LESSON PLAN OF MATHEMATICS

Name of College:- CH. BANSI LAL GOVT. P.G. COLLEGE LOHARU (BHIWANI)

Academic Session:- 2022-23

Semester:- B.Sc. Non Medical IInd Sem

Subject:- NUMBER THEORY AND TRIGONOMETRY

Teacher name:- MS. SANGEETA

	LESSON PLAN OF NUMBER THEORY AND TRIGONOMETRY
APRIL	
Week 1:	**Introduction to Syllabus and Pattern**
	Divisibility, Greatest common divisor, least common multiple, primes
Week 2:	**Fundamental theorem of arithmetic , linear congruencies**
Week 3:	**Fermat's theorem, Wilson's theorem and its converse**
Week 4:	**Complete residue system and reduced residue system modulo m, Euler function, Chinese remainder theorem**
Week 5:	**Quadratic residues, Legender symbol, Gauss lemma, Greatest integer function, Divisor function, Sum function**
MAY:	
Week 1:	**De Moivre's theorem, Expansion of trigonomrtric functions**
Week 2:	**Direct circular and hyperbolic functions and their properties**
Week 3:	**Logarithm of a complex quantity**
Week 4:	**Gregory's series and summation of trigonometric series**

Lesson Plan (2022-23)

1St Sem

Name of the Assistant/ Associate Professor: - Sangeeta

Class: B.A/ B.SC. 1st

Subject: Calculus

Week	Topics
Sep 1	Introduction to Syllabus and Pattern
Sep 2	Successive differentiation, Leibnitz theorm
Sep 3	Maclaurin and Taylor series expensions
Sep 4	Newtons method, Radius of curvature for pedal curves
Oct 1	Tangential polar equations
Oct2	circle of curvature, chord of curvature
Oct 3	Asymptotes , Intersection of curve and its asymptotes
Oct 4	Test for concavity and convexity
Nov 1	Points of inflexion, multiple points
Nov 2	Cusps, nodes, conjugate points
Nov 3	Reduction formulae, Rectification
Nov 4	Multiple integrals Area and volume by double integral
Dec 1	Cylindrical and spherical coordinates, Volume of solid

LESSON PLAN OF MATHEMATICS

Name of College:- CH. BANSI LAL GOVT. P.G. COLLEGE LOHARU (BHIWANI)

Academic Session:- 2022-23

Semester:-B.A./ B.Sc. Non Medical 3st Sem

Subject:- Differential equations

Teacher name:- MS. Sangeeta

	LESSON PLAN OF DIFFERENTIAL EQUATIONS
September	
Week 4:	**Introduction to Syllabus and Pattern**
Week 5:	Geometrical meaning of a differential equation, exact differential equations
October:	
Week 1:	Integral factors,
	Reduction to exact diff. equations
Week 2:	First order higher degree equations solutions,
	Lagrange equations, Clairaut equations
Week 3:	Singular solutions
	Orthogonal trajectories
November	
Week 1:	Linear differential equations with constant coefficients,
	Solution by variation of parameter
Week 2:	Homogeneous linear ordinary differential equations
	Partial differential equations introduction
Week 3:	Solutions of linear and non linear partial differential equations of 1st order.
Week 4:	Solution of lagrange linear equations
	Charpits general method of solution
December	
Week 1:	Jacobi method, linear partial differential equations of 2nd and higher order
Week 2:	Linear and non linear homogeneous and non-homogeneous equations with constant coefficients,
	Method of separation of variables

LESSON PLAN OF MATHEMATICS

Name of College:- CH. BANSI LAL GOVT. P.G. COLLEGE LOHARU (BHIWANI)

Academic Session:- 2022-23

Semester:- B.A. VIth Sem

Subject:- LINEAR ALGEBRA

Teacher name:- MS. SANGEETA

	LESSON PLAN OF LINEAR ALGEBRA
APRIL	
Week 1:	**Introduction to Syllabus and Pattern**
	Vector space, Subspace
Week 2:	**Sum and direct sum of subspaces, Linear span, L.I. and L.D. subsets, finitely generated vector space, finite dimensional vector space.**
Week 3:	**Basis, Quotient space and its dimension, Homomorphism and isomorphism, Linear transformation and linear form of vector space**
Week 4:	**Dual space, Bi dual space, annihilator of subspace, Null space, Range space of linear transformation**
Week 5:	**Rank and Nullity theorem, Algebra of linear transformation, Minimal polynomial of a linear transformation**
MAY:	
Week 1:	**Singular and non-singular linear transformation, Matrix of linear transformation, change of basis, Eigenvalue and eigen vector**
Week 2:	**Inner product space, Cauchy- Schwarz inequality, Orthogonal vector, orthogonal sets and basis**
Week 3:	**Bessel's inequality, Gram-Schmidt orthogonalization process, Adjoint and its properties, Unitary linear transformation**

