

Spring 2022

Math 203 – Calculus for Business and the Social Sciences (3)

Course Description: Basic concepts; differentiation and integration, applications to management, finance, economics, and the social sciences.

Prerequisite: 134, 135 or 161 or assessment exam.

Recently used text: *Calculus and its Applications* by Goldstein, Schneider, Lay, Asmar, Prentice Hall

Approximate Timeline:

Introduction, Limits, and Continuity (4 hours). Review of functions and graphs, and intuitive treatment of limits and continuity.

Differentiation (9 hours). Average rate of change, the derivative, differentiation rules, differentials, implicit differentiation. Application to cost, revenue, profit, elasticity of demand.

Curve Sketching (5 hours) Increasing and decreasing functions, concavity, extreme values, optimization, inventory control.

Exponential and Logarithm Functions (6 hours) Functions, derivatives, applications involving earnings per share, growth, compounded interest.

Integration (7 hours) Antiderivatives, areas, Fundamental Theorem of Calculus, integration by substitution, consumers' and producers' surpluses, continuous cash flows.

Functions in several variables (6 hours) Functions in two variables, partial derivatives, relative maxima and minima, applications.

Course Objectives and Student Learning Outcomes: Upon successful completion of Math 203 the student will have a basic understanding of differentiation and integration with applications to business and the social sciences, be able to solve routine problems, understand applications of the principal ideas of calculus, and be able to apply the ideas.

Program objectives: The course is a service course for business and social science majors, and students will learn how to apply calculus concepts to real world problems.