

Lesson Plan

Name of Teacher: Ms. Richa Kumari

Class: B.A. 1st Year/Semester 1st

Paper: MDC (Mathematics for everyday life)

Session: 2025-2026

Sr.No.	Months	Weeks	Topics
1.	July	4 th Week Last Week	1. Number system 2. LCM and HCF of numbers
2.	August	1 st Week 2 nd Week 3 rd Week 4 th Week Last Week	1. Decimal Fractions 2. Square and cube roots 3. Average 4. Problems on Numbers 5. Problems on Ages
3.	September	1 st Week 2 nd Week 3 rd Week 4 th Week	1. Surds and Indices 2. Percentage, Assignment 1 3. Percentage 4. Profit and Loss
4.	October	1 st Week 2 nd Week 3 rd Week 4 th Week	1. Ratio and Proportion 2. Partnership, Chain Rule, Problems based on the topics of Calendar and Clocks. 3. Time and Work 4. Unit Test, Assignment 2 (Vacations/Diwali 19-26, Oct 2025)
5.	November	1 st Week 2 nd Week 3 rd Week	1. Time and Distance 2. Area, Volume and Surface Area 3. Revision

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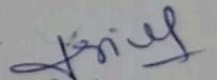
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Lesson Plan

Name of Teacher: Dr. Vinod Gill
Paper: VOC (Sets and Sequences)

Class: B.A. 1st Year 1st Semester
Session: 2025-2026

Sr.No.	Months	Weeks	Topics
1.	July	4 th Week Last Week	1. Sets and their representations. 2. Empty set, Finite and infinite sets, Subsets.
2.	August	1 st Week 2 nd Week 3 rd Week 4 th Week Last Week	1. Equal sets, Power sets. 2. Universal set, Union and intersection of sets. 3. Difference of two sets, Complement of a set. 4. Venn diagram. 5. De-Morgan's laws and their applications.
3.	September	1 st Week 2 nd Week 3 rd Week Last Week	1. Arithmetic progression 2. Geometric progression. 3. Harmonic progression. 4. Harmonic progression, Assignment I
4.	October	1 st Week 2 nd Week 3 rd Week Last Week	1. Arithmetic mean (A.M.). 2. Geometric mean (G.M.). 3. Harmonic mean (H.M.). 4. Harmonic mean (H.M.), Unit Test, Assignment II (Vacations/Diwali 19-26, Oct 2025)
5.	November	1 st Week 2 nd Week 3 rd Week	1. Relation between A.M., G.M. and H.M. . 2. Revision 3. Revision


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Lesson Plan

Name of Teacher: Dr. Vinod Gill

Class: B.A. 1st Year 1st Semester

Paper: VAC (Contributions of Indian Mathematicians)

Session: 2025-2026

Sr.No.	Months	Weeks	Topics
1.	July	4 th Week Last Week	1. Development of Indian mathematics during Vedic and Ancient period. . 2. Overview of the Vedic period.
2.	August	1 st Week 2 nd Week 3 rd Week 4 th Week Last Week	1. Mathematical ideas in the Vedas and manuscripts in Indian mathematics. Life. 2. background, notable works 3. Mathematical contribution of Baudhayana, Pingala, Aryabhata, Brahmagupta, . 4. Bhaskaracharya, Mahaviracharya and Lilavati. Kerala School of Mathematics, Madhava of Sangamagrama, 5. Nilakantha Somayaji, Jyesthadeva: Overview of historical backgrounds and their contribution. .
3.	September	1 st Week 2 nd Week 3 rd Week Last Week	1. Contribution in Modern Period: Srinivasa Ramanujan, Satyendra Nath Bose . 2. Contribution in Modern Period: Radhanath Sikdar, Assignment I 3. Contribution in Modern Period: P.C. Mahalanobis, D.R. Kaprekar 4. Introduction to the prestigious Ramanujan Award, Fields Medal.
4.	October	1 st Week 2 nd Week 3 rd Week 4 th Week	1. Fields Medal, Abel Prize and their significance 2. Biography and contributions of illustrious mathematicians from India: Subrahmanyam Chandrasekhar 3. Biography and contributions of illustrious mathematicians from India: C.R. Rao, S.R. Srinivasa Varadhan . 4. Biography and contributions of illustrious mathematicians from India :Akshay Venkatesh Unit Test, Assignment II (Vacations/Diwali 19-26, Oct 2025)
5.	November	1 st Week 2 nd Week 3 rd Week	1. Biography and contributions of illustrious mathematicians from India : Harish Chandra . . 2. Revision 3. Revision

