SARDAR PATEL UNIVERSITY
Programme & Subject: B.Sc (Mathematics)
Semester: IV
Syllabus with Effect from: November/December-2012

Paper Code: US04CMTH02	Total Credit: 3
Title Of Paper: Differential Equations	

Unit	Description in detail	Weighting (%)
I	Surfaces and curves in three dimensions ; Methods of solving dx/P=dy/Q=dz/R	
II	Orthogonal trajectories of a system of curves on surface. Pfaf-fian forms and equations; Solution of Pfaffan difierential equations in three variables .	
III	Partial differential equations ; Origin of ¯rst order partial differ-ential equations ; Linear equations of the first order .	
IV	Integral surfaces through a given curve ;Surfaces orthogonal to a given system of surfaces .	
V	Non-linear partial di®erential equations of first order; Compatible systems of first order equations .	
VI	Charpit's method ,The origin of second order equations ; Lin-ear partial diffrential equations with constant coe±cients ; Equations with variable coeffcients.	

Recommended Texts:

Sneddon, Elements of Partial Differential Equations, McGraw Hill Book Company, International Student Edition:
Chapter 1 (1.1,1.3,1.4,1.5(excluding Thm.6),1.6),Chapter 2 (2.1,2.2,2.4 (Statement only for Thm.3),2.5,2.6,2.7,2.9,2.10),Chapter 3 (3.1,3.4,3.5,3.9)

Basic Text & Reference Books:-

- M.D.Raisinghania, Ordinary and Partial differential equations.
- T.Amarnath, An elementary course in partial differential equations.
- B.S.Grawal,Higher Engineering Mathematics.
- K.R.Kachot,Higher Engineering Mathematics.