**LESSON PLAN**

**Even Semester (2022-2023)**

Mr. Ashish Kumar, Assistant Professor

Deptt of Mathematics

**B.Sc.-I**

**(Number Theory and trigonometry)**

**Feb:** Divisibility, Congruence, Fermat’s, Wilson’s and Chinese remainder theorem, Euler’s functions and residue systems.

**March**: Some functions of number theory, Quadratic residues and quadratic reciprocity law, De-Moiver’s theorem and its applications, circular functions of a complex variable

**April**: Hyperbolic functions, log of a complex quantity, inverse circular and inverse hyperbolic functions, Summation of series

**May**: Revision

**B.Sc.-II**

**(Programming in C and Numerical Methods)**

**Feb**: Computers, Introduction to C, Data types, operators and Expressions, Decision control structures,

**March**: Loops, functions, C-processor, Arrays, Puppetting of strings,

**April**: Structures and Unions, Pointers, Files in C, Solutions of algebraic and transcendental equations

**May**: Simultaneous linear algebraic equations, Revision.

**BCA-II**

**(Computer Oriented Statistical Methods)**

**Feb**: Basic Statistics, Measure of Central tendency, Measure of Dispersion, Moments and Moment Generating Function,

**March**: Probability Distributions, Correlation,

**April**: Regression, Curve Fitting, Baye’s Theorem in Decision Making & Forecasting Techniques,

**May**: Analysis of Variance (ANOVA), Chi-Square Test

Mr. Ashish Kumar

Assistant professor

Deptt. of Mathematics

**LESSON PLAN**

**Even Semester (2022-2023)**

Mrs. Seema Sharma, Assistant Professor

Deptt of Mathematics

**B.Sc. -1**

**(Vector Calculus)**

**Feb**: Scalar and vector product of three vectors, product of four vectors, Vector differentiation, Scalar Valued point functions

**March**: Vector valued point functions derivative along a curve, directional derivatives, Gradient of a scalar point function, geometrical interpretation of grad F, character of gradient as a point function. Divergence and curl of vector point function, Gradient, divergence and curl of sums and product and their related vector identities. Laplacian operator.

**April**: Orthogonal curvilinear coordinates Conditions for orthogonality, Gradient, Divergence, Curl and Laplacian operators in terms of orthogonal curvilinear coordinates, Cylindrical co-ordinates and Spherical coordinates, Vector integration; Line integral, Surface integral, Volume integral Theorems of Gauss.

**May**: Green & Stokes and problems based on these theorems and revision

**B.Sc.-II**

**( Sequence and series)**

**Feb** : Toplogy of Real numbers, Sequences, Infinite Series

**March** : Infinite Series(Continued), alternating series

**April** : arbitrary Series, Infinite Products

**May** : Revision

**B.Sc.-III**

**(Linear Algebra)**

**Feb**: Vector spaces, sub-spaces, Basis and Dimension, Quotient Spaces and Linear Transformation,

**March**: Rank and Nullity, Algebra of Linear Transformation, Matrix of Linear Transformation,

**April**: Dual Space, Eigen Values, Eigen Vectors, Inner Product Space and Linear operators on inner product spaces

**May** : Revision

**B.Com.-I**

**(Business Mathematics)**

**Feb**: Permutations and Combinations, Binomial theorem

**March**: Linear Inequalities in two variables, linear Programming

**April**: Data- Introduction, Classification and tabulation, Diagrammatic Representation of data, Graphical Representation of data

**May**: Data Interpretation and Revision

Mrs. Seema Sharma

Assistant Professor

Deptt of Mathematics

**LESSON PLAN**

**Even semester (2022-23)**

Dr. Sarita Rani, Assistant professor

Deptt. of Mathematics

**B.Sc.-I**

**(ODE)**

**Feb**: Exact differential equations, equation of first order but not of first degree, orthogonal trajectory,

**March**: LDE with constant coefficients, homogeneous linear equations,

**April**: LDE of second order, Ordinary simultaneous De, Total differential equations,

**May**: Revision

**B. Sc.-II**

**(Special Functions & Integral Transforms)**

**Feb**: Laplace transforms, Convolution theorem, Inverse Laplace transforms, solution of ode using Laplace transform, Fourier Transforms,

**March**: Relation between Fourier and Laplace transforms, Parseval’s identity, solution of ode using Fourier transform, Power series method, Definitions of Beta and Gamma functions,

**April**: Bessel equation, Relations and Generating functions, Orthogonality of Bessel Function, Legendre and Hermite differential equations,

**May**: Orthogonality of Legendre and Hermite polynomials, Rodrigues Formula, Laplace integral representation of Legendre polynomial, Revision.

**B.Com.-I**

**(Business Mathematics)**

**Feb**: Permutations and Combinations, Binomial theorem

**March**: Linear Inequalities in two variables, linear Programming

**April**: Data- Introduction, Classification and tabulation, Diagrammatic Representation of data, Graphical Representation of data

**May**: Data Interpretation and Revision

(Dr. Sarita Rani)

Assistant professor

Deptt. of Mathematics

**LESSON PLAN**

**Even Semester (2022-2023)**

Dr. Sarita Rani & Mr. Ashish Kumar

**B.Sc.-III**

**(Real and Complex analysis)**

**Feb**: Jacobians, Beta and Gamma Functions,

**March**: Double and Triple Integral, Fourier Series,

**April**: Calculus of Complex functions, Elementary functions,

**May**: Mobius Transformations, Critical mappings.

**B. Sc.-III**

**(Dynamics)**

**Feb**: Velocity and acceleration, relative velocity and acceleration, simple harmonic motion, elastic strings

**March**: Mass, momentum, force, work power energy, conservative forces, impulsive forces

**April** : Motion on smooth and rough plane curves, projectile motion, vector-angular velocity

**May** : Central orbits, Kepler’s laws, motion in 3-D, acceleration in coordinate system, Revision

**LESSON PLAN**

**Even Semester (2022-2023)**

Dr. Sarita Rani & Mrs. Seema Sharma

**BCA-I**

**(Elements of Mathematical Foundation)**

**Feb**: Propositions and logical operators, Truth Tables

**March**: Propostions generated by a set, Equivalence and implications, Laws of logic

**April**: Mathematical system, Proposition over a universe, Mathematical Induction

**May**: Quantifiers and Revision

Mrs. Seema Sharma

Dr. Sarita Rani

Mr. Ashish Kumar