

Syllabus – Math 10250. Elements of Calculus I

Textbook: *Applied Calculus, 10th ed.*, by S. Tan

Chapters 1 and 2

- Precalculus (Review)
- Lines and the Cartesian coordinate system (Review)
- Functions and graphs, the algebra of functions
- Functions and mathematical models
- Limits
- One-sided limits and continuity
- The derivative

Chapter 3

- The product and quotient rules for derivatives
- The chain rule
- Marginal functions in Economics
- Higher order derivatives
- Implicit differentiation and related rates

Chapter 4

- Applications of the derivative
- Curve sketching
- Optimization

Chapter 5

- Exponential and logarithmic functions
- Derivatives of exponential and log functions
- Compound interest

Chapter 6

- Ant-derivatives and indefinite integrals
- Integration by substitution
- The definite integral
- The Fundamental Theorem of Calculus
- Applications to Business and Economics