TENTATIVE LESSON PLAN

SESSION: 2025-26

Name of the Teacher: Raj Kamal Department: Mathematics

Subject/Course: Linear programming and optimization Programme: M.Sc. Mathematics

Semester: . 3rd Sem.

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Nature, Scope and phases of operation research, Foprmulation of LPP, Decision variables, Objective function, Constraints, Graphical solution of LPP with two variables, Feasible region, bounded, unbounded region, degeneracy, introduction to convex sets and their roles in LPP.	August 2025
2.	Introduction to basic feasible solutions, standard and canonical form, Simplex method, pivoting, optimality test, special cases:degeneracy, unbounded solutions, Artificial variables, Big M method, two phase method, Duality in LPP, formulation in dual, Primal-dual relation.	September 2025
3.	Introduction to transportation problem, formulation, balanced, unbalance problem, Initial basic feasible solution, North-west corner rule, least cost method, Vogels approximation method, Optimality test, Modified distribution method, stepping stone method, Assignment problem, formulation, Hungarian method	October 2025
4.	Introduction to game theory, two person zero sum game, maximin and minimax principle, game with pure strategies, solution of 2*2 game using algebraic and graphical method, Dominance principle for reducing size of game.	November 2025
5.	Revision	December 2025first week (till Exam)

TENTATIVE LESSON PLAN

SESSION: 2025-26

Name of the Teacher: Raj Kamal Department: Mathematics

Subject/Course: Sequences and Series Programme: B.Sc. physical Sciences

Semester: . 5th Sem.

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Boundedness of the set of real number, least upper bound and greatest lower bound of a set, Archimedean, algebra and ordered properties, the real number system as a complete ordered field, neighbourhood, isolated point, interior point, limiot point, open set, closed set, interior of a set, closure of a set, in real numbers and their properties, Bolzano-Weierstrass theorem, Open cover, compact set	August 2025
2.	Denumerable and non-denumerable sets, sequences, real sequences and their convergence, theorem on limit of sequence, bounded and monotonic sequence, Cauchy sequence, Cauchy general principle of convergence, subsequence and subsequential limits, limit superior and limit inferior	September 2025
3.	Infinite series, convergence and divergence of infinite series, comparision test of positive terms infinite series, Cauchy general principle of convergence of series, Convergence and divergence of geometric series, hyper harmonic series, , D'alembert ratio test, raabes test, logarithmic test, Cauchy n root test, De-Morgan and Bertrand test, Gauss test, Cauchy integral test.	October 2025
4.	Alternating series, Absolute and conditionally convergence, Leibnitz test, Arbitrary series, Abel and Dirichlet test, Insertion and removal of parenthesis, re-arrangement of terms in a series, Cauchy product of series.	November 2025
5.	Revision	December 2025 first week (till Exam)

SESSION: 2025-26

Name of the Teacher: Mukesh Kumari Department: Mathematics

Subject/Course: Advancesd Calculus Programme: B.sc Single Major

Semester:-1st Sem.

Unit	*Name of Topic/Contents*	*Tentative Dates/Days*
1.	Continuous functions, Sequential criterion for continuity. Properties of continuous functions, Uniform continuity, Chain rule of differentiability, Mean value theorems: Rolle's Theorem, Lagrange's mean value theorem and their geometrical interpretations, Cauchy mean value theorem. Taylor's theorem with various forms of remainders.	August 2025
2.	Limit and continuity of real valued functions of two variables. Partial differentiation. Total Differentials; Composite functions & implicit functions. Change of variables. Homogenous functions & Euler's theorem on homogeneous functions. Taylor's theorem for functions of two variables.	September 2025
3.	Differentiability of real valued functions of two variables. Young's theorem, Schwarz's theorem, Implicit function theorem. Extrema of functions of two and more variables: Maxima, minima and saddle points. Lagrange's method of undetermined multipliers.	*October 2025*
4.	Jacobians. Beta and Gamma functions, Relation between Beta and Gamma functions, Legendre's duplication formula. Double integration over rectangular angular and non rectangular regions, Double integrals in polar co-ordinates. Change of order of integration. Volume by triple integrals. Triple integration in cylindrical and spherical co-ordinates. Dirichlet integrals, Liouville's extension of Dirichlet's integral.	*November 2025*
5.	Revsion	*December 2025first week (till Exam)*

TENTATIVE LESSON PLAN

SESSION: 2025-26

Name of the Teacher: Mukesh Kumari *Department: Mathematics*

Subject/Course: ABSTRACT ALGEBRA *Programme:* M.Sc. Mathematics

Semester: . 1st Sem.

