LESSON PLAN (Odd Semester) Session 2025-26

Class: B.A/B.Sc VIth Semester **Subject:** Numerical Analysis (Mathematics)

Name of Assistant / Associate Professors	Period	Topics to be covered	Academic activities to be organized	Topic of Assignments / Tests to be given to the students
Dr. Pooja Goel.	up to 15th Aug.	Finite difference operators and their relations, Interpolation with equal Intervals & unequal Intervals	Assignment - I	Test
	16th Aug. to 31st Aug.	Central differences :- Gauss forward & Gauss Backward Interpolation formulae		
	1st Sept. to 15th Sept.	Probability distribution of random variables, Binomial distribution,		
	16th Sept. to 30th Sept.	Poisson's distribution, Normal distribution, Numerical differentiation		
	1st Oct. to 15th Oct.	Eigen value problems, Power methods, Jacobi's Method, Given's Method.	Assignment - II	
	16th Oct. to 31st Oct.	Numerical Integration :- Trapezoidal Rule, Simpson 1/3 rule and 3/8 th Rule.		
	1st Nov. to till the commencement of exams	Numerical soln of O.D.E :- Picard method, Taylor's series Method, Runge-Kutta Method, Euler's Method,		

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LESSON PLAN (Odd Semester) Session 2025-26

Class: M.Sc Ist sem. Mathematics

Subject: Ordinary Diff. equations (CC5)

Name of Assistant / Associate Professors	Period	Topics to be covered	Academic activities to be organized	Topic of Assignments / Tests to be given to the students
Dr. Pooja Goel	up to 15th Aug.	Initial value problem & eq. I. Eqⁿ, E - app. Solutions, equicts. set of functions, Arzela - Ascoli thᵐ Cauchy - Peano existence Thm.	Assignment - I	Test
	16th Aug. to 31st Aug.	Gronwall's inequality, Lip. con. Picard Lindelof thᵐ, its examples L.D.E of order n, L.D & L.I.		
	1st Sept. to 15th Sept.	Wronskin theorey, Abel's Identity, Fundamental sets, Non - Homogeneous L.D.E, Variation of parameter, Adjoint, Lagrange's identity, Green's formula, Linear second order eqⁿ, Self adjoint eqⁿ of second order, Superposition principle.		
	16th Sept. to 30th Sept.			
	1st Oct. to 15th Oct.	Riccati eqⁿ, Bruffer transformation Zero of a Solⁿ, Abel's formula, Common zero of solutions, Sturm theorey.		
	16th Oct. to 31st Oct.	Second order Boundry Value Problem, Linear problem, Regular Singular BVP, Singular linear BVP,	Assignment - II	
	1st Nov. to till the commencement of exams	Sturm Liouville BVP, eigen values & eigen fun., Orthogonality of fun, Green function, Application of green fun. for B.V.P		

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LESSON PLAN (Odd Semester) Session 2025-26

Class: M.Sc Ist sem Mathematics

Subject: Computer Programming in ANSI C SEC/4.01

Name of Assistant / Associate Professors	Period	Topics to be covered	Academic activities to be organized	Topic of Assignments / Tests to be given to the students
Dr. Pooja Goel.	up to 15th Aug.	C fundamentals, Anatomy of C functions, Variables, Constants, Expressions, Assignment Statements, Formatting Source files.	Assignment – 1	Test
	16th Aug. to 31st Aug.	Continuation character, The pre-processor, Data types, declarations, Diff. Kind of Constants, Implicit & Explicit conver.		
	1st Sept. to 15th Sept.	The void data types, Typedef declaration, Program develop, Operators & expressions, Precedence & Associativity,		
	16th Sept. to 30th Sept.	Relational operators, logical operators, Bit Manipulation operators, Size of operators, Conditional operator, Memory op.		
	1st Oct. to 15th Oct.	Control flow Conditional branch, The switch statement, Looping, Nested loops, Break statement, The goto statement.	Assignment – 2	
	16th Oct. to 31st Oct.	Infinite loops, Arrays, Memory, Initializing arrays, strings, Encryption & Decryption.		
	1st Nov. to till the commencement of exams	Functions :- Passing arguments, declaration & calls, the main function, Passing arrays as function arguments		

LESSON PLAN (Odd Semester) Session 2025-26

Class: M.Sc IIIrd sem. Mathematics **Subject:** Integral Equations DSC-4

Name of Assistant / Associate Professors	Period	Topics to be covered	Academic activities to be organized	Topic of Assignments / Tests to be given to the students
Dr. Pooja Goel.	up to 15th Aug.	Linear Integral equations, Initial value problem reduced to V.I.E, Method of successive Substitution and app. to solve I.E.	Assignment-1	Test.
	16th Aug. to 31st Aug.	Iterated Kernel and Neumann Series for V.E. Ressolvent Kernel as a series. Laplace Transform method for diff Kernel.		
	1st Sept. to 15th Sept.	B.V.P reduced to F.I.E. Method of succ. app. & succ. Sub. to solve F.E. Iterated Kernel and Neumann Series for F.Eqn.		
	16th Sept. to 30th Sept.	Fredholm Resolvent Kernel as a sum of series. Fredholm eqn with separable Kernels. Fred. eqn with degenerate Kernels.		
	1st Oct. to 15th Oct.	Singular Integral equations Sol^n of Abel's I.Eqn. Sol^n of gen. form of Abel I.E, Cauchy principle, Hilbert Kernel, closed contour.	Assignment-2	
	16th Oct. to 31st Oct.	Green function, Use of method of variation of parameter to construct green fun. Green fun.		
	1st Nov. to till the commencement of exams	Reduction of a B.V.P to a Fredholm Integral eqn with Kernel as Green fun.		

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Class: M.Sc IIIrd Sem. (Mathematics)

LESSON PLAN (Odd Semester) Session 2025-26

Subject: Fluid Mechanics (CC II)

Name of Assistant / Associate Professors	Period	Topics to be covered	Academic activities to be organized	Topic of Assignments / Tests to be given to the students
Dr. Pooja Goel	up to 15th Aug.	Kinematics – Velocity at a point of fluid, Eulerian & Lagrangian methods. Stream line, Streak lines, Path lines, Vel. pot, Irrotational & Rotational motion, Vorticity & Circulation, Eqn of Continuity, Boundry Surface, Acceleration at a point of fluid.	Assignment – 1	Test
	16th Aug. to 31st Aug.			
	1st Sept. to 15th Sept.	Pressure at a point of fluid, Euler's eqn of motion, Bernoulli's eqn, Impulsive Motion, Kelvin Circulation thm,		
	16th Sept. to 30th Sept.	Uniqueness Theorem, Axially Symmetric flows, Equation of motion of sphere, kinetic energy generated by Impul. Motion,	Assignment – 2	
	1st Oct. to 15th Oct.	Image of sources, sinks and doublets in & rigid infinite plane		
	16th Oct. to 31st Oct.	Two dimensional motion, Use of cylindrical polar Co-ordinates, stream function. Axisymmetric flows.		
	1st Nov. to till the commencement of exams	Stoke's stream function of basic flows, Irrotational motion in two dimensions, Complex velocity potential. Blasius Theorem.		

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