Lesson Plan

Teacher ……Dr. Kuntal…………….

Class …B.Sc. Honours 1st………….. Sec. ………………..

Subject …Regression Analysis…..Session ………2023-24(2nd sem.)…

Week(Feb.)	Topics
1(14-17)	Introduction of linear regression Principal of least square and fitting of straight line, properties of regression coefficients, Derivative of two lines of regression
2(19-24)	Standard error of estimate obtained from regression lines, correlation coefficients between observed and estimated values, angle between two lines of regression, difference between correlation and regression.
3(26-29)	Curvilinear regression, fitting of curves.Test

Week(March)	Topics
1(1-2)	Basic concepts of Probability, Mathematical Probability, Statistical Probability and examples
2(4-9)	Subjective Probability and examples, Sets, Axiomatic Approach to Probability
3(11-16)	Addition Theorem of probability, Boole's inequality, Conditional probability, Multiplication theorems of probability and examples
4(18-23)	Bayes theorem and its application, Random variable and probability functions, defination and properties of random variable, Test, Assignment of 1st unit
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	discrete and continuous random variable, probability mass and density functions, distribution functions
2(8-13)	Concepts of bivariate random variable
3(15-20)	Joint marginal and conditional distributions
4(22-27)	Mathematical expectation moments measure of location, dispersion, skewness and kurtosis, Test
5(29-30)	revision

Lesson Plan

Teacher ………Dr. Kuntal………….

Class- Maths honours 1st……...   Sec. ………………..

Subject -Number Theory & Trigonmetry, Session ……2023-24(2nd sem.)……

Week(Feb.)	Topics
1(14-17)	Unit 1:Number Theory: Divisibility, G.C.D., L.C.M., Primes, fundamental theorem of arithmetic.
2(19-24)	Linear congruences, fermat's theorem, Wilson's theorem ant its converse
3(26-29)	Linear diphantine equation in two variables, test

Week(March)	Topics
1(1-2)	Unit 2:Complete residue system, reduced residue system module m
2(4-9)	Euler's function, euler's generalization of fermat's theorem, Chinese remainder theorem, quadratic residues, legendre symbols, lemma of gauss, gauss reciprocity law, greatest integer function[X], Test
3(11-16)	The number of divisors and the sum of divisors of a natural number n, moebius function and moebius inversion formula
4(18-23)	Unit 3: De moivre's theorem and its applications, expension of trigonometrical function, Assignment of unit 1
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Direct circular and hyperbolic function and their properties, test
2(8-13)	Unit 4: inverse circular and hyperbolic functions and their properties
3(15-20)	Logarithm of a complex quantity
4(22-27)	Gregory's series, summation of trigonometry series.
5(29-30)	revision

Lesson Plan

Teacher ……Dr. Kuntal……………

Class …B.Sc. Honours III…………..   Sec. ………………..

Subject ……Fluid Daynamics……..Session ……2023-24(6th sem.)……

Week(Feb.)	Topics
1(6-10)	Unit:1 Kinematics- Eulerian and langrangian methods, stream lines
2(12-17)	path lines and streak lines, Velocity potential, irrotational and rotational motion, vortex lines
3(19-24)	equations of continuity and its examples
4(26-29)	boundary surfaces and its examples, Test

Week(March)	Topics
1(1-2)	Unit-2: Acceleration at a point of a fluid,
2(4-9)	components of acceleration in cylindrical and spherical polar coordinates, pressure at a point of a moving fluid , euler's and legrange's equation of motion, Test
3(11-16)	bernoulli's equation , impulsive motion , stream function
4(18-23)	Unit-3: acyclic and cyclic irrotation motions , kinetic energy of irrotational flow, Assignment of unit 1
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	kalvin's minimum energy theorem, axially symmetric flows liquid streaming passed a fixed sphere , motion of a sphere through a liquid at rest at infinity
2(8-13)	Equation of motion of a sphere , three dimensional sources , sinks ,doublets and their images, stokes stream function
3(15-20)	Unit-4: irrotational motion in two dimension, complex velocity potential , milne thomson theorem,
4(22-27)	blasius theorem and its applications and examples.Test
5(29-30)	Revision

Lesson Plan

Teacher …Dr. Kuntal………………

Class …B.sc. IV Sem………….. Sec. ………………..

Subject ……SEC. Logic and Sets…..Session …2023-24………

Week(Feb.)	Topics
1(06-08)	Unit-1: Introduction, propositions, truth table, negation
2(12-15)	conjuction and disconjuction, implications, bi-conditional propositions, converse
3(19-22)	contrapositive, and inverse propositions, and precedence of logical operators.Test
4(26-29)	Unit-2: propositional equivalence: logical equivalence

Week(March)	Topics
1(4-7)	predicates and quantifiers, introduction quantifiers
2(11-14)	binding variables and negations.
3(18-21)	Unit-3:Sets, Subsets, Set operations, the laws of set theory, and venn diagram, Assignment of unit 1
4(25-30)	Holiday of Holi

Week(April)	Topics
1(1-4)	Examples of finite and infinite sets, finite sets and counting principle, Test.
2(8-11)	Empty set, properties of empty set, Standard set operations, classes of set, power set
3(15-18)	Unit-4: Difference and Symmetric difference of two sets, set identifies, generalized union and intersection.Test
4(22-25)	Relation and its properties, Test
5(29-30)	Revision

Lesson Plan

Teacher ………Dr. Sunita………….

Class …B.Sc. Honours III………….. Sec. ………………..

Subject ……Dynamics…………………..Session ……2023-24 (6th Sem)……

Week(Feb.)	Topics
1(6-10)	Chapter 1: Introduction of motion along a plane curve, Radial and transverse velocities and acceleration, Tangential and normal velocities and acceleration.
2(12-17)	Chapter 2: introduction of relative motion
3(19-24)	Chapter 3: introduction of SHM
4(26-29)	Chapter 4: introduction of elastic string, Test

Week(March)	Topics
1(1-2)	Chaptor 5: Introduction of Newton's law of motion
2(4-9)	Continue…..Chaptor 5: Introduction of Newton's law of motion
3(11-16)	Chaptor 6: introduction of work, Introduction of power, Introduction of energy
4(18-23)	Chapter 7: motion of a particle on smooth and rough plane curves, Motion on the outside of a vertical circle, Motion on the inside of a vertical circle, Cylindrical motion, Motion on a rough curve under gravity, Assignment of Chapter 1,2.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Chaptor 8: introduction of projectiles, Velocity at any point of the trajectory, Directions of projection for a particle to hit a given point, Range and time of flight, directions,and velocity, Test
2(8-13)	Chapter 9: introduction of central orbits, Areal velocity, elliptic orbit, hyperbolic orbits, Velocity in a curves, Apse and apsidal distances
3(15-20)	Chapter 10: introduction of kepler's law,
4(22-27)	Chapter 11: Motion of particle in three dimension, velocity and acc. Of moving axis
5(29-30)	Revision and Test

<div align="center">Lesson Plan</div>

Teacher ……Dr. Sunita…………….

Class B.Sc.III……..   Sec. …A(1-3)+B(4-6)……………..

Subject-Special Function and Integral Transforms..Session-2023-24(6 Sem.)