Unit	*Name of Topic/Contents*	*Tentative Dates/Days*
5.	Normal subgroup, quotient group, normalizer and centralizer of a nonempty subset of a group G, commutator subgroups of a group. first. second and third isomorphism theorems (only statement), class equation of a finite group G. normal series, composition series, Jordan Holder theorem, Zassenhaus lemma, Schëier's refinement theorem, solvable group.	August 2025
6.	Nilpotent group, Cyclic decomposition, even and odd permutation, Alternation group An, Cauchy's theorem, Sylow's first, second and third theorems and its applications to group of smaller orders. groups of order p2 and pq (q>p).	September 2025
7.	Modules, submodules, direct sums, finitely generated modules, cyclic module. R-homomorphism, quotient module, completely reducible modules, Schur"s lemma, free modules.	*October 2025*
8.	Similar linear transformation, invariant subspaces of vector spaces. reduction of a linear transformation to triangular form, nilpotent transformation, index of nilpotency of a nilpotent transformation. Cyclic subspace with respect to a nilpotent transformation, uniqueness of the invariants of a nilpotent transformation. Primary decomposition theorem.	*November 2025*
5.	Revision	*December 2025first week (till Exam)*

TENTATIVE LESSON PLAN

SESSION: 2025-26

Name of the Teacher: Mukesh Kumari *Department: Mathematics*

Subject/Course: INTEGRAL EQUATIONS AND CALCULUS OF VARIATIONS

Programme: M.Sc. Mathematics

Semester: . 1st Sem.

Unit	*Name of Topic/Contents*	*Tentative Dates/Days*
1.	Definition of Integral Equations and their classifications. Eigen values and Eigen functions. Special kinds of Kernel, Convolution Integral. The inner or scalar product of two functions. Reduction to a system of algebraic equations. Fredholm alternative, Fredholm theorem, Fredholm alternative theorem, an approximate method. .	August 2025
2.	Method of successive approximations, Iterative scheme for Fredholm and Volterra Integral equations of the second kind. Conditions of uniform convergence and uniqueness of series solution. Some results about the resolvent Kernel. Application of iterative scheme to Volterra integral equations of the second kind. Classical Fredholm's theory, the method of solution of Fredholm equation, Fredholm's First theorem, Fredholm's second theorem, Fredholm's third theorem.	September 2025
3.	Symmetric Kernels, Complex Hilbert space. An orthonormal system of functions, Riesz-Fisher theorem, A complete two-Dimensional orthonormal set over the rectangle a≤s≤b,csisd. Fundamental properties of Eigenvalues and Eigenfunctions for symmetric Kernels. Expansion in eigen functions and Bilinear form. Hilbert-Schmidt theorem and some immediate consequences. Definite Kernels and Mercer's theorem. Solution of a symmetric Integral Equation. Approximation of a general t2-Kernel (not 15 15 15 σ Scanned with OKEN Scanner IV necessarily symmetric) by a separable Kernel. The operator method in the theory of integral equations. Rayleigh-Ritz method for finding the firs eigenvalue.	*October 2025*
4.	Functional and its variation, Euler's (Euler-Lagrange) equations Variational problems for functionals depending on one independent and Jone dependent variable(s) and its (i) first derivative (ii) higher derivatives with fixed end conditions, Variational problems for functionals depending on n functions of a single independent variable and functional depending on a function and its n derivatives, Functionals dependent on functions o several independent variables. Variational problems in parametric form Natural boundary conditions and transition conditions, Invariance o Euler's equation. Conditional extremum. Variational problem with moving boundaries. Some basic problems in calculus of variations shortest distance, minimum surface of revolution, Brachistochrone problem, isoperimetric problem and geodesic problems.	*November 2025*
5.	Revision	*December 2025first week (till Exam)*

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2025-26

Name of Teacher: poonam devi *Department: Mathematics*

Subject/Course:Real analysis *Programme: M.sc*

Semester: 1st

Unit	*Name of Topic/Contents*	*Tentative Dates/Days*

1.	*Definition and existence of the Riemann -Stieltjes integral, properties of the integral, integration and differentiation, the fundamental theorem of calculus, integration of vector-valued functions, rectifiable curves,Sequences and series of functions: Pointwise and uniform convergence of sequences of functions, Cauchy criterion for uniform convergence Dini's theorem,*	*August 2025*
2.	*uniform convergence and continuity, uniform convergence and Riemann integration, uniform convergence and differentiation Convergence and uniform convergence of series of functions, Weierstrass M-test, integration and differentiation of series of functions, existence of a continuous nowhere-differentiable function, the Weierstrass approximation theorem*	*September 2025*
3.	Functions of several variables: Linear transformations, the space of linear transformations on Rn to Rm as a metric space, open sets continuity, derivative in an open subset of R, chain rule, partial derivatives, continuously differentiable mappings, the contraction principle, the inverse function theorem, the implicit function theorem Mid term exam assignments	*October 2025*
4.	*Fourier Series: Formulation of convergence problems, the necessary and sufficient condition for the Fourier series for fat x to converge to f(x), The (C,1) summability of Fourier series,*	*November2025*

