

COURSE CODE	COURSE TITLE	L	T	P	C
UMA14201	CALCULUS	4	1	-	4
INSTRUCTIONAL OBJECTIVES					
1.	Solve problems using expansion of functions				
2.	Familiar with curve tracing				
3.	Apply integral calculus in solving problems				
4.	Have a clear understanding of analytical geometry				
5.	Have a thorough knowledge of conics				

UNIT I - DIFFERENTIAL CALCULUS

nth derivative - Leibnitz's theorem (Without proof) and its application - Jacobians - Total differential - maxima and minima functions of 2 & 3 independent variable, Lagrange's method (without proof), problems on this concepts.

UNIT II - GEOMETRICAL APPLICATIONS OF DIFFERENTIAL CALCULUS

Polar coordinates – Angle between radius vector and tangent – Angle between two curves, Curvature, Radius of Curvature in Cartesian and Polar coordinates, p-r equation, Evolutes.

UNIT III - ASYMPTOTES

Methods (without proof) of finding asymptotes of rational algebraic curves with specialcases.

UNIT IV - INTEGRAL CALCULUS

Reduction formulae, Beta and Gamma Functions - Properties and Problems.

UNIT V – MULTIPLE INTEGRALS

Double Integrals - Change of order of Integration - Triple Integrals - Applications to Area, Surface Area and Volume.

TEXT BOOK

S.Narayanan and T.K.Manicavachagom Pillay, Calculus – I & II, S.Viswanathan Printers & Publishers Pvt. Ltd, 2004.

REFERENCES

1. P.Kandasamy, K.Thilagavathy, Mathematic for B.Sc. Vol.-I, II, III & IV, S.Chand & Company Ltd., New Delhi-55, 2004.
2. Shanti Narayan, Differential Calculus, Shyamlal Charitable Trust, New Delhi,2001.
3. Shanti Narayan, Integral Calculus, S.Chand & Co. New Delhi, 2001.
4. S.Sudha, Calculus, Emerald Publishers, Chennai, 1998.
5. G.B.Thomas and R.L.Finney, Calculus and Analytic Geometry, Addison Wesley, Mass Indian Print,1998.
6. P.R.Vittal, Calculus, Margham Publication, Chennai 2004.