Week(Feb.)	Topics
1 (6-10)	Chapter 1: Power Series
2(12-17)	Continue…..Chapter 1: Power Series
3(19-24)	Chapter 2: Bessel's equations and functions
4(26-29)	Continue…Chapter 2: Bessel's equations and functions, Test

Week(March)	Topics
1(1-2)	Chapter 3: Legendre's equations
2(4-9)	Chapter 5: Laplace transforms
3(11-16)	Chapter 6:Inverse Laplace transforms
4(18-23)	Chapter 7: Use of Laplace transforms in integral equations Assignment of chapter 1.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Chapter8: Solution of differential equation by laplace transformation, Test
2(8-13)	Chapter 9: Fourier transforms
3(15-20)	Continue….. Chapter 9: Fourier transforms
4(22-27)	Chapter10: Solution of differential equation by Fourier transforms
5(29-30)	Revision , Test

Lesson Plan

Teacher ……Dr. Sunita…………….

Class B.Sc.II Honours……..   Sec. ……………..

Subject-Special Function and Integral Transforms..Session-2023-24(4 Sem.)

Week(Feb.)	Topics
1 (6-10)	Chapter 1: Power Series
2(12-17)	Continue…..Chapter 1: Power Series
3(19-24)	Chapter 2: Bessel's equations and functions
4(26-29)	Chapter 3: Legendre's equations

Week(March)	Topics
1(1-2)	Chapter 4: Hermite's equations
2(4-9)	Chapter 5: Laplace transforms
3(11-16)	Chapter 6:Inverse Laplace transforms
4(18-23)	Chapter 7: Use of Laplace transforms in integral equations Assignment of chapter 1.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Chapter8: Solution of differential equation by laplace transformation, Test
2(8-13)	Chapter 9: Fourier transforms
3(15-20)	Continue….. Chapter 9: Fourier transforms
4(22-27)	Chapter10: Solution of differential equation by Fourier transforms
5(29-30)	Revision , Test

Lesson Plan

Teacher ………Dr. Sunita………….

Class ……B.Sc.III Honours……….. Sec. ………………..

Subject ……Elementry Topology..Session ……2023-24……

Week(Feb.)	Topics
1 (6-10)	Unit1: Definition and examples of topological spaces. Comparison of topologies on a set, Intersection and union of topologies on a set.
2(12-17)	Neighbourhoods, Interior point and interior of a set , Closed set as a complement of an open set , Adherent point and limit point of a set,
3(19-24)	Closure of a set, Derived set, Properties of Closure operator, Boundary of a set , Dense subsets, Interior,
4(26-29)	Exterior and boundary operators. Alternative methods of defining a topology in terms of neighbourhood system and Kuratowski closure operator.Test

Week(March)	Topics
1(1-2)	Unit 2:Relative(Induced) topology, Base and subbase for a topology, Base for Neighbourhood system.
2(4-9)	Continuous functions, Open and closed functions , Homeomorphism. Connectedness and its characterization,
3(11-16)	Connected subsets and their properties, Continuity and connectedness, Components, Locally connected spaces.
4(18-23)	Unit 3:Compact spaces and subsets, Compactness in terms of finite intersection property,Continuity and compact sets, Basic properties of compactness, Assignment
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Closedness of compactsubset and a continuous map from compact space into a Hausdorff and its consequence. Test
2(8-13)	Sequentially and countably compact sets, Local compactness and one point compatification
3(15-20)	Unit 4:First countable, second countable and separable spaces, hereditary and topological property, Countability of a collection of disjoint open sets in separable and second countable spaces,
4(22-27)	Lindelof theorem. T0, T1, T2 (Hausdorff) separation axioms,their characterization and basic properties.
5(29-30)	Revision and Test

Lesson Plan

Teacher …Punita(1-3) and …Sunita(4-6)…………….

Class B.Sc II Honours……………..   Sec. ………………..

Subject - Hydrostatics… ..Session 2023-24 (4 th sem)………

Week(Feb.)	Topics
1 (6-10)	Pressure equation. Condition of equilibrium. Lines of force
2(12-17)	Homogeneous and heterogeneous fluids,Elastic fluids.
3(19-24)	Surface of equal pressure.
4(26-29)	Fluid at rest under action of gravity. Rotating fluids. Test

Week(March)	Topics
1(1-2)	Fluid pressure on plane surfaces. Centre of pressure. Resultant pressure on curved surfaces..
2(4-9)	Equilibrium of floating bodies
3(11-16)	Curves of buoyancy. Surface of buoyancy
4(18-23)	Stability of equilibrium of floating bodies. Metacentre. Work done in producing a displacement. Assignment
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Vessels containing liquid,Test
2(8-13)	Stability of equilibrium of floating bodie, Metacentre.
3(15-20)	Work done in producing a displacement.
4(22-27)	Vessels containing liquid
5(29-30)	Revision and Test

Lesson Plan

Teacher: Savita Sharma…………………

Class: B. Sc. 2nd ……..   Sec:…A+B…..

Subject: Mechanics…..Session:2023-24……

Week(Feb.)	Topics(Statics)
1 (6-10)	Chapter 1: Forces acting at a point
2(12-17)	Chapter 1: Forces acting at a point
3(19-24)	Chapter 2 : Parallel forces
4(26-29)	Chapter 3: Moments

Week(March)	Topics
1(1-2)	Chapter 4: Couples, Test
2(4-9)	Chapter5: Analytical conditions of equilibrium of coplanar forces
3(11-16)	(Dynamics) Chapter 1: Motion along a plane curve
4(18-23)	Chapter 2: Relative motion, Assignment
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Chapter 3: simple harmonic motion, Test
2(8-13)	Chapter 4: Elastic string
3(15-20)	Chapter 5: Newton's law of motion
4(22-27)	Chapter 6: work, power and energy
5(29-30)	Revision

Lesson Plan

Teacher– SAVITA SHARMA

Class – B.A 3rd…….. Days-(1-3 days)

Subject- Advanced calculus   Session – 2023-24

Week(Feb.)	Topics
1 (5-7)	UNIT -1: Uniform continuity , chain rule of differentiability, mean value theorem, rolle's theorem
2(12-14)	Lagrange's mean value theorem and their geometrical interpretations, taylor's theorem with various forms of remainders
3(19-21)	indeterminate forms , taylor's theorem with various forms of remainders
4(26-28)	Darboux intermediate value theorem for derivatives

Week(March)	Topics
1(4-6)	UNIT-2 : Limit and continuity of real valued functions of two variables. Partial differentiation
2(11-13)	Total differentiation; complete functions and implicit function. change of variables. Homogeneous functions and euler's theorem of homogeneous functions
3(18-20)	Revision and test of unit 1 & 2
4(25-30)	Holiday of Holi

Week(April)	Topics
1(1-3)	UNIT-3: Taylor's theorem for functions of two variables. Differentiability of real valued functions of two variables. Schwarz and young's theorem
2(8-10)	Implicit function theorem . maxima, minima and saddle point of two variables
3(15-17)	UNIT-4: Lagrange's method of multipliers . jacobian , differentiation under integral sign
4(22-24)	Application of triple integrals , change of variable in double and triple integrals.
5(29-30)	Test and assignment of unit 3& 4

Lesson Plan

Teacher: Sativa Sharma

Class: Bsc 2nd (honours)   Sem: 4th

Subject : Elementry Inference Session: 2023-24

Week(Feb.)	Topics
1 (6-10)	UNIT-1:Parameter and statistic, sampling distribution and standard error of estimate
2(12-17)	Point and interval estimation, unbiasedness, efficiency and related examples
3(19-24)	Consistency , sufficiency and related examples
4(26-29)	UNIT-2:Method of maximum likelihood estimation and its examples, Test