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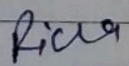
Class: B.A. 2nd Year/3rd Semester

Paper: Differential Equations

Session: 2025-2026

Course Code: C24MAT301T

Sr.No.	Months	Weeks	Topics
1.	July	3 rd Week	1. Geometrical meaning of a differential equation. Exact differential equations, integrating factors.
		4 th Week	2. First order higher degree equations solvable for x,y,p Lagrange's equations, Clairaut's equations. Equations reducible to Clairaut's form.
		Last Week	3. Singular solutions. Linear differential equations with constant coefficients.
2.	August	1 st Week	1. Homogeneous linear ordinary differential equations. Equations reducible to homogeneous.
		2 nd Week	2. Ordinary simultaneous differential equations. Solution of simultaneous differential equations.
		3 rd Week	3. Partial differential equations: Formation, order and degree.
		4 th Week	4. Linear and Non-Linear Partial differential equations of the first order.
		Last Week	5. Complete solution, singular solution.
3.	September	1 st Week	1. General solution, Linear partial differential equations of second and higher orders.
		2 nd Week	2. Linear and non-linear homogeneous and non-homogeneous equations with constant coefficients.
		3 rd Week	3. Partial differential equations with variable coefficients reducible to equations with constant coefficients.
		Last Week	4. Assignment I.
4.	October	1 st Week	1. Complimentary functions and particular integrals.
		2 nd Week	2. Classification of linear partial differential equations of second order, hyperbolic, parabolic and elliptic types.
		3 rd Week	3. Reduction of second order linear partial differential equations to Canonical (Normal) forms and their solutions.
		Last Week	4. Cauchy's problem for second order partial differential equations, Unit Test, Assignment II (Vacations/Diwali 19-26, Oct 2025).
5.	November	1 st Week	1. Characteristic equations and characteristic curves of second order partial differential equations.
		2 nd Week	2. Revision.
		3 rd Week	3. Revision


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Name of Teacher: Mrs. Richa Kumari

Paper: Differential Equations Lab

Course Code: C24MAT301P

Class: B.A. 2nd Year/3rd Semester

Session: 2025-2026

Sr.No.	Months	Weeks	Topics
1.	July	3 rd Week 4 th Week Last Week	1. Basic Commands and symbols to write differential equations. 2. Commands used to find the derivative and integration of a function. 3. To find the Difference among general solution, singular solution and particular solution.
2.	August	1 st Week 2 nd Week 3 rd Week 4 th Week Last Week	1. To find the solutions of first and second order differential equations. 2. To find the solutions of first and second order differential equations. 3. The plotting of family of solutions of differential equations of first, second and third order. 4. The plotting of family of solutions of differential equations of first, second and third order. 5. The plotting of family of solutions of differential equations of first, second and third order.
3.	September	1 st Week 2 nd Week 3 rd Week Last Week	1. To find the solution of differential equations using method of variation of parameters. 2. To find the solution of differential equations using method of variation of parameters. 3. To find the solutions of linear differential equations of second order using built in functions of Python software. 4. To find the solutions of linear differential equations of second order using built in functions of Python software.
4.	October	1 st Week 2 nd Week 3 rd Week Last Week	1. To find numerical solution of a first order ODE using built in functions of Python. 2. To find numerical solution of a first order ODE using built in functions of Python. 3. To find numerical solution of a first order PDE using built in functions of Python. 4. To find numerical solution of a first order PDE using built in functions of Python, (Vacations/Diwali 19-26, Oct 2025).
5.	November	1 st Week 2 nd Week 3 rd Week	1. Revision

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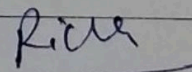
Name of Teacher: Ms. Richa Kumari

Class: B.A. 2nd Year/3rd Semester

Paper: **MDC(Application of Mathematical Statistics in daily life)** Session: 2025-2026

