Lesson Plan of Paper : Calculus **Session: 2025-26**
Name of Teacher: Mr. Anup Singh
Class:B.Sc./B.A. BA (Hons.) 1st year Sem. 1st

Week 1	
	Definition of the limit of a function. Basic properties of limits, Continuous functions
Week 2	
	Classification of discontinuities. Indeterminate forms
Week 3	
	Differentiability. Successive differentiation. Assignment-1
Week 4	
	Leibnitz theorem. Maclaurin and Taylor series expansions
Week 5	
	Asymptotes in Cartesian coordinates, intersection of curve and its asymptotes, asymptotes in polar coordinates.
Week 6	
	Curvature, radius of curvature for Cartesian curves, parametric curves, polar curves.
Week 7	
	Newton's method. Radius of curvature for pedal curves
	Tangential polar equations
Week 8	
	Centre of curvature. Circle of curvature. Chord of curvature,evolutes
Week 9	
	Tests for concavity and convexity. Points of inflexion.
Week 10	
	Multiple points. Cusps, nodes & conjugate points. Type of cusps
Week 11	
	Tracing of curves in Cartesian, parametric and polar co-ordinates.
Week 12	
	Reduction formulae.Rectification, intrinsic equations of curve.
Week 13	
	Quardrature (area)Sectorial area. Area bounded by closed curves. Assignment-2
Week 14	
	Volumes and surfaces of solids of revolution. Class Test
Week 15	
	Theorems of Pappu's and Guilden.
Week 16	
	Revision

Lesson Plan of Paper :Basic Calculus　　　　　　　　**Session: 2025-26**
Name of Teacher: Ms. Savita
Class: BA(Minor) 1st year Sem. 1st

Week 1	
	Definition of the limit of a function. Basic properties of limits
Week 2	
	Continuous functions
Week 3	
	Classification of discontinuities
Week 4	
	Indeterminate forms
Week 5	
	Differentiability
Week 6	
	Successive differentiation
Week 7	
	Leibnitz theorem
Week 8	
	Maclaurin and Taylor series expansions
Week 9	
	Asymptotes : horizontal, vertical
Week 10	
	Asymptotes : oblique asymptotes for algebraic curves
Week 11	
	Asymptotes for polar curves
Week 12	
	Intersection of a curve and its asymptotes
Week 13	
	Reduction formulae of type-I and exercise. Unit test
Week 14	
	Reduction formulae of type-II and exercise. Assignment-1
Week 15	
	Reduction formulae of type-III and exercise
Week16	
	Reduction formulae of type-IV and exercise and Assignment -2

Lesson Plan of : Practical of Calculus
Name of Teacher: Ms. Neha
Class: B.A.1ˢᵗ Sem. **Session: 2025-2026**

Week 1	
	Learn to use basic operators and functions in Maxima software.
Week 2	
	Simplify algebraic expressions and expressions containing radicals, logarithms, exponentials and trigonometric functions.
Week 3	
	Expand algebraic, rational, trigonometric and logarithmic expressions. Find derivatives of algebraic, trigonometric, exponential and logarithmic functions.
Week 4	
	Find derivatives of functions involving above mentioned functions.
Week 5	
	Problems of successive differentiation. Find indefinite integrals of different functions
Week 6	
	Find definite integrals of different functions. To plot curves involving Cartesian, parametric and polar forms. .
Week 7	
	To demonstrate singular points
Week 8	
	Practice of programs.

Lesson Plan of Paper : Differential Equations-1   **Session: 2025-26**

Name of Teacher: Ms. Ruchika

Class: BSc.2nd year Sem. 3rd

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Week 1	Lagrange's method for PDEs of the form: $P(x,y,z) p + Q(x,y,z) q = R(x,y,z)$, where $p=\partial z/\partial x$ and $q=\partial z/\partial y$.
Week 2	
	Integral surfaces passing through a given curve. Surfaces orthogonal to a given system of surfaces
Week 3	
	Compatible systems of first order equations. Charpit's method, Special types of first order PDEs, Jacobi's method.
Week 4	
	. Second Order Partial Differential Equations with Constant Coefficients,
Week 5	
	Fundamental theorem of algebra and some examples.
Week 6	
	Relation between root and coefficients of an equation Problems and examples on root of an equation Results on common root
Week 7	
	Revision and Test.

