GOVT SHIVALIK COLLEGE NAYA NANGAL

TEACHING PLAN (SESSION 22-23)

SUBJECT-MATHEMATICS

PAPER-DIFFERTIAL EQUATIONS/LINEAR ALGEBRA

TEACHER NAME - PRIYA WADHWA

Class- B.Sc. I Sem-I

Sr.no	Date	Subject Matter
1	01/09/2022-06/09/2022	DIFFRENTIAL EQUATIONS: First order differential equations **:** Order and degree of a differential equation, Separable differential equations
2	07/09/2022 12/09/2022	Homogeneous differential equations, equations reducible to Homogenous differential equations , Exact differential equations
3	14/092022-23/09/2022	Linear differential equations and equations reducible to linear differential equations. Higher order differential equations **:** Wronskian CLASS TEST
4	24/09/2022-05/10/2022	Solution of Linear homogeneous and non-homogeneous differential equations of higher order with constant coefficients and with variable coefficients, Method of Variation of Parameters.
5	06/10/2022-14/10/2022	Higher order differential equations **:** Differential operator method, Linear non-homogeneous differential equations with variable coefficients POWER POINT PRESENTATION BY STUDENTS
6	15/10/2022-22/10/2022	Euler's Cauchy method. Frobenius method, Regular point, ordinary point**,** Power Series method.
7	23/10/2022-30/10/2022	Bessel and Legendre Equations, Legendre and Bessel functions and their properties , recurrence relations, orthogonality, Rodriguge formulae. DISCUSSION
8	01/11/2022-12/11/2022	LINEAR ALGEBRA: Vector spaces, Examples, Linear Dependence, Linear Combinations Bases and Dimension, Subspaces, Linear transformation.
9	13/11/2022-23/11/2022	Algebra of linear transformations, Matrices as linear transformations, Matrices and change of basis, Kernel and image
10	24/11/2022-03/12/2022	MST EXAMS & REVISION

GOVT SHIVALIK COLLEGE NAYA NANGAL

TEACHING PLAN (SESSION 22-23)

SUBJECT-MATHEMATICS

PAPER-PARTIAL DIFFRENTIAL EQUATIONS/ANALYTIC GEOMETRY

TEACHER NAME - PRIYA WADHWA

CLASS B.Sc. I Sem-II

Sr.no	Date	Subject Matter
1	06/2/2023-11/02/2023	Partial differential equations : Partial differential equation of first order, Lagrange's solution,, Integral surfaces passing through a given curve.
2	13/02/2023-20/02/2023	surfaces orthogonal to a given system of surfaces, Partial differential equation of first order but of any degree , Charpit's general method of solution.
3	21/02/2023-28/02/2023	Partial differential equations of second and higher order : Partial differential equations of the second order and their classification into hyperbolic, elliptic and parabolic types, canonical forms.
4	01/03/2023-15/03/2023	Homogeneous and non-homogeneous partial differential equations with constant coefficients. POWER POINT PRESENTATION BY STUDENTS
5	16/03/2023-25/03/2023	One dimension Wave and Heat equations. CLASS TEST
6	26/03/2023-31/03/2023	Two dimensional Laplace equation by separation of variable method and D'Alembert's solution of wave equation.
7	01/04/2023-07/04/2023	Sphere: Section of a sphere by a plane. sphere through a given circle. Intersection of a line and sphere, tangent line, tangent plane, angle of intersection of two spheres and condition of orthogonality. DISCUSSION
8	08/04/2023-15/04/2023	Cone: general second degree equation of a cone, its intersection with a plane and with a line, enveloping cone, right circular cone, the cone $ax^2 + by^2 + cz^2 = 0$
9	16/04/2023-21/04/2023	Cylinder: enveloping cylinder, right circular cylinder
10	22/04/2023-29/04/2023	MST EXAMS &REVISION

GOVT SHIVALIK COLLEGE NAYA NANGAL

TEACHING PLAN (SESSION 22-23)