Course Code: **C24MDC319T**

Sr.No.	Months	Weeks	Topics
1.	July	3 rd Week 4 th Week Last Week	Introduction to Statistics: Definition and Importance, Applications of Statistics in Real Life (e.g., business, health, sports, education). Types of Data: Qualitative vs. Quantitative Data. - Discrete vs. continuous Data, Primary and Secondary Data.
2.	August	1 st Week 2 nd Week 3 rd Week 4 th Week Last Week	- Organizing Data: Frequency Distribution Tables, Grouped and ungrouped Data. - Mean (Arithmetic Average): Calculation for Ungrouped and Grouped Data. - Mean (Arithmetic Average): Calculation for Grouped Data. - Median: Finding the Middle Value for Ungrouped and Grouped Data. - Median: Finding the Middle Value for Ungrouped and Grouped Data.
3.	September	1 st Week 2 nd Week 3 rd Week Last Week	- Mode: Identifying the Most Frequent Value. - Range -Definition and Calculation,. - Variance - Concept and Basic Calculation for Ungrouped Data. - Variance - Concept and Basic Calculation for Ungrouped Data, Assignment I
4.	October	1 st Week 2 nd Week 3 rd Week Last Week	- Standard Deviation : Concept and Basic Calculation for Ungrouped Data. - Interquartile Range (IQR)- Understanding Quartiles and Spread of Data. - Interquartile Range (IQR)- Understanding Quartiles and Spread of Data. Unit Test, Assignment II (Vacations/Diwali 19-26, Oct 2025).
5.	November	1 st Week 2 nd Week 3 rd Week	- Revision. - Revision.



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Lesson Plan

Name of Teacher: Dr. Vinod Gill

Paper: **Mathematical Statistics**

Course Code: **C24MIC315T**

Class: B.A. 2nd Year/3rd Semester

Session: 2025-2026

Sr.No.	Months	Weeks	Topics
1.	July	3 rd Week 4 th Week Last Week	1. Introduction to Statistics: Definition and Importance, Applications of Statistics in Real Life (e.g., business, health, sports, education). 2. Types of Data: Qualitative vs. Quantitative Data. 3. Discrete vs. continuous Data, Primary and Secondary Data.
2.	August	1 st Week 2 nd Week 3 rd Week 4 th Week Last Week	1. Data Collection and Organization Methods of Data Collection: Surveys, Experiments, and Observations, Sampling Techniques (Random, Stratified, Systematic). 2. Organizing Data: Frequency Distribution Tables, Grouped and ungrouped Data. 3. Organizing Data: Grouped and ungrouped Data, Tally Marks 4. Graphical Representation of Data: Bar Graphs, Pie Charts, Line Graphs. 5. Histograms and Frequency Polygons, Interpretation of Graphs and Charts.
3.	September	1 st Week 2 nd Week 3 rd Week Last Week	1. Mean (Arithmetic Average): Calculation for Ungrouped and Grouped Data. 2. Median: Finding the Middle Value for Ungrouped and Grouped Data. 3. Mode: Identifying the Most Frequent Value. 4. Mode: Identifying the Most Frequent Value, Assignment I
4.	October	1 st Week 2 nd Week 3 rd Week Last Week	1. Measures of Dispersion:- Range-Definition and Calculation. 2. Variance and Standard Deviation: Concept and Basic Calculation for Ungrouped Data. 3. Interquartile Range (IQR)-Understanding Quartiles and Spread of Data. 4. Unit Test, Assignment II (Vacations/Diwali 19-26, Oct 2025).
5.	November	1 st Week 2 nd Week 3 rd Week	1. Revision. 2. Revision.

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Lesson Plan

Name of Teacher: Dr. Vinod Gill
Paper: Sequence and Series

Class: B.A 3rd Year/5th Sem
Session: 2025-2026

Sr.No.	Months	Weeks	Topics
1.	July	3 rd Week	1. Boundedness of the set of real numbers; least upper bound, greatest lower bound of a set Neighborhoods, interior points.
		4 th Week	2. Isolated points, limit points, Open sets, closed set. Interior of a set, closure of a set in real numbers and their properties.
		Last Week	3. Sequence: Real sequences and their convergence
2.	August	1 st Week	1. Theorem on limits of sequence, bounded and monotonic sequences.
		2 nd Week	2. Cauchy's sequence, Cauchy general principle of convergence, subsequences, sub sequential limits.
		3 rd Week	3. Infinite series: Convergence and divergence of Infinite Series,
		4 th Week	4. Comparison Tests of positive terms Infinite series
		Last Week	Cauchy's general principle of Convergence of series. 5. Convergence and divergence of geometric series
3.	September	1 st Week	1. Hyper Harmonic series or p-series. D-Alembert's ratio test.
		2 nd Week	2. Raabe's test, Logarithmic test, De Morgan and Bertrand's test.
		3 rd Week	3. Cauchy's nth root test, Gauss Test, Cauchy's integral test, Cauchy's condensation test. Assignment I
		Last Week	4. Alternating series: Leibnitz's test, absolute and conditional convergence, Arbitrary series: Abel's lemma, Abel's test, Dirichlet's test
4.	October	1 st Week	1. Fourier's series: Fourier expansion of piecewise monotonic functions, Properties of Fourier Coefficients, Dirichlet's conditions.
		2 nd Week	2. Parseval's identity for Fourier series, Fourier series for even and odd functions, Half range series.
		3 rd Week	3. Change of Intervals. Riemann integral: Definition and examples. Unit Test, Assignment II.
		Last Week	4. Darboux's Theorem and condition of existence of Riemann's integral. (Vacations/Diwali 19-26, Oct 2025)
5.	November	1 st Week	1. Integrability of continuous, monotonic functions and discontinuous functions.
		2 nd Week	2. Properties of integrable functions. Continuity and differentiability of integrable functions.
		3 rd Week	3. Primitive. The Fundamental theorem of integral calculus, Mean value theorems of integral calculus.