Lesson Plan of Paper: Integral Transforms and Fourier Analysis   Session : 2025-26
Name of Teacher: Ms. Pooja

Class: B.A(Hons) 3rd year, Sem-5th

Week 1	Introduction to Integral transforms. Laplace transforms: Existence theorem for Laplace
Week 2	Linearity, change of scale and shifting properties of Lapllaplace transforms, Laplace transforms of some ffunctions,
Week 3	Laplace transforms of derivatives and integrals, Differentiation and integration of Laplace transforms
Week 4	Laplace transforms of periodic functions and some special functions. Convolution theorem, Inverse Laplace transforms and its properties.
Week 5	Fourier series, Fourier series of even and odd ctions
Week 6	Fourier half-range series, Fourier cosine and sine series, Parseval's identity.
Week 7	Fourier transforms, Fourier sine and cosine nsforms. .Lin Linearity, Change of scale and Shifting pperties
Week 8	Fourier transforms of derivatives, Modulation eorem, Rel Relation between Fourier and Laplace nsforms
Week 9	Convolution theorem for Fourier transform, Parseval's identity for Fourier transforms, , Finite Fourier transform
Week 10	Inversion formula for finite Fourier transforms. Inverse Fourier transforms, Inverse Fourier sine and cosine transforms
Week 11	Applications of Laplace transform in obtaining solutions of ordinary differential equations
Week 12	integral equations.
Week 13	Solution of integral equation by Fourier sine and sine transforms
Week 14	Applications of infinite Fourier
Week 15	Applications of finite Fourier
Week 16	Revision

Lesson Plan of Paper: Linear Programming Session : 2025-26
Name of Teacher: Mr. Anup Singh

Class: B.A(Hons) 3rd year, Sem-5th

Week 1	Linear Programming Problems: Definition, Objective function, Constraints, Canonical and standard forms.
Week 2	Graphical approach for solving some linear programming problems, Limitations of graphical method.
Week 3	Convex and polyhedral sets, Extreme points, Basic solutions, Basic feasible solutions.
Week 4	Correspondence between basic feasible solutions and extreme points
Week 5	Theory of simplex method, Concept of initial basic feasible solution, Optimality criterion, Improving a basic feasible solution, Unboundedness.
Week 6	Simplex algorithm and its tableau format, Artificial variables, Two-phase method, Big-M method.
Week 7	Relation between maximization and minimization problems
Week 8	Solving linear programming problems using simplex algorithm.
Week 9	Formulation of the dual problem, Duality theorems
Week 10	Unbounded and infeasible solutions in the primal, Solving the primal problem using duality theory.
Week 11	Transportation Problem: Definition and formulation, Methods of finding initial basic feasible solutions
Week 12	North West corner rule
Week 13	. Least cost method
Week 14	Vogel's Approximation method
Week 15	Assignment Problem: Mathematical formulation and Hungarian method of solving.
Week 16	Revision

LESSON PLAN : Mechanics-1   Session: 2025-26
NAME :Ms. Reena
B.A.(Math Hons)3rd year 5th sem

Week 1	
	Introduction with students Basics of Statics
Week 2	
	Composition and resolution of forces.
Week 3	
	Parallel forces, Assignment-1
Week 4	
	Moments and Couples.
Week 5	
	concept of friction,law of friction.
Week 6	
	Concept of Centre of Gravity, C.G. about arc
Week 7	
	Centre of Gravity of plane area and solid of revolution
Week 8	
	Velocity and acceleration along radial, transverse, tangential. normal directions
Week 9	
	Relative velocity and acceleration
Week 10	
	Simple harmonic motion
Week 11	
	Elastic strings
Week 12	
	Newton's 1st laws of motion
Week 13	
	Newton's laws of motion, Problems
Week 14	
	Work, Problems
Week 15	
	Power and Energy
Week 16	
	Revision