Week(March)	Topics
1(1-2)	Null and alternative hypotheses, simple and composite hypotheses
2(4-9)	Critical region, level of significance, one tailed and two tailed test, types of error, Power of test, steps in solving testing of hypotheses problem
3(11-16)	Most powerful test and uniformly most powerful test, Neyman- Pearson lemma, unbiased test and unbiased critical region and its examples
4(18-23)	UNIT-3:Testing of significance, error in sampling, critical values, procedure for testing of hypothesis, sampling of attributes, test of significance for single proportion and its examples
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Test of significance for single mean and difference of means and its examples, Test and Assignment
2(8-13)	UNIT -4: Definition of chi-square test and its properties, definition of student's 't' and snedcor's F-statistics,
3(15-20)	Testing for the mean and variance of univariate normal distributions
4(22-27)	Related confidence intervals, analysis of variance for one way and two way classified data
5(29-30)	Revision

<div align="center">Lesson Plan</div>

Teacher – Dr. KUSUM

Class- B.Sc 3rd ……….   Sec – C+D

Subject – Advance calculus… Session – 2023-24…

Week(Feb.)	Topics
1 (8-10)	UNIT -1: Uniform continuity , chain rule of differentiability, mean value theorem, rolle's theorem
2(15-17)	Lagrange's mean value theorem and their geometrical interpretations, taylor's theorem with various forms of remainders
3(29)	Darboux intermediate value theorem for derivatives , indeterminate forms

Week(March)	Topics
1(1-2)	UNIT-2 : Limit and continuity of real valued functions of two variables. Partial differentiation
2(7-9)	Total differentiation; complete functions and implicit function. change of variables. Homogeneous functions and euler's theorem of homogeneous functions
3(14-16)	Revision and test of unit 1 & 2
4(21-23)	UNIT-3: Taylor's theorem for functions of two variables. Differentiability of real valued functions of two variables. Schwarz and young's theorem
5(25-30)	Holiday of Holi

Week(April)	Topics
1(4-6)	Implicit function theorem . maxima, minima and saddle point of two variables
2(11-13)	UNIT-4: Lagrange's method of multipliers . jacobian , differentiation under integral sign
3(18-20)	Application of triple integrals , change of variable in double and triple integrals.
4(25-27)	Test and assignment of unit 3& 4

Lesson Plan

Teacher : Dr. Kusum ………………

Class : B.sc 3rd …………..   Sem: 6th……………..

Subject : SEC(Transportation and game theory)… Session: 2023-24

Week(Feb.)	Topics
1 (6-8)	UNIT-1: Transportation problem
2(12-15)	Mathematical formulations: Transportation problem
3(19-22)	Northwest corner method
4(26-29)	Least cost method

Week(March)	Topics
1(4-7)	UNIT-2: Vogel approximation method for determination of starting basic solution Examples of vogel method
2(11-14)	Revision of unit1 and unit 2 and test and assignment
3(18-21)	UNIT-3 : Algorithm for solving transportation problem, assignment problem and its mathematical formulation
4(25-30)	Holiday of Holi

Week(April)	Topics
1(1-4)	Hungarian method for solving assignment problem
2(8-11)	UNIT-4: Game theory: formulation of two person zero sum games,
3(15-18)	Solving two person zero sum games
4(22-25)	Graphical solution procedure
5(29-30)	Test and assignment

<center>Lesson Plan</center>

Teacher …Dr. Punita……………….

Class ……B.Sc. 1st……….. Sec. ………A+B+C………..

Subject ……… Number Theory…...Session ……2023-24(2nd sem.)……

Week(Feb.)	Topics
1(19-24)	Unit 1:Number Theory: Divisibility, G.C.D., L.C.M., Primes, fundamental theorem of arithmetic. Linear congruences, fermat's theorem, Wilson's theorem ant its converse
2(26-29)	Linear diphantine equation in two variables, test

Week(March)	Topics
1(1-2)	Unit 2:Complete residue system, reduced residue system module m
2(4-9)	Euler's function, euler's generalization of fermat's theorem, Chinese remainder theorem, quadratic residues, legendre symbols, lemma of gauss, gauss reciprocity law, greatest integer function[X], Test
3(11-16)	The number of divisors and the sum of divisors of a natural number n, moebius function and moebius inversion formula
4(18-23)	Unit 3: De moivre's theorem and its applications, expension of trigonometrical function, Assignment of unit 1
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Direct circular and hyperbolic function and their properties, test
2(8-13)	Unit 4: inverse circular and hyperbolic functions and their properties
3(15-20)	Logarithm of a complex quantity
4(22-27)	Gregory's series, summation of trigonometry series.
5(29-30)	revision

Lesson Plan

Teacher …Punita(1-3) and …Sunita(4-6)…………….

Class B.Sc II Honours……………..   Sec. ………………..

Subject - Hydrostatics… ..Session 2023-24 (4 th sem)………

Week(Feb.)	Topics
1 (6-10)	Pressure equation. Condition of equilibrium. Lines of force
2(12-17)	Homogeneous and heterogeneous fluids,Elastic fluids.
3(19-24)	Surface of equal pressure.
4(26-29)	Fluid at rest under action of gravity. Rotating fluids. Test

Week(March)	Topics
1(1-2)	Fluid pressure on plane surfaces. Centre of pressure. Resultant pressure on curved surfaces..
2(4-9)	Equilibrium of floating bodies
3(11-16)	Curves of buoyancy. Surface of buoyancy
4(18-23)	Stability of equilibrium of floating bodies. Metacentre. Work done in producing a displacement. Assignment
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Vessels containing liquid,Test
2(8-13)	Stability of equilibrium of floating bodie, Metacentre.
3(15-20)	Work done in producing a displacement.
4(22-27)	Vessels containing liquid
5(29-30)	Revision and Test

Lesson Plan

Teacher …Dr. Vikas……………….

Class …B.Sc Physics(H)………….. Sem . 4th………………..

Subject …Mathematics II……………………...Session -2023-24 …………

Week(Feb.)	Topics
1 (6-10)	Reading and Writing Mathematics: Illustration of mathematical proofs via examples, Illustration of Conjunction, Disjunction
2(12-17)	Negation of Statements and Conditional Statements via examples, Functions and Relations
3(19-24)	Sets, DeMorgan'sLaws, Relations, Cartesian Products, Functions and Graphical Representation
4(26-29)	Injective and Surjective functions, Composition and Inverse of Functions

Week(March)	Topics
1(1-2)	Level Sets, Equivalence Relations and Equivalence Classes.
2(4-9)	Radial Numbers: Natural Numbers, Algebraic Properties
3(11-16)	Mathematical Induction. Real Numbers, Order Properties and Completeness Property of $\mathbb{R}$. Intervals on $\mathbb{R}$, Infinity, Infinite Sets and Cardinality.
4(18-23)	Revision; test and assignment of above topic.
5(25-30)	Holiday of Holi.

Week(April)	Topics
1(1-6)	Ionic Sequences: Sequences, Convergence,
2(8-13)	Limit Theorems, Divergence, Cauchy Sequences.
3(15-20)	Infinite Series: Convergence and Divergence of Series, Geometric Series, Tests for Convergence.
4(22-27)	Limits: Limits of Functions, Boundedness, Squeeze Theorem, Limits at Infinity
5(29-30)	Revision; test and assignment of above topic.

Lesson Plan

Teacher …Dr. Vikas……………….

Class …B.Sc 1st(H)…………..   Sem . 2nd………………..

