MATHEMATICS

Time Plan for SEM 1

Group A: Calculus [Marks: 20] [16 Classes]

Topic	No. of Classes	Remarks
Differentiability, derivative meaning, hyperbolic functions, higher order derivatives, Leibnitz rule & applications	4	
Indeterminate forms, L'Hospital's rule (statement and example)	2	
Reduction formulae ($\int \sin^n x$, $\int \cos^n x$, $\int \tan^n x$, $\int \sec^n x$, $\int (\log x)^n dx$)	4	
Parametric equations, arc length, area under curve, surface of revolution	6	

Group B: Geometry [Marks: 35] [28 Classes]

Topic	No. of Classes	Remarks
Rotation of axes, second degree equations, classification of conics, canonical form	6	
Tangent and normal, polar equations of conics	4	
Spheres, cylindrical surfaces	4	
Central conicoids, paraboloids, plane sections of conicoids	6	
Generating lines, identification and	8	

classification of quadrics

Group C: Vector Analysis [Marks: 20] [16 Classes]

Topic	No. of Classes	Remarks
Triple product, vector equations, applications to geometry & mechanics (concurrent forces, theory of couples, parallel forces)	6	
Introduction to vector functions, operations with vector-valued functions	4	
Limits and continuity of vector functions	2	
Differentiation & integration of vector functions of one variable	4	