

Mathematics Department

Lesson Plan

Academic Session: 2026-27

Class:	M.Sc. Maths (1st Sem)	Paper:	Complex Analysis
Faculty Name:	Dr. Parul Singh		

Month	Week	Topics / Plan
September 2026	Week 1	Function of Complex Variable, Continuity and Differentiability, Analytic functions and its property
	Week 2	Cauchy Riemann Equation, Power series and Radius of Convergence
	Week 3	Examples on Radius of Convergence, differentiability of sum function of power series
	Week 4	Branches of many valued functions with reference to $\arg z$, $\log z$, complex exponential function
	Week 5	Test of 1st section, Path in region, Contour, complex integration
October 2026	Week 1	Cauchy theorem, Cauchy Integral formula + Group wise Seminar on above topics
	Week 2	Higher order derivatives, Complex integral as a function of upper limit
	Week 3	Morera theorem, Cauchy inequality, Liouville Theorem, Taylor Theorem
	Week 4	Zeros of analytic function, Laurent series, Isolated Singularities
November	Week	Diwali Break

Month	Week	Topics / Plan
2026	1	
	Week 2	Casorati-Weierstrass theorem, Limit point of zeroes and pole, Calculus of residues, Cauchy residue theorem, Conformal mappings
	Week 3	Maximum modulus principle, Schwarz Lemma, Meromorphic functions, Argument Principle, Equation of integrals, Space of analytic functions and completeness, Hurwitz theorem
	Week 4	Rouche Theorem, Fundamental theorem of algebra, Inverse function theorem, Revision and test, Montel Theorem, Riemann mapping theorem, Discuss some short question on entire syllabus
December 2026	Week 1	Seminar on important topics, Tests and Assignments

Academic Session: 2026-27

Class: M.Sc. Maths (1st Sem)

Paper: Mathematical Statistics

Name: Dr. Kusum

Weeks	Month
	September 2026
Week 1	Probability, approaches of probability
Week 2	Addition theorem, Boole inequality
Week 3	Conditional probability, multiplication theorem
Week 4	Independent events
Week 5	Bayes theorem , Assignments
	October 2026
Week 1	Random variable and probability function
Week 2	Discrete and continuous random variables

Week 3	concept of bivariate random variables,joint and marginal function
Week 4	Mathematical expectations,M.G.F,presentation
	November 2026
Week 1	Diwali break
Week 2	Discrete distribution (Uniform, Bernoulli , iPoisson,Geometric),Unit test 1
Week 3	Continuous distribution (Uniform, exponential, normal)
Week 4	Hypothesis testing, level of significance, unit test 2
	December 2026
Week 1	Test of significance,large sample test and difference between two means and proportion , seminar on important topics, Test and assignment

Academic Session: 2026-27

Class: M.Sc. Maths (3rd Sem)

Paper: Functional Analysis

Name: Dr. Kusum

Weeks	Month
	August, 2026
Week 2	Normed linear space, Banach Spaces, Subspace of a Banach space, Holder and Minkowski inequality
Week 3	Completeness of quotient spaces of normed linear spaces, Completeness of different spaces.
Week 4	Incomplete normed spaces. Problem discussion and test.
Week 5	Finite dimensional normed linear spaces and subspaces.
	September 2026
Week 1	Bounded linear transformation, Equivalent formation of continuity
Week 2	Spaces of bounded linear transformations
Week 3	Continuous linear functional, Conjugate spaces
Week 4	Hahn Banach extension theorem, Problem discussion, Seminar and test.
	October 2026

Week 1	Riesz representation theorem for bounded linear functionals on L^p and $C[a,b]$
Week 2	Second conjugate spaces, Reflexive space, Uniform bounded principle and its consequences.
Week 3	Open mapping theorem and its application, projection, closed graph theorem
Week 4	Equivalent norms, weak and strong convergence, equivalence in finite dimensional spaces
November 2026	
Week 1	Diwali break
Week 2	Weak sequential compactness, Solvability of linear equations in Banach spaces.
Week 3	Compact operator and its relation with continuous operator, Compactness of L.T., and Compact operators and its properties.
Week 4	Seminar on important topics, Tests and Assignments

Teacher. Dr. Rekha Dahiya

Class. M.Sc. 2 nd

Paper. Fluid dynamics

August

Week 2: Kinematics - Velocity at a point of a fluid. Eulerian and Lagrangian methods. Stream lines, path lines and streak lines.

