Session: 2023 - 2024

Name of the Teacher: Dr. MONIA
Class and Section: B.Sc.I(Semester-II)
Subject: Mathematics
Paper: Vector Calculus

JANUARY
Week 4 **Chapter:** Scalar and vector product of three vectors, product of four vectors.
Week 5 **Chapter:** Reciprocal vectors. Vector differentiation, Scalar Valued point functions

FEBRUARY
Week 1 **Chapter:** Directional derivatives
Week 2 **Chapter:** Gradient of a scalar point function, geometrical interpretation of grad Φ ,
Week 3 **Chapter:** Character of gradient as a point function.
Week 4 **Chapter:** Divergence and curl of vector point function, characters of Div fρ and Curl fρ as point function, examples.
Week 5 **Chapter:** Gradient, divergence and curl of sums and product and their related vector identities. Laplacian operator

MARCH
Week 1 **Chapter:** Orthogonal curvilinear coordinates Conditions for orthogonality fundamental triad of mutually orthogonal unit vectors.
Week 2 **Chapter:** Gradient, Divergence, Curl
Assignments:
Week 3 **Chapter:** Laplacian operators in terms of orthogonal curvilinear coordinates,
Week 4 **Chapter:** Cylindrical co-ordinates and Spherical co- ordinates.

APRIL
Week 1 **Chapter:** Vector integration; Line integral.
Week 2 **Chapter:** Surface integral, Volume integral.
Week 3 **Chapter:** Theorems of Gauss, Green & Stokes
Quiz
Week 4 **Chapter:** Problems based on these theorems
Week 5 **Chapter:** Test