BALNATH CHAUDHARY GOVT. COLLEGE FOR WOMEN, NANGAL CHAUDHARY

Lesson Plan

Name of the Assistant/ Associate Professor: Sushma Yadav Sem. 2nd

Class and Section: B.A./B.Sc. I st Subject: Mathematics (ODE)

Month	Topics
21st March to 31st March	Differential Equation, order and degree of diff eqn Sol^n of exact diff eq^n, Integrating factor, examples Rules to find I.F, examples, Problems given by the students, Test of ch-I st
1st April to 30th April	Equations solvable for p, examples, eq^n's solvable for y, examples, eq^n's solvable for x examples. Clairaut's eq^n, examples, singular sol^n orthogonal Trajectories in polar co-ordinates examples Test of ch- 2nd & 3rd Linear Differential eq^n's with constant co-efficients
1st May to 31st May	Auxiliary Equations (A.E), Find C.S and P.I examples Th^m's examples Diff Rules to find P.I, examples examples, Homogeneous of Linear equations, examples eq^n's reducible to Homogeneous Linear Form, ex. Test of ch- 4th & 5th. Linear Differential eq^n's of 2nd order
1st June to 30th June	Method for finding P.I of $\frac{d^2y}{dx^2} + P\frac{dy}{dx} + Qy = 0$ examples. Solve a LDE of second order by changing the independent variable. examples, examples To solve a LDE of second order by the method of Undetermined coefficients, examples Ordinary Simultaneous Differential Equations
1st July to 11th July	Examples. Total Differential Equations. Condition for exactness. examples. Method for solving Homogeneous Equations. examples. Problems given by the students. Test

Sushma Yadav
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Lesson Plan

Name of the Assistant/ Associate Professor: Sushma Yadav Sem. 2nd

Class and Section: B.Com Ist Subject: Mathematics

Month	Topics
21st March to 31st March	Algebra of Matrices : Matrix, Types of Matrices examples Multiplication of Matrices. Symmetric Matrix Skew - Symmetric Matrix Determinants of a square Matrix, examples
1st April to 30th April	Expansion of a determinant in terms of Co-Factors Singular and Non-Singular Matrices. Properties of Determinants, examples. Adjoint of a matrix Inverse of a square matrix, examples, Sol^{n} of system of Linear equations by using Cramer's Rule, examples Differentation, The derivative of a fu^{n}, examples
1st May to 31st May	Differentation of Product of two functions, examples Derivative of fu^{n} of a fu^{n} (chain Rule), examples, Diff of Logarithmic & exponential functions, examples, Diff. of Implicit fu^{n}, examples, Logrithmic diff., examples. Test of unit-II Applications of Derivatives, Maxima and Minima. examples Compound Intrest, Simple Intrest, Formale, examples
1st June to 30th June	examples of C.I, Continuous compounding of Interest examples. Annuities Immediate or ordinary Annuity Amount of an Annuity. examples. Sol^{n}'s of Practical Problems. examples. Ratio and Proportion. comparison of Ratios. examples, Proportion - Def^{n} and examples
1st July to 11th July	Continued Proportion, examples, Properties of Proportion, examples, Sol^{n} of Problems on Proportion By using key-Method, examples. Percentage, examples Profit and Loss. examples. Problems given by the students. Test of unit - III & IV

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Lesson Plan

Name of the Assistant/ Associate Professor: Sushma Yadav Sem. 4th

Class and Section: B.A / B.Sc 2nd year Subject: Mathematics (Special fun & Integral Transforms)

Month	Topics
21st March to 31st March	Power Series, Convergence of Power Series, Interval of Convergence, Examples, Operation on Power Series, Analytic Function, Examples, ord. & Singular Points of D.E., Examples, Existance of Power Series Solution, Ex., Frobenius Method. Examples Beta Function, Properties, Gamma Fxn, Relⁿ blw β and Γ Fxn Bessel's Eqn. and Fxn, Solution of Bessel's Eqn, Recurrence Relations blw Bessel's Eq. Fxns. Examples
1st April to 30th April	Generating Fxn for $J_n(x)$ & Representation, Examples, Equation Reducible to Bessel's Eqn. Ex., Orthogonality Relation of Bessel's Fxn, Examples, Legendre's Eqn. & its solution Legendre's Polynomial, Rodrigues Formula, & its Derivation Generation Fxⁿ for $P_n(x)$, Examples, Recurrence Relations Ex. Orthogonality of Legendre's Polynomial, Laplace Integral Representation, Ex. Test. Hermite Equation and its Solution, Hermite's Polynomial
1st May to 31st May	Defⁿ of H.Po, H.P. for some values of n, G.F. for H.P. Rodrigues Formula for $H_n(x)$, Derivation, Recurrence Relation, Examples, Orthogonal Properties of Hermite Polyno. Examples. Test Laplace Transforms, Linear Property of L.T., Examples, First Shifting Properties, Change of scale property Examples, Theorem, 2nd S.Thm, Ex., Laplace Transform of Integrals,
1st June to 30th June	Ex. Inverse Laplace Transform, Examples, Other Method of Finding Inverse Transforms, Convolution Theorem, Examples, Application of laplace Transf. to integral eqn. Ex. Solution of Linear D.E. with constant coff. by laplace method, Ex. Fourier Transforms & Properties, Shifting Properties Ex. Convolution (Defn) Theorems for Fourier Transformation, Parseval's Id. for F.T., Ex. Finite Sine & Cosine Transform Ex.
1st July to 11th July	Solution of D.E. By Fourier Transforms, Ex. Test. Problems Given By The Students, Revision Test.

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BALNATH CHAUDHARY GOVT. COLLEGE FOR WOMEN, NANGAL CHAUDHARY

Lesson Plan

Name of the Assistant/ Associate Professor: Sushma Yadav Sem. 6th

Class and Section: B.A/B.Sc 3rd year Subject: Mathematics (Linear Algebra)

Month	Topics
21st March to 31st March	Vector Space, Vectors in R^n, Examples, Some general Properties of Vector space, Subspaces, Some Theorems on Vector Sub-spaces, examples, Linear sum of subspaces, Direct sum spaces, examples, Linear combination of Vector, linear dependence and independence of vectors, examples, Linear span, spanning sets Finitely Generated vector space, examples, Basis of a vector space, ordered Basis, Co-ordinates of a vector relative to the Basis,
1st April to 30th April	minimal generated set, Dimension of a vector space, examples, identical spaces, examples, complementary subspace, examples, Dimension of a quotient space, examples, Linear Transformation Vector space Homomorphism, examples, Vector space isomorphism, Vector space Isomorphism, examples, To find the linear transformation T, examples, Test
1st May to 31st May	Null space of Kernel of a Linear Transformation, Rank and Nullity of a Linear Transformation, examples, Sum of Linear Transformations, examples, Singular and Non-Singular Transformation, examples, Coordinate Vector, matrixes of Identity and zero Transformation, examples, change of Basis, example Vector space of All Linear transformations, dual space Annihilator examples.
1st June to 30th June	Eigen space, characteristics Polynomial of Linear transformation Some important theorems, similar matrix, diagonalisation examples, Minimal Polynomial, inner Product spaces examples, Triangle Inequality, Normed Linear spaces examples, orthonormal set, Bessel's inequality. examples Gram-Schmidt, orthogonalism process, examples
1st July to 11th July	Adjoint operator, theorems, operators, examples Problems given by the students. Revision Test

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