LESSON PLAN

CLASS – M.Sc I (Math) SEMESTER – 2nd

Name of Assistant / Associate – CHINKY

Subject / Paper – Operations Research Techniques.

Unit	Month	Subject Matter / Syllabus
1	January	OR- Origin, Definition and scope. LPP- formation and solution of Linear programming problems by graphical and simplex, Big-M, two phase methods, Degeneacy; Duality in LPP.
2	February	Transportation Problem: Basic feasible solutions, optimum solutions by stepping stone and modified distribution methods, Unbalanced and degenerate problem. Transhipment Problem. Assignment Problem, Hungarian method, maximization, Travelling salesman
3	March.	Concept of stochastic process, Poisson process, Birth death, Queuing Models: Basic concept, steady state solution of Markovian queuing model with single and multiple serves. (M/M/1. M/M/C, M/M/1/K, M/M/C/K).
4	April and May	Inventory control models: EOQ model with uniform demand, EOQ with uniform replenishment, Inventory control with price breaks. Game Theory: Two persons zero sum game, Game with saddle points. Rule of dominance and other methods.

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LESSON PLAN

CLASS – M.Sc.II (Math) SEMESTER – 4th

Name of Assistant / Associate – CHINKY

Subject / Paper – Viscous fluid Dynamics.

Unit	Month	Subject Matter / Syllabus
1	January.	Vorticity in two dimensions, Circular and rectilinear vortais, Vortex doublet, Image, Motion due to vortices, Single and double infinite rows of vortices. karman vortex street. Wave motion in a gas. Equation of motion. Isentropic gas flow, Flow through a nozzle.
2	February	Stress components in a real fluid. Relation between different component of Stress. Newtonian and Non-Newtonian fluids. Navier stoke equation of motion Equations of motion in different cordinate Diffusion of vorticity. Energy dissipation due to viscosity
3	March.	plane poiseuille and Couette flows between two parallel plates. Theory of lubrication. Hagen Poiseuille flow. Steady flows between co-axial circular cylinders and concentric rotating cylinders. Flow in convergent and divagent channels.
4	April and May	Dynamical similarity. Inspection analysis. Non-dimensional numbers. Buckingham Π-theorem and its application. Physical importance of non-dimentional parameters. Prandtl boundry layer. karman integral conditions. karman-Pohlhausen methods.

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LESSON PLAN

CLASS- B.Sc/BA IB Sc.

SEMESTER- 4th.

Name of Extension lecturer CHINKY

Subject/Paper - Real Analysis

Sr. No.	Duration	Subject Matter/ Syllabus
Unit-1	January	Riemann integral, Integrabililty of continuous and monotonic functions, The Fundamental theorem of integral calculus. Mean value theorems of integral calculus.
Unit-2	February.	Improper integrals and their convergence, Comparison tests, Abel's and Dirichlet's tests, Frullani's integral, Integral as a function of a parameter. Continuity, Differentiability and integrability of an integral of a function of a parameter.
Unit-3	March.	**Definition and examples of metric spaces, neighborhoods, limit points, interior points, open and closed sets, closure and interior, boundary points, subspace of a metric space, equivalent metrics, Cauchy sequences, completeness, Cantor's intersection theorem, Baire's category theorem, contraction Principle**
Unit-4	April and May.	Continuous functions, uniform continuity, compactness for metric spaces, sequential compactness, Bolzano-Weierstrass property, total boundedness, finite intersection property, continuity in relation with compactness, connectedness, components, continuity in relation with connectedness.

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LESSON PLAN

CLASS – B.Sc III and B.Sc (H.) SEMESTER – 6th.

Name of Assistant / Associate – CHINKY

Subject / Paper – Dynamics

Unit	Month	Subject Matter / Syllabus
1	January	Velocity and acceleration along radial, Transverse, Tangential and Normal direction. Relative velocity and acceleration. Simple harmonic motion. Elastic strings.
2	February	Mass, Momentum and force. Newton's laws of motion. Work, Power and Energy. Definitions of conservative forces and Impulsive forces.
3	March.	Motion on smoth and rough plane curves. Projectile motion of a particle in a plane. Vector angular velocity.
4	April and May	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 system.

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