Subject …Vector Calculus……………………..Session -2023-24 …………

Week(Feb.)	Topics
1 (6-10)	UNIT-1: Scalar and vector product of three vectors, product of four vectors.
2(12-17)	Reciprocal vectors. Vector differentiation. Scalar Valued point functions, vector valued point functions
3(19-24)	Derivative along a curve, directional derivatives
4(26-29)	UNIT-2: Character ofΦGradient of a scalar point function, geometrical interpretation of grad

Week(March)	Topics
1(1-2)	Gradient as a point function. Divergence and curl of vector point function, characters of ρDiv f ρand Curl f as point function, examples.
2(4-9)	Gradient, divergence and curl of sums and product and their related vector identities. Laplacian operator.
3(11-16)	Revision; test and assignment of UNIT-1 & UNIT-2
4(18-23)	UNIT-3: Orthogonal curvilinear coordinates Conditions for orthogonality fundamental triad of mutually orthogonal unit vectors
5(25-30)	Holiday of Holi.

Week(April)	Topics
1(1-6)	Gradient, Divergence, Curl and Laplacian operators in terms of orthogonal curvilinear coordinates.
2(8-13)	Cylindrical co-ordinates and Spherical co- ordinates.
3(15-20)	UNIT-4: Vector integration; Line integral, Surface integral, Volume integral.
4(22-27)	Theorems of Gauss, Green & Stokes and problems based on these theorms.
5(29-30)	Revision; test and assignment of UNIT-3 & UNIT-4

Lesson Plan

Teacher …Dr. Vikas……………….

Class …B.Sc 2nd (H)…………..   Sem . 4th………………..

Subject …Sequence & Series……………………..Session -2023-24 …………

Week(Feb.)	Topics
1 (6-10)	UNIT-1: Boundedness of the set of real numbers; least upper bound, greatest lower bound of a set, neighborhoods, interior points, isolated points, limit points.
2(12-17)	Open sets, closed set, interior of a set, closure of a set in real numbers and their properties.
3(19-24)	Bolzano-Weiestrass theorem, Open covers, Compact sets and Heine-Borel Theorem
4(26-29)	UNIT-2: Sequence: Real Sequences and their convergence, Theorem on limits of sequence, Bounded and monotonic sequences, Cauchy's sequence, Cauchy general principle of convergence.

Week(March)	Topics
1(1-2)	Subsequences, Sub sequential limits. Infinite series: Convergence and divergence of Infinite Series, Comparison Tests of positive terms Infinite series.
2(4-9)	Cauchy's general principle of Convergence of series, Convergence and divergence of geometric series, Hyper Harmonic series or p-series.
3(11-16)	Revision; test and assignment of above topic.
4(18-23)	UNIT-3: Infinite series: D-Alembert's ratio test, Raabe's test, Logarithmic test, de Morgan and Bertrand's test.
5(25-30)	Holiday of Holi.

Week(April)	Topics
1(1-6)	Cauchy's Nth root test, Gauss Test, Cauchy's integral test, Cauchy's condensation test.
2(8-13)	UNIT-4: Alternating series, Leibnitz's test, absolute and conditional convergence, Arbitrary series: abel's lemma, Abel's test, Dirichlet's test
3(15-20)	Insertion and removal of parenthesis, re- arrangement of terms in a series, Dirichlet's theorem, Riemann's Re-arrangement theorem, Pringsheim's theorem.
4(22-27)	Multiplication of series, Cauchy product of series, (definitions and examples only) Convergence and absolute convergence of infinite products.
5(29-30)	Revision; test and assignment of above topic.

Lesson Plan

Teacher ………Dr. Neeti………….

Class …………….. Sec. ………………..

Subject ………Group …………………...Session …………

Week(Feb.)	Topics
1 (6-10)	UNIT-1 : Definition of a group with example and simple properties of groups.
2(12-17)	Subgroups and Subgroup criteria, Generation of groups, cyclic groups, Cosets.
3(19-24)	Left and right cosets, Index of a sub-group Coset decomposition.
4(26-29)	Largrage's theorem and its consequences, Normal subgroups, Quotient groups.

Week(March)	Topics
1(1-2)	UNIT- 2 : Homoomorphisms, isomophisms, automorphisms and inner automorphisms of a group.
2(4-9)	Automorphisms of cyclic groups, Permutations groups. Even and odd permutations. Alternating groups, Cayley's theorem, Center of a group and derived group of a group.
3(11-16)	UNIT -3 : Introduction to rings, subrings, integral domains and fields.
4(18-23)	Characteristics of a ring. Ring homomorphisms.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	ideals (principle, prime and Maximal) and Quotient rings, Field of quotients of an integral domain.
2(8-13)	UNIT 4 : Euclidean rings, Polynomial rings, Polynomials over the rational field, The Eisenstein's criterion.
3(15-20)	Polynomial rings over commutative rings, Unique factorization domain, R unique factorization domain implies so is $R[X_1, X_2, …… X_n]$.
4(22-27)	REVISION
5(29-30)	TEST

Lesson Plan

Teacher …………Dr. Kulvir……….

Class ….B.sc 3rd year Hons…………..

Subject …Linear Algebra

Session ………2023-24…

Week(Feb.)	Topics
1 (6-10)	UNIT -1 : Vector spaces, subspaces, Sum and Direct sum of subspaces, Linear span, Linearly Independent and dependent subsets of a vector space.
2(12-17)	Finitely generated vector space, Existence theorem for basis of a finitely generated vector space.
3(19-24)	Finite dimensional vector spaces, Invariance of the number of elements of bases sets.
4(26-29)	Dimensions, Quotient space and its dimension.

Week(March)	Topics
1(1-2)	UNIT -2: Homomorphism and isomorphism of vector spaces, Linear transformations and linear forms on vector spaces.
2(4-9)	Vector space of all the linear transformations Dual Spaces, Bidual spaces, annihilator of subspaces of finite dimentional vector spaces.
3(11-16)	Null Space, Range space of a linear transformation, Rank and Nullity Theorem.
4(18-23)	UNIT -3: Algebra of Liner Transformation, Minimal Polynomial of a linear transformation, Singular and non-singular linear transformations.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Matrix of a linear Transformation, Change of basis, Eigen values and Eigen vectors of linear transformations.
2(8-13)	UNIT -4: Inner product spaces, Cauchy-Schwarz inequality.
3(15-20)	Orthogonal sets and Basis, Bessel's inequality for finite dimensional vector spaces, Gram-Schmidt, Orthogonalization process.
4(22-27)	Adjoint of a linear transformation and its properties, Unitary linear transformations.
5(29-30)	REVISION

Lesson Plan

Teacher ………Dr. Neeti………….

Class ……B.A. 2nd year……….. Sec. ………………..

Subject ……Group and Ring…………………..Session …2023-24 even sem.

Week(Feb.)	Topics
1 (6-10)	UNIT-1 : Definition of a group with example and simple properties of groups.
2(12-17)	Subgroups and Subgroup criteria, Generation of groups, cyclic groups, Cosets.
3(19-24)	Left and right cosets, Index of a sub-group Coset decomposition.
4(26-29)	Largrage's theorem and its consequences, Normal subgroups, Quotient groups.