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Lesson Plan

Name of Teacher: Mrs. Richa Kumari
Paper: Groups and Rings

Class: B.A. 3rd Year/Semester 5th
Session: 2025-2026

Sr.No.	Months	Weeks	Topics
1.	July	3 rd Week 4 th Week Last Week	1. Definition of a group. Examples of abelian and non abelian groups. 2. The group Z_n of integers under addition modulo n and the group of (n) of units under multiplication modulo n . 3. Generator of a group, Cyclic groups
2.	August	1 st Week 2 nd Week 3 rd Week 4 th Week Last Week	1. Permutations groups, Alternating groups, Cayley's theorem. 2. Subgroups, Subgroup criteria, cosets, Left and right 3. Cosets, properties of cosets. Index of a sub-group, coset decomposition, Lagrange's theorem on groups and its consequences. 4. Normal subgroups, Quotient groups, Homomorphisms, isomorphisms, automorphisms on group. 5. Center of a group and class equation of a group and derived group of a group.
3.	September	1 st Week 2 nd Week 3 rd Week Last Week	1. Introduction to Rings, subrings. 2. Integral domains and Fields, Characteristics of a ring. Ring homomorphisms. 3. Theorems on Ring homomorphisms, Ideals (Principle, Prime and Maximal). 4. Quotient rings, Field of quotients of an integral domain.
4.	October	1 st Week 2 nd Week 3 rd Week Last Week	1. Euclidean rings, Polynomial rings, Polynomials over the rational field. 2. The Eisenstein's criterion of irreducibility of polynomials over the field of rational numbers. 3. Polynomial rings over commutative rings. 4. Principal ideal domain. (Vacations/Diwali 19-26, Oct 2025)
5.	November	1 st Week 2 nd Week 3 rd Week	1. Unique factorization domain. 2. Revision. 3. Revision

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Lesson Plan

Name of Teacher: Mrs. Richa Kumari and Dr. Vinod Gill

Class: B.A. 3rd Year/Semester 5th

Paper: Number Theory & Trigonometry

Session: 2025-2026

Sr.No.	Months	Weeks	Topics
1.	July	3 rd Week 4 th Week Last Week	1. Divisibility, 2. Linear Diophantine equation, 3. Prime counting function, Statement of prime number theorem
2.	August	1 st Week 2 nd Week 3 rd Week 4 th Week Last Week	1. Goldbach conjecture, Congruence, Linear congruence 2. Complete set of residues 3. Chinese remainder theorem. 4. The Fermat's little theorem 5. Wilson's theorem
3.	September	1 st Week 2 nd Week 3 rd Week Last Week	1. Number theoretic functions, Sum and number of divisors 2. Totally multiplicative functions, Euler's phi-function 3. Some properties of Euler's phi-function. Euler's theorem, Möbius inversion formula and Unit Test 4. Reduced set of residues, The greatest integer function
4.	October	1 st Week 2 nd Week 3 rd Week Last Week	1. Order of an integer modulo n , primitive roots for primes, Composite numbers having primitive roots 2. Euler's criterion, the Legendre symbol and its properties, Quadratic reciprocity, quadratic congruences with composite moduli. Assignment 1 3. Exponential, Logarithmic, Circular functions; $\sin(nx)$, $\cos(nx)$, $\tan(nx)$. 4. Circular functions; $\sin^n x$, $\cos^n x$, $\tan^n x$. Hyperbolic and inverse hyperbolic functions - simple problems. Assignment 2 (Vacations/Diwali 19-26, Oct 2025)
5.	November	1 st Week 2 nd Week 3 rd Week	1. Gregory's series, 2. Summation of Trigonometric series, 3. Trigonometric expansions of sine and cosine as infinite products (without proof) and revision of important topics

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