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2025-26

Name of Teacher: poonam devi *Department: Mathematics*

Subject/Course:Element of calculus *Programme: B.sc Single Major*

Semester: 1st

Unit	*Name of Topic/Contents*	*Tentative Dates/Days*
1	Limit and continuity of a real valued function,basic properties of discontinuities ,differentiability of functions.Application of L'Hospital rule to indeterminate forms,successive differentiation , Leibnitz thm,Taylor's and Maclaurin's series expansion with different forms of remainder	*August 2025*
2	Asymptotes: Horizontal,vertical and oblique asymptotes for algebraic curves,Asymptotes for polar curves,Curvature and radius of curvature of curves,Newton's method,centre of curvature and circle of curvature. Assignment	*September 2025*
3	Multiple points,Node,Cusp,Conjugate point,Tests for concavity and convexity,Point of inflexion ,Tracing of curves,Reduction formulae Mid term exam	*October 2025*
4	Rectification ,intrinsic equation of a curve,Quadrature,Area bounded by closed curves,Volumes and surfaces of solids of revolution. Revision of syllabus	*November2025*

TENTATIVE LESSON PLAN

SESSION: 2025-26

Name of the Teacher: Dr. Bhagwan Dass *Department: Mathematics*

Subject/Course: FUZZY SET THEORY *Programme:* M.Sc. Mathematics

Semester: . 3rd Sem.

Unit	*Name of Topic/Contents*	*Tentative Dates/Days*
5.	Fuzzy Sets: Basic definitions, a-cuts, strong a-cuts, level set of a fuzzy set, support of a fuzzy set, the core and height of a fuzzy set, normal and subnormal fuzzy sets, convex fuzzy sets, cutworthy property, strong cutworthy property, standard fuzzy set operations, standard complement, equilibrium points, standard intersection, standard union, fuzzy set inclusion, scalar cardinality of a fuzzy set, the degree of subsethood.	August 2025
6.	Additional properties of a-cuts involving the standard fuzzy set operators and the standard fuzzy set inclusion. Representation of fuzzy sets, three basic decomposition theorems of fuzzy sets, Extension principle for fuzzy sets, Images and inverse images of fuzzy sets, proof of the fact that the extension principle is strong cutworthy but not cutworthy. .	September 2025
7.	Operators on fuzzy sets: types of operations, fuzzy complements, equilibrium of a fuzzy complement, equilibrium of a continuous fuzzy complement, first and second characterization theorems of fuzzy complements, fuzzy intersections (t-norms), standard fuzzy intersection as the only idempotent t-norm, standard intersection, algebraic product, bounded difference and drastic intersection as examples of t-norms, decreasing generator, the Pseudo-inverse of a decreasing generator, increasing generators and their Pseudo-inverses.)	*October 2025*
8.	Conversion of decreasing generators and increasing generators to each other, characterization theorem of t-norms (statement only), fuzzy unions (t-conorms), standard union, algebraic sum, bounded sum, and drastic union as examples of t-conorms, characterization theorem of t-conorms (statement only). Fuzzy numbers, relation between fuzzy numbers and a convex fuzzy set, characterization of fuzzy numbers in terms of its membership functions as piecewise defined functions, fuzzy cardinality of a fuzzy set using fuzzy numbers, arithmetic operators on fuzzy numbers, extension of standard arithmetic operations on real numbers to fuzzy numbers.	*November 2025*
5.	Revision	*December 2025first week (till Exam)*

TENTATIVE LESSON PLAN

SESSION: 2025-26

Name of the Teacher: Dr. Bhagwan Dass *Department: Mathematics*

Subject/Course: Sequences and Series *Programme:* B.Sc. physical Sciences

Semester: . 5th Sem.

Unit	*Name of Topic/Contents*	*Tentative Dates/Days*
5.	Boundedness of the set of real number, least upper bound and greatest lower bound of a set, Archimedean, algebra and ordered properties, the real number system as a complete ordered field, neighbourhood, isolated point, interior point, limiot point, open set, closed set, interior of a set, closure of a set, in real numbers and their properties, Bolzano-Weierstrass theorem, Open cover, compact set	August 2025
6.	Denumerable and non-denumerable sets, sequences, real sequences and their convergence, theorem on limit of sequence, bounded and monotonic sequence, Cauchy sequence, Cauchy general principle of convergence, subsequence and subsequential limits, limit superior and limit inferior	September 2025
7.	Infinite series, convergence and divergence of infinite series, comparision test of positive terms infinite series, Cauchy general principle of convergence of series, Convergence and divergence of geometric series, hyper harmonic series, , D'alembert ratio test, raabes test, logarithmic test, Cauchy n root test, De-Morgan and Bertrand test, Gauss test, Cauchy integral test.	*October 2025*
8.	Alternating series, Absolute and conditionally convergence, Leibnitz test, Arbitrary series, Abel and Dirichlet test, Insertion and removal of parenthesis, re-arrangement of terms in a series, Cauchy product of series.	*November 2025*
5.	Revision	*December 2025 first week (till Exam)*