Week(March)	Topics
1(1-2)	UNIT- 2 : Homoomorphisms, isomophisms, automorphisms and inner automorphisms of a group.
2(4-9)	Automorphisms of cyclic groups, Permutations groups. Even and odd permutations. Alternating groups, Cayley's theorem, Center of a group and derived group of a group.
3(11-16)	UNIT -3 : Introduction to rings, subrings, integral domains and fields.
4(18-23)	Characteristics of a ring. Ring homomorphisms.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	ideals (principle, prime and Maximal) and Quotient rings, Field of quotients of an integral domain.
2(8-13)	UNIT 4 : Euclidean rings, Polynomial rings, Polynomials over the rational field, The Eisenstein's criterion.
3(15-20)	Polynomial rings over commutative rings, Unique factorization domain, R unique factorization domain implies so is R[X1 , X2,……Xn].
4(22-27)	REVISION
5(29-30)	TEST

Teacher …Dr. Neeti…………….

Class ……B.A (2nd year)………..   Sec. ………………..

Subject ……Mechanics…………………..Session ……2023-24……

Week(Feb.)	Topics(Statics)
1 (6-10)	Chapter 1: Forces acting at a point
2(12-17)	Chapter 1: Forces acting at a point
3(19-24)	Chapter 2 : Parallel forces
4(26-29)	Chapter 3: Moments

Week(March)	Topics
1(1-2)	Chapter 4: Couples, Test
2(4-9)	Chapter5: Analytical conditions of equilibrium of coplanar forces
3(11-16)	(Dynamics) Chapter 1: Motion along a plane curve
4(18-23)	Chapter 2: Relative motion, Assignment
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Chapter 3: simple harmonic motion, Test
2(8-13)	Chapter 4: Elastic string
3(15-20)	Chapter 5: Newton's law of motion
4(22-27)	Chapter 6: work, power and energy
5(29-30)	Revision

Lesson Plan

Teacher ……Dr. Neeti…………….

Class ……B.Sc. 1st year………..   Sec. ………B+C……..

Subject …Vector Calculus………………..Session ………2023-24…

Week(Feb.)	Topics
1 (6-10)	UNIT 1:- Gradient of a scalar point function, geometrical interpretation of grad gradient as a point function
2(12-17)	Divergence and curl of vector point function, characters of ρDiv f ρand Curl f as point function, examples.
3(19-24)	Gradient, divergence and curl of sums and product and their related vector identities. Laplacian operator.
4(26-29)	UNIT 2:- Orthogonal curvilinear coordinates Conditions for orthogonality fundamental triad of mutually orthogonal unit vectors.

Week(March)	Topics
1(1-2)	Gradient, Divergence, Curl and Laplacian operators in terms of orthogonal curvilinear coordinates, Cylindrical co-ordinates and Spherical co- ordinates.
2(4-9)	UNIT 3 :- Vector integration; Line integral, Surface integral, Volume integral.
3(11-16)	Theorems of Gauss, Green & Stokes and problems based on these theorems.
4(18-23)	UNIT 4:- General equation of second degree.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Tangent at any point to the conic.
2(8-13)	chord of contact.
3(15-20)	pole of line to the conic, director circle of conic.
4(22-27)	REVISION
5(29-30)	TEST

Lesson Plan

Teacher ……Neeti…………….

Class …B.SC Hons…………..

Subject …Ordinary differential equation

Session …2023-24

Week(Feb.)	Topics
1 (6-10)	UNIT 1 :-Geometrical meaning of a differential equation.
2(12-17)	Exact differential equations, integrating factors.
3(19-24)	First order higher degree equations solvable for x,y,p Lagrange's equations, Clairaut's equations.
4(26-29)	Equation reducible to Clairaut's form. Singular solutions.

Week(March)	Topics
1(1-2)	UNIT 2 :-Orthogonal trajectories: in Cartesian coordinates and polar coordinates.
2(4-9)	Self orthogonal family of curves.. Linear differential equations with constant coefficients.
3(11-16)	Homogeneous linear ordinary differential equations. Equations reducible to homogeneous.
4(18-23)	UNIT 3 :- Linear differential equations of second order: Reduction to normal form.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Transformation of the equation by changing the dependent variable/ the independent variable. Solution by operators of non-homogeneous linear differential equations.
2(8-13)	Reduction of order of a differential equation. Method of variations of parameters. Method of undetermined coefficients.
3(15-20)	UNIT 4 :-Ordinary simultaneous differential equations. Solution of simultaneous differential equations involving operators x (d/dx) or t (d/dt) etc.
4(22-27)	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.
5(29-30)	REVISION

Lesson Plan

Teacher …Neeti…………….

Class …B.SC Hons………..

Subject ……Operation research 2

Session ……2023-24……

Week(Feb.)	Topics
1 (6-10)	UNIT 1 :-Inventory Control: introduction of inventory, factors affecting inventory.
2(12-17)	Inventory models, Deterministic models.
3(19-24)	Economic order quantity model when shortages are allowed/not allowed, price discounts model, multi-item inventory models.
4(26-29)	UNIT 2 :-Queuing Theory : Basic characteristics of queuing system.

Week(March)	Topics
1(1-2)	Birth-death equations, Steady state solution of Markovian queuing models with single and multiple servers (M/M/1 and M/M/c), with limited capacity (M/M/1/K and M/M/c/K).
2(4-9)	UNIT 3 :- Sequencing problems: Processing of n jobs through 2 machines, n jobs through 3 machines, 2 jobs through m machines, n jobs through m machines
3(11-16)	Replacement problems: Replacement of items whose running cost increases with time.
4(18-23)	Replacement policies for the items that fail completely - Individual and the group replacement policies.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	UNIT 4 :-PERT and CPM: Introduction of PERT and CPM, Earliest and latest times.
2(8-13)	Probablistic and cost considerations in project scheduling.
3(15-20)	Determination of critical path and various types of floats.
4(22-27)	REVISION
5(29-30)	TEST

Lesson Plan

Teacher ……Neeti…………….

Class …B.SC Hons…………..

Subject …Data structure using C

Session ……2023-24……

Week(Feb.)	Topics
1 (6-10)	UNIT 1 :-Data structure and its essence, Data structure types.
2(12-17)	Linear and list structures: Arrays, stacks, queues and lists; Sequential and linked structures.
3(19-24)	Simple lists, circular lists, doubly linked lists. Inverted lists, threaded lists.
4(26-29)	Operations on all these structures and applications.

Week(March)	Topics
1(1-2)	UNIT 2 :-Arrays, Multidimensional arrays, sequential allocation, address calculations, sparse arrays
2(4-9)	sequential allocation, address calculations, sparse arrays.
3(11-16)	Tree structures: Trees, binary trees and binary search trees. Implementing binary trees, Tree traversal algorithms, threaded trees, trees in search algorithms, AVL Trees.
4(18-23)	UNIT 3 :-Graph data structure and their applications. Graph traversals, shortest paths, spanning trees and related algorithms. Family of B-Trees: B-tree, B*-Trees, B+ Trees.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Family of B-Trees: B-tree, B*-Trees, B+ Trees.
2(8-13)	UNIT 4 :-Sorting: Internal and External sorting. Various sorting algorithms, Time and Space complexity of algorithms.
3(15-20)	Searching techniques and Merging algorithms. Applications of sorting and searching in computer science.
4(22-27)	REVISION
5(29-30)	TEST

Lesson Plan

Teacher ………Deepshikha………….

Class …B.Sc.2nd …………..   Sec. ……A+B…………..

Subject ………Group & Ring…………..Session ……2023-24……

Week(Feb.)	Topics
1 (6-10)	UNIT-1 : Definition of a group with example and simple properties of groups.
2(12-17)	Subgroups and Subgroup criteria, Generation of groups, cyclic groups, Cosets.
3(19-24)	Left and right cosets, Index of a sub-group Coset decomposition.
4(26-29)	Largrage's theorem and its consequences, Normal subgroups, Quotient groups.

