Govt. College Bhattu Kalan (Fatehabad)
Lesson Plan
Session 2023-24 (EVEN Semester)
B.A/B.Sc 2ND Semester
Sub: Number Theory and Trigonometric Name of Teacher- Dr. Kirti chaudhary

Ist Week, January 2024	Chapter 1, Divisibility
2nd Week, January, 2024	Division algorithm and theorem, Some theorems on prime numbers
3rd Week January, 2024	Chapter 2,Congruences
4th Week, January, 2024	Chapter 3 Fermat's theorem and examples, Wilson's theorem, Chinese remainder theorem
5th Week, January , 2024	Chapter 4 Euler's function and some theorems on Euler's function
Ist Week, February 2024	Chapter 5 The Mobius function
2nd Week, February, 2024	Vacations
3rd Week February, 2024	Chapter 6 Quadratic congruence
4th Week, February, 2024	Chapter 7 De Moivre's theorem
Ist Week, March 2024	Expansion of $cosn\theta$, $sinn\theta$ and $tann\theta$, Formation of equations
2nd Week, March, 2024	Chapter 8 Circular functions of a complex variable
3rd Week March, 2024	Chapter 9 Hyperbolic functions
4th Week, March, 2024	Chapter 10 Logarithm of complex numbers
5th Week, March, 2024	Holi Vacations
Ist Week, April 2024	Chapter 11 Inverse circular functions of a real variable
2nd Week, April, 2024	Chapter 12 Gregory's series, Series of sines and cosines of angles which are in A.P
3rd Week April, 2024	Exercise and Question solved
4th Week, April, 2024	Revision
5th Week, April, 2024	Revision

Govt. College Bhattu Kalan (Fatehabad)
Lesson Plan
Session 2023-24 (EVEN Semester)
B.A/B.Sc 2ND Semester

Sub: Vector Calculus **Name of Teacher- Dr. kirti chaudhary**

Ist Week, January 2024	Chapter 1, Multiple Products of Vectors
2nd Week, January, 2024	Vector Triple Products
3rd Week January, 2024	Theorems and Question solved
4th Week, January, 2024	Chapter 2 Differentiations of Vectors
5th Week, January , 2024	Curves in Space
Ist Week, February 2024	Chapter 3 Gradient
2nd Week, February, 2024	Vacations
3rd Week February, 2024	Chapter 3 Divergence
4th Week, February, 2024	Chapter 3 Curl
Ist Week, March 2024	Chapter 4 Curvilinear Coordinates
2nd Week, March, 2024	Examples and Question solved
3rd Week March, 2024	Chapter 5 Vector Integration
4th Week, March, 2024	Examples and Question solved
5th Week, March, 2024	Holi Vacations
Ist Week, April 2024	Chapter 6 Guass's, Green and Stoke's Theorems
2nd Week, April, 2024	Stoke's Theorems and Question solved
3rd Week April, 2024	Examples and Question solved
4th Week, April, 2024	Revision
5th Week, April, 2024	Revision

Govt. College Bhattu Kalan (Fatehabad)
Lesson Plan
Session 2023-24 (EVEN Semester)
B.A/B.Sc 4TH Semester

Sub: Special Functions and Integral Transforms **Name of Teacher- Dr. kirti chaudhary**

Ist Week, January 2024	Chapter 1 Introduction to power series and convergence of power series
2nd Week, January, 2024	Working rule for the roots of an indicial equation are equal and examples
3rd Week January, 2024	Chapter 2 Introduction to Beta a function and properties
4th Week, January, 2024	Introduction to Gamma function and properties
5th Week, January , 2024	Chapter 3 Bessel's function
Ist Week, February 2024	Chapter 4, Hermite's equation
2nd Week, February, 2024	Vacations
3rd Week February, 2024	Rodrigue's formula for $H_n(x)$, Recurrence relations for Hermite's polynomial and examples
4th Week, February, 2024	Chapter 5, Laplace transform
Ist Week, March 2024	Question solved, Laplace transforms of derivatives and integrals and Question solved
2nd Week, March, 2024	Chapter 6, Inverse Laplace transform and properties
3rd Week March, 2024	Chapter 7, Application of Laplace transformation to integral equations
4th Week, March, 2024	Chapter 8, Solution of differential equations by Laplace transformation
5th Week, March, 2024	Holi Vacations
Ist Week, April 2024	Chapter 9, Fourier Sine and Cosine transforms
2nd Week, April, 2024	Chapter 10, Inverse Fourier transforms
3rd Week April, 2024	Question Solved
4th Week, April, 2024	Revision
5th Week, April, 2024	Revision

