GOVT SHIVALIK COLLEGE NAYA NANGAL

TEACHING PLAN (SESSION 19-20)

SUBJECT-MATHEMATICS

PAPER-DIFFERTIAL EQUATIONS/COORDINATE GEOMETRY

TEACHER NAME - PRIYA WADHWA

Class- B.Sc. I Sem-I

Sr.no	Date	Subject Matter
1	1/08/2019-10/08/2019	DIFFRENTIAL EQUATIONS: First order differential equations **:** Order and degree of a differential equation, Separable differential equations. Homogeneous differential equations.
2	11/08/2019 20/08/2019	Equations reducible to Homogenous differential equations , Exact differential equations
3	21/08/2019-30/08/2019	Linear differential equations and equations reducible to linear differential equations. Higher order differential equations **:** Wronskian,
4	1/09/2019-10/09/2019	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	11/09/2019-22/09/2019	Higher order differential equations **:** Differential operator method, Linear non-homogeneous differential equations with variable coefficients
6	23/09/2019-31/09/2019	Euler's Cauchy method. Frobenius method, Regular point, ordinary point**,** Power Series method.
7	1/10/2019-10/10/2019	Bessel and Legendre Equations, Legendre and Bessel functions and their properties , recurrence relations, orthogonality, Rodriguge formula
8	11/10/2019-20/10/2019	COORDINATE GEOMETRY: general equation of second degree, parabola: pole, polar.
9	21/10/2019-30/10/2019	Pair of tangents from a point, chord of contact ,equation of chord in terms of midpoint, diameter of conic, subtangent and subnormal and its geomaterial properties.
10	1/11/2019-10/11/2019	MST WILL BE HELD
11	11/11/2019-30/11/2019	REVISION

GOVT SHIVALIK COLLEGE NAYA NANGAL

TEACHING PLAN (SESSION 19-20)

SUBJECT-MATHEMATICS

PAPER-PARTIAL DIFFRENTIAL EQUATIONS/ANALYTIC GEOMETRY

TEACHER NAME - PRIYA WADHWA

CLASS B.Sc. I Sem-II

Sr.no	Date	Subject Matter
1	15/1/2020-25/01/2020	Partial differential equations **:** Partial differential equation of first order, Lagrange's solution,, Integral surfaces passing through a given curve,
2	26/01/2020-05/02/2020	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	06/02/2020-15/02/2020	Partial differential equations of second and higher order **:** Partial differential equations of the second order and their classification into hyperbolic
4	16/02/2020-28/02/2020	Homogeneous and non-homogeneous partial differential equations with constant coefficients.
5	1/03/2020-15/03/2020	One dimension Wave and Heat equations
6	16/03/2020-30/03/2020	Two dimensional Laplace equation by separation of variable method and D'Alembert's solution of wave equation.
7	01/04/2020-15/04/2020	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. MST WILL BE HELD
8	16/04/2020-30/04/2020	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	01/05/2020-31/05/2020	Cylinder**:** enveloping cylinder, right circular cylinder

GOVT SHIVALIK COLLEGE NAYA NANGAL

TEACHING PLAN (SESSION 19-20)

SUBJECT-MATHEMATICS PAPER-ANALYSIS I/STATICS

TEACHER NAME - PRIYA WADHWA

CLASS- B.Sc- II SEM - 03

Sr.no	Date	Subject Matter
1	1/08/2019-10/08/2019	ANALYSIS: Definition of a sequence, Bounded and Monotonic sequences, Convergent sequence, Cauchy sequences, Cauchy's Convergence Criterion.
2	11/08/2019-20/08/2019	Theorems on limits of sequences. Subsequence , Sequential continuity, Definition of a series, Test's of convergence (Without proofs) Comparison test.
3	21/08/2019-30/08/2019	Cauchy's integral Ratio tests. Raabe's, Logarithmic, Gauss Test, Cauchy's root test, Alternating series. Leibnitz's test. Absolute and conditional convergence.
4	1/09/2019-10/09/2019	Definition and existence of Riemann integrals. Properties of integrals. Integrability of continuous and monotonic functions.
5	11/09/2019 -22/09/2019	The fundamental theorem of integral calculus. Mean value theorems of integral calculus. Functions of bounded variations and rectifiable curves; properties of monotonic functions.
6	23/09/2019-31/09/2019	Functions of Bounded Variation, Total variation, Additive property of total variation.
7	1/10/2019-10/10/2019	Total Variation on [a, x] as a function of x, functions of bounded variation expressed as the difference of increasing functions, continuous functions of bounded variation, rectifiable curves and arc .
8	11/10/2019-20/10/2019	STATICS**:** Equilibrium of two concurrent forces, equilibrium condition for any number of coplanar concurrent forces, Lami's theorem. λ - μ theorem.
9	21/10/2019-30/10/2019	resultant of a force and a copule. Equilibrium conditions for coplanar non-concurrent forces. Definition and nature of friction, laws of friction, Centre of gravity.
10	1/11/2019-10/11/2019	MST WILL BE HELD