Week 3: Velocity potential. Irrotational and rotational motions. Vorticity and circulation. Equation of continuity.

Week 4/5: Boundary surfaces. Acceleration at a point of a fluid. Components of acceleration in cylindrical and spherical polar co-ordinates. Section-II

September

Week 1: Pressure at a point of a moving fluid. Euler equation of motion. Equations of motion in cylindrical and spherical polar co-ordinates.

Week 2: Bernoulli equation. Impulsive motion. Kelvin circulation theorem. Vorticity equation. Energy equation for incompressible flow.

Week 3: Kinetic energy of irrotational flow. Kelvin minimum energy theorem. Kinetic energy of infinite fluid. Uniqueness theorems.

Week 4: Axially symmetric flows. Liquid streaming past a fixed sphere. Motion of a sphere through a liquid at rest at infinity.

October

Week 1: Equation of motion of a sphere. Kinetic energy generated by impulsive motion.

Week 2: Motion of two concentric spheres. Three-dimensional sources, sinks and doublets.

Week 3 : Images of sources, sinks and doublets in rigid impermeable infinite plane and in impermeable spherical surface.

Week 4: Two dimensional motion; Use of cylindrical polar co-ordinates.

November

Week 1: Stream function. Axisymmetric flow. Stoke stream function. Stoke stream function of basic flows.

Week 2: Diwali Break

Week 3: Irrotational motion in two-dimensions. Complex velocity potential. Milne-Thomson circle theorem.

Week 4: Two dimensional sources, sinks, doublets and their images. Blasius theorem.

December

Week 1 : Revision and Test

Academic Session: 2026-27

Class: B.Sc. 3rd Sem(SEC)

Paper: Operations Research Techniques

Name: Dr. Parvesh

Weeks	Month
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	August 2026
Week 2	Concept of optimization, Formation of LPP,
Week 3	Requirements for an LPP, Advantage and limitation of LP, Graphical solution
Week 4	Graphical solution of LPP
Week 5	Problem discussion and Test
	September 2026
Week 1	Principle of simplex methods, Basic solution
Week 2	Cases of simplex method
Week 3	Two phase and Big M method
Week 4	Problem discussion, seminar and test
	October 2026
Week 1	Duality in LPP
Week 2	Transportation problem and its different cases
Week 3	Unbalanced assignment problem, crew assignment and travelling salesman problem
Week 4	Assignment problem and its cases
	November 2026
Week 1	Diwali break
Week 2	Game theory and its cases, Problem discussion and Test
Week 3	Seminar of important topics
Week 4	Assignment and problem discussion

LESSON PLAN

Session: 2026-27 (ODD SEM) Name of Teacher- Dr. Sarita

Class- B.Sc. Single Major 3rd Semester Subject- Advanced Calculus

WEEKS	SYLLABUS
August	
Week 2	Chapter: Continuous functions, uniform continuity
Week 3	Assignments : Examples based on continuity Chapter: Discuss the problem
Week 4	chapter: The derivative and mean value theorems
September	
Week 1	Chapter: The derivative and mean value theorems, Lagrange's mean value theorem, Darboux's theorem, Rolle's theorem, Taylor's theorem Assignments: Examples related to mean value theorems

Week 2	Chapter: Maclaurin's theorem, Cauchy's mean value theorem
Week 3	Chapter: Indeterminate forms
Week 4	Chapter: and continuity of functions of two variables and Partial differentiation <i>Assignments: Examples</i>
	<i>October</i>
Week 1	Chapter: Partial differentiation-Homogeneous functions, Euler's theorem <i>Assignments: Questions based on Euler's theorem</i>
	<i>October</i>
Week 2	Chapter: Differentiability of functions of two variables <i>Assignments: Definitions related to differentiability</i>
Week 3	Chapter: Differentiability of a function of two variables- Implicit function theorem <i>Assignments: Questions based on exercise</i>
Week 4	Chapter: Maximum and minimum of a function of two variables, Lagrange's method of undetermined multipliers <i>Assignments: Examples</i>
	<i>November</i>
Week 2	Chapter: Curves in space ,introduction to curves, Circle of curvature and spherical curvature, normal plane <i>Assignments: Examples</i>
Week 3	Chapter: Circle of curvature and spherical curvature <i>Assignments: Examples</i>
Week 4	Chapter: Concept of a surface and envelopes Chapter: Involutives and evolutes Revision

