Multivariate Calculus			
Credit Hours:	3-0	Prerequisites:	Calculus and Analytical Geometry

Course Learning Outcomes (CLOs):		
At the end of the course the students will be able to:	**Domain**	**BT Level***
1. Understand the basic concepts and know the basic techniques of differential and integral calculus of functions of several variables;		
2. Apply the theory to calculate the gradients, directional derivatives, arc length of curves, area of surfaces, and volume of solids;		
3. Solve problems involving maxima and minima, line integral and surface integral, and vector calculus;		
* BT= Bloom's Taxonomy, C=Cognitive domain, P=Psychomotor domain, A= Affective domain		

Course Content:
Functions of Several Variables and Partial Differentiation. Multiple Integrals, Line and Surface Integrals. Green's and Stoke's Theorem. Fourier Series: periodic functions, Functions of any period P-2L, Even & odd functions, Half Range expansions, Fourier Transform; Laplace Transform, Z-Transform.
Teaching Methodology:
Lectures, Written Assignments, Practical labs, Semester Project, Presentations
Course Assessment:
Sessional Exam, Home Assignments, Quizzes, Project, Presentations, Final Exam
Reference Materials:
1. *Multivariable Calculus*, 6th edition James, Stewart 2007 Cengage Learning publishers. 2. *Calculus and Analytical Geometry*, 6th edition. Swokowski, Olinick and Pence.1994.Thomson Learning EMEA, Ltd. **3.** ***Multivariable Calcu****lus*, 5th edition Howard, A. Albert, H. 1995, John Wiley.