

BS Geography 4 Years Programme, University of the Punjab, Lahore

Prerequisite(s): Mathematics I (Algebra)

Specific Objectives of the Course:

To prepare the students, not majoring in mathematics, with the essential tools of calculus to apply the concepts and the techniques in their respective disciplines.

Course Outline:

- **Preliminaries:**
 - Real-number line, functions and their graphs, solution of equations involving absolute values, inequalities.
- **Limits and Continuity:**
 - Limit of a function, left-hand and right-hand limits, continuity, continuous functions.
- **Derivatives and their Applications:**
 - Differentiable functions, differentiation of polynomial, rational and transcendental functions, derivatives.
- **Integration and Definite Integrals:**
 - Techniques of evaluating indefinite integrals, integration by substitution, integration by parts, change of variables in indefinite integrals.

Recommended Books:

1. Anton H, Bevens I, Davis S, Calculus: A New Horizon (8th edition), 2005, John Wiley, New York
2. Stewart J, Calculus (3rd edition), 1995, Brooks/Cole (suggested text)
3. Swokowski EW, Calculus and Analytic Geometry, 1983, PWS-Kent Company, Boston

4. Thomas GB, Finney AR, Calculus (11th edition), 2005, Addison-Wesley, Reading, Ma, USA