Lesson Plan of Paper : Calculus **Session: 2025-26**
Name of Teacher: .Ms. Neha
Class:B.Sc./B.A. . 1st year Sem. 1st

Week 1	
	Centre of curvature. Circle of curvature. Chord of curvature,evolutes ..
Week 2	
	Tests for concavity and convexity. Points of inflexion. Multiple points
Week 3	
	Cusps, nodes & conjugate points. Type of cusps.
Week 4	Tracing of curves in Cartesian, parametric and polar co-ordinates.
Week 5	Reduction formulae.Rectification, intrinsic equations of curve.
Week 6	Quardrature (area)Sectorial area. Area bounded by closed curves. Assignment-2
Week 7	Volumes and surfaces of solids of revolution. Class Test
Week 8	Theorems of Pappu's and Guilden. Revision.

Lesson Plan of Advanced Calculus

Session:2025-26

Name of Teacher: Ms. Nivedita

Class: BA(Hons.) 1st year 1st Sem

Week 1	
	Introduction to syllabus Preliminaries
Week 2	
	Continuous & discontinuous function Properties of Continuous function Examples and Discussion of Exercise Problems Theorems
Week 3	
	Uniform continuity Examples Exercise The derivative and mean value theorem The chain rule Examples Darboux theorems
Week 4	
	Problems Mean value theorems Examples Problems Lagrange's mean value theorem Examples & Excercise
Week 5	
	Cauchy mean value theorem Examples Taylors theorems Examples & Exercise Problems
Week 6	
	Indeterminate forms Examples & Discussion of Exercise L' hospital rule Examples & Discussion of Exercise Limit and continuity of function of two variables

Week 7	
	Examples & Exercise Problems Partial differentiation Examples Exercise
Week 8	
	Homogeneous functions Examples and Exercise Problems Total differentiation Examples Implicit functions Examples & Exercise
Week 9	
	Taylors theorem Test Differentiability of functions of two variables Examples Young's theorem Maximum and minimum of a function of two variables Examples & Exercise
Week 10	
	Lagrange's method of undetermined multipliers Examples & Exercise Curves in space Examples & Exercise Equation of a tangent line at a point on a space curve

Week 11	
	Jacobians Examples Exercise
Week 12	
	Beta and Gama functions Examples & Exercise Problems
Week 13	
	Double and Triple integrals Change of order of integration in double integrals. Examples & Exercise Assignment-1
Week 14	
	Volume by triple integrals Triple integration in cylindrical and spherical Co-ordinates. Examples & Exercise Problems Assignment-2
Week 15	
	Dirichlet's integrals Liouville''s extension of Dirichlet's integrals Examples Exercise
Week 16	
	Revision

Lesson Plan of Paper : Business Mathematics　　　　　　　　**Session: 2025-26**

Name of Teacher: Ms. Nivedita

Class: B. Com. 1st year Sem. 1st

Week 1	
	Set Theory: Representation of sets, equivalent sets, power set, complement of a set.
Week 2	
	Venn Diagrams: Union and intersection of sets, De-Morgan's laws.
Week 3	
	Logical statements and truth tables.
Week 4	
	Logarithms: Laws of operation, log tables .
Week 5	
	Arithmetic and geometric progression.
Week 6	
	Matrices and Determinants: Definition of a matrix, order, equality, types of matrices
Week 7	
	Operations on matrices: Addition, multiplication and multiplication with a scalar and their simple properties. Test
Week 8	
	Properties of determinants, minors, co-factors
Week 9	
	Applications of determinants in finding the area of triangle, adjoint and inverse of a square matrix
Week 10	
	Solutions of a system of linear equations by examples.
Week 11	
	Compound interest
Week 12	
	Different types of interest rates ,Assignment-1
Week 13	
	Annuities ,types of annuities
Week 14	
	Present value and amount of an annuity (including the case of continuous compounding)
Week 15	
	Valuation of simple loans and debentures, problems related to sinking funds,,Assignment-2
Week16	
	Revision and Test

