

**Hunter College of The City University of New York**

**MATH 150 CALCULUS with ANALYTIC GEOMETRY I 4 hrs, 4 cr.**

**Text: *Single Variable Calculus*, 6th Edition, James Stewart, Brooks/Cole, bundled with Enhanced WebAssign**

**Chapter 2:**

- 2.1 The Tangent and Velocity Problems
- 2.2 The Limit of a Function
- 2.3 Calculating Limits Using the Limit Laws
- 2.4 The Precise Definition of a Limit
- 2.5 Continuity

**Chapter 3:**

- 3.1 Derivatives and Rates of Change
- 3.2 The Derivative as a Function
- 3.3 Differentiation Formulas
- 3.4 Derivatives of Trigonometric Functions
- 3.5 The Chain Rule
- 3.6 Implicit Differentiation
- 3.7 Rates of Change in the Natural and Social Sciences
- 3.8 Related Rates
- 3.9 Linear Approximation and Differentials

**Chapter 4:**

- 4.1 Maximum and Minimum Values
- 4.2 The Mean Value Theorem
- 4.3 How Derivatives Affect the Shape of a Graph
- 4.4 Limits at Infinity; Horizontal Asymptotes
- 4.5 Summary of Curve Sketching
- 4.7 Optimization Problems
- 4.9 Antiderivatives

**Chapter 5:**

- 5.1 Areas and Distances
- 5.2 The Definite Integral
- 5.3 The Fundamental Theorem of Calculus
- 5.4 Indefinite Integrals and the Net Change Theorem
- 5.5 The Substitution Rule

**Chapter 6:**

- 6.1 Areas between Curves
- 6.2 Volumes
- 6.3 Volumes by Cylindrical Shells
- 6.4 Work (Optional if time permits)