GOVT SHIVALIK COLLEGE NAYA NANGAL

TEACHING PLAN (Session- 2019-20)

SUBJECT-MATHEMATICS PAPER – ANALYSIS I/DYNAMICS

Teacher Name – Priya Wadhwa

Class- B.sc- II Sem-04

Sr.no	Date	Subject Matter
1	15/1/2020-25/01/2020	ANALYSIS: Concept of Point-wise and Uniform convergence of sequence of functions and series of functions with special reference to power Series.
2	26/01/2020-5/02/2020	Statement of Weierstrass M-Tests for Uniform convergence of sequence of functions and of series of functions. Simple applications
3	06/02/2020-15/02/2020	Determination of Radius of convergence of power series. Term by term integration and Term by term differentiation of power Series.
4	16/02/2020-28/02/2020	Scalar and vector fields, differentiation of vectors, velocity and acceleration. Vector differential operators: Del, Gradient.
5	1/03/2020-15/03/2020	Divergence and Curl, their physical interpretations. Formulae involving Del applied to point functions and their products. Line, surface and volume integrals.
6	16/03/2020-30/03/2020	Stokes Theorem and the Divergence Theorem. Applications of Green's, Stoke's and Divergence theorem.
7	01/04/2020-15/04/2020	Greens Theorem in the Plane Parameterized Surface. MST WILL BE HELD
8	16/04/2020-30/04/2020	Projectile, Work, Power, conservative fields and potential energy, work done against gravity, potential energy of a gravitational field.
9	01/05/2020-31/05/2020	Relative motion, relative displacement, velocity and acceleration, motion relative to a rotating frame of reference. Linear momentum, angular momentum, conservation of A angular momentum, impulsive forces, principle of impulse and momentum.

GOVT SHIVALIK COLLEGE NAYA NANGAL

TEACHING PLAN (SESSION 19-20)

SUBJECT-MATHEMATICS PAPER-ALGEBRA/DISCREATE MATHEMATICS

TEACHER NAME PRIYA WADHWA

CLASS B.Sc III Sem-05

Sr.no	Date	Subject Matter
1	1/08/2019-10/08/2019	ALGEBRA: Group: definition, examples, subgroups, counting Principle, Langrange's theorem
2	11/08/2019-20/08/2019	Normal subgroups, Quotient groups, Homomorphisms.
3	21/08/2019-30/08/2019	Fundamental theorem of homomorphism and related theorems. Cyclic Groups.
4	1/09/2019-10/09/2019	Rings**:** Definition and examples of Rings, Elementary properties of Rings.
5	11/09/2019-20/09/2019	Sub-rings, Homomorphism, ideals and Quotient Rings
6	21/09/2019 30/09/2019	Field of Quotient of Integral domain,division rings
7	1/10/2019-10/10/2019	Euclidean Rings, Principal ideals, examples. Discrete Mathematics **:** Graphs and Planar Graphs-Basic Terminology. MST WILL BE HELD
8	11/10/2019-20/10/2019	Multigraphs. Weighted Graphs. Paths and Circuits Shortest paths. Eulerian Paths and Circuits. Travelling Salesman Problem.
9	21/10/2019-30/11/2019	Definition and Examples of Finite State Machines-Equivalent Machines and Finite State Machines as Language Recognizers.

GOVT SHIVALIK COLLEGE NAYA NANGAL

TEACHING PLAN (SESSION 19-20)

SUBJECT-MATHEMATICS

PAPER-ALGEBRAII/DISCREATE MATHEMATICS II

TEACHER NAME PRIYA WADHWA

CLASS B.Sc III Sem-06

Sr.no	Date	Subject Matter
1	15/1/2020-25/01/2020	ALGEBRA: Vector spaces, Examples, Linear Dependence, Linear Combinations.
2	26/01/2020-5/02/2020	Bases and Dimension, Subspaces, Quotient spaces , Direct Sum of vector spaces.
3	06/02/2020-15/02/2020	Direct Sum of vector spaces, Dimension of a direct sum, Dual of a vector space.
4	16/02/2020-28/02/2020	Matrices and change of basis. Linear transformation, Algebra of linear transformations.
5	1/03/2020-15/03/2020	Matrices as linear mappings, Kernal and image, Rank and Nullity theorem, Singular and non-singular linear mappings.
6	16/03/2020-30/03/2020	Isomorphism, Composition of linear mappings, Polynomials and linear operators.
7	01/04/2020-15/04/2020	Square matrices as linear operators, matrix representation of a linear operator, Change of basis. characteristic and minimal polynomial for linear operator. MST WILL BE HELD
8	16/04/2020-30/04/2020	Discrete Mathematics **:** Brief review of Groups and Rings. Boolean AIgebras-Lattices and Algebraic Structures. Duality. Distributive and Complemented Lattices.
9	01/05/2020-31/05/2020	Boolean Lattices and Boolean Algebras. Boolean Functions and Expressions. Prepositional Calculus. Design and Implementation of Digital Networks. Switching circuit.