B.com. 2 (minor), Semester-III

Paper name. operation Research

Teacher's name: Dr. Rekha Dahiya

August

Week.2. Linear programming problems (LPP):
week 3. Introduction to linear programming problems (LPP),
Week 4/5. Mathematical formulation of the linear programming problems with illustrations.
September
week 1 Graphical method used for solving linear programming problem.
week2. Feasible region of LPP, unbounded solution to the LPP in graphical method,
Canonical and standard form of LPP.
week 3. Simplex Method: Basic and non basic variables, Theory of Simplex method
week 4/5 optimality and unboundlessness, Simplex algorithm,
October

week 1. Simplex method in tableau format. Introduction to artificial variables,
week 2. Two –phase simplex method, Big-M method, Degeneracy problem in simplex method.
week 3. Transportation Problem: Introduction to transportation problem,
week 4/5 Initial basic feasible solution to transportation problem using North-West Corner, Least Cost Method and Vogel's approximation Method.
November
week 1 Optimal solution to transportation problem using MODI method, Unbalanced transportation problem, Degeneracy in transportation problem.
Week 2. Diwali Break
Week 3 Assignment Problem: Introduction to assignment problem,
week 4/5 Mathematical formulation of assignment problem, Solution to assignment problem using Hungarian method.
December
week 1 Revision/test

Academic Session: 2026-27

College Name:	G.C.W. Rohtak	Faculty Name:	Dr. Parul Singh (Assistant Professor)
Class & Section:	B.A 2nd Semester, B.Sc. Maths (H) 2nd sem	Subject:	Mathematics – Ordinary Differential Equations

Monthly Syllabus & Weekly Schedule

Month	Week	Topics / Plan
August 2026	Week 2	Introduction of the Papers, Scheme of Examination, Pattern of Question paper, Preliminary Concepts of the Subject to be taught, Exact differential equations, Rules to find integrating Factors.
August 2026	Week 3	Equation of first order but not of First Degree.

Month	Week	Topics / Plan
August 2026	Week 4	Equation of first order but not of First Degree, Orthogonal Trajectories, Assignment of section 1 including Chapter 1, 2.
September 2026	Week 1, 2	Linear Differential Equation with Constant Coefficient.
September 2026	Week 3, 4	Linear Differential Equation with Constant Coefficient, Homogeneous linear ordinary differential equations.
October 2026	Week 1, 2	Linear Differential Equation of Second Order.
October 2026	Week 3, 4	Linear differential equations of second order, Ordinary Simultaneous Differential Equation.
November 2026	Week 1	Diwali Break
November 2026	Week 2, 3	Ordinary Simultaneous Differential Equation, Total Differential Equation and Test of Section 2 including Chapter 4, 5.
November 2026	Week 4	Total Differential Equation.
December 2026	Week 1	Assignment on Remaining chapters and test, revision.

LESSON PLAN

Academic Session: 2026-27

College Name:	G.C.W. Rohtak	Faculty Name:	Dr. Yashpal (Associate Professor)
Class & Section:	B.A 4th Semester, B.Sc. Maths (H) 4th sem, B.Sc. (NM) 4th sem	Subject:	Mathematics – Special Functions and Integral Transforms

Month	Week	Topics / Plan
August 2026	Week 2	Series solution of differential equations: Power series method.
August 2026	Week 3	Power series method, Bessel equation and solution, Bessel functions and their properties.
August 2026	Week 4	Recurrence relations and Generating Functions, Orthogonality of Bessel functions.
September 2026	Week 1	Legendre and Hermite differential equations and their solutions.
September 2026	Week 2	Assignment of section 1 including Chapter 1, 2.
September 2026	Week 3	Orthogonality of Legendre and Hermite Polynomials.
September 2026	Week 4	Rodrigues Formula for Legendre and Hermite Polynomials.
October 2026	Week 1	Recurrence relations of Legendre and Hermite Polynomials.
October 2026	Week 2	Generating Functions of Legendre and Hermite Polynomials.
October 2026	Week 3	Laplace Transforms and its properties.
October 2026	Week 4	Existence theorem for Laplace Transforms.
November 2026	Week 1	Diwali Break
November 2026	Week 2	Inverse Laplace Transforms and Convolution Theorem.