Week(March)	Topics
1(1-2)	UNIT- 2 : Homoomorphisms, isomophisms, automorphisms and inner automorphisms of a group.
2(4-9)	Automorphisms of cyclic groups, Permutations groups. Even and odd permutations. Alternating groups, Cayley's theorem, Center of a group and derived group of a group.
3(11-16)	UNIT -3 : Introduction to rings, subrings, integral domains and fields.
4(18-23)	Characteristics of a ring. Ring homomorphisms.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	ideals (principle, prime and Maximal) and Quotient rings, Field of quotients of an integral domain.
2(8-13)	UNIT 4 : Euclidean rings, Polynomial rings, Polynomials over the rational field, The Eisenstein's criterion.
3(15-20)	Polynomial rings over commutative rings, Unique factorization domain, R unique factorization domain implies so is R[X1 , X2,……Xn].
4(22-27)	REVISION
5(29-30)	TEST

LESSON PLAN

Teacher: Deepshikha

Class: Bsc 2nd (honours) 2nd Sem

Subject : Programming in Visual Basic   **Session:** 2023-24

Week(Feb.)	Topics
1 (6-10)	**UNIT-1:** Introduction, analyzing, Data types.
2(12-17)	Variables, constant, Control and Properties, Exit statement
3(19-24)	conditional statement, Loop statement, Stop statement Arrays
4(26-29)	**UNIT-2:** Text Boxes, Command Button, Labels, Additional controls-list box

Week(March)	Topics
1(1-2)	Combo box, difference between list box and combo box, option button, check box, Frames, scroll bar, timer control.
2(4-9)	Control arrays, Functions and procedures
3(11-16)	SDI and MDI Applications, Class test
4(18-23)	**UNIT-3:** Menu Editor, Menu Controls, Submenus, Popup menus
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Common Dialog controls, Color dialog box, font dialog box, open and save as dialog box, print dialog box, help dialog box
2(8-13)	Data base programming: Data access object, Data binding, Data control and Data bound control, data base object, record set object, field object.
3(15-20)	**UNIT -4:** Crystal report: introduction to Reports, Crystal reports, Creating and using a report in VB, Class test.
4(22-27)	Library Functions: Conversion function, String functions, String function, Numeric functions, Date and Time functions
5(29-30)	Revision

Lesson Plan

Teacher ……Deepshikha…………….

Class ……B.A. 1st year……….. Sec. …………..

Subject …Vector Calculus………………..Session ………2023-24…

Week(Feb.)	Topics
1 (6-10)	UNIT 1:- Gradient of a scalar point function, geometrical interpretation of grad gradient as a point function
2(12-17)	Divergence and curl of vector point function, characters of ρDiv f ρand Curl f as point function, examples.
3(19-24)	Gradient, divergence and curl of sums and product and their related vector identities. Laplacian operator.
4(26-29)	UNIT 2:- Orthogonal curvilinear coordinates Conditions for orthogonality fundamental triad of mutually orthogonal unit vectors.

Week(March)	Topics
1(1-2)	Gradient, Divergence, Curl and Laplacian operators in terms of orthogonal curvilinear coordinates, Cylindrical co-ordinates and Spherical co- ordinates.
2(4-9)	UNIT 3 :- Vector integration; Line integral, Surface integral, Volume integral.
3(11-16)	Theorems of Gauss, Green & Stokes and problems based on these theorems.
4(18-23)	UNIT 4:- General equation of second degree.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Tangent at any point to the conic.
2(8-13)	chord of contact.
3(15-20)	pole of line to the conic, director circle of conic.
4(22-27)	REVISION
5(29-30)	TEST

<center>Lesson Plan</center>

Teacher …Dr. Sonia…………….

Class …B.SC Math Honours 2nd year…………..

Subject …Numerical methods with programming in C……Session ……2023-24……

Week(Feb.)	Topics
1 (6-10)	UNIT -1: Programmer's model of a computer.
2(12-17)	Algorithms, Flow charts.Data types, Operators and expressions, Input / outputs functions.

Week(feb.)	Topics
3(19-24)	Data types, Operators and expressions.
4(26-29)	Input / outputs functions.
Week(March)	UNIT -2: Decisions control structure: Decision statements.
1(1-2)	Logical and conditional statements.
2(4-9)	Implementation of Loops, Switch Statement & Case control structures.

Week(March)	Topics
1(1-2)	Functions, Preprocessors and Arrays.
2(4-9)	UNIT -3: Strings: Character Data Type, Standard String handling Functions, Arithmetic Operations on Characters.
3(11-16)	Structures: Definition, using Structures, use of Structures in Arrays and Arrays in Structures
4(18-23)	Pointers: Pointers Data type, Pointers and Arrays, Pointers and Functions.
5(25-30)	Solution of Algebraic and Transcendental equations: Bisection method, Regula-Falsi method, Secant method, Newton-Raphson's method.

Week(April)	Topics
1(1-6)	Newton's iterative method for finding pth root of a number, Order of convergence of above methods UNIT -4: Simultaneous linear algebraic equations: Gauss-elimination method, Gauss-Jordan method.
2(8-13)	Triangularization method (LU decomposition method).
	Crout's method, Cholesky Decomposition method. Iterative method, Jacobi's method, Gauss-Seidal's method, Relaxation method.,
4(22-27)	ASSIGNMENT
5(29-30)	TEST

Lesson Plan

Teacher ………Dr. Sonia………….

Class ……Bsc 2nd ……….. Sec. …………C……..

Subject ………Group and Ring…………………..Session …………

Week(Feb.)	Topics
1 (6-10)	UNIT-1 : Definition of a group with example and simple properties of groups.
2(12-17)	Subgroups and Subgroup criteria, Generation of groups, cyclic groups, Cosets.
3(19-24)	Left and right cosets, Index of a sub-group Coset decomposition.
4(26-29)	Largrage's theorem and its consequences, Normal subgroups, Quotient groups.

Week(March)	Topics
1(1-2)	UNIT- 2 : Homoomorphisms, isomophisms, automorphisms and inner automorphisms of a group.
2(4-9)	Automorphisms of cyclic groups, Permutations groups. Even and odd permutations. Alternating groups, Cayley's theorem, Center of a group and derived group of a group.
3(11-16)	UNIT -3 : Introduction to rings, subrings, integral domains and fields.
4(18-23)	Characteristics of a ring. Ring homomorphisms.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	ideals (principle, prime and Maximal) and Quotient rings, Field of quotients of an integral domain.
2(8-13)	UNIT 4 : Euclidean rings, Polynomial rings, Polynomials over the rational field, The Eisenstein's criterion.
3(15-20)	Polynomial rings over commutative rings, Unique factorization domain, R unique factorization domain implies so is $R[X_1, X_2,……X_n]$.
4(22-27)	REVISION
5(29-30)	TEST

Lesson Plan

Teacher …Mankesh……………….

Class ……B.Sc. 1st/B.A.1st ……….   Sec. ………A………..