Lesson Plan of Paper : Differential Equations-1　　　　　　　　　**Session: 2025-26**

Name of Teacher: Pooja

Class: BA(Hons.)2nd year Sem. 3rd

Week 1	
	Basic concepts and genesis of ordinary differential equations, Order and degree of a differential equation, Solutions of differential equations of first order and first degree,
Week 2	
	Exact differential equations, Integrating factor, First order higher degree equations solvable for x, y and p,
Week 3	
	Lagrange's equations, Clairaut's form and singular solutions
Week 4	
	Orthogonal trajectories of one-parameter families of curves in a plane.
Week 5	
	Solutions of linear ordinary differential equations with constant coefficients, linear non-homogeneous differential equations. Linear differential equation of second order with variable coefficients.
Week 6	
	. Method of reduction of order, method of undetermined coefficients, method of variation of parameters. Cauchy-Euler equation
Week 7	
	Genesis of Partial differential equations (PDE), Concept of linear and nonlinear PDEs.
Week 8	
	Complete solution, general solution and singular solution of a PDE. Linear PDE of first order.
Week 9	
	Lagrange's method for PDEs of the form: $P(x,y,z) p + Q(x, y, z) q = R(x, y, z)$, where $p=\partial z/\partial x$ and $q=\partial z/\partial y$.
Week 10	
	Integral surfaces passing through a given curve. Surfaces orthogonal to a given system of surfaces
Week 11	
	Compatible systems of first order equations.
Week 12	
	Charpit's method, Special types of first order PDEs, Jacobi's method. Assignment -1
Week 13	
	. Second Order Partial Differential Equations with Constant Coefficients. Problems and examples on above method

Week 14	
	Fundamental theorem of algebra Theorems and examples based on above problem
Week 15	
	Relation between root and coefficients of an equation. Assignment -2
Week 16	
	Problems and examples on root of an equation Results on common root Problems on common root

Lesson Plan of Paper: Reasoning   **Session: 2025-26**
Name of Teacher: Ms.Nivedita
Class: B.A/B.A.(Hons) 3rd year, Sem-3rd

Week 1	Verbal Reasoning: Series Completion, Number series
Week 2	Letter Series, Alpha numeric series
Week 3	Wrong Letter Series, Repeat Series, Wrong Number Series
Week 4	Number Analogy, Word Analogy.
Week 5	Coding and Decoding: Letter Coding
Week 6	Number coding, Matrix coding
Week 7	Place arrangement, Direction sense
Week 8	Family-based puzzles; Blood Relationships
Week 9	Arithmetic reasoning, Venn diagrams, Logical
Week 10	Arithmetic reasoning, Symbol Substitution.
Week 11	Non-verbal Reasoning: Choosing the odd figure
Week 12	Word Analogy
Week 13	Number Analogy
Week 14	Water Images
Week 15	Mirror Images.
Week 16	Revision

Lesson Plan of Paper: Groups and Rings   **Session : 2025-26**
Name of Teacher: Ms. Reena

Class: B.A(Hons)2ⁿᵈ year, Sem-3ʳᵈ

	Binary operations & its properties
	Group & its examples
Week 1	
	General properties of groups and theorems
	Order of an element of a group and theorems
	Examples & Exercise
	Subgroups & theorems
Week 2	
	Theorems
	Examples & Discussion of Exercise
	Cyclic groups & theorems
	Theorems
Week 3	
	Examples & Discussion of Exercise
	Cosets & theorems
	Examples
	Relation of congruence modulo of a subgroup in a gro group
	Lagrange's Theorem
Week 4	
	Examples & Exercise
	Normal subgroups & theorems
	Quotient group
	Example & Exercise
Week 5	
	Homomorphisms and Isomorphisms of groups
	Kernel of homomorphisms
	Fundamental theorem on homomorphism of groups
	Second and third theorem of isomorphism
	Automorphism of a group
Week 6	
	Theorems & examples
	Inner Automorphism
	Theorems & examples
	Centre of group
	Characteristic subgroups
	Exercise
Week 7	
	Normalizer (Centralizer) of an element
	Commutator, Derived Group
	Permutation groups
	Examples
Week 8	