Govt. College Bhattu Kalan (Fatehabad)
Lesson Plan
Session 2022-23 (EVEN Semester)
B.A/B.Sc 6TH Semester

Sub: Real and Complex Analysis Name of Teacher- Dr. kirti chaudhary

Ist Week, January 2024	Chapter 1 Introduction to Jacobians
2nd Week, January, 2024	Chapter 2 Introduction to Beta and Gamma Functions
3rd Week January, 2024	Chapter 3 Introduction to Double Integral, Examples and Question solved
4th Week, January, 2024	Introduction to Triple Integral, Examples and Question solved
5th Week, January , 2024	Chapter 4 Introduction to Fourier Series
Ist Week, February 2024	Fourier Expansion of Piecewise Monotonic Continuous Functions and Examples, Half Range Series, Parseval's Identity for Fourier Series
2nd Week, February, 2024	Vacations
3rd Week February, 2024	Chapter 5 Stereographic Projection of Complex Numbers, Complex Function of a Complex Variable
4th Week, February, 2024	Analytic Function and Question solved
Ist Week, March 2024	Cauchy-Riemann Equations, Cauchy-Riemann Equations in Polar Form and Orthogonal System and Harmonic Function
2nd Week, March, 2024	Chapter 6 Applications of Analytic Functions to Field and Flow Problems and Question solved
3rd Week March, 2024	Properties of Exponential and Trigonometrical Functions, Mapping by Elementary Functions
4th Week, March, 2024	Chapter 7 Conformal Mapping and Examples,
5th Week, March, 2024	Holi Vacations
Ist Week, April 2024	Inverse Points and Question solved
2nd Week, April, 2024	Chapter 7 Conformal Mapping and Examples,
3rd Week April, 2024	Linear Fractional Transformations and Question solved
4th Week, April, 2024	Revision
5th Week, April, 2024	Revision

Govt. College Bhattu Kalan (Fatehabad)
Lesson Plan
Session 2023-24 (EVEN Semester)
B.A/B.Sc 6TH Semester

Sub: Dynamics **Name of Teacher- Dr. kirti chaudhary**

Ist Week, January 2024	Chapter 1 Definitions and explanation of displacement, velocity, Acceleration, Acceleration due to Gravity, Particle Projected Vertically Downwards, Examples
2nd Week, January, 2024	Radial and Transverse Velocities, Tangential and Normal Velocities and Acceleration, Examples and Question solved
3rd Week January, 2024	Chapter 2 Relative Displacement,
4th Week, January, 2024	, Velocity and Articles
5th Week, January , 2024	Chapter 3 Simple Harmonic Motion,
Ist Week, February 2024	Examples and Question solved
2nd Week, February, 2024	Vacations
3rd Week February, 2024	Chapter 4 Introduction to Elastic String and Articles,
4th Week, February, 2024	Chapter 5 Explanation of Newton's Laws of Motion,
Ist Week, March 2024	Articles Related to Pressure of a Body, Examples
2nd Week, March, 2024	Motion of Two Bodies Connected By a String,
3rd Week March, 2024	Motion on a Smooth Horizontal Plane and Question solved
4th Week, March, 2024	Chapter 6 Work done by a variable force,
5th Week, March, 2024	Holi Vacations
Ist Week, April 2024	Question solved and Examples
2nd Week, April, 2024	Exercise
3rd Week April, 2024	Exercise
4th Week, April, 2024	Revision
5th Week, April, 2024	Revision

Name - Dr Kirti Chaudhary

Department Of Mathematics

Govt College Bhattu Kalan

Bsc/BA sem 4 session 2023-24

Sub – Dynamics

Month	Week	Topic
Januaury	Week 1	• Basic concepts • Velocity along a plane curve • Angular velocity • Questions solved • Radial and transversal acceleration
	Week 2	• Tangential and normal velocitoies • Questions solved • Relative motion • Relative velocity • Relative acceleration • Simple Harmonic Motion
	Week 3	• Elastic Strings • Hookes law • Horizontal elastic string • Newtons alw of motions • Questions solved
	Week 4	• Motion of a lift • Motion on smooth horizontal plane • Question ssolved
February	Week 1	• Work • Units of work • Questions solved • Energy • Conservative system of forces
	Week 2	• Motion of a particle in smooth curve • Motion on the inside of a smooth vertical circle • Questions solved