Month	Week	Topics / Plan
November 2026	Week 3	Test and Assignment of Section 2.
November 2026	Week 4	Applications of Laplace Transforms to Differential Equations. Fourier transform
December 2026	Week 1	Fourier Transforms continue. Revision and Final Assignment.

B.Sc (Major)Vector Calculus

Programme	4-Year Bachelor of Science (Mathematics)
Course	Vector Calculus
Course Code	24MATS401DS02
Semester	I
Credits	4
Hours per Week	4
Maximum Marks	100 (70 Theory + 30 Internal)
Time of Examination	3 Hours

Planning Note: The plan covers the available teaching weeks specified: August Week 3; all weeks of September and October; November Weeks 3 and 5; and December Week 1. Each week is planned for approximately 4 teaching hours.

Week / Month	Unit / Section	Topics / Content to be Covered	Teaching–Learning / Assessment
August – Week 3	Section I	Scalar and vector products of three vectors; product of four vectors;	Lecture + worked examples; board-based problem solving; short

Week / Month	Unit / Section	Topics / Content to be Covered	Teaching–Learning / Assessment
		reciprocal vectors; basic vector identities.	diagnostic questions.
September – Week 1	Section I	Partial derivatives; vector differentiation; scalar-valued point functions; vector-valued point functions.	Concept explanation, examples and tutorial problems; class participation.
September – Week 2	Section I	Derivative along a curve; directional derivatives; calculation of directional derivatives.	Derivations + numerical problems; short quiz/tutorial.
September – Week 3	Section I	Gradient of a scalar point function; properties of gradient; geometrical interpretation of gradient.	Geometrical discussion, examples and practice problems.
September – Week 4	Section I	Gradient as a point function; tangent planes; normal lines; problems on tangent planes and normal lines.	Problem-solving session; formative assessment.
September – Week 5	Section II	Divergence of a vector point function; definition, properties and examples; physical/geometrical interpretation.	Lecture + worked examples; tutorial exercise.
October – Week 1	Section II	Curl of a vector point function; definition, properties, examples and interpretation.	Derivation, examples and numerical practice; quick quiz.
October – Week 2	Section II	Divergence and curl of sums/products; vector identities; Laplacian operator.	Identity-based problem solving; assignment/tutorial.

Week / Month	Unit / Section	Topics / Content to be Covered	Teaching–Learning / Assessment
October – Week 3	Section II	Double integrals; double integrals in polar coordinates; change of order of integration.	Region sketching, transformations and numerical problems.
October – Week 4	Section II	Change of variables and Jacobian; triple integrals; applications.	Step-by-step examples; tutorial and practice sheet.
October – Week 5	Section II	Triple integrals in cylindrical and spherical coordinates; change of order in triple integrals; volume integrals.	Coordinate transformation practice; volume problems; unit review.
November – Week 3	Section III	Line integrals; path independence; conservative vector fields; Green's Theorem.	Statement, derivation/interpretation and solved problems; internal assessment practice.
November – Week 5	Section IV	Surface integrals; Stokes' Theorem; problems based on Stokes' Theorem; Gauss' Theorem.	Theorem-based problem solving; comparison of applications.
December – Week 1	Section IV + Revision	Problems based on Gauss' Theorem; mixed revision of Sections I–IV; important examination-oriented problems.	Model test, doubt clearing, remedial teaching and final revision.

Multidisciplinary Course in Mathematics – Semester I

Course: Introductory Mathematics | Course Code: 23MATX01MD01 | Credits: 03

Programme	Five Year Integrated Programme	Session	2023–24
Semester	I	Maximum Marks	50
Teaching Schedule	August–December	Hours/Week	03

Week	Month	Unit / Topic
Week 1	August – Week 3	Unit I: Numbers
Week 2	September – Week 1	Unit I: H.C.F. & L.C.M.
Week 3	September – Week 2	Unit I: Decimals & Fractions
Week 4	September – Week 3	Unit I: Simplification
Week 5	September – Week 4	Unit I: Square/Cube Roots; Surds & Indices
Week 6	October – Week 1	Unit II: Average
Week 7	October – Week 2	Unit II: Percentage
Week 8	October – Week 3	Unit II: Profit & Loss
Week 9	October – Week 4	Unit II: Ratio, Proportion, Ages & Partnership

Week 10	November – Week 3	Unit III: Time & Work; Time & Distance
Week 11	November – Week 5	Unit III: Problems on Trains & Mixture
Week 12	December – Week 1	Unit III: Calendar & Clock + Revision