SUBJECT-MATHEMATICS

PAPER-ANALYSIS I/MECHANICS

TEACHER NAME - PRIYA WADHWA

CLASS- B.Sc- II SEM - 03

Sr.no	Date	Subject Matter
1	01/09/2022-06/09/2022	ANALYSIS :Sequence: Definition of a sequence, Bounded and Monotonic sequences, Convergent sequence, Cauchy sequences, Cauchy's Convergence Criterion.
2	07/09/2022 12/09/2022	Infinite Series: Definition of a series, Tests of convergence, Comparison test.
3	14/092022-23/09/2022	Logarithmic test, Gauss test, Cauchy's root test, Alternating series.Cauchy's integral Ratio test, condensation test, Raabe's test. CLASS TEST
4	24/09/2022-05/10/2022	Leibnitz's test. Absolute convergence and conditional convergence. Weierstrass M-Test for Uniform convergence of sequence of functions and series of functions.
5	06/10/2022-14/10/2022	Simple applications. Determination of Radius of convergence of power series. POWER POINT PRESENTATION BY STUDENTS
6	15/10/2022-22/10/2022	Improper integrals: Definition, statements of their conditions of existence. Test of the convergence of improper integral, beta and gamma functions and their convergence. Abel's and Dirichlet's tests.
7	23/10/2022-30/10/2022	Motion of a particle with constant acceleration, acceleration of falling bodies, motion under ground. DISCUSSION
8	01/11/2022-12/11/2022	Motion of a body projected vertically upward, motion of a two particles connected by a string, motion along a smooth inclined plane.
9	13/11/2022-23/11/2022	constrained motion along a smooth inclined plane. Variable acceleration, Simple harmonic motion, Projectile.
10	24/11/2022-03/12/2022	MST EXAMS & REVISION

GOVT SHIVALIK COLLEGE NAYA NANGAL

TEACHING PLAN (Session- 2022-23)

SUBJECT - MATHEMATICS
PAPER-ANALYSIS/NUMBERTHEORY

Teacher Name – Priya Wadhwa

Class- B.sc- II Sem-04

Sr.no	Date	Subject Matter
1	06/2/2023-11/02/2023	ANALYSIS: Functions of bounded Variation and Rectifiable Curves: Properties of Monotonic Functions, Functions of Bounded Variation. Total variation, Additive property of total variation, Total Variation on [a, x] as a function of x.
2	13/02/2023-20/02/2023	functions of bounded variation expressed as the difference of increasing functions, continuous functions of bounded variation, rectifiable curves and arc length.
3	21/02/2023-28/02/2023	Additive and continuity Property of Arc Length Equivalence of Paths and Change of Parameter. DISCUSSION
4	01/03/2023-15/03/2023	The Riemann-Stieltjes integrals: Definition, elementary properties, integration by parts, change of variable, reduction to Riemann integral. CLASS TEST
5	16/03/2023-25/03/2023	step functions as integrators. Reduction ofThe Riemann-Stieltjes integrals: Definition, elementary properties, integration by parts, change of variable, reduction to Riemann integral, step functions as integrators.
6	26/03/2023-31/03/2023	Reduction of Riemann's condition,comparison theorem ,integrators of bounded variation, mean value theorems for Riemann integrals.
7	01/04/2023-07/04/2023	Application to cryptography, primitive root. POWER POINT PRESENTATION BY STUDENTS
8	08/04/2023-15/04/2023	indices, quadratic residues, Legendre Symbol, Euler's criterion.
9	16/04/2023-21/04/2023	Gauss Lemma., Quadratic reciprocity Law, Jacobi Symbol. Arithmetic functions (n), d(n), (n), a(n), Mobius inversion Formula.
10	22/04/2023-29/04/2023	MST EXAMS & REVISION

GOVT SHIVALIK COLLEGE NAYA NANGAL

TEACHING PLAN (SESSION 22-23)

SUBJECT-MATHEMATICS

PAPER-ALGEBRA/DISCREATE MATHEMATICS

TEACHER NAME PRIYA WADHWA

CLASS B.Sc III Sem-05

Sr.no	Date	Subject Matter
1	01/09/2022-06/09/2022	ALGEBRA: Group: definition, examples, subgroups, counting Principle, Langrange's theorem
2	07/09/2022 12/09/2022	Normal subgroups, Quotient groups, Homomorphisms.
3	14/092022-23/09/2022	Fundamental theorem of homomorphism and related theorems. Cyclic Groups. DISCUSSION
4	24/09/2022-05/10/2022	Rings**:** Definition and examples of Rings, Elementary properties of Rings.
5	06/10/2022-14/10/2022	Sub-rings, Homomorphism, ideals and Quotient Rings
6	15/10/2022-22/10/2022	Field of Quotient of Integral domain, division rings
7	23/10/2022-30/10/2022	Euclidean Rings, Principal ideals, examples. Discrete Mathematics **:** Graphs and Planar Graphs-Basic Terminology. POWER POINT PRESENTATION BY STUDENTS
8	01/11/2022-12/11/2022	Multigraphs. Weighted Graphs. Paths and Circuits Shortest paths. Eulerian Paths and Circuits. Travelling Salesman Problem.
9	13/11/2022-23/11/2022	Definition and Examples of Finite State Machines-Equivalent Machines and Finite State Machines as Language Recognizers.
10	24/11/2022-03/12/2022	MST EXAMS & REVISION