TENTATIVE LESSON PLAN

SESSION: 2025-26

Name of the Teacher: AJAY SINGH Department:MATHEMATICS

Subject/Course: : COMPLEX ANALYSIS. Programe:M.Sc

Semester: 1st sem

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	The function of a complex variable, Continuity, Differentiability, Analytic functions and their properties, Cauchy-Reimann equations in cartesian and polar coordinates, Power Series, Radius of convergence, Differentiability of sum function of a power series.	August
2.	Contour, Complex Integration, Cauchy theorem, Simply/multiply connected domains, Cauchy integral formula, Extension of Cauchy integral formula for multiply connected domains, Poisson integral formula, Morera's theorem, Cauchy inequality, Liouville theorem. (Assignment)	September
3.	**Taylor theorem, Zeros of an analytic function, Laurent series, Singularities: Isolated singularities and non-isolated singularities, Cassorati-Weierstrass theorem, Limit point of zeros and poles, Maximum modulus principle, Schwarz Lemma. (Test)**	October
4.	V Meromorphic functions, Argument principle, Rouche theorem, Fundamental theorem of algebra, Calculus of residues, Cauchy residues theorem, Evaluation of integrals of thedifferent types(Assignment)	November
5.	**Revision**	December

TENTATIVE LESSON PLAN

SESSION: 2025-26

Name of the Teacher: AJAY SINGH Department:MATHEMATICS

Subject/Course ;FUNCTIONAL ANALYSIS Programme:M.Sc

Semester: 3rd SEM

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Normed linear spaces, Banach spaces, finite dimensional normed spaces and subspaces, equivalent norms, compactness and finite dimension. F.Riesz's lemma. Bounded and continuous linear operators differentiation operator.	August
2.	Hahn-Banach theorem for normed linear spaces, application to bounded linear functionals on C[a,b], Riesz-representation theorem for bounded linear functionals on C[a,b], Uniform Boundedness Theorem, Open Mapping Theorem and Closed Graph.	September
3	Inner product spaces, Hilbert spaces and their examples, Schwarz inequality, continuity of inner product, orthogonal complements and direct sums, minimizing vector, orthogonality, projection theorem characterization of sets in Hilbert spaces whose span is dense	October
4.	Orthonormal sets and sequences, Bessel's inequality, series related to orthonormal sequences and sets, total (complete) orthonormal sets and sequences, Parseval's identity, separable Hilbert spaces. Riesz representation theorem for bounded linear functionals on a Hilber space, sesquilinear form, Riesz representation theorem for bounded sesquilinear forms on Hilbert spaces.	November
4	**RIVISION**	December

TENTATIVE LESSON PLAN

SESSION: 2025-26

Name of the Teacher: GURDEEP Department: MATHEMATICS

Subject/Course: : DIFFERENTIAL EQUATION-I. Programe: B.Sc/B.A

Semester: 3rd SEM

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Differential Equations of First Order and First Degree, Exact Differential Equations, Equations of First Order But Not of First Degree, Orthogonal Trajectories	August
2.	Linear Differential Equations with Constant Co-efficients, Cauchy-Euler Equations, Linear Differential Equations of Second Order with Variable Coefficients. (Assignment)	September
3.	Ordinary Simultaneous Differential Equations, Total Differential Equations, First Order Linear Partial Differential Equations (Test)	October
4.	First Order Non Linear Partial Differential Equations, Second Order Linear Partial Differential Equations With Constant Coefficients	November
5.	Revision	December