M.Sc. Mathematics – Object Oriented Programming with C++

Course Code: 24MAT201SE02 | Program Code: MAT2 | Credits: 4 | Maximum Marks: 100 | Examination: 3 Hours

Week	Unit / Section	Topics / Syllabus Coverage
August – Week 3	Section I	Introduction to OOP; need, advantages and applications of OOP; object-oriented languages; introduction to C++; structure of a C++ program.
September – Week 1	Section I	C++ programming basics: input/output, data types, constants/variables, operators and expressions.
September – Week 2	Section I	Control structures: if, if-else, nested if, switch, for, while and do-while loops; library functions.
September – Week 3	Section II	Functions in C++; function declaration/definition, passing arguments and returning values; inline functions; default arguments.
September – Week 4	Section II	Function overloading; classes and objects; specifying and using a class and object.
October – Week 1	Section II	Arrays within a class; arrays of objects; objects as function arguments.
October – Week 2	Section II	Friendly functions; pointers to members; deeper practice with classes and member functions.
October – Week 3	Section III	Constructors and destructors; types of constructors; object initialization and destruction.

Week	Unit / Section	Topics / Syllabus Coverage
October – Week 4	Section III	Operator overloading and type conversions; unary/binary operator overloading.
October – Week 5	Section III	Inheritance: derived classes and constructors; overriding member functions; class hierarchies; public/private inheritance.
November – Week 3	Section III	Polymorphism; pointers to objects; this pointer; pointers to derived classes; virtual functions.
November – Week 5	Section IV	Streams and stream classes; unformatted input/output; formatted console input/output; manipulators.
December – Week 1	Section IV + Consolidation	File stream operations; opening/closing files; file pointers and manipulation; random access; error handling; command-line arguments; exception handling.

M.Sc. MATHEMATICS – GRAPH THEORY

Teacher Name : Sushma

Course Code: 25MAT203DS05 | 4 Hours/Week | 11 August–6 December 2026

Week	Dates	Topics / Teaching Plan	Activity / Assessment
1	11–16 Aug	Definition/types of graphs; terminology; graph representation	Examples & board work
2	17–23 Aug	Walks, paths, circuits; connected/disconnected graphs	Assignment 1
3	24–30 Aug	Applications; graph operations; representation; isomorphism	Revision + Test 1
4	31 Aug–6 Sep	Eulerian paths, trails and circuits; Euler's results	Problem solving
5	7–13 Sep	Hamiltonian paths and cycles	Assignment 2
6	14–20 Sep	Shortest path in weighted graphs; algorithms	Numerical practice
7	21–27 Sep	Travelling Salesperson Problem; applications	Revision + Test 2

8	28 Sep–4 Oct	Planar graphs; planarity; regions/faces; Euler formula	Assignment 3
9	5–11 Oct	Kuratowski theorem; graph colouring; applications	Problem solving
10	12–18 Oct	Directed graphs; terminology and representation	Assignment 4
11	19–25 Oct	Trees; terminology; rooted labelled trees	Exercises
12	26 Oct–1 Nov	Prefix code; binary search tree; tree traversal	Revision + Test 3
13	2–8 Nov	Spanning trees and cut sets; minimum spanning trees	Assignment 5
14	9–15 Nov	Kruskal and Prim algorithms	Algorithm practice
15	16–22 Nov	Decision trees; sorting methods	Assignment 6
16	23–29 Nov	Section IV complete revision; mixed problems	Revision + Test 4
17	30 Nov–6 Dec	Full syllabus revision; important theorems and algorithms	Final Model Test

MONTH-WISE REVISION & ASSESSMENT PLAN

Month	Planned assessment / revision
August	Assignment 1; last-week revision; Test 1
September	Assignments 2–3; last-week revision; Test 2
October	Assignment 4; last-week revision; Test 3
November	Assignments 5–6; last-week revision; Test 4
December	First-week full revision + Final Model Test

B.Sc. MATHEMATICS – GRAPH THEORY

Teacher name : Sushma

Semester V | Course Code: 26MATS405DS06 | 4 Hours/Week | 11 August–6 December 2026

