

Govt. College Sihma, Mahendergarh

Lesson Plan (Session 2021-22)

Name - Sarita yadav

Subject- Mathematics

Paper Name - Vector Calculus

Class - B.A. 1st year

21st March - 20 April

Unit - 1st

Scalar and vector product of three vectors, product of four vectors. Reciprocal vectors. Vector differentiation. Scalar Valued point functions, vector valued point functions, derivative along a curve, directional derivatives.

20 April - 10 May

Unit - 2nd

Gradient of a scalar point function, geometrical interpretation of $\text{grad } \Phi$, character of gradient as a point function. Divergence and curl of vector point function, characters of $\text{Div } \vec{f}$ and $\text{Curl } \vec{f}$ as point function, examples. Gradient, divergence and curl of sums and product and their related vector identities. Laplacian operator.

10 May - 20 May

Unit - 3rd

Orthogonal curvilinear coordinates, Conditions for orthogonality, fundamental triad of mutually orthogonal unit vectors. Gradient, Divergence, Curl and Laplacian operators in terms of orthogonal curvilinear coordinates, Cylindrical co-ordinates and Spherical co-ordinates.

20 May onwards

Unit - 4th

Vector integration; Line integral, Surface integral, Volume integral. Theorems of Gauss, Green & Stokes and problems based on these theorems.

Revision & Tests

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