

Govt. College Mandi Hariya (Ch. Dadri)
Lesson Plan (2024-25 Odd sem.)

Name: Dr Yogita Godara
Designation: Assistant Professor
Subject: Mathematics
Class: B.A. 5th Sem. (Statics & Dynamics)
(20UMTH501)

SN	Weeks	Topic
1	1 st week of August	Friction, Centre of Gravity. Virtual work.
2	2 nd week of August	Centre of Gravity. Virtual work.
3	3 rd week of August.	Virtual work.
4	4 th week of August	Test and Revision
5	1 st week of September	Forces in three dimensions,
6	2 nd week of September	Poinsot's central axis.
7	3 rd week of September	Wrenches,
8	4 th week of September	Null lines and planes
9	1 st week of October	Test and Revision
10	2 nd week of October	Definitions of Conservative forces and Impulsive forces.
11	3 rd week of October	Projectile motion of a particle in a plane. Vector angular velocity.
12	4 th week of October	Diwali Break (Assignments)
13	1 st week of November	Kepler laws of motion.
14	2 nd week of November	General motion of a rigid body. Central Orbits,
15	3 rd week of November	Motion of a particle in three dimensions
16	4 th week of November	House Exam and Practical

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Govt. College Mandi Hariya (Ch. Dadri)
Lesson Plan (2024-25 Odd sem.)

Name: Dr Yogita Godara
Designation: Assistant Professor
Subject: Mathematics
Class: B.A. 5th Sem. (Linear Algebra)
(20UMTH504)

SN	Weeks	Topic
1	1 st week of August	Vector spaces, subspaces, Sum and Direct sum of subspaces, Linear span, Linearly Independent and dependent subsets of a vector space.
2	2 nd week of August	Finitely generated vector space, Existence theorem for basis of a finitely generated vector space, Finite dimensional vector spaces,
3	3 rd week of August.	Invariance of the number of elements of bases sets, Dimensions, Quotient space and its dimension
4	4 th week of August	Test and Revision
5	1 st week of September	Homomorphism and isomorphism of vector spaces, linear transformations and linear forms on vector spaces,
6	2 nd week of September	Vector space of all the linear transformations, Dual Spaces, Null Space,
7	3 rd week of September	Range space of a linear transformation, Rank and Nullity Theorem(Statement and applications).
8	4 th week of September	Test and Revision
9	1 st week of October	Algebra of Liner Transformation, Minimal Polynomial of a linear transformation,
10	2 nd week of October	Singular and non-singular linear transformations,
11	3 rd week of October	Matrix of a linear Transformation, Change of basis, Eigen values and Eigen vectors of linear transformations.
12	4 th week of October	Diwali Break (Assignments)
13	1 st week of November	Inner product spaces, Cauchy-Schwarz inequality, orthogonal vectors, orthogonal complements
14	2 nd week of November	Practical and house exam
15	3 rd week of November	Orthogonal sets and Basis, Bessel's inequality for finite dimensional vector spaces (Statement only), Gram-Schmidt, Orthogonalization process.
16	4 th week of November	Test and Revision

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Govt. College Mandi Hariya (Ch. Dadri)
Lesson Plan (2024-25 Odd sem.)

Name: Dr Yogita Godara
Designation: Assistant Professor
Subject: Mathematics
Class: B.A. 3rd Sem. (Numerical Methods with Programming in C)

SN	Weeks	Topic
1	1 st week of August	Programmer's model of a computer, Algorithms, Flow charts
2	2 nd week of August	Data types, Operators and expressions, Input / outputs functions.
3	3 rd week of August.	Decisions control structure: Decision statements, Logical and conditional statements,
4	4 th week of August	Implementation of Loops, Switch Statement & Case control structures. Functions, Preprocessors and Arrays
5	1 st week of September	Singular solutions and Test
6	2 nd week of September	Orthogonal trajectories: in Cartesian coordinates and polar coordinates.
7	3 rd week of September	Strings: Character Data Type, Standard String handling Functions,
8	4 th week of September	Arithmetic Operations on Characters. And Practical
9	1 st week of October	Structures: Definition, using Structures,
10	2 nd week of October	use of Structures in Arrays and Arrays in Structures
11	3 rd week of October	Solution of Algebraic and Transcendental equations: Bisection method, Regula-Falsi method, Secant method.
12	4 th week of October	Diwali Break (Assignments)
13	1 st week of November	Fixed Point iterative method, Newton-Raphson's method.
14	2 nd week of November	Newton's iterative method for finding nth root of a number, Order of convergence of above methods. House Exam
15	3 rd week of November	Simultaneous linear algebraic equations: Gauss-elimination method, Gauss-Jordan method, Iterative method Jacobi's method, Gauss-Seidal's method, Relaxation method. Convergence of Gauss Seidal Method.
16	4 th week of November	Practical