Week	Dates	Topics / Teaching Plan	Activity / Assessment
1	11–16 Aug	Introduction; definition and representation of graphs; basic terminology	Examples & discussion
2	17–23 Aug	Simple, multigraph, pseudograph, complete and regular graphs	Assignment 1
3	24–30 Aug	Bipartite graphs; degree; Handshaking Lemma; subgraphs; complement; isomorphism	Revision + Test 1
4	31 Aug–6 Sep	Walks, trails, paths, circuits; connected components	Practice
5	7–13 Sep	Eulerian graphs; Euler trails/circuits; Euler's theorem with proof	Assignment 2
6	14–20 Sep	Hamiltonian graphs; paths/cycles; Dirac's and Ore's theorems (statements)	Problem practice
7	21–27 Sep	Applications: route planning and social networks	Assignment 3 + Revision
8	28 Sep–4 Oct	Section II revision; Eulerian and Hamiltonian problems	Test 2
9	5–11 Oct	Trees: definition, properties; rooted, binary and m-ary trees	Exercises
10	12–18 Oct	Preorder, inorder and postorder traversal	Assignment 4
11	19–25 Oct	Spanning trees; applications; minimum spanning trees	Practice
12	26 Oct–1 Nov	Kruskal's and Prim's algorithms	Revision + Test 3
13	2–8 Nov	Vertex colouring; proper colouring; chromatic number	Exercises
14	9–15 Nov	Timetabling/scheduling; independent sets and cliques	Assignment 5
15	16–22 Nov	Planar graphs; Euler formula; regions and	Problem solving

		faces	
16	23–29 Nov	Kuratowski theorem (statement); dual graphs; Section IV revision	Revision + Test 4
17	30 Nov–6 Dec	Full syllabus revision; definitions, theorems, algorithms and problems	Final Model Test

MONTH-WISE REVISION & ASSESSMENT PLAN

Month	Planned assessment / revision
August	Assignments 1–2; last-week revision; Test 1
September	Assignment 3; last-week revision; Test 2
October	Assignment 4; last-week revision; Test 3
November	Assignment 5; last-week revision; Test 4
December	First-week full revision + Final Model Test

Name of Assistant Professor: Dr Yashpal

Class and Section: B.Sc. Single Major 1st Sem

Subject: Functions and Algebra

Month & Week	Topics Covered
AUGUST	
Week -2	Relations, Functions along with domain and range, Composition of functions, Invertibility and inverse of functions, One-to-one correspondence and the cardinality of a set.
Week -3	Relations between the roots and coefficients of general polynomial equation in one variable.
Week -4	Solutions of polynomial equations having conditions on roots. Common roots and multiple roots.
SEPTEMBER	
Week -1	Transformation of equations. Nature of the roots of an equation, Descartes' rule of signs.
Week -2	Solutions of cubic equations (Cardon's method), Biquadratic equations and their solutions.
Week -3	Revision of above topics and test.
Week -4	Matrix and its types. Symmetric, Skew-symmetric, Hermitian and Skew Hermitian matrices.

OCTOBER	
Week -1	Unitary and Orthogonal Matrices. Idempotent, Involutory, Nilpotent Matrices, Linear dependence and independence of rows and columns of matrices.
Week -2	Applications of matrices to a system of linear (both homogeneous and non-homogeneous) equations. Theorems on consistency of a system of linear equations.
Week -3	Rank of a Matrix & its applications. Rank of a matrices, Row rank and column rank of a matrix.
Week -4	Elementary operations on matrices.
Week -5	Inverse of a matrix, Normal Form, PAQ Form
NOVEMBER	
Week -2	Cayley Hamilton theorem. Eigenvalues, eigenvectors and the characteristic equation of a matrix. Minimal polynomial of a matrix.
Week -3	Cayley Hamilton theorem and its use in finding the inverse of a matrix.
Week -4	Diagonalization of matrix.
Week -5	Assignment and Presentation
DECEMBER	
Week -1	Revision of some typical topics and doubts clearance.

Name of Assistant Professor: – Dr. Mamta

Class and Section:– M.Sc. Math Semester –3rd

Subject: – MATLAB

Lesson Plan: (From 11th Aug 2026 to 7th December 2026)

Week	August
2	Introduction to MATLAB Programming: Basics of MATLAB programming
3	Anatomy of a program, Data types, Operators, Arithmetic operators with scalars & Its Examples