	Week 3	• **CYcloidal motion** • **Motion on a cycloid** • **Questions solved**
	Week 4	• **Motion of a projectile** • **Questions solved**
March	**Week 1**	• **Velocity at a point of a trajectory** • **Directions of projection for a particle** • **Questions solved**
	Week 2	• **Range and time of aflight** • **Questions solved**
	Week 3	• **Central orbits** • **Areal velocity** • **Elliptic orbit** • **Questions solved**
	Week 4	• **Hyperbolic orbit** • **Velocity in circle** • **Questions solved**
April	**Week 1**	• **Apse and apsidal distances** • **Velocity of infinity** • **Questions solved**
	Week 2	• **Keplers law** • **Gravitations** • **Questions solved**
	Week 3	• **Motion of a particle in 3 dimensions** • **Questions solved**
	Week 4	**Revision of whole syallabus**

Name - Dr Kirti Chaudhary

Department Of Mathematics

Govt College Bhattu Kalan

Bsc/BA sem 4 Session -2023-24

Sub - Programming In C and Numerical Method

Month	Week	Topic
januaury	**Week 1**	• **Programmers Model of a computer** • **Algorithm** • **Flow charts** • **Questions on flow chart** • **Importance to C** • **C character set** • **C tokens** • **Constant**
	Week 2	• **Identifiers** • **Variables** • **Data types** • **Integers** • **Character** • **Floating point type** • **Void Type** • **Variable Declaration**
	Week 3	• **PrintF function** • **Main function** • **Execution of C Program** • **Operators** • **Library function in C** • **Programs** • **Scan F function**
	Week 4	• **Structured Languages** • **If Else Statement** • **Programs** • **Nested If else statement** • **Go to statement**

February	**Week 1**	• **Loops** • **Programs on loops** • **Nested control structures** • **programs**
	Week 2	• **Functions** • **Accessing a function** • **Function declaration** • **Programs**
	Week 3	• **C preprocessor** • **Macros** • **Other directives** • **Arrays** • **Programs on arrays** • **Multi dimensional arrays**
	Week 4	• **Puppeting on strings** • **Reading strings** • **Comparison on strings** • **Programs** • **Extraction on strings**
March	**Week 1**	• **Defining a structure** • **Array of structures** • **Programs** • **Declaring pointers** • **Files in c**
	Week 2	• **GetC functions** • **Random access to files** • **Unformatted data files**
	Week 3	• **Solution Of Algebraic and transdental equations** • **Variation of signs** • **Descartes rule of sign** • **theorem**
	Week 4	• **Bisection Method** • **Regula false method** • **Questions**

April	**Week 1**	• **Order of Convergence** • **Secant method** • **Newton Raphson method**
	Week 2	• **Questions** • **Gauss elimination method** • **Gauss Jordan method**
	Week 3	• **Triangularization method** • **Cholesky method** • **Crouts method**
	Week 4	**Revision of whole syallabus**

Name - Dr Kirti Chaudhary

Department Of Mathematics

Govt College Bhattu Kalan

Bsc/BA sem 6 session 2023-24

Sub - Linear Algebra

Month	Week	Topic
Januaury	Week 1	• Vector spaces • Subspaces • Sum and Direct sum • Questions solved
	Week 2	• Linear span • Linearly independent • Subsets of a vector space • Finitely generated vector space • Question solved
	Week 3	• Existence theorem for basis • Finitely generated vector space • Finite dimensional vector space • Questions solved
	Week 4	• Invariance of number of elements of vector space • Dimensions • Quotient space • Question solved
February	Week 1	• Homomorphism • Isomorphisim of vector space • Linear transformation • Linear forms on vector space • Questions solved
	Week 2	• Vector space of linear transformation • Dual spaces • Bidual spaces • Questions solved

	Week 3	• **Annihilator of subspaces** • **Null space** • **Range space of L.T** • **Rank and nullity theorem** • **Questions solved**
	Week 4	• **Algebra of L.T** • **Minimal polynomial of L.T** • **Singular L.T** • **Non singular L.T** • **Questions solved**
March	**Week 1**	• **Matrix of linear transformation** • **Change of basis** • **Question solved**
	Week 2	• **Eigen values** • **Eigen vectors of L.T** • **Questions solved**
	Week 3	• **Inner product space** • **Cauchynscharwz inequality** • **Orthogonal vectors** • **Questions solved**
	Week 4	• **Orthogonal complements** • **Orthogonal sets** • **Basis** • **Questions solved**
April	**Week 1**	• **Bessels inequality** • **Questions solved**
	Week 2	• **Gram Schmidt orthogonalization process** • **Questions solved**
	Week 3	• **Adjoint of linear transformation** • **Properties** • **Unitary linear transformation**
	Week 4	• **Revision of whole syllabus**

