

Summary of Lesson Plan

Name of College: **GOVERNMENT POST GRADUATE NEHRU COLLEGE, JHAJJAR**

SESSION: 2023-2024

For the month of January, 2024 – April, 2024

Sr. No.	Name of Assistant/ Associate Professor	SUBJECT/ CLASS/ SEMESTER	TOPIC/ Chapters to be covered
1	Dr. Narinder Kumar Extension Lecturer	B.Sc. 2nd Semester Ordinary Differential Equations	<p>01st January, 2024 – 31st January, 2024: Geometrical meaning of a differential equation. Exact differential equations. Integrating factors. First order higher degree equations solvable for x, y, p. Lagrange's equations. Clairaut's equations. Equation reducible to Clairaut's form. Singular solutions.</p> <p>01st February, 2024 – 29th February, 2024 : Orthogonal trajectories: in Cartesian coordinates and polar coordinates. Self orthogonal family of curves.. Linear differential equations with constant coefficients. Homogeneous linear ordinary differential equations. Equations reducible to homogeneous linear ordinary differential equations.</p> <p style="text-align: center;">Sessional Exam</p> <p>01st March, 2024 – 31st March, 2024: Linear differential equations of second order. Reduction to normal form. Transformation of the equation by changing the dependent variable/ the independent variable. Solution by operators of non-homogeneous linear differential equations. Reduction of order of a differential equation. Method of variations of parameters. Method of undetermined coefficients.</p> <p>01st April, 2024 – 30th April, 2024: Ordinary simultaneous differential equations. Solution of simultaneous differential equations involving operators $x (d/dx)$ or $t (d/dt)$ etc. Simultaneous equation of the form $dx/P = dy/Q = dz/R$. Total differential equations. Condition for $Pdx + Qdy + Rdz = 0$ to be exact. General method of solving $Pdx + Qdy + Rdz = 0$ by taking one variable constant. Method of auxiliary equations.</p> <p style="text-align: center;">Sessional Exam</p>


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1	Dr. Narinder Kumar Extension Lecturer	B.Sc. 2nd Semester Vector Calculus	<p>01st January, 2024 – 31st January, 2024: 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.</p> <p>01st February, 2024 – 29th February, 2024 : 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.</p> <p style="text-align: center;">Sessional Exam</p> <p>01st March, 2024 – 31st March, 2024: 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.</p> <p>01st April, 2024 – 30th April, 2024: Vector integration: Line integral, Surface integral, Volume integral. Theorems of Gauss, Green & Stokes and problems based on these theorms.</p> <p style="text-align: center;">Sessional Exam</p>


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1	Dr. Narinder Kumar Extension Lecturer	BBA 2nd Semester Business Statistics	<p>01st January, 2024 – 31st January, 2024: Statistics: Meaning, evolution, scope, limitations and applications; data classification; tabulation and presentation: meaning, objectives and types of classification, formation of frequency distribution, role of tabulation, parts, types and construction of tables, significance, types and construction of diagrams and graphs.</p> <p>01st February, 2024 – 29th February, 2024 : Measures of Central Tendency and Dispersion: Meaning and objectives of measures of central tendency, different measure viz. arithmetic mean, median, mode, geometric mean and harmonic mean, characteristics, applications and limitations of these measures; measure of variation viz. range, quartile deviation mean deviation and standard deviation, co-efficient of variation and skewness.</p> <p style="text-align: center;">Sessional Exam</p> <p>01st March, 2024 – 31st March, 2024: Correlation and Regression: Meaning of correlation, types of correlation – positive and negative correlation, simple, partial and multiple correlation, methods of studying correlation; scatter diagram, graphic and direct method; properties of correlation co-efficient, rank correlation, coefficient of determination, lines of regression, co-efficient of regression, standard error of estimate.</p> <p>01st April, 2024 – 30th April, 2024: Index numbers and time series: Index number and their uses in business; construction of simple and weighed price, quantity and value index numbers; test for an ideal index number, components of time series viz. secular trend, cyclical, seasonal and irregular variations, methods of estimating secular trend and seasonal indices; use of time series in business forecasting and its limitations, calculating growth rate in time series.</p> <p style="text-align: center;">Sessional Exam</p>


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1	Dr. Narinder Kumar Extension Lecturer	B.Com 2nd Semester Business Mathematics-II	01st January, 2024 - 31st January, 2024: Matrices and Determinants: Definition of a Matrix; Types of Matrices; Algebra of Matrices; Calculation of values of Determinants up to third order; adjoint of a Matrix, elementary row and column operations. Finding inverse matrix through adjoint and elementary row or column operations. Solution of a system of Linear equations having unique Solution and involving not more than three variables. 01st February, 2024 - 29th February, 2024 : Differentiation (only algebraic problem). Application of differentiation. Sessional Exam 01st March, 2024 - 31st March, 2024: Compound Interest and Annuities: Certain different types of interest rate; Concept of present value and amount of a sum; Types of annuities; Present value and amount of an annuity, including the case of continuous compounding. 01st April, 2024 - 30th April, 2024: Ratio, Proportion and Percentage; Profit and Loss. Sessional Exam


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