigonometric Equations

• **Applications of Trigonometry (2 weeks)**  
  - 7.1 The Law of Sines  
  - 7.2 The Law of Cosines  
  - 7.3 Vectors  
  - 7.4 Trigonometric Form of Complex Numbers  
  - 7.5 Powers and Roots of Complex Numbers

• **Systems of Equations and Inequalities (1 week)**  
  - 8.1 Systems of Linear Equations in Two Variables  
  - 8.2 Systems of Linear Equations in Three Variables