

SARDAR PATEL UNIVERSITY
Programme: B.Sc
Semester: I
Syllabus with effect from: June-2011

Paper Code: US01CMTH01	Total Credit: 2
Title of Paper: Analytical Geometry & Complex Numbers	

Unit	Description in Detail	Weightage (%)
I	Sketching of curves using symmetry and horizontal and vertical asymptotes.; Equation of tangents and normal to curves given by parametric equations. Parametric equations of conics and other curves; Tangent parallel to the axes, Asymptotes: horizontal, vertical and oblique to a curve; cycloid and its application.	25%
II	Polar coordinates in two dimensions; Relation between polar and Cartesian coordinates; Symmetry, extent and closedness of a curve, Limacons, Lemniscates, Rose curves and Spirals.	25%
III	Polar equations of line, circle and Conics, Reciprocal curves and their applications.	25%
IV	Complex numbers, Polar form of complex number. De Moivre theorem, nth roots of a complex number, Fundamental theorem of algebra (statement only), multiple roots and test for multiplicity.	25%

Basic Text & Reference Books:

- Vasavada H.M., Analytical geometry of two and three dimensions , 2000 .Chapter 2(11,12,13), Chapter 3(2,3,4, except example : 10,11,12,13),Chapter 4 (1 , 2 , 3 , 6 , 7 (except example : 8,9), 8), Chapter 5(2,6,7,8).
- Grewal, B.S., Higher engineering mathematics, Thirty - fth edition, Khanna publ. 2000. Chapter 19 (19.1 , 19.5 , 19.6 , 19.7 , 19.8 , 19.9)
- The calculus with analytic geometry, Louis Leithod, Harper-Collins Pub.