TENTATIVE LESSON PLAN

SESSION: 2025-26

Name of the Teacher: GURDEEP Department: MATHEMATICS

Subject/Course; ORDINARY DIFFERENTIAL EQUATION-I Programme: M.Sc

Semester: 1st SEM

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Initial value problem and equivalent integral equation, e-approximate solution, Equicontinuous family of functions, Ascoli-Arzela theorem, Cauchy-Peano existence theorem, Existence and Uniqueness of Solutions, Lipschitz condition.	August
2.	Picard-Lindelof theorem for Existence and Uniqueness of Solutions, Solution of initial-value problems by Picard method, Gronwall's inequality, Linear differential systems: Definitions and notations. Linear homogeneous systems, Fundamental set and Fundamental matrix, Linear systems with constant and periodic coefficients.(Assignment)	September
3	Non-homogeneous linear systems, Floquet theory, Higher order equations: Linear differential equations of order n, theory & examples, Linear combination, Linear dependence and independence of solutions. Wronskian theory: Definition, a necessary and sufficient condition for linear dependence and linear independence of solutions of homogeneous linear differential equations.(Test)	October
4.	More Wronskian theory. Abel's Identity, Reduction of order, non-homogeneous linear differential equations, Variation of parameters, Adjoint equations, Lagrange's Identity and Green's formula.(Assignment)	November
5	RIVISION	December

TENTATIVE LESSON PLAN

SESSION: 2025-26

Name of the Teacher: Mannu Arya

Department: Mathematics

Subject/Course: Number Theory

Programme: M.Sc. Mathematics

Semester:-1st Sem.

Unit	Name of Topic/Contents	Tentative Dates/Days
9.	Well ordering principle, divisibility, division algorithm, G.C.D. (greatest common divisors), L.C.M. (least common multiple). Gauss theorem, primes, perfect number, Euclid's first theorem, Fundamental Theorem of arithmetic or Unique Factorization theorem, Euclid's second theorem.	August 2025
10.	Linear Diophantine equation i,e, equation of the type ax + by = c, the necessary and sufficient condition that the linear Diophantine equation has a solution in integer. Example of Linear Diophantine equation, simultaneous linear equation.	September 2025
11.	Farey sequences, Farey sequences of order n, rational approximations, Hurwitz theorem, ítrational numbers, Geometry of numbers, Minkowski's convex body theorem, Langrange's four square theorem.	October 2025
12.	Fermat numbers, Fermat numbers are relatively prime, properties of Fermat numbers, Fermat's theorem, Wilson's theorem converse of Wilson's theorem, Euler's function and its properties multiplicative function, Euler's generalization of Fermat's theorem.	November 2025
5.	Doubts and key result, theorems discussion for exam purpose	December 2025first week (till Exam)

SESSION: 2025-26

Name of the Teacher: Mannu Arya Department: Mathematics

Subject/Course: Mathematical Statistics Programme: M.Sc. Mathematics

Semester:-3rd Sem.

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Basic concepts of set theory: sample space, events, algebra of events. Definitions of probability: classical, empirical, and axiomatic.Addition and multiplication theorems, independent events. Conditional probability and Bayes' theorem with applications.Random variables: discrete and continuous; probability mass function (PMF), probability density function (PDF), and cumulative distribution function (CDF). Functions of random variables.	August 2025
2.	Mathematical Expectation and Standard Distributions Mathematical expectation and its properties. Moments, moment generating functions (MGF), cumulants. Inequalities: Markov's inequality, Chebyshev's inequality, Jensen's inequality. Discrete distributions: Bernoulli, Binomial, Poisson, Geometric, Hypergeometric, Negative Binomial - definitions, properties, and applications. Continuous distributions: Uniform, Exponential, Normal, Gamma, Beta derivations, characteristics, and real-life relevance.	September 2025
3.	Joint and Marginal Distributions Bivariate and multivariate random variables. Joint, marginal, and conditional distributions for discrete and continuous cases. Independence of random variables. Covariance, correlation, and properties ofthe correlation coefficient. Conditional expectation and its applications. Bivariate normal distribution: definition and properties.	October 2025
4.	Distribution of Functions of Random Variables and Limit Theorems Distribution of sums, differences, and other functions of random variables. Method of transformation and Jacobian technique. Convolution and distributions of sums of independent variables. Weak and strong laws of large numbers: statements and applications. Central Limit Theorem (CLT): Lindeberg-Levy version and examples.	November 2025
5.	Doubts and key results, theorems discussion for exam purpose	December 2025first week (till Exam)

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2025-26

Name of the Teacher: Reena Devi Department: Mathematics

Subject/Course: Differential Equations-I Programme: B.Sc.2nd (B)

Semester: 3rd

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Basic concepts and genesis of Ordinary Diff. Eqn., Order and Degree, Solutions of first order and first degree,Exact Diff.Eqn,Integrating factor,first order higher degree eqn.,Lagrange eqn.,Clairaut form,Orthogonal trajectories , Solution of Linear diff. eqn.,linear non-homo,2nd order linear with variable coeff.	August 2025
2.	Method of Reduction of order,undetermined coeff.,variation of parameters , Cauchy-Euler eqn., Solu. Of simultaneous diff. eqn.,total diff. eqn.,Genesis of PDE,Linear and non linear PDE, Complete solu.,general solu. And singular solu. Of a PDE + Assignment	September 2025
3.	linear PDE of first order, Lagrange method , Integral surfaces passing through a given curve , Surfaces orthogonal , compatible systems of first order eqn.,Charpit method, Special types of first order PDE,Jacobi method + Class Test	October 2025
4.	2nd order PDE + Revision	November & December 2025

