

# Syllabus – Math 10260. Elements of Calculus II for Business

**Textbook:** *CALCULUS Ideas and Applications*, by Alex Himonas and Alan Howard, Wiley 2003.

## • Chapter 5

- The Indefinite Integral (Review)
- Integration by Substitution (Review)
- Integration by Parts and Partial Fractions (Review)
- Area and the Definite Integral (Review)
- The Fundamental Theorem of Calculus (Review)
- Computing Definite Integrals, Areas, and Averages (Review)
- Numerical Methods (Review)

## • Chapter 6

- Consumer and Producer Surplus
- Continuous Income Streams
- Separable Differential Equations
- The Logistic Growth Model
- Improper Integrals and Applications

## • Chapter 7

- Functions of Two Variables and Their Graphs
- Partial Derivatives
- Maxima and Minima in Two Variables
- The Method of Least Squares
- Constrained Optimization and Lagrange Multipliers

## • Chapter 8

- Derivative and Integral of  $\sin x$  and  $\cos x$

## • Chapter 9

- Numerical Solution
- Graphical Solution
- The Solow Growth Model

## • Chapter 10

- Taylor's Formula
- Taylor's Series
- Power Series

## • Chapter 11

- Sample Spaces and Assignment of Probabilities
- Conditional Probability
- Discrete Random Variables
- The Binomial Distribution
- Continuous Random Variables

- Some Important Continuous Densities