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Govt. College Mandi Hariya (Ch. Dadri)
Lesson Plan (2024-25 Odd sem.)

Name: Dr Yogita Godara
Designation: Assistant Professor
Subject: Mathematics
Class: B.A. 3rd Sem. (Differential equations)

SN	Weeks	Topic
1	1 st week of August	Geometrical meaning of a differential equation.
2	2 nd week of August	Exact differential equations, integrating factors
3	3 rd week of August.	Reduction to Exact differential equations, First order higher degree equations solvable for x, y, dy/dx
4	4 th week of August	Lagrange's equations, Clairaut's equations. Equation reducible to Clairaut's form.
5	1 st week of September	Singular solutions and Test
6	2 nd week of September	Orthogonal trajectories: in Cartesian coordinates and polar coordinates.
7	3 rd week of September	Self-orthogonal family of curves
8	4 th week of September	Linear differential equations with constant coefficients.
9	1 st week of October	Solution by variation of parameters.
10	2 nd week of October	Homogeneous linear ordinary differential equations. Equations reducible to homogeneous linear ordinary differential equations. And Test
11	3 rd week of October	Partial differential equations: Formation, order and degree, Linear and Non-Linear Partial differential equations of the first order: Complete solution, singular solution, General solution.
12	4 th week of October	Diwali Break (Assignments)
13	1 st week of November	Solution of Lagrange's linear equations, Charpit's general method of solution.
14	2 nd week of November	Compatible systems of first order equations, Jacobi's method and House exam
15	3 rd week of November	Linear partial differential equations of second and higher orders, Linear and non-linear homogenous and non-homogenous equations with constant coefficients,
16	4 th week of November	Practical

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Govt. College Mandi Hariya (Ch. Dadri)
Lesson Plan (2024-25 Odd sem.)

Name: Dr Yogita Godara
Designation: Assistant Professor
Subject: Mathematics
Class: B.A. 1st Sem. (Calculus)

SN	Weeks	Topic
1	1 st week of August	Limit and Continuity, Successive differentiation Leibnitz theorem. Maclaurin and Taylor series expansions.
2	2 nd week of August	Maclaurin and Taylor series expansions
3	3 rd week of August.	Asymptotes in Cartesian and polar coordinates, intersection of curve and its asymptotes.
4	4 th week of August	Curvature. radius of curvature for Cartesian curves parametric curves polar curves.
5	1 st week of September	Newton's method. Radius of curvature for pedal curves. Tangential polar equations. Centre of curvature. Circle of curvature. Chord of curvature, evolutes
6	2 nd week of September	Tests for concavity and convexity. Points of inflexion. Multiple points Cusps, nodes & conjugate points. Type of cusps.
7	3 rd week of September	Reduction formulae Rectification intrinsic equations of curve
8	4 th week of September	Applications of single integration: Quadrature (area). Sectorial area
9	1 st week of October	Area bounded by closed curves Volumes and surfaces of solids of revolution Applications Only) Theorems of Pappu's and Guilden
10	2 nd week of October	Test, Assignments and short answer type questions
11	3 rd week of October	Double integrals in cartesian and polar coordinates. area and volume by Double integrals,
12	4 th week of October	Diwali Break
13	1 st week of November	House Exam and Practical
14	2 nd week of November	Triple integrals, Cartesian. cylindrical and spherical coordinates, volume of solids by Triple integrals
15	3 rd week of November	Practical
16	4 th week of November	Test and Revision

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