TENTATIVE LESSON PLAN (SEMESTERS)
SESSION: 2025-26

Name of the Teacher: Reena Devi

Department: Mathematics

Subject/Course: Business Mathematics

Programme: B.Com. 1st (A, B, C)

Semester: 1st

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Set Theory: Representation of sets, equivalent sets, power set, complement of a set. Venn Diagrams: Union and intersection of sets, De-Morgan's laws; Logical statements and truth tables. Logarithms: Laws of operation, log tables; Arithmetic and geometric progression.	August 2025
2.	Matrices and Determinants: Definition of a matrix, order, equality, types of matrices; Operations on matrices: Addition, multiplication and multiplication with a scalar and their simple properties. .+ Assignment	September 2025
3.	Determinant of a square matrix (upto 3 x 3 order): Properties of determinants, minors, co-factors and applications of determinants in finding the area of triangle, adjoint and inverse of a square matrix, solutions of a system of linear equations by examples.+ Mid Term Exam	October 2025
4.	Compound interest and annuities: Different types of interest rates, types of annuities, present value and amount of an annuity (including the case of continuous compounding), valuation of simple loans and debentures, problems related to sinking funds. + Revision	November & December 2025

TENTATIVE LESSON PLAN (SEMESTERS)
SESSION: 2025-26

Name of the Teacher: NEERU Department: Mathematics

Subject/Course: INTRODUCTORY MATHEMATICS (MDC)
Programme:MDC 1ST

Semester: 1st

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Set theory,Matrices and Determinants,Quadratic equations	August
2.	Complex numbers ,Linear inequalities +Assignment	September
3.	Arithmetic,Geometric and Harmonic Progression+mid term exam	October
4.	Straight lines + Revision	November /Dec

TENTATIVE LESSON PLAN (SEMESTERS)
SESSION: 2025-26

Name of the Teacher: NEERU Department: Mathematics

Subject/Course: Mathematics for all (MDC) Programme:MDC 2nd

Semester: 3rd

Unit	Name of Topic/Contents	Tentative Dates/Days
5.	The concept of a set , The concept of a function, Solution of simple quadratic and cubic eqn.,Solution of simultaneous linear eqn, Arithmetic progression , Geometric Progression,The concept of differentiation	August 2025
6.	Integration of simple algebraic ,trigonometric and exponential functions , Presentation of data , Measures of central tendency + Assignment	September 2025
7.	Measures of dispersion , Correlation , Linear regression + Class Test	October 2025
8.	Solution of diff. eqn.	November 2025
5.	Revsion	December 2025first week (till Exam)

SESSION: 2025-26

Name of the Teacher: Neeru Department: Mathematics

Subject/Course: Calculus Programme: B.sc 1st year

Semester:-1st Sem.

Unit	Name of Topic/Contents	Tentative Dates/Days
9.	Limit and continuity of a real valued function,basic properties of discontinuities ,differentiability of functions.Application of L'Hospital rule to indeterminate forms,successive differentiation , Leibnitz thm,Taylor's and Maclaurin's series expansion with different forms of remainder	August 2025
10.	Asymptotes: Horizontal,vertical and oblique asymptotes for algebraic curves,Asymptotes for polar curves,Curvature and radius of curvature of curves,Newton's method,centre of curvature and circle of curvature. Assignment	September 2025
11.	Multiple points,Node,Cusp,Conjugate point,Tests for concavity and convexity,Point of inflexion ,Tracing of curves,Reduction formulae Mid term exam	October 2025
12.	Rectification ,intrinsic equation of a curve,Quadrature,Area bounded by closed curves,Volumes and surfaces of solids of revolution. Revision of syllabus	November 2025
5.	Revsion	December 2025first week (till Exam)

TENTATIVE LESSON PLAN (SEMESTERS)
SESSION: 2025-26

Name of the Teacher: NEERU *Department: Mathematics*

Subject/Course:Reasoning *Programme VOC*

Semester: 5th

Unit	*Name of Topic/Contents*	*Tentative Dates/Days*
1.	Verbal Reasoning :Series completion,Number series,Letter series ,wrong number series,word Analogy	*August*
2.	Coding and Decoding :Letter coding ,Number coding,Matrix coding,place arrangement,Direction sense,Family-based puzzles;Blood Relationships+Assignment	*September*
3.	Arithmetic reasoning ,Venn diagrams,Logical diagram,Symbol Substitution+mid term exam	*October*
4.	Non verbal Reasoning :Choosing the odd figure ,word Analogy,Number analogy,Water Images,Mirror images+ Revision	*November /Dec*

TENTATIVE LESSON PLAN

SESSION: 2025-26

Name of the Teacher: Dr. Anil Kumari Department: Mathematics

Subject/Course: Environmental Studies (sec-A, C) Programme: UG-1ST Year

Semester:-1st Sem.