LESSON PLAN OF MATHEMATICS

Name of College:- CH. BANSI LAL GOVT. P.G. COLLEGE LOHARU (BHIWANI)

Academic Session:- 2022-23

Semester:- B.Sc. Non Medical/B.A. IVth Sem

Subject:- MECHANICS

Teacher name:- MS. SANGEETA

	LESSON PLAN OF MECHANICS
APRIL	
Week 2:	Introduction to Syllabus and Pattern
	Composition and resolution of forces
Week 3:	Resultant of two parallel forces and their applications
Week 4:	Moments and couples
Week 5:	Analytic conditions of equilibrium of coplanar forces
MAY:	
Week 1:	Velocity and acceleration along radial, transverse, tangential and normal direction
Week 2:	Simple harmonic motion and elastic string
Week 3:	Newton's law of motion
Week 4:	Work, Power and Energy

LESSON PLAN OF MATHEMATICS

Name of College:- CH. BANSI LAL GOVT. P.G. COLLEGE LOHARU (BHIWANI)

Academic Session:- 2022-23

Semester:- B.Sc. Non Medical 5th Sem

Subject:- Differential equations

Teacher name:- MS. Sangeeta

	LESSON PLAN OF NUMR
September	
Week 4:	**Introduction to Syllabus and Pattern**
Week 5:	Geometrical meaning of a differential equation, exact differential equations
October:	
Week 1:	Integral factors,
	Reduction to exact diff. equations
Week 2:	First order higher degree equations solutions,
	Lagrange equations, Clairaut equations
Week 3:	Singular solutions
	Orthogonal trajectories
November	
Week 1:	Linear differential equations with constant coefficients,
	Solution by variation of parameter
Week 2:	Homogeneous linear ordinary differential equations
	Partial differential equations introduction
Week 3:	Solutions of linear and non linear partial differential equations of 1^{st} order.
Week 4:	Solution of lagrange linear equations
	Charpits general method of solution
December	
Week 1:	Jacobi method, linear partial differential equations of 2^{nd} and higher order
Week 2:	Linear and non linear homogeneous and non-homogeneous equations with constant coefficients,
	Method of separation of variables

Lesson Plan (2023-24)

3rd Sem

Name of the Assistant/ Associate Professor: - Ajay Kumar

Class: B.A /B.SC. 2nd

Subject: Numerical methods with Programming in C

Week	Topics
Sep 1	Programmer model of a computer, algorithms, flow chart
Sep 2	Data type, operators and expressions, input/output functions
Sep 3	Decision control structures, logical and conditional statements, Loops, Switch and Case control structure
Sep 4	Strings, character data types, Arithmetic operation on characters
Oct 1	Structure: definition and uses
Oct2	Solution of algebraic and transcendental equations; Bisection method
Oct 3	Regula falsi method, secant method
Oct 4	Fixed point iterative method, Newton Raphson's method
Nov 1	Newton iterative formulae for nth root of a number and order of convergence
Nov 2	Gauss elimination method, Gauss Jordan method
Nov 3	Iterative method and Jacobi method
Nov 4	Gauss seidal method and Relaxation method
Dec 1	Order of convergence and revision

LESSON PLAN OF MATHEMATICS

Name of College:- CH. BANSI LAL GOVT. P.G. COLLEGE LOHARU (BHIWANI)

Academic Session:- 2022-23

Semester:- B.Sc. Non Medical VIth Sem

Subject:- REAL AND COMPLEX ANALYSIS

Teacher name:- MS. SANGEETA

	LESSON PLAN OF REAL AND COMPLEX ANALYSIS
APRIL	
Week 1:	**Introduction to Syllabus and Pattern**
	Fourier series introduction
Week 2:	**Fourier expansion of piecewise monotonic function**
Week 3:	**Properties of Fourier coefficients, Dirichlet's conditions**
Week 4:	**Parseval's identity, fourier series for even and odd functions**
Week 5:	**Half range series, change of intervals**
MAY:	
Week 1:	**Mapping by elementary functions: Translation, Rotation, Magnification and Inversion**
Week 2:	**Conformal mappings, Mobius transformations, Fixed point, cross ratio**
Week 3:	**Inverse Points and critical mappings**