4	Display Formats, Mathematical operations, Scalar Variables and assignments and its example
	September
1	Script Files, Complex Numbers and Commands related to Complex Numbers, and its example
2	Loops: For loops, While loops and its related Programmes
3	Branching (conditional statements) – if statement, If else statement, Else if statement and its related Programmes
4	Introduction to Arrays: Creating one and two–dimensional arrays, Array addressing, Strings, String functions and its related Programmes
5	Mathematical Operations with Arrays, Cell array, Creating cell array, Using script files and Managing Data and its related Programmes
	October
1	Input / Output Commands, Save and Load Commands, Importing and Exporting Data and its related Programmes
2	Executable files, Subroutines, Built in functions and user–defined functions, Function handles, Function handles in m–files, Inline functions and its related Programmes
3	Two–Dimensional Plots, Specialized 2–D plots, Formatting a Plot, Multiple Plots on same Plot, Plots with

	Logarithmic Axes and its related Programmes
4	Error Bar Plots, Histograms, Polar Plots, Using subplots for multiple graphs, 3-D plots– Line Plots, Mesh and Surface Plots and its related Programmes
5	View Command, Interpolated surface plots, Overlay Plots, Saving and printing graphs, Mesh, Contour, Contourf and its related Programmes

	November
2	Polynomials: Finding Value and Roots of Polynomials, Arithmetic operations with Polynomials. Curve Fitting: Curve Fitting with Polynomials, Curve fitting with Functions other than Polynomials, Interpolation and its related Programmes
3	Numerical Analysis: Solving an equation, Finding Minimum and Maximum of Function,
4	Numerical Integration, Ordinary Differential Equations and its related Programmes
	December
1	Unit – IV Programmes, Revision &Test.

Name of Assistant Professor: – Dr. Mamta

Class and Section:– M.Sc. Math Semester –3rd

Subject: – Elementary Topology

Lesson Plan: (From 11th Aug 2026 to 7th December 2026)

Week	August
2	Definition and examples of topological spaces, Comparison of topologies on a set, Intersection and union of topologies on a set, Neighbourhoods, Interior point and interior of a set
3	Closed set as a complement of an open set, Adherent point and limit point of a set, Closure of a set, Derived set, Properties of Closure operator
4	Boundary of a set, Dense subsets, Interior, Exterior and boundary operators, Alternative methods of defining a topology in terms of neighbourhood system and Kuratowski closure operator.
	September
1	Script Files, Complex Numbers and Commands related to Complex Numbers, and its example
2	Loops: For loops, While loops and its related Programmes
3	Branching (conditional statements) – if statement, If else statement, Else if statement and its related Programmes
4	Introduction to Arrays: Creating one and two–dimensional arrays, Array addressing, Strings, String functions and its related Programmes
5	Mathematical Operations with Arrays, Cell array, Creating cell array, Using script files and Managing Data and its related Programmes

	October
1	Relative (Induced) topology, Base and subbase for a topology, Base for Neighbourhood system.
2	Continuous functions, Open and closed functions, Homeomorphism. Connectedness and its characterization
3	Sequentially compact sets and their properties, Continuity and compactness, Components, Locally connected spaces.
4	First countable spaces, Second countable spaces and separable spaces, finite intersection property
5	Continuity and compactness of disjoint properties of compactness, Closeness of compact subset and a separable and second countable spaces, Lindelof theorem. continuous map from a compact space into a Hausdorff T_0 , T_1 , T_2 (Hausdorff) separation axioms, their and its consequence. characterization and basic properties.
	December
1	Unit – IV Programmes, Revision & Test.

Name of Assistant Professor: – Dr. Mamta

Class and Section:– B.Com Semester –5th (Minor)

Subject: – Mathematical Computing using MATLAB

Lesson Plan: (From 11th Aug 2026 to 7th December 2026)

Week	August
2	Introduction to MATLAB Programming: Basics of MATLAB programming
3	Anatomy of a program, Data types, Operators, Arithmetic operators with scalars & Its Examples
4	Display Formats, Mathematical operations, Scalar Variables and assignments and its example
	September
1	Complex Numbers and Commands related to Complex Numbers, and its example
2	Loops: For loops, While loops and its related Programmes
3	Branching (conditional statements) – if statement, If else statement
4	Else if statement and its related Programmes
5	Mathematical Operations with Arrays, Cell array, Creating cell array
	October
1	Solving Linear Systems of Equations, Inverse, Determinants
2	Cholesky Factorization, LU Factorization

3	QR Factorization, Eigenvalues, Eigen Vectors
4	Polynomials: Representing Polynomials, Polynomial roots
5	Characteristics, Evolutions, Convolution and deconvolution, Polynomial Derivatives, Curve Fitting, Partial Fraction Expansion

	November
2	Interpolation: Definition, 1–D Interpolation, 2–D Interpolation, Comparing Interpolation Methods
3	Interpolation and Multidimensional Arrays, Triangulation and Interpolation of Scattered Data
4	Tessellation and Interpolation of Scattered Data, Higher Dimensions
	December
1	Unit – IV Programmes, Revision & Test.