Unit	Name of Topic/Contents	Tentative Dates/Days
13.	Introduction to environmental studies Multidisciplinary nature of environmental studies; Scope and importance; Concept of sustainability and sustainable development. Ecosystems Definition, structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs, Major ecosystems types: Forest ecosystem, Grassland ecosystem, Desert ecosystem and Aquatic ecosystem (lakes, rivers, oceans).	August 2025
14.	Natural resources: Renewable and Non-renewable Resources Land resources: Land degradation and soil erosion. Forest resources: Importance of forests, deforestation: causes and impacts on environment. Water resources: Use and over-exploitation of surface an ground water. Energy resources: Renewable and non- renewable energy sources. Biodiversity and Conservation Definition and its types, Endangered and endemic species of India. Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex- situ conservation of biodiversity. Ecosystem and biodiversity services: Ecological, economi social, ethical, aesthetic and informational values. Assignment	September 2025
15.	Test Environmental pollution Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution. Solid waste management: Sources, methods of disposal: Landfill, incineration and composting. Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture. Environmental Policies & Practices Environmental laws: Environment (Protection) Act, 1986, Air (Prevention & Control of Pollution) Act, 1981, Water (Prevention and control of Pollution) Act, 1974.	October 2025
16.	Human Communities and the Environment Human population growth: Impacts on environment, human health and welfare. Resettlement and rehabilitation of project affected person. Disaster management: floods, earthquake, cyclones, landslides and drought. Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.	November 2025
5.	Revsion	December 2025first week (till Exam)

SESSION: 2025-26

Name of the Teacher: Dr. Anil Kumari Department: Mathematics

Subject/Course: Basic IT Tools (sec-A) Programme: UG-1ST Year

Semester:-1st Sem.

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Introduction to Computer: Computer and Latest IT gadgets, Evolution of Computers & its applications, Basics of Hardware and Software, Application Software, Systems Software, Utility Software. Central Processing Unit, Input devices, Output devices, Computer Memory & storage, Mobile Apps Discussion and problems taken	August 2025
2.	Introduction to Operating System, Functions of the Operating system, Operating Systems for Desktop and Laptop, Operating Systems for Mobile Phone and Tablets, User Interface for Desktop and Laptop, Task Bar, Icons & shortcuts, Running an Application, Operating System Simple Setting, Changing System Date and Time, Changing Display Properties, To Add or Remove Program and Features, Adding, Removing & Sharing Printers, File and Folder Management. Discussion and problems taken Mid-Term Exam Assignment	September 2025
3.	Introduction to Internet and World Wide Web, Basic of Computer Networks, Local Area Network (LAN), Wide Area Network (WAN), Network Topology, Internet, Applications of Internet, Website Address and URL, Popular Web Browsers (Internet Explorer/Edge, Chrome, Mozilla Firefox, Opera etc.), Popular Search Engines, Searching on the Internet Discussion and problems taken	October 2025
4.	E-mail: Using E-mails, Opening Email account, Mailbox: Inbox and Outbox, Creating and Sending a new Email, replying to an E-mail message, forwarding an E-mail message, searching emails, Attaching files with email, Email Signature. Social Networking: Facebook, Twitter, LinkedIn, Instagram, Instant Messaging (WhatsApp, Facebook Messenger, Telegram), Introduction to Blogs, Digital Locker	November 2025
5.	Revsion	December 2025first week (till Exam)

SESSION: 2025-26

Name of the Teacher: Dr. Anil Kumari Department: Mathematics

Subject/Course: Calculus Programme: B.sc Single Major (Minior)

Semester:-1st Sem.