Name of Assistant Professor: Dr.Kirti

Class and Section:B.A/BSC.2nd Semester and Section-A

Subject: Ordinary Differential Equation

Januaury **Week 1** Chapter 1: Exact differential equation, Chapter 2:Equation of first order but of not first degree
Assignments
Introduction to differential equation
Geometrical meaning of D.E
Exact differential equation
Integrating factors
Week 2 February First order higher degree equation solving for x,y,p
Chapter 2:Equation of first order but of not first degree
Assignments
Langranges equation
question related to langrages equation
Introduction of claurates equation
Week 3
Equation reducible to claurates forms
Introduction of singular solution
Week 4

Chapter 2:Equation of first order but of not first degree, Chapter 3:Orthogonal trajectories.
Assignments
February **week 1** Discriminant
Working rule of singular solution
Week 2 Introduction about trajectories
Week 3 Orthogonal trajectories
Orthogonal trajectories in Cartesian coordinate.
Orthogonal trajectories in polar coordinates
Chapter :4 Linear Differential equation with constant coefficients.
Assignments
Week 4
Linear differential equation.
The differential operator D
Complete solutions.
March **week 1**
Auxilary Equation
Chapter4 Linear Differential equation with constant coefficients
Assignments
Rule to solve an equation
Complementary function and particular integral
Week 2
Inverse Operator
Particular Integral in some cases
Working Rule to solve the Particular integral
Chapter 5: Homogenous Linear Equation, Chapter:6 Linear Differential Equation of Second degree
test of chapter 3

Week 3 Introduction to homogenous linear equation
Method to solve H.L.E.
Equation reduceable to H.L.E.
Question related to H.L.E.
Linear Differencial equation of second degree
Week 4
Chapter 6 Linear Differential Equation of Second degree
Assignments
L.D.E. of second order by changing dependent variable
April **Week 1**
Method for finding particular integral
Questions related to P.I.
To Solve second order by removing first derivate
Week 2
Chapter 6 Linear Differential Equation of Second degree
Assignments
Revision of L.D.E.
To solved L.D.E. of second order by changing independent variable
Questions for practice
Introduction of variation of parameters
Method of variation of parameters
Question related to varistion of parameters
Chapter 6 Linear Differential Equation of Second degree
Week 3 To Solve L.D.E. of Second Order by undetermined coefficient
Question solved
Assignments
Method of undetermined coefficient
Questions related to method of undetermined coefficient
simultaneous differential equation

Method of solving simultaneous equation
Question related to S.E
Revision of variation of parameter
Chapter 7 ordinary differential simultaneous equation
Assignments
Use of operator D
Method of differentiation
To solve simultaneous equation
To solve simultaneous equation of different form
Working rule to solve S.E
Question related to simultaneous equation
week 4 Chapter 7 ordinary differential simultaneous equation chapter 8 Total differential equations
General interpretation of equation
Question related to general interpretation
Second integral found with the help of first
Question related to second integral
Total differential equation
Chapter 8 total differential equation
Revision of O.S.E
Test of O.D.E
Revision of total differential equation
Test of T.D.E

Name - Dr Kirti Chaudhary

Department Of Mathematics

Govt College Bhattu Kalan

Bsc/BA sem 4 session 2023-24

Sub - Sequence and series

Month	Week	Topic
Januaury	Week 1	• Basic knowledge • Boundness of set of real number • Least upper bound • Questions solved
	Week 2	• Greatest lower bound • Interior points • Isolated points • Limit points • Questions solved
	Week 3	• Open sets • Closed sets • Interior of a set • Closure of a set in real number • properties
	Week 4	• compact sets • heini borel property • sequence • real sequence and there convergence
February	Week 1	• theorem on limit of sequence • monotonic sequence • Cauchy sequence • Cauchy general principle of convergence
	Week 2	• Sub sequence • Sub sequential limits • Infinite series • Convergence and divergence

	Week 3	• **Comparison test of positive term series** • **Cauchys general principal of convergence** • **Convergence and divergence of geometric series** • **Hyper harmonic series test**
	Week 4	• **Infinite series** • **Dalembert ratio test** • **Rabbes test** • **Logarithm test** • **Demorgan test**
March	**Week 1**	• **Cauchys n root test** • **Gauss test** • **Cauchys integral test**
	Week 2	• **Cauchys condensation test** • **Alternating series**
	Week 3	• **Leibnitz test** • **Absolute and conditional convergence**
	Week 4	• **Arbitrary series** • **Abels lemma** • **Abels test** • **Dirichlets test** • **Insertion and removalof parthensis**
April	**Week 1**	• **Dirichlet theorem** • **Riemanns rearrangement theorem** • **Pringshems theorem**
	Week 2	• **Multiplication of series** • **Cauchy product of series**
	Week 3	• **Convergence and absolute convergence of infinite products**
	Week 4	**Revision of whole syallabus**