GOVT. COLLEGE BAROTA

LESSON PLAN OF MATHEMATICS(2023-24)(EVEN SEM.)

Name of Assistant Professor: Ms. Nikita Goel

Class: B.A. & B.SC. (2nd Sem.)

Subject: Vector Calculus

MONTH	WEEK	SYLLABUS
JANUARY	WEEK 1	Scalar and vector product of three vectors.
	WEEK 2	Product of four vectors, Reciprocal vectors, Test.
	WEEK 3	Vector differentiation, Scalar Valued point functions, vector valued point functions, derivative along a curve, directional derivatives.
	WEEK 4	Gradient of a scalar point function, geometrical interpretation of grad Φ , character of gradient as a point function.
	WEEK 5	Divergence of vector point function, characters of Div $\vec{f}$ as point function, examples, Assignment.
FEBRUARY	WEEK 1	Curl of vector point function, characters of Curl $\vec{f}$ as point function
	WEEK 2	Examples of curl of a function, Gradient, divergence and curl of sums and product and their related vector identities.
	WEEK 3	Problems, Laplacian operator. Test.
	WEEK 4	Line integral and its examples.
	WEEK 5	Surface integral, Volume integral and their problems, Assignment.
MARCH	WEEK 1	Gauss Theorem and problems based on these theorem.
	WEEK 2	Green's Theorem and Stoke's theorem and problems based on these theorems.
	WEEK 3	Test, Orthogonal curvilinear coordinates, Conditions for orthogonality, fundamental triad of mutually orthogonal unit vectors.
APRIL	WEEK 1	Gradient, Divergence, Curl in terms of orthogonal curvilinear coordinates.
	WEEK 2	Laplacian operators in terms of orthogonal curvilinear coordinates.
	WEEK 3	Cylindrical co-ordinates and Spherical co-ordinates.
	WEEK 4	Revision and Test
	WEEK 5	Revision and Test

Signature