Unit	Name of Topic/Contents	Tentative Dates/Days
13.	Limit and continuity of a real valued function,basic properties of discontinuities ,differentiability of functions.Application of L'Hospital rule to indeterminate forms,successive differentiation , Leibnitz thm,Taylor's and Maclaurin's series expansion with different forms of remainder	August 2025
14.	Asymptotes: Horizontal,vertical and oblique asymptotes for algebraic curves,Asymptotes for polar curves,Curvature and radius of curvature of curves,Newton's method,centre of curvature and circle of curvature. Assignment	September 2025
15.	Multiple points,Node,Cusp,Conjugate point,Tests for concavity and convexity,Point of inflexion ,Tracing of curves,Reduction formulae Mid term exam	October 2025
16.	Rectification ,intrinsic equation of a curve,Quadrature,Area bounded by closed curves,Volumes and surfaces of solids of revolution. Revision of syllabus	November 2025
5.	Revsion	December 2025first week (till Exam)

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2025-26

Name of the Teacher: Reena Rani *Programme: B.Sc &B.a.*

Subject /course: Element of calculus

Semester: 1st

Unit	*Name of Topic/Contents*	*Tentative Dates/Days*
1	***definition of limit and continuity of a real valued function, Basic properties of limits, Types of discontinuities, Differentiability of functions, Application of L 'Hospital rule to indeterminate forms, Successive differentiation, Leibnitz theorem, Taylor's and Maclaurin's series expansion with different forms of remainder.***	*August 2025*
2	*Asymptotes: Horizontal, vertical and oblique asymptotes for algebraic curves, Asymptotes for polar curves, Intersection of a curve and its asymptotes, Curvature and radius of curvature of curves (cartesian, parametric, polar & intrinsic forms), Newton's method, Centre of curvature and circle of curvature.* ***Discussion and problems taken***	*September 2025*
3	*Multiple points, Node, Cusp, Conjugate point, Tests for concavity and convexity, Points of inflexion, Tracing of curves, Reduction formulae.* *Mid term exam* *Assignment*	*October 2025*
4	*Rectification, intrinsic equation of a curve, Quadrature, Area bounded by closed curves, Volumes and surfaces of solids of revolution.* *Revision*	*November 2025*

Lesson plan

Name of the Teacher: Reena Rani *Department: Mathematics*

Subject/course: calculation skill in vedic mathematics 2 *Programme:SEC*

Semester:3rd

Unit	*Name of Topic/Contents*	*Tentative Dates/Days*
1	Multiplication (Quadratic expressions of single variable), Urdhwatirygbhyaam Method, Combined Operations. Division and Factorization: Division (Divisor: Linear expression of single variable), Factorization (Quadratic and cubic polynomials of two variables), Factorization of quadratic polynomial containing more than two variables.	August
2	Solution of Simple Equation, solution of linear equation in one variable, solution of linear equations in two variables, solution of quadratic equations, Solution ***Assignment*** ***Discussion and problems taken***	September
3		October

	LCM and HCF of polynomials. Concept of Baudhayana Number (BN), BN of an angle, Multiplication of a constant in a BN, BN of complementary angles, BN of sum and difference (a + B) of an angle, BN of halfangle. Mid term exam	
4	Pythagorean triple, Trigonometric relation for half, twice and thrice of angle, sum, difference of angles using triples Vedic Geometry: Angle between two lines, perpendicular distance of line from a point. ***Discussion and problems taken*** ***Revision***	November

SESSION: 2025-26

Name of the Teacher: Reena Rani Department: Mathematics

Subject/Course: Basic IT Tools (sec-D) Programme: UG-1ST Year

Semester:-1st Sem.

Unit	*Name of Topic/Contents*	*Tentative Dates/Days*
1.	Introduction to Computer: Computer and Latest IT gadgets, Evolution of Computers & its applications, Basics of Hardware and Software, Application Software, Systems Software, Utility Software. Central	August 2025

	Processing Unit, Input devices, Output devices, Computer Memory & storage, Mobile Apps Discussion and problems taken	
2.	Introduction to Operating System, Functions of the Operating system, Operating Systems for Desktop and Laptop, Operating Systems for Mobile Phone and Tablets, User Interface for Desktop and Laptop, Task Bar, Icons & shortcuts, Running an Application, Operating System Simple Setting, Changing System Date and Time, Changing Display Properties, To Add or Remove Program and Features, Adding, Removing & Sharing Printers, File and Folder Management. Discussion and problems taken Mid-Term Exam Assignment	September 2025
3.	Introduction to Internet and World Wide Web, Basic of Computer Networks, Local Area Network (LAN), Wide Area Network (WAN), Network Topology, Internet, Applications of Internet, Website Address and URL, Popular Web Browsers (Internet Explorer/Edge, Chrome, Mozilla Firefox, Opera etc.), Popular Search Engines, Searching on the Internet Discussion and problems taken	*October 2025*
4.	E-mail: Using E-mails, Opening Email account, Mailbox: Inbox and Outbox, Creating and Sending a new Email, replying to an E-mail message, forwarding an E-mail message, searching emails, Attaching files with email, Email Signature. Social Networking: Facebook, Twitter, LinkedIn, Instagram, Instant Messaging (WhatsApp, Facebook Messenger, Telegram), Introduction to Blogs, Digital Locker	*November 2025*
5.	Revsion	*December 2025first week (till Exam)*