Subject ……… Number Theory…...Session ……2023-24(2nd sem.)……

Week(Feb.)	Topics
1(19-24)	Unit 1:Number Theory: Divisibility, G.C.D., L.C.M., Primes, fundamental theorem of arithmetic. Linear congruences, fermat's theorem, Wilson's theorem ant its converse
2(26-29)	Linear diphantine equation in two variables, test

Week(March)	Topics
1(1-2)	Unit 2:Complete residue system, reduced residue system module m
2(4-9)	Euler's function, euler's generalization of fermat's theorem, Chinese remainder theorem, quadratic residues, legendre symbols, lemma of gauss, gauss reciprocity law, greatest integer function[X], Test
3(11-16)	The number of divisors and the sum of divisors of a natural number n, moebius function and moebius inversion formula
4(18-23)	Unit 3: De moivre's theorem and its applications, expension of trigonometrical function, Assignment of unit 1
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Direct circular and hyperbolic function and their properties, test
2(8-13)	Unit 4: inverse circular and hyperbolic functions and their properties
3(15-20)	Logarithm of a complex quantity
4(22-27)	Gregory's series, summation of trigonometry series.
5(29-30)	revision

Lesson Plan

Teacher ……Mankesh…………….

Class ……B.Sc. 1st year………..   Sec. ……A……..

Subject …Vector Calculus………………..Session ………2023-24…

Week(Feb.)	Topics
1 (6-10)	UNIT 1:- Gradient of a scalar point function, geometrical interpretation of grad gradient as a point function
2(12-17)	Divergence and curl of vector point function, characters of ρDiv f ρand Curl f as point function, examples.
3(19-24)	Gradient, divergence and curl of sums and product and their related vector identities. Laplacian operator.
4(26-29)	UNIT 2:- Orthogonal curvilinear coordinates Conditions for orthogonality fundamental triad of mutually orthogonal unit vectors.

Week(March)	Topics
1(1-2)	Gradient, Divergence, Curl and Laplacian operators in terms of orthogonal curvilinear coordinates, Cylindrical co-ordinates and Spherical co- ordinates.
2(4-9)	UNIT 3 :- Vector integration; Line integral, Surface integral, Volume integral.
3(11-16)	Theorems of Gauss, Green & Stokes and problems based on these theorems.
4(18-23)	UNIT 4:- General equation of second degree.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Tangent at any point to the conic.
2(8-13)	chord of contact.
3(15-20)	pole of line to the conic, director circle of conic.
4(22-27)	REVISION
5(29-30)	TEST

Lesson Plan

Teacher ……Nagesh Kumar Singh…………….

Class B.A.III……..   Sec. ……………..

Subject-Special Function and Integral Transforms..Session-2023-24(6 Sem.)

Week(Feb.)	Topics
1 (6-10)	Chapter 1: Power Series
2(12-17)	Continue…..Chapter 1: Power Series
3(19-24)	Chapter 2: Bessel's equations and functions
4(26-29)	Continue…Chapter 2: Bessel's equations and functions, Test

Week(March)	Topics
1(1-2)	Chapter 3: Legendre's equations
2(4-9)	Chapter 5: Laplace transforms
3(11-16)	Chapter 6:Inverse Laplace transforms
4(18-23)	Chapter 7: Use of Laplace transforms in integral equations Assignment of chapter 1.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Chapter8: Solution of differential equation by laplace transformation, Test
2(8-13)	Chapter 9: Fourier transforms
3(15-20)	Continue….. Chapter 9: Fourier transforms
4(22-27)	Chapter10: Solution of differential equation by Fourier transforms
5(29-30)	Revision , Test

Lesson Plan

Teacher– Nagesh Kumar Singh

Class – B.Sc. 3rd…….. Sec. A(4-6)+ B(1-3)

Subject- Advanced calculus   Session – 2023-24

Week(Feb.)	Topics
1 (5-7)	UNIT -1: Uniform continuity , chain rule of differentiability, mean value theorem, rolle's theorem
2(12-14)	Lagrange's mean value theorem and their geometrical interpretations, taylor's theorem with various forms of remainders
3(19-21)	indeterminate forms , taylor's theorem with various forms of remainders
4(26-28)	Darboux intermediate value theorem for derivatives

Week(March)	Topics
1(4-6)	UNIT-2 : Limit and continuity of real valued functions of two variables. Partial differentiation
2(11-13)	Total differentiation; complete functions and implicit function. change of variables. Homogeneous functions and euler's theorem of homogeneous functions
3(18-20)	Revision and test of unit 1 & 2
4(25-30)	Holiday of Holi

Week(April)	Topics
1(1-3)	UNIT-3: Taylor's theorem for functions of two variables. Differentiability of real valued functions of two variables. Schwarz and young's theorem
2(8-10)	Implicit function theorem . maxima, minima and saddle point of two variables
3(15-17)	UNIT-4: Lagrange's method of multipliers . jacobian , differentiation under integral sign
4(22-24)	Application of triple integrals , change of variable in double and triple integrals.
5(29-30)	Test and assignment of unit 3& 4

Lesson Plan

Teacher …DR. AJAY SINGH………..…………

Class …B.Com…2nd Sem..   Sec. ……B+C……..….

Subject ..BUS.Mathematics..Session …2023-2024..

Week(Feb.)	Topics
1 (6-10)	Matrices: Definition of a matrix, Types of matrices; Algebra of matrices.
2(12-17)	Applications of matrices operations for solution to simple business and economic problems.
3(19-24)	Determinants and inverse of a matrix: Calculation of values of determinants up to third order. Finding inverse of a matrix through determinant method.
4(26-29)	Solution of system of linear equation up to three variables. Compound Interest: Certain different types of interest rate; Concept of present value and amount of a sum

Week(March)	Topics
1(1-2)	Annuities: Types of annuities; Present value of amount of an annuity, including the case of continuous compounding.
2(4-9)	Differentiation: Concept of differentiation. Rules of differentiation - simple standard forms. Applications of differentiation - elasticity of demand and supply.
3(11-16)	Applications of differentiation - elasticity of demand and supply.
4(18-23)	Maxima and Minima of functions (involving second or third order derivatives) relating to cost, revenue and profit.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Permutations and Combinations: Definition, Formulas, Difference.
2(8-13)	Difference between Permutations and Combinations,
3(15-20)	Fundamental Principle of Counting, N and Rin Permutations and Combinations (Simple Problems).
4(22-27)	Sequence and Series: Definition, Types Arithmetic Progression, Geometric Progression, Formulas,
5(29-30)	Difference between Sequence and Series (Simple Problems).

Lesson Plan

Teacher …DR. Shekhar………………….

Class …B.Com…2nd Sem..   Sec. ……A……..…

Subject ..BUS.Mathematics..Session …2023-2024..

Week(Feb.)	Topics
1 (6-10)	Matrices: Definition of a matrix, Types of matrices; Algebra of matrices.
2(12-17)	Applications of matrices operations for solution to simple business and economic problems.
3(19-24)	Determinants and inverse of a matrix: Calculation of values of determinants up to third order. Finding inverse of a matrix through determinant method.
4(26-29)	Solution of system of linear equation up to three variables. Compound Interest: Certain different types of interest rate; Concept of present value and amount of a sum

Week(March)	Topics
1(1-2)	Annuities: Types of annuities; Present value of amount of an annuity, including the case of continuous compounding.
2(4-9)	Differentiation: Concept of differentiation. Rules of differentiation - simple standard forms. Applications of differentiation - elasticity of demand and supply.
3(11-16)	Applications of differentiation - elasticity of demand and supply.
4(18-23)	Maxima and Minima of functions (involving second or third order derivatives) relating to cost, revenue and profit.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Permutations and Combinations: Definition, Formulas, Difference.
2(8-13)	Difference between Permutations and Combinations,
3(15-20)	Fundamental Principle of Counting, N and Rin Permutations and Combinations (Simple Problems).
4(22-27)	Sequence and Series: Definition, Types Arithmetic Progression, Geometric Progression, Formulas,
5(29-30)	Difference between Sequence and Series (Simple Problems).