Lesson Plan(2026-27)

Name of Assistant Professor: Dr Shalini, Dr pravesh

Class and Section: BSC (Phy. Sci)

Semester: 5

Subject: Groups and Rings

Week- 2 10-15 August, 2026	Definition of group and its brief introduction, examples of group and general properties. Theorems on group, introduction of subgroups and its examples, subgroup criterion, product, intersection and union of subgroup. Cyclic groups and its examples and theorems, Euler function and its generators
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	of groups.
Week -3 17-22 August,2026	Introduction of cosets of a subgroup, theorems on cosets, Index of a subgroup, Lagrange's theorem and its consequences, introduction to Normal subgroups and simple groups
Week- 4 24-29 August,2026	Examples and theorems on Normal subgroups, concept of quotient groups, examples and theorems on quotient groups.
Week -5 31 August -05 Sept ,2026	Introduction to Homomorphism and isomorphism of groups and examples, Kernel of homomorphism and Fundamental theorem, Automorphism.
Week -6 07-12 Sept ,2026	Examples and theorems on automorphism and Inner automorphism, Normalizer of a subgroup and examples, centre of a group.
Week -7 14-19 Sept ,2026	Definition of permutation group and alternating group, related theorems, Caley theorem
Week- 8 21-26 Sept ,2026	Introduction to Rings and related examples and theorems, integral domain and its examples, introduction to Field and examples.
Week -9 28 Sept- 03 Oct,2026	Theorems on fields and integral domain, subring of a ring and examples, characteristic of ring and field and related theorems.
Week -10 05-10 Oct,2026	Introduction to ideal, their examples, sum, product, intersection, union and related theorems.
Week -11 12-17 Oct,2026	Principal ideal and principal ideal domain, their examples and theorems.
Week -12 19-24 Oct,2026	Maximal and prime ideal, idempotent and nilpotent element in ring, concept of quotient ring, ring homomorphism and its examples,

Week- 13 26-31 Oct,2026	Fundamental theorem on homomorphism. Field of quotient of an integral domain, divisibility in the ring.
Week -14, 10-14 Nov, 2026	Unit, prime and irreducible element in ring and their examples. Introduction to polynomial ring, polynomial over ring and integral domain, GCD and LCM in ring, Euclidean ring, its example and theorems, theorems on prime and irreducible element
Week -15 16-21 Nov, 2026	Unique factorization domain and its examples and theorems.
Week -16 23-28 Nov, 2026	Division algorithm, irreducibility of polynomial over ring and integral domain, mod-p and the Eisenstein's criterion for irreducibility of polynomials.
Week 17 30 Nov- 05 December, 2026	Revision of some typical topics and doubts clearance.
Week 18	Revision

Lesson Plan

Academic Session: 2026-27

Class: B.Sc. Maths (3rd Sem)(MDC)

Paper: Elements of Applicable Mathematics
Dr Shalini

Name:

Weeks	Month
	August, 2026
Week 2	Theory Of Sets:Meaning, elements,types, Presentation and equality of Sets.

Week 3	Union, Intersection, Complement and Difference of Sets.
Week 4	Venn Diagram, Cartesian Product of two Sets
Week 5	Application of Set Theory
	September 2026
Week 1	Application of Set Theory
Week 2	Definition of Matrix. Types of Matrix, Algebra of Matrices, Properties of determinant
Week 3	Calculation of values of Determinants upto third order. Adjoint of a Matrix, elementary row and column operations
Week 4	Finding inverse matrix through adjoint.
	October 2026
Week 1	Finding inverse matrix through adjoint
Week 2	Solution of a system of linear equations having unique solution and involving not more than three variables.
Week 3	Revision
Week 4	Test and Assignments
	November 2026
Week 1	Diwali break
Week 2	Certain different types of interest rate: Concept of present value and amount of a sum
Week 3	Types of annuities : Present value and amount of an annuity. including the case of continuous Compounding
Week 4	Revision , Tests and Assignments