Week 9	Cyclic permutation, Alternating Group, Cayley Theorem
	Examples & Exercise
	Problems
	Rings and examples
	Ring with or without zero divisors
Week 10	Integral domain, Divison ring, field
	Theorem and Examples
	Exercise
	Sub rings, Centre of a ring & example
	Characteristic of a ring
	Theorems and Exercise
Week 11	Assignment-1
	Ideals
	Theorems
	Simple ring & theorems
	Principal ideal, unity , zero ideal, PID
	Maximal, prime ideal
Week 12	Quotient rings
	Examples and Exercise
	Ring homomorphisms
	Fundamental theorem of homomorphism
Week 13	First and Second theorem of isomorphism
	Theorems and examples
	Embedding of rings, field of quotients of an I.D.
	Example and Exercise
Week 14	Unit element, prime element, irreducible element
	Proper and improper divisors, GCD, LCM, E.D
	P.I.D.
	Theorems, Assignment-2
Week 15	Examples and Exercise
	Polynomial rings
	Polynomial over field
Week 16	Eisenstein's criterion, UFD
	Problems
	Test

Lesson Plan of : Seq. and Series
Name of Teacher: Ms. Ruchika
Class: B.A. Maths Hons.5th Sem.   **Session: 2025-2026**

Week 1	
	Examples.
	D-Alembert's ratio test
	Raabe's test
	Examples.
	Logarithmic test
Week 2	
	Examples.
	de Morgan and Bertrand's test
	Cauchy's Nth root test
	Examples.
	Test
	Gauss Test
Week 3	
	Cauchy's integral test
	Assignment-2
	Cauchy's condensation test
	Examples.
Week 4	
	Leibnitz's test
	absolute and conditional convergence
Week 5	
	Arbitrary series: abel's Lemma
	Examples.
	Abel's test
Week 6	
	Dirichlet's test, Insertion and removal of parenthesis
	rearrangement of terms in a series, Dirichlet's theorem
	Examples.
Week 7	
	Riemann's Re-arrangement theorem
	cauchay product theorem.
	Revision.

Lesson Plan of : Seq. and Series
Name of Teacher: Ms. Savita
Class: B.A.(Hons.)/B.Sc. 5th Sem.   **Session: 2025-2026**

Week 1	
	Discussion about exam pattern.
	Review chapter.
	Boundedness of the set of real numbers
	least upper bound, greatest lower bound of a set
Week 2	
	neighborhoods, interior points
	isolated points, limit points
	Examples.
	open sets, closed set
	interior of a set, closure
	Examples.
Week 3	
	Bolzano-Weiestrass theorem
	Open covers, Compact sets
	Examples
	Heine-Borel Theorem
	Test.
Week 4	
	Denumerable and non denumerable set,denumerable on imteger and rationals.
	non denumerability of real numbers.
Week 5	
	Sequence: Real Sequences and their convergence
	Theorem on limits of sequence
	Bounded and monotonic sequences
Week 6	
	Cauchy's sequence
	Cauchy general principle of convergence
	Examples.
	Subsequences
	Subsequential limits
Week 7	
	Infinite series: Convergence and divergence of Infinite Series
	Comparison test of positive terms infinite series
	Examples.
	Test
Week 8	
	Cauchy's general principle of Convergence of series
	Convergence and divergence of geometric series
	Examples.
	Hyper Harmonic series or p-series
Week 9	
	Examples.
	D-Alembert's ratio test
	Raabe's test
	Examples.
	Logarithmic test

Week 10	
	Examples.
	de Morgan and Bertrand's test
	Cauchy's Nth root test
	Examples.
	Test
	Gauss Test
Week 11	
	Cauchy's integral test
	Assignment-2
	Cauchy's condensation test
	Examples.
Week 12	
	Leibnitz's test
	absolute and conditional convergence
Week 13	
	Arbitrary series: abel's Lemma
	Examples.
	Abel's test
Week 14	
	Dirichlet's test, Insertion and removal of parenthesis
	rearrangement of terms in a series, Dirichlet's theorem
	Examples.
Week 15	
	Riemann's Re-arrangement theorem
	Problems
Week 16	
	Cauchy product theorem.
	Revision.