

LESSON PLAN

CLASS: - M.Sc. (Maths)II
(2026-27)

SEMESTER:- 3rd Sem

Name : - Dr.Chinky

Designation: Extension lecturer

Paper: Fluid dynamics

Time Period	Syllabus to be covered
August 11, 2026- Sept. 12, 2026.	Kinematics - Velocity at a point of a fluid. Eulerian and Lagrangian methods. Stream lines, path lines and streak lines. Velocity potential. Irrotational and rotational motions. Vorticity and circulation. Equation of continuity. Boundary surfaces. Acceleration at a point of a fluid. Components of acceleration in cylindrical and spherical polar co-ordinates
September 14, 2026- Oct.10, 2026	Pressure at a point of a moving fluid. Euler equation of motion. Equations of motion in cylindrical and spherical polar co-ordinates. Bernoulli equation. Impulsive motion. Kelvin circulation theorem. Vorticity equation. Energy equation for incompressible flow. Kinetic energy of irrotational flow. Kelvin minimum energy theorem. Kinetic energy of infinite fluid. Uniqueness theorems.
October 12, 2026- Nov. 18, 2026	Axially symmetric flows. Liquid streaming past a fixed sphere. Motion of a sphere through a liquid at rest at infinity. Equation of motion of a sphere. Kinetic energy generated by impulsive motion. Motion of two concentric spheres. Three-dimensional sources, sinks and doublets. Images of sources, sinks and doublets in rigid impermeable infinite plane and in impermeable spherical surface.
November 19, 2026- December 11, 2026	Two dimensional motion; Use of cylindrical polar co-ordinates. Stream function. Axisymmetric flow. Stoke stream function. Stoke stream function of basic flows. Irrotational motion in two-dimensions. Complex velocity potential. Milne-Thomson circle theorem. Two dimensional sources, sinks, doublets and their images. Blasius theorem

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LESSON PLAN

CLASS: - BCAII

SEMESTER:- 3rd Sem (2026-27)

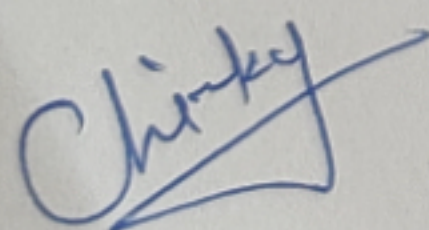
Name : - Dr.Chinky

Designation: Extension lecturer

Paper: Probability and Statistics

Time Period	Syllabus to be covered
August 11, 2026- Sept. 12, 2026.	Basic concepts of Statistics, qualitative and quantitative data, classification of data, construction of frequency distribution, diagrammatic representation of data. Measures of Central Tendency: Arithmetic mean, median and mode—their properties Measures of Dispersion: Range, mean deviation, quartile deviation, variance and standard deviation.
September 14, 2026- Oct.10, 2026	Correlation: Definition, scatter diagram, types of correlation, measures—Karl Pearson's correlation coefficient and Spearman's rank correlation coefficient. Regression: Linear regression-fitting by least square method and interpretation.
October 12, 2026- Nov. 18, 2026	Concepts of probability: Experiment and sample space, events and operations with events, probability of an event, basic probability rules, applications of probability rules, conditional probability. Random Variables: Discrete and continuous random variable, probability distribution of a random variable, probability mass function, probability density function, expectation and variance of a random variable. Standard Probability Distributions: Binomial probability distribution, Poisson probability distribution, Normal probability distribution.
November 19, 2026- December 11, 2026	Sampling Distribution: Concept of Population and Sample, parameter and statistic, sampling distribution of sample mean and sample proportion. Statistical Inference: Estimation and Hypothesis Testing (only concept). Hypothesis Testing for a Single Population: Concept of a hypothesis testing, tests involving a population mean and population proportion (z test and t test). Chi square test for independence of attributes and goodness of fit.

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LESSON PLAN

CLASS: - M.Sc. (MATH)

SEMESTER:- 1st (2026-27)

Name : - Dr.Chinky

Designation: Extension lecturer

Paper: Mathematical Statistics

Time Period	Syllabus to be covered
August 31, 2026- Sept. 12, 2026.	Probability: Definition and various approaches of probability, Addition theorem, Boole inequality, Conditional probability and multiplication theorem, Independent events, Mutual and pairwise independence of events, Bayes theorem and its applications.
September 14, 2026- sept.30, 2026	Random variable and probability functions: Definition and properties of random variables, Discrete and continuous random variables, Probability mass and density functions, Distribution function. Concepts of bivariate random variable: joint, marginal and conditional distributions. Mathematical expectation: Definition and its properties. Variance, Covariance, Moment generating function Definitions and their properties.
October	Discrete distributions: Uniform, Bernoulli, Binomial, Poisson and Geometric distributions with their properties. Continuous distributions: Uniform, Exponential and Normal distributions with their properties.
November	Testing of hypothesis: Parameter and statistic, Sampling distribution and standard error of estimate, Null and alternative hypotheses, Simple and composite hypotheses, Critical region, Level of significance, One tailed and two tailed tests, Two types of errors. Tests of significance: Large sample tests for single mean, Single proportion, Difference between two means and two proportions

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CLASS: - B.A./B.Sc. (MATH)

LESSON PLAN

SEMESTER:- 3rd (2026-27)

Name : - Dr.Chinky

Designation: Extension lecturer

Paper : Operations Research Techniques

Time Period	Syllabus to be covered
August	Definition, scope, methodology and applications of OR. Types of OR models. Concept of optimization, Linear Programming: Introduction, Formulation of a Linear Programming Problem (LPP), Requirements for an LPP, Advantages and limitations of LP. Graphical solution: Multiple, unbounded and infeasible solutions.
September	Principle of simplex method: standard form, basic solution, basic feasible solution. Computational Aspect of Simplex Method: Cases of unique feasible solution, no feasible solution, multiple solution and unbounded solution and degeneracy. Two Phase and Big- M methods.
October	Duality in LPP, primal-dual relationship. Transportation Problem: Methods for finding basic feasible solution of a transportation problem, Modified distribution method for finding the optimum solution, Unbalanced and degenerate transportation problems, transshipment problem, maximization in a transportation problem
November	Assignment Problem: Solution by Hungarian method, Unbalanced assignment problem, maximization in an assignment problem, Crew assignment and Travelling salesman problem. Game Theory: Two person zero sum game, Game with saddle points, the rule of dominance; Algebraic, graphical and linear programming methods for solving mixed strategy games.

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