

Lesson Plan even semester 2023-2024

Name of Teacher: Gaurav Saini

Subject: Mathematics

Class and Subject/ month	January	February	March	April
BCA IV Sem COSM	Basic Statistics: Measure of Central Tendency, preparing frequency distribution table, Mean Arithmetic, Mean Geometric, Mean Harmonic, Mean, Media, Mode. Measure of Dispersion: Range, Variance and Standard Deviations; Frequency Distributions and Cumulative Frequency Distributions: Moments and Moments Generating Functions	Distribution Patterns: Types of Theoretical Probability; Normal Binomial Poisson distribution. Correlation and Regression: Types of Correlation, Properties of Coefficient of Correlation, Methods of studying Correlation; Aim of Regression Analysis, Kinds of Regression Analysis.	Tests of significance: Z-test, Student T-test, Chi-square test. Curve fitting: Method of least squares and Polynomial fit.	ANOVA: Meaning, Assumptions, Cochran's Theorem (only statement), One way classification, ANOVA Table for One-Way Classified Data, Baye's theorem in decision-making, Forecasting techniques.
BA IV Sem Sequence and Series	Boundedness of the set of real numbers; least upper bound, greatest lower bound of a set, neighborhoods, interior points, isolated points, limit points, open sets, closed set, interior of a set, closure of a set in real numbers and their properties. Bolzano-Weiestrass theorem, Open covers, Compact sets and Heine-Borel Theorem	Sequence: Real Sequences and their convergence, Theorem on limits of sequence, Bounded and monotonic sequences, Cauchy's sequence, Cauchy general principle of convergence, Subsequences, Subsequential limits. Infinite series: Convergence and divergence of Infinite Series, Comparison Tests of positive terms Infinite series, Cauchy's general principle of Convergence of series, Convergence and divergence of geometric series, Hyper Harmonic series or p-series.	Infinite series: D-Alembert's ratio test, Raabe's test, Logarithmic test, de Morgan and Bertrand's test, Cauchy's Nth root test, Gauss Test, Cauchy's integral test, Cauchy's condensation test.	Alternating series, Leibnitz's test, absolute and conditional convergence, Arbitrary series: Abel's lemma, Abel's test, Dirichlet's test, Insertion and removal of parenthesis, rearrangement of terms in a series, Dirichlet's theorem, Riemann's Rearrangement theorem, Pringsheim's theorem (statement only), Multiplication of series, Cauchy product of series, (definitions and examples only) Convergence and absolute convergence of infinite products.
BA VI Sem Dynamics	Velocity and acceleration along radial, transverse, tangential and normal directions. Relative velocity and acceleration. Simple harmonic motion. Elastic strings.	Mass, Momentum and Force. Newton's laws of motion. Work, Power and Energy. Definitions of Conservative forces and Impulsive forces.	Motion on smooth and rough plane curves. Projectile motion of a particle in a plane. Vector angular velocity	General motion of a rigid body. Central Orbits, Kepler laws of motion. Motion of a particle in three dimensions. Acceleration in terms of different co-ordinate systems.