Lesson Plan

Teacher: …Dr. Shekhar…………………

Class: B.Sc. 2ⁿᵈ ……..   Sem: C ……..

Subject: Mechanics…..Session:2023-24……

Week(Feb.)	Topics(Statics)
1 (6-10)	Chapter 1: Forces acting at a point
2(12-17)	Chapter 1: Forces acting at a point
3(19-24)	Chapter 2 : Parallel forces
4(26-29)	Chapter 3: Moments

Week(March)	Topics
1(1-2)	Chapter 4: Couples, Test
2(4-9)	Chapter5: Analytical conditions of equilibrium of coplanar forces
3(11-16)	(Dynamics) Chapter 1: Motion along a plane curve
4(18-23)	Chapter 2: Relative motion, Assignment
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Chapter 3: simple harmonic motion, Test
2(8-13)	Chapter 4: Elastic string
3(15-20)	Chapter 5: Newton's law of motion
4(22-27)	Chapter 6: work, power and energy
5(29-30)	Revision

Lesson Plan

Teacher …Sohan Phogat…………………

Class …BSc 1st Honours..   Sec. ………………..

Subject …Discrete Mathematics…..Session 2023-24…………

Week(Feb.)	Topics
1 (6-10)	Lattices and their properties
2(12-17)	Lattice as algebraic system, Bounded
3(19-24)	Complement and distributive lattices.
4(26-29)	Boolean algebra, definition and examples, properties

Week(March)	Topics
1(1-2)	Duality, distributive and complmented Calculus.
2(4-9)	Design and implementation of digital networks, switching circuits, Karnaugh map
3(11-16)	Revision and Test of 1st and 2nd Sections
4(18-23)	Graph, definition, exemplary types of graphs And Give the Assignment for Holiday
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Paths and circuits. Eulearian and Hermitian circuits, Seven bridges machine
2(8-13)	Shortest path traveling salesman problems, Planar graph. Matrix of graph Planar graph. Matrix of graph
3(15-20)	Directed Graphs, Trees, Isomorphism of Trees, Representation of Algebraic Expressions by Binary Trees,
4(22-27)	Spanning Tree of a Graph, Shortest Path Problem, Minimal spanning Trees, Cut Sets, Tree Searching
5(29-30)	Test of 3rd and 4th Sections

Lesson Plan

Teacher …Sohan Phogat………………

Class   BSc III Honours……..   Sec. ………………..

Subject Real And Complex……..Session 2023-24…………

Week(Feb.)	Topics
1 (6-10)	Jacobians, Beta and Gama functions,
2(12-17)	Double and Triple integrals, Dirichlets integrals,
3(19-24)	Change of order of integration in double integrals And Test of 1st Secction
4(26-29)	Extended Complex Plane, Stereographic projection of complex numbers

Week(March)	Topics
1(1-2)	Continuity and differentiability of complex functions
2(4-9)	Analytic functions, Cauchy-Riemann equations.
3(11-16)	Harmonic functions And Test of 3rd Section
4(18-23)	Fourier's series: Fourier expansion of piecewise monotonic functions, Properties of Fourier Co-efficients,
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	conditions, Parseval's identity for Fourier series, Fourier series for even and odd functions
2(8-13)	Dirichlet's, Half range series, Change of Intervals
3(15-20)	Mappings by elementary functions: Translation, rotation, Magnification and Inversion.
4(22-27)	Conformal Mappings, Mobius transformations. Fixed pints, Cross ratio, Inverse Points and critical mappings.
5(29-30)	Test of 2nd and 4th Section And Assignment Collection

Lesson Plan

Teacher …Dr. Kulvir ……………….

Class B.Sc 1st (Hons.)……………..   Sem. …2nd……………..

Subject …O.D.E……………………..Session …2023-24………

Week(Feb.)	Topics
1 (6-10)	UNIT-1: Geometrical meaning of a differential equation. Exact differential equations, integrating factors.
2(12-17)	First order higher degree equations solvable for x,y,p Lagrange's equations, Clairaut's equations.
3(19-24)	Equation reducible to Clairaut's form. Singular solutions.
4(26-29)	UNIT-2: Orthogonal trajectories: in Cartesian coordinates and polar coordinates. Self orthogonal family of curves. Linear differential equations with constant coefficients.

Week(March)	Topics
1(1-2)	Homogeneous linear ordinary differential equations. Equations reducible to homogeneous
2(4-9)	Revision; test and assignment of UNIT-1 & UNIT-2
3(11-16)	UNIT-3: Linear differential equations of second order: Reduction to normal form. Transformation of the equation by changing the dependent variable/ the independent variable.
4(18-23)	Solution by operators of non-homogeneous linear differential equations. Reduction of order of a differential equation.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Method of variations of parameters. Method of undetermined coefficients.
2(8-13)	UNIT-4: Ordinary simultaneous differential equations. Solution of simultaneous differential equations involving operators x (d/dx) or t (d/dt) etc.
3(15-20)	Simultaneous equation of the form dx/P = dy/Q = dz/R. Total differential equations. Condition for Pdx + Qdy +Rdz = 0 to be exact.
4(22-27)	General method of solving Pdx + Qdy + Rdz = 0 by taking one variable constant. Method of auxiliary equations.
5(29-30)	Revision; test and assignment of UNIT-3 & UNIT-4

Lesson Plan

Teacher ……Dr. Kulvir…………….

Class   B.Sc 3ʳᵈ(Hons.)…………….. Sem. 6th………………..

Subject …Linear Algebra…………..Session …2023-24………

Week(Feb.)	Topics
1 (6-10)	UNIT-1: Vector spaces, subspaces, Sum and Direct sum of subspaces, Linear span, Linearly Independent and dependent subsets of a vector space. Finitely generated vector space.
2(12-17)	Existence theorem for basis of a finitely generated vactor space, Finite dimensional vector spaces.
3(19-24)	Invariance of the number of elements of bases sets, Dimensions, Quotient space and its dimension.
4(26-29)	UNIT-2: Homomorphism and isomorphism of vector spaces, Linear transformations and linear forms on vector spaces, Vactor space of all the linear transformations.

Week(March)	Topics
1(1-2)	Dual Spaces, Bidual spaces, annihilator of subspaces of finite dimentional vactor spaces, Null Space, Range space of a linear transformation, Rank and Nullity Theorem,
2(4-9)	Revision; test and assignment of UNIT-1 & UNIT-2
3(11-16)	UNIT-3: Algebra of Liner Transformation, Minimal Polynomial of a linear transformation,
4(18-23)	Singular and non-singular linear transformations, Matrix of a linear Transformation.
5(25-30)	Holiday of Holi

Week(April)	Topics
1(1-6)	Change of basis, Eigen values and Eigen vectors of linear transformations.
2(8-13)	UNIT-4: Inner product spaces, Cauchy-Schwarz inequality, Orthogonal vectors, Orthogonal complements.
3(15-20)	Orthogonal sets and Basis, Bessel's inequality for finite dimensional vector spaces, Gram-Schmidt, Orthogonalization process.
4(22-27)	Adjoint of a linear transformation and its properties, Unitary linear transformations.
5(29-30)	Revision; test and assignment of UNIT-3 & UNIT-4