GOVT SHIVALIK COLLEGE NAYA NANGAL

TEACHING PLAN (SESSION 22-23)

SUBJECT-MATHEMATICS

PAPER-OPTAMISATION TECHNIQUES/DISCREATE MATHEMATICS -II

TEACHER NAME PRIYA WADHWA

CLASS B.Sc III Sem-06

Sr.no	Date	Subject Matter
1	06/2/2023-11/02/2023	Inventory, Costs involved in Inventory
2	13/02/2023-20/02/2023	Variables in Inventory Models, Characteristics of Inventory Systems and Classifications
3	21/02/2023-28/02/2023	Concept of Economic Ordering (EQQ). EQQ models with no shortage: Economic Lot Size system with uniform demand. DISCUSSION
4	01/03/2023-15/03/2023	Economic Lot Size with different rates of demand in different cycles, Economic Lot Size with finite rate of replenishment.
5	16/03/2023-25/03/2023	E0Q models with shortages: EOQ with constant rate of demand, Scheduling time constant and scheduling time variable, Production Lot size demand with shortages. CLASS TEST
6	26/03/2023-31/03/2023	Introduction to Job Sequencing: n jobs on two machines. m jobs on three machines, two jobs on m machines, n jobs on m machines.
7	01/04/2023-07/04/2023	Project Networks: Critical Path Methods, Project Evaluation and Review Techniques (PERT) POWER POINT PRESENTATION BY STUDENTS
8	08/04/2023-15/04/2023	Discrete Mathematics **:** Brief review of Groups and Rings. Boolean AIgebra -Lattices and Algebraic Structures. Duality. Distributive and Complemented Lattices.
9	16/04/2023-21/04/2023	Boolean Lattices and Boolean Algebras. Boolean Functions and Expressions. Prepositional Calculus. Design and Implementation of Digital Networks. Switching circuit.
10	22/04/2023-29/04/2023	MST EXAM & REVISION

GOVT SHIVALIK COLLEGE NAYA NANGAL

TEACHING PLAN (SESSION 22-23)

SUBJECT-MATHEMATICS

PAPER-BUSINESS STATISTICS

TEACHER NAME - PRIYA WADHWA

Class- B.COM-II Sem-III

Sr.no	Date	Subject Matter
1	01/09/2022-06/09/2022	Introduction to Statistics-Definition, Importance and Limitations, Functions and scope. Measures of Central Tendency: Mean, Median, Mode.
2	07/09/2022 12/09/2022	Measures of dispersion: Range, Quartile deviation, Mean deviation and Standard deviation.
3	14/092022-23/09/2022	Analysis of Time Series: Causes of variations in time series multiplicative models. CLASS- TEST
4	24/09/2022-05/10/2022	Determination of trends, Moving averages method and method of least squares (including linear, second degree, parabolic and exponential trends)
5	06/10/2022-14/10/2022	Computation of seasonal-indices by simple averages, ratio-trend, ratio-to-moving average, and link relative methods. DISCUSSION
6	15/10/2022-22/10/2022	Index numbers: Need, definition and limitations of index numbers-simple and weighted index numbers- Laspyer's, Paasche's and Fisher Index numbers.
7	23/10/2022-30/10/2022	Criterion of ideal index numbers, problems involved in the construction of index numbers. PPT by Students
8	01/11/2022-12/11/2022	Correlation: Meaning, types and measurement of correlation (Karl Pearson's methods and Spearman's rank correlation). Regression: Meaning, Regression Equation of X on Y and Y on X.
9	13/11/2022-23/11/2022	Forecasting Methods: Forecasting Concept, types and importance; General approach to forecasting; Methods of forecasting; Forecasting demand; Industry Vs. Company sales forecasts; Factors affecting company sales.
10	24/11/2022-03/12/2